Doing Project Work: The Interactional Organization of Tasks, Resources, and Instructions

# Doing Project Work

## The Interactional Organization of Tasks, Resources, and Instructions

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# Abstract

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In the Swedish educational system, there is a strong emphasis on student autonomy, active knowledge seeking, and critical reflection. Students regularly work individually or in groups with projects that are organized around problems that do not have a straightforward solution. This thesis investigates how such projects are interactionally and practically accomplished. Through detailed analyses of video recorded material of classroom interaction, and within an approach informed by ethnomethodology and conversation analysis, the thesis examines the interactional organization of tasks, resources, and instructions in project work.

In the investigated setting, the students are asked to address whether the greenhouse effect is a natural phenomenon or caused by humans, how the environmental policies of different countries change the local and global ecosystems, whether they as individuals can help prevent future environmental damage, etc. A central idea of the project work is that the students should produce texts 'on their own' based on information they have found in sources they have selected. Although the students are supposed to work independently with these issues, they clearly rely on the instructional and organizational work of teachers. Teachers set the agenda, plan assignments, formulate instructions, give introductions, and provide guidance. Teachers also evaluate the quality of what the students produce, which means that the students continuously need to address normative issues about what they have done and what they are about to do. Given that students often lack the resources for assessing a chosen course of action, this also means students routinely encounter issues that they themselves find difficult to handle.

The three empirical studies of the thesis investigate how instructions are given and received, how students and teachers are dealing with the inherent and designed openness of the tasks, and how the encounters between teachers and students are materially, bodily, and interactionally organized. Study 1 shows how the students interpret a task and how they position themselves in relation to the expectations of this task. Study 2 examines student-initiated instructional interaction and shows some systematic ways in which the actions of students and teachers are contingent on, shaped by, and oriented to these tasks and the associated texts. Study 3 addresses how talk and bodily conduct are coordinated and sequentially organized in the closing of encounters and how teachers and students negotiate the transition from instruction to the closing phase.

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Part One


Doing Project Work: The
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# Chapter 1
# Introduction: Teacher and student interaction in instructional settings

Through detailed analyses of video-recorded material of classroom interaction, and within an approach informed by ethnomethodology and conversation analysis (Garfinkel, 1967; Sacks, 1992), this thesis addresses the interactional organization of tasks, resources, and instructions in project work. More specifically, the interest of this thesis lies in how instructions are given and received, and how the work of teachers and students is practically accomplished in the setting. Although the literature on the organization of project work is growing (e.g., Furberg, 2010; Lilja, 2012; Lundh, 2011), educational arrangements like this remain an unexplored domain. Most research on classroom interaction has studied whole class instruction. At the same time, teachers in Sweden, as well as in many other countries, report that they increasingly work with so-called 'student-centered' approaches and that they organize much of their education in terms of group work, themes, or project work (cf. Bergqvist, 1990; Carlgren, Klette, Mýrdal, Schnack, & Simola, 2006; Cuban, 1993; Nyroos, 2006).

Thus, in many educational systems, there has been a significant move toward student-centered approaches as alternatives and supplements to teacher-led lectures. According to the national curriculum for the compulsory school system (*Läroplan för det obligatoriska skolväsendet, förskoleklassen och fritidshemmet*, Lpo 94), teachers should provide students "with opportunities for taking initiatives and responsibility as well as creating the preconditions for developing their ability to work independently and solve problems" (p. 6). One way of implementing this policy is to let students work individually or in groups with projects that are organized around problems that do not have a straightforward solution. By engaging with issues such as the greenhouse effect, gene modification, or the consequences of colonialism, it is believed that students improve their ability to collect and examine facts and critically explore the

consequences of various positions and arguments (e.g., Lilja, 2012; Säljö, Jakobsson, Lilja, Mäkitalo, & Åberg, 2011).

In discussions of the educational characteristics of project work, in Sweden as well as internationally, the teacher is often portrayed as a supervisor or guide who scaffolds the students' work instead of an authority who instructs the students in the subject matter content. In line with this, ideally students, instead of teachers, should take responsibility for their learning (cf. Palincsar & Brown, 1984; Zimmerman, 1986). As repeatedly shown in studies of classroom practice, however, educational activities in which students are supposed to work 'autonomously' or 'on their own' nevertheless rely on the instructional and organizational work of teachers (e.g., Amerine & Bilmes, 1988; Bergqvist & Säljö, 1994; Greiffenhagen, 2008; Merritt & Humphrey, 1979). Teachers set the agenda and plan assignments. They formulate instructions, give introductions, and provide guidance. Although students are responsible for doing and completing assignments, teachers eventually evaluate the quality of what the students produce. This means that the students continuously need to address normative issues about what they have done and what they are about to do. Given that students often lack the resources for assessing a chosen course of action, this also means students routinely encounter issues that they themselves find difficult to handle.

The studies of this thesis set out to investigate such issues. With a background in ethnomethodology and conversation analysis, the aim is to investigate how "daily activities in classrooms are produced as such in the first place, rather than having these 'in place' and then theorizing them" (Hester & Francis, 2000, p. 1). A central premise in these traditions is that social worlds are meaningfully analyzed by the members of that world (Macbeth, 1998; Schütz, 1953/1962). Following this, the term ethnomethodology does not refer to a particular method within the social sciences. Instead, the term points to an area of study – "the ordinary 'methods' through which persons conduct their practical affairs" (Lynch, 1993, p. 5). Similarly, the term conversation analysis (CA) does not only refer to a certain analytical approach to the study of interaction, but to a topic: "lay interlocutors' *own* commonsense analysis of the conversation in which they were involved, moment-to-moment" (Watson, 2008, p. 224, italics in original). In contrast to many other social scientific approaches, ethnomethodology and CA do not attempt to replace members' own interpretations with rival theoretical accounts. Instead, the central aim is to show how members analyze each other and their surroundings and "to

build descriptions of those first organizations on the scene" (Macbeth, 2011b, p. 77). For the study of education, this means "investigating the educational orders to which parties to educational scenes, settings and activities are oriented in the course of those selfsame scenes, settings and activities" (Hester & Francis, 2000, p. 1). The aim is not to explain or understand a phenomenon such as teacher corrections by applying theories or criteria obtained outside the actual setting (cf. Garfinkel, 1967, p. 33) but to investigate how corrections are practically and interactionally achieved in the first place.

In relation to the way educational research sometimes is understood and conducted, this approach implies some restrictions. Ethnomethodological and conversation analytical studies do not set out to make normative assessments of teachers' approaches. Neither do they provide prescriptions or recommendations for teachers. As formulated by Macbeth (2011a): "They do not pose as arbiters – or designers – of things like 'best practices'. Instead, these studies aim to re-describe how students and teachers take up their daily tasks of instruction on local fields of understanding-in-interaction" (pp. 12–13). Following this, the thesis will not include discussions about the educational value of project work and does not provide recommendations for how successful projects should be designed. Instead, the three studies in the thesis aim to explicate the ways in which teachers and students work with tasks and the associated "local fields of understanding-in-interaction".

Despite this descriptive analytical interest, there is, however, the hope and potential for the studies to be useful for practitioners in the field as well. The thesis, and its studies of naturally occurring interaction in the classroom, provides a "way into an exploration of teachers' and pupils' routinely taken-for-granted practical reasoning and common sense knowledge" (Payne & Cuff, 1982, p. 5). Through such a re-descriptive analysis, teachers might consider their own implications and their own practical solutions. As argued by Hester and Francis (2000), "it is through such detailed inquiries that 'self-reflection' and hence improved practice may best be promoted" (p. 7). Ideally, this kind of research could also contribute to a public debate about education. While the thesis does not state what teachers should do, it hopefully provides a better understanding of the practice of teaching in project work – what issues teachers and students need to deal with, what the students ask of the teachers, and how the teachers design their instructions in response to these issues and requests. In the public debate, the role of the teacher is often discussed in very general terms. Nevertheless, or perhaps because of this, Hester and Francis's

argument could be applied in this context as well – the improved practice the debate aims for might be promoted by a detailed understanding of the actual practice.

## The studies and their context

The empirical material for this thesis consists mainly of video and audio materials that were recorded as part of a research project called Transforming Information to Knowing (in Swedish, *att Transformera Information till Kunskap*, TIK).[1] The research project aimed at investigating how teaching and learning are contingent on technologies and genres of communication. All researchers in TIK shared an interest in project work as a contemporary educational phenomenon, the interaction that took place in the investigated activities, and the concrete conditions for teaching and learning that project work organization provides. Empirical studies were conducted at three sites. These studies included a broad range of materials, such as field notes, interviews, copies of the students' work, and video and audio recordings of classroom interaction. In relation to this corpus of data, a number of questions were raised and addressed: What are the similarities and differences between the sites? What competences are needed by the students to produce what is expected of them? What challenges do students and teachers encounter? What kind of support did the students seem to need and what support did the teachers provide? Some of the results of the research project have been reported in a co-authored book (Säljö et al., 2011). With teachers and students in teacher education as the main audience, the book outlines how teachers and students interact within project work activities and discusses changes in learning and literacy practices when instructions are based on multiple resources instead of schoolbooks.

Although there are many overlaps between the interests and approach of the research project and those of this thesis, there are also some central differences. This thesis exclusively focuses on one of the sites and an interdisciplinary school project that lasted for a period of five weeks in a Grade 9 class (students aged 15–16). In contrast to this thesis, moreover, the research pro-

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[1] The members of TIK were, from University of Gothenburg, Professor Roger Säljö (head of the project), Professor Åsa Mäkitalo, PhD Patrik Lija (defended his thesis in 2012), and myself, and from the University of Malmö, Professor Anders Jakobsson.

ject as a whole was mainly situated within a sociocultural research tradition (e.g., Ivarsson, Linderoth, & Säljö, 2009; Säljö, 1999).

The first empirical study of this thesis, a book chapter a co-authored with Åsa Mäkitalo and Roger Säljö, is different from the other two; it is closer to the sociocultural frame of the general project and thus not similarly tied to ethnomethodology and CA. Within the research on education and elsewhere, ethnomethodology, CA, and sociocultural theories have all been characterized as "situated perspectives" – they all take situated actions, activities, and practices as the object of study. As will be further discussed, however, the way they do this, the intellectual histories they draw upon, and what the very notion of "situatedness" means differ between the approaches (cf. Chapter 4).

Representing the way in which the thesis has developed, and particularly how the two most recent studies have been conducted, the introduction situates the work in ethnomethodology and CA. An alternative would have been to attempt to present a framework that would do equal justice to all three studies, but given the differences between the traditions, such an approach would risk ending up in an introduction that was unable to do justice to any of them. Most importantly, such an approach would not represent the position from which the thesis now is written.

## Overall aim and research interests

In the classroom investigated, the teachers characterize their method of working as interdisciplinary project work[2] where students are to work in a more "self-regulated" way. The teachers describe their role in the setting as supervisors who are to help the students when they are working with their tasks. While such self-reports are interesting in their own right, this thesis is focused on the actual classroom practice. More specifically, the thesis aims to investigate the interactional organization of tasks, resources, and instructions, and how project work is accomplished *in situ*. In the empirical studies, three questions are addressed: (1) How are instructions given and received? (2) How do students and teachers deal with the inherent and designed openness of the

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[2] The teachers in the studied setting referred to the organization as interdisciplinary "temaarbete/theme work" but there is no equivalent term in English and that is why I have chosen to call the organization "project work". The organization of "theme work" has many similarities to how "project work" is organized in schools. The students also worked with different "projects", although the teachers did not follow any predetermined project work methods or models. The initiative, format, and methods were all designed by the teachers and were based on their view of how teaching and learning should be organized.

tasks? (3) How are the encounters between teachers and students materially, bodily, and interactionally organized? The three questions are closely related, and they are all relevant to the three studies included in this thesis.

In the investigated setting, the teachers regularly introduce the tasks to the whole class, and the students then work independently at their desks with these tasks – either in groups or on their own. The instructions for the tasks are all open to interpretation. For example, the students should write an argumentative composition in a chosen subject, plan and build a model of a sustainable city of the future, and find information about different topics that the teacher had chosen (fishery, forest logging, agriculture, etc.). In all of these tasks, the students are to incorporate their own reflections and provide an analysis of how the environment will be affected. Since the students are supposed to practice these skills and work independently, it becomes interesting to investigate how the students' concerns are formulated and responded to in the setting. On the one hand, the teachers set the agenda and, in the end, assess and grade the students' work. Even though the expectations of what to include in the tasks are not always made that explicit, the teachers have planned the tasks so that they will be educationally rewarding for the students. On the other hand, the students are supposed to do the actual work – and they should do so independently or in groups, by contributing with their own arguments and by taking a critical stance toward the information they find. This thesis investigates how students and teachers deal with these conditions in and through the instructional interaction. It takes a special interest in the detailed ways through which this is accomplished – how the participants establish joint attention, monitor each other's conduct, maintain, and re-orient toward a shared focus, organize closure of the encounter, etc.

## Overview of the thesis

This thesis is divided into two parts. The first part provides a frame for the studies that are presented in the second part. After this introduction, Chapter 2 provides a historical backdrop for the arguments and implementations of a more "student-centered" agenda and how the Swedish curricula have changed over the past 60 years. In addition, the chapter presents critical voices of certain premises of this development and summarizes the results of relevant empirical studies.

Chapter 3 deals with the theoretical framing of the thesis by introducing central notions within ethnomethodology and CA. Chapter 4 expands this discussion by raising applications and criticisms of ethnomethodology and CA – particularly focused on issues of situatedness, relevance, and learning. Chapter 5 discusses how work within ethnomethodology and CA has dealt with issues of instruction and tasks in educational settings. The chapter also discusses various educational formats: whole-class teaching, between-desk instructions, and feedback in text supervision.

Chapter 6 presents the investigated setting; the chapter describes how the setting was found and approached, and it provides additional information about the school, project, and tasks. Chapter 7 discusses the research methods of the thesis: how video was recorded, how the recordings were turned into transcripts and representations, and how ethical issues were approached. Chapter 8 summarizes the three empirical studies, whereas the final Chapter 9 discusses the results. Chapter 10 is a Swedish summary of the thesis. The second part of the thesis consists of the three empirical studies. The first study is published as a co-authored book chapter, whereas the two other studies are single authored manuscripts.

# Chapter 2
# Toward student-centered education: A historical background

This chapter outlines the movement toward "student-centered activities" and "self-regulated" students that has taken place in Sweden since the beginning of the 20th century. Although there were discussions of student-centered education before this,[3] it was at this point that these ideas began to be implemented in the Swedish national curriculum (*Läroplan* in Swedish, *Lehrplan* in German). The chapter does not intend to describe all of the reforms, aims, and discussions that have taken place during this time. Instead, it focuses on certain parts that are particularly relevant to the empirical studies of the thesis. The meaning of "student centeredness" is not straightforward. It is a term that is regularly associated with various ways of organizing education, such as "individual work", "group work", "independent work", and "project work". The next section begins by giving a brief background on the ideologies and national curricular developments that have contributed to the practices of teaching and learning in Sweden. The chapter then summarizes studies that investigate and discuss how classrooms are organized and the roles and responsibilities of students and teachers in project work. The chapter ends with an overview of various recent empirical studies that in different ways analyzed project work activities in the classroom.

## Ideologies and curricular reforms

Two researchers and philosophers are often described as particularly important for the move toward more student-centered education: Jean Piaget (1896–1980) and John Dewey (1859–1952). Despite the many differences be-

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[3] Project work can for instance be dated back to the 16th century when it was used as method in architectural schools in Europe (Knoll, 1997). In the end of the 18th century project work was also practiced in Russia at the Manual Training School in carpentry (Woodward, 1887).

tween the two[4], Dewey and Piaget were both critical to the ways in which "traditional" schooling was organized and implemented (Dewey, 1900; Piaget, 1970). Another similarity between the two was that they both emphasized that teaching and learning should preferably be organized in ways that actively engage students in hands-on experimental activities.

Piaget was a developmental psychologist and philosopher who argued, based on his empirical research, that cognitive development could be understood in terms of two co-existing processes: assimilation and accommodation (Piaget, 1936). With assimilation, Piaget meant that the child (the subject) makes experiences and incorporates information without changing existing cognitive schemas; the information and experiences are incorporated within existing ones. According to Piaget, accommodation takes place when the child learns to deal with or adapt new information that he or she has not experienced before; the information and experiences change the child's already existing cognitive schemas. This enables the child to discover new associations and ways to reason. Piaget also argued that the child has to develop his or her own cognitive schemas and that he or she cannot take over someone else's assimilation or accommodation (cf. Perret-Clermont & Barrelet, 2008).

It is often pointed out that interpretations of Piagetian psychology have been important to the formulation of national curricula in many Western countries (e.g., Bergqvist, 1990; Lundgren, 1985, 2002; Vinterek, 2006). Central here is the idea that students are not only to learn from teacher-led activities. In order for students to learn, they also need to be challenged, conduct experiments on their own, and have the opportunity to discuss these challenges and experiments with their peers (Brainerd, 2003; Bruner, 1961; Fox & Risconscente, 2008; Inhelder, Sinclair & Bovet, 1974). Edwards and Mercer (1987) write about this in terms of an "idealized model of learning" in which "children's natural curiosity about 'real world problems' motivates their exploration of educational knowledge, and wherein existing and new knowledge are synthesized in the act of discovery" (p. 38).

Although Piaget and Dewey came from different intellectual backgrounds, there are parallels between the way that Piaget's work has been interpreted and the works of Dewey. According to Dewey, students need to have a con-

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[4] Among other things, Dewey "emphasized the role of cultural forms and meanings in perpetuating higher forms of human thought, whereas Piaget focused on the role by logical and mathematical reasoning" (Mayer, 2008, p. 6). Rogoff (1993) points out that in Dewey's perspective, "people share joint endeavors, thinking in common, whereas in Piaget's view, individuals work with independence and equality on each other's ideas" (p. 127).

nection between their lived world and the world of the school and the subjects being taught. In general, Dewey "emphasized process over structure, dialogue rather than formal instruction, democracy rather than control, freedom and self-expression over teacher directedness and authority" (Peters, 2008, p. 8). He argued that the traditional teacher-led lessons were not well suited for students who are preparing to become active participants in a democratic society. His arguments consisted of a critique of the content and the form of schooling that prevailed at the time.

> The mere absorbing of facts and truths is so exclusively individual an affair that it tends very naturally to pass into selfishness. There is no obvious social motive for the acquirement of mere learning, there is no clear social gain in success thereat. Indeed, almost the only measure for success is a competitive one, in the bad sense of that term – a comparison of results in the recitation or in the examination to see which child has succeeded in getting ahead of others in storing up, in accumulating, the maximum of information. (Dewey, 1900, p. 15)

According to Dewey, schools should not only teach about democracy but also educate students to become active citizens in society by using democratic forms of instruction (cf. Säljö et al., 2011). In *How We Think*, which was directed toward educators, Dewey (1910) argues that a feasible method for learning is to start from a problem or a question that engages the students in "inquiry". By systematically exploring, trying out different positions, and becoming familiar with different methods, students would become actively involved in the practices in which they engage. Dewey (1938) points out that inquiry is not only a method for organizing education but also the main process from which one learns: "inquiry is the controlled or directed transformation of an indeterminate situation into one that is so determinate in its constituent distinctions and relations as to convert the elements of the original situation into a unified whole" (Dewey, 1938, p. 108; cf. Lilja, 2012).

Dewey's student William H. Kilpatrick (1871–1965) developed a general model and method for how project work should be organized in schools. What differentiated Kilpatrick's (1918) concept of project work from Dewey's was that Kilpatrick argued that project work was to be initiated, conducted, and finalized by students, and that it preferably should be done without teachers' direct involvement. Kilpatrick also argued for the need to organize all schooling as project work. Dewey, who did not see project work as an exclusive way of organizing teaching and learning, argued against this idea. Accord-

ing to Dewey (1904), project work was to be seen as one of many ways to organize teaching and learning, and he also contended that the teacher had a vital and central role in organizing and guiding students' work.

## Student-centered education in the Swedish national curriculum

As in many other countries, student-centered pedagogy is argued to have had a major influence on the Swedish school system and in formulating new guidelines for schools (Bergqvist & Säljö, 1994; Englund, 2000; Giota 2013; Lundgren, 1985, 2002; Sahlström, 2008; Säljö et al., 2011; Vinterek, 2006). From the beginning to the middle of the 20th century, Europe suffered great losses in the two world wars and experienced a growth of different totalitarian ideologies that deeply affected society and the democratic mindset. As a response, measures were taken to restore a democratic society and to foster democratically aware citizens (cf. Englund, 2000; Lundgren, 2006; Säljö et al., 2011). A central part of this ambition concerned schooling and how it could become a part of this re-establishment. The role of the school became to foster students into democratically conscious students and to educate them into being critical of information and claimed truths.[5] There were discussions about how to reform education and make it more student-centered. According to Knoll (1997), one such discussion was based on Dewey and Kilpatrick's project method in which "many of the new reformers believed that they had found the mechanism for the democratic and libertarian transformation of school and society" (p. 22).

Since the first discussions in Sweden of adopting a more student-centered curriculum in 1919, several revisions of the national curriculum have ap-

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[5] Some studies of curricular reforms in Sweden also point out that the reforms of a democratic schooling "were soon overshadowed by a rhetoric about the need for the schools to prepare societies for economic growth and for enhancing the labour market, in short, for economic efficiency" (Englund, 2000, p. 307). In the 1960s and 1970s "the relationship between education and economic growth took place as a basic motivation for educational change, and, together with the pragmatically idea, became a driving force in curriculum thinking" (Lundgren, 2006, online paper). From the 1990s onwards there is a discussion if what is dominating in the curricula is "the competition between nations using international tests like PISA, complemented with an increasing control of the outcomes of education. Curricula are now expressed in terms of evaluations" (ibid.). This thesis does not take a position in relation to these claims, but simply outlines a background to project work in schools. Rather than investigating the history or ideological underpinnings of educational reforms, the focus of this thesis is the actual practice of project work – what students and teachers do when they are working with their tasks.

peared. Since the 1940s there has been a gradual move toward more individualized and self-regulated education. In the 1962 (*Läroplan för grundskolan*, Lgr 62/ Curriculum for the comprehensive school) and 1969 (*Läroplan för grundskolan*, Lgr 69) national curricula for primary and upper secondary schools, students are "to be treated and instructed or taught as individuals in relation to an existing body of knowledge (in its broad meaning). The individual is pointed out in relation to the idea of a common collective knowledge body as well as social belonging" (Carlgren et al., 2006, p. 304). Related movements were also taking place in the United Kingdom and the United States, where the idea of "open education" and "open classrooms" took form. The Plowden Report (1966), for instance, was a policy statement in the United Kingdom that "outlined a philosophy of primary schooling based firmed on Piagetian stage theory that emphasized children as individuals and supported a move to child centered methods and curricula suited to the 'needs of the child'" (Peters, 2008, p. 8).

In the 1962 and 1969 Swedish curricula, an emphasis was placed on strengthening the individual's participation and learning. However, in the redrafting of the Swedish national curriculum in 1980 (*Läroplan för grundskolan*, Lgr 80), students "are not referred to as individuals, but rather as belonging to groups, that is, student participation is not seen foremost as an individual activity" (Carlgren et al., 2006, p. 304). In this national curriculum, more emphasis was on forming schooling after the students' experiences outside the school, and lessons were more often organized in interdisciplinary project work (Vinterek, 2006). In upper secondary schools it even became obligatory to organize parts of the education in themes or project work.

In Lpo 94[6], there is an emphasis on the students' responsibility for their own lives and learning, and the curriculum stresses that students should become active participants in society (cf. Säljö et al., 2011). For example, Lpo 94 states that the fundamental value of schools is "to encourage all pupils to discover their own uniqueness as individuals and thereby actively participate in social life by giving of their best in responsible freedom" (p. 3). The task of the schools is, among other things, to "provide pupils with opportunities for taking initiatives and responsibility as well as creating the preconditions for developing their ability to work independently and solve problems" (p. 6).

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[6] Lpo 94 was the national curriculum during the time that the fieldwork for this thesis took place. Since then it has been reformulated in 2011 (*Läroplan för grundskolan, förskoleklassen och fritidshemmet*, Lgr 11). In the 2011 curriculum there are more detailed instructions on what content to include in the different academic subjects.

Lpo 94 as a text is more ideological than explanatory or guiding in its form; teachers have to decide, for example, when specific academic content is to be taught, and what methods to use. The national curriculum serves as a framework for how to organize teaching and learning, and the teachers can choose to organize their lessons in mixed constellations that include interdisciplinary lessons, whole class lessons, group work, or individual work.

To sum up, there has been a gradual move toward more independent and self-regulated learning and teaching. It has even been argued that since the 21st century in Sweden it "seems as if traditional class teaching now is challenged by new ways of organizing school work such as work plans and project work" (Carlgren et al., 2006, p. 303). According to Carlgren et al., it is common today that whole-class instruction is used to introduce new tasks or work methods instead of teaching the whole class in a specific academic subject or content. Such arrangements are also argued to have changed the roles of teachers and students in that they are assumed to take different roles and positions or to seek new institutional identities (cf. Brown, 1992; Lemke, 1990; Nystrand, 1997; Postholm, 2006; Skidmore, 2006; Wood, 1992). This type of research regularly builds on the ideological underpinnings that students become more active and motivated as learners in settings where they are to take more responsibility for their own learning process. These voices also often include a built-in analogy and normative criticism of teacher-led lessons. For example, discussions contend that, when students are working in project work settings, they go "from being a passive receiver to becoming an active learner and producer" (Postholm, 2006, p. 150). The teacher's role is then described as "not to be a 'sage on the stage', but a 'guide on the side' who arranges for and supports the pupils in their knowledge construction" (ibid., p. 151).

Although many researchers have emphasized the value of project work, others have pointed out that project work and similar approaches are problematic for many students. On the one hand, student-centered approaches are often described as a step away from teachers' "one-sided control". On the other hand, the expectations of student independence have also been criticized; it has been argued, for instance, that the emphasis on student autonomy and independence privilege certain groups of students at the expense of others (Bergqvist & Säljö, 2004; Maher, 2002). The next section explores a number of empirical studies of project work settings. Many of these studies focused on what is learned and how learning can best be promoted in these types of settings. Another line of research is devoted to evaluating and devel-

oping project work approaches. There is also a strand of ethnographic studies whose focus is the interaction between students and teachers in project work settings. These studies show, among other things, how teachers and students organize their lessons, and what potential challenges they might encounter in their work.

# Empirical studies of project work

When it comes to studies of project work, there is a wide range of different contributions in the literature, and it is difficult to provide a full description of the various research interests that exist. For example, many studies have been conducted on project-based learning in the field of science education. Within this field, several researchers have taken an interest in the challenges that teachers and students encounter during their work, and the research provide recommendations for how one might possibly overcome these challanges (e.g., Barron et al., 1998; Edelson, Gordon, & Pea, 1999; Jiménez-Aleixandre, Bugallo Rodríguez, & Duschl, 2000; Krajcik et al., 1998; Marx et al., 1994, 1997). In addition, numerous studies have looked at how students' motivation and knowledge might be promoted (e.g., Blumenfeld et al., 1991; Schneider, Krajcik, Marx, & Soloway, 2002). Other studies have focused on what students learn during project work. Knoll (1997, online journal) argues that students should develop two skills in particular when working within project work: "independence and responsibility", and they are to "practice social and democratic modes of behavior".

Krajcik et al. (1998) present a set of case studies of eight students who for the first time worked with inquiry in two different projects that lasted several months. The aim of the study was to show where the students encountered problems in their work and to "inform educators so that they can anticipate what students might need help with and, therefore, design instructional practices to promote effective learning through inquiry" (p. 316). In order to do this, Krajcik et al. used various types of data such as interviews, video recordings, classroom observations, and analyses of the students' assignments, notebooks, and tests. According to the authors, the "analyses moved through iterative cycles of examining data, generating hypotheses, and searching for confirming and disconfirming evidence for conclusion" (p. 321). The results show how the eight students "asked questions, planned and designed procedures, constructed apparatus, carried out investigations, interpreted data and drew

conclusions, and presented the findings" (p. 316). The authors also discussed the strengths and weaknesses of the project work design. One weakness was that teachers had to support the students more in exploring the scientific value of their questions; otherwise, the students risked coming up with questions that were not tied to the scientific content.

Another strand of research is dedicated to the development of different ways of working with particular content in projects. Central here are socioscientific issues or dilemmas within science education (cf. Driver et al., 2000; Kolstø, 2001; Zeidler, 1984). Socioscientific issues are formulated in interdisciplinary projects where students are faced with "real-world" problems or dilemmas (e.g., the greenhouse effect, genetically modified food, or climate refugees) that do not have a simple or straightforward solution. The main aim of organizing teaching about these kinds of dilemmas is to develop the students' scientific and moral reasoning (cf. Sadler, 2004). Within this field, a primary focus is the assessment of students' content knowledge and argumentation skills (e.g., Hogan, 2002; Sadler & Donnelly, 2006; Zohar & Nemet, 2002). Hogan (2002), for instance, investigates "whether and how students with a general background in ecology applied ecological and other salient principles as they made an environmental management decision within a group context" (p. 345). The study builds on 28 students in the eight grade, who work in groups of three and attempt to resolve a given scenario about an invasive mussel and its effects on the ecosystem. The students' reasoning about these issues is compared with the answers from a scientific expert who discusses the same issue. The author video-recorded all groups working with the scenario. Afterward, she transcribed the video and sorted students' arguments into different categories. These arguments were also scored for content correctness. When comparing the students' discussion with that of the expert, Hogan found that some groups raised many environmental concerns that were similar to the ones the expert had emphasized as important for making environmental management decisions. Hogan concludes that it is important that teachers work with students' prior knowledge and basic concepts in science education. She writes that educators should not just pay attention to building students' content knowledge but also concentrate on developing students' abilities to work creatively in groups.

Socioscientific dilemmas organized in project work have also been studied from a sociocultural perspective. These studies often analyze the interaction that takes place in the classroom in order to find out how students approach

and make sense of socioscientific issues and how this changes over time (e.g., Furberg & Ludvigsen, 2008), how students use different resources, how they successively approximate scientific modes of reasoning when discussing socioscientific dilemmas (e.g., Jakobsson, Mäkitalo, & Säljö, 2009), and how students deal with different scientific discourses when discussing these types of issues or dilemmas (e.g., Mäkitalo, Jakobsson, & Säljö, 2009). Furberg and Ludvigsen's study builds on video recordings from an upper secondary class, where students were working with a socioscientific task on gene technology. An interest of the study is to investigate how students interact with their peers and mediating tools. In line with this interest, the authors raise the question, "what characterizes the students' accounts of how to deal with the socioscientific task?" (p. 1777). The authors build their analysis on two school lessons in which two students worked on writing an article about gene technology. The authors show that the students, in their interaction, made socioeconomic and ethical considerations, for instance, by talking about gene modification in relation to scientific explanations and the social consequences. According to the authors, the students' debate on the issue was much more substantial than the article they then handed in to the teacher.

There is also an existing body of more ethnographically informed studies that investigate the interaction that takes place in project work settings (e.g., Eklöf, 2014; Lilja, 2012; Lundh, 2011). Lilja (2012) conducted an ethnographic study, in which he followed different arrangements of a project over four months. During the field study, Lilja combined methods of field notes, audio recordings, and interviews. In the studied setting, the students worked "in base groups with supervising teachers rather than teacher led classes" (p. 54). The lessons were organized in themes and were characterized in terms of project work as well as problem-based learning. Among other things, Lilja shows what role the teacher plays in the progress of the students' work. Although the students are encouraged to ground their work on their own interests, the teacher's planned agenda is still central. Lilja also shows how the projects begin with an open problem that then becomes increasingly specified by the teacher. According to Lilja, there are two ways in which the teacher has an "enabling function" for the progression of the project. First, the teacher is "modifying the premises for tasks, or discussing how to take them on with the students" (p. 152). Second, the teacher introduces "constraints, which reduces complexity and directs the students' work in relevant aspects" (ibid.). While the "enabling function" is closely related to the teacher's guidance and instruc-

tions for how to organize the project, the teacher is also described as being a qualifier of the students' argumentation. In this way, the teacher is able to help the students complete the task in the correct and expected way. This is done through the teacher's assessments and through the introduction of conceptual tools and different perspectives. What Lilja's ethnographic study shows is that students rely on their teacher to help them and that the teacher in different ways, and for different reasons, intervenes in the students' work.

In another ethnographic study of project work, Eklöf (2014) investigates students' activities when they were working without an attendant teacher (the author decided not to video-record when the teacher was present). According to Eklöf, the students struggled with the demands of working independently and had major problems in how to interpret the instructions that they had received. This also led to frustration and uncertainty on the part of the students. Another contributing factor to the students' uncertainty was that they resisted requesting the teacher's help, since this could be interpreted as a lack of autonomous action on their side. Because of this, many students stated that asking for help was "not a primary option" (p. 65) and therefore not a solution to the problems they experienced.

In Säljö et al.'s (2011) study, the authors show that the students have to take into consideration that the teacher is not always immediately available to help them with their projects (e.g., since he or she is helping other students). The authors point out that the teachers' inaccessibility can be a challenge for the teachers as well. In the empirical studies on which the book is based, it is the teachers who formulate the plans, activities, tasks, examinations, and pedagogical aims. Although the teachers commonly introduce the tasks for the whole class, he or she cannot be present at all times during the students' work process. Among other things, this means that teachers do not always know how the project will unfold, what texts and issues the students work with, or what problems the students might encounter during their work.

Different classroom arrangements thus create different conditions for instruction, and there is a need to further explore and understand the interaction that take place between students and teachers in project work settings (cf. Greiffenhagen, 2008; Sahlström, 2008). Many argue for the advantages or disadvantages of different arrangements, methods, and models that are implemented in classrooms. However, as argued in the introduction, this thesis does not aim to assess whether project work is to be considered as more or less rewarding than any other educational arrangement or what specific learn-

ing the methods or models contribute to. Instead, it investigates how the participants interact in and make sense of the activities in which they are involved. How teaching is performed, then, is not mainly seen as dependent on what specific work model or method the teachers use. Instead, teaching and learning are seen as locally situated, interactional, and practical accomplishments. The concern of the thesis is "the detailed orderliness of activities and the in situ accomplishment of mutual intelligibility" (Hester & Francis, 2000, p. 12).

In the next chapter, the theoretical framework is further presented. The chapter provides a description of the two theoretical traditions – ethnomethodology and CA – that the thesis takes its departure from and outlines some of the implications of these traditions for the empirical studies. This is then further developed in the following chapter (Chapter 4). There, three related notions situatedness, relevance, and learning, are discussed. How ethnomethodology and CA approach these three notions has been widely influential but also criticized by proponents of other traditions. This critique and the replies to it are used to further outline the approach adopted in the thesis.

# Chapter 3
# Ethnomethodology and CA:
# Naturalistic approaches to social order

For more than three decades, researchers within ethnomethodology (Garfinkel, 1967) and conversation analysis (Sacks, 1992) have investigated classroom order and the organization of instructional interaction (e.g., McHoul, 1978; Mehan, 1979; Payne & Cuff, 1982). Although the interest in classroom order and interaction is shared with many other analytical approaches, ethnomethodology and CA are distinctive in the ways in which they set out to explicate the locally situated and practical accomplished character of social order and instructional interaction. This thesis investigates the interactional organization of project work. In doing this, the thesis is shaped by some of the basic premises and concerns of ethnomethodology and CA – an interest in naturally occurring activities, a naturalistic approach to these activities, and a focus on the sequential organization of instructional interaction. The aim of this chapter is to introduce the two traditions and what they imply for the study of classroom interaction.

The chapter outlines some of the basic premises and objectives of ethnomethodology and CA on which this thesis builds. There are central differences between these two traditions. As argued by Maynard and Clayman (2003), for instance, "ethnomethodology's broad concern with diverse forms of practical reasoning and embodied action contrasts with the conversation analytic focus on the comparatively restricted domain of talk-in-interaction" (p. 176). At the same time, there are also strong connections. Ethnomethodology and CA take an interest in the details of practical actions and "both enterprises suggest that there is a self-generating order in the behavioral concreteness of everyday life" (ibid., p. 195). Shared premises separate these traditions from other related approaches. In the next chapter (Chapter 4), there is a discussion of how central ideas within ethnomethodology and CA have been used and critically dis-

cussed. This chapter focuses on ways in which the notions of "situatedness", "relevance", and "learning" have been taken up, and critically responded to, and discusses some attempts to combine ethnomethodology and CA with other traditions and theories, including potential problems that emerge from such attempts.

# Ethnomethodology

This thesis partially builds on Harold Garfinkel's (1917–2011) ethnomethodological approach to "practical activities, practical circumstances, and practical sociological reasoning" (1967, p. 1). As formulated by Garfinkel, ethnomethodology is an approach that directs its interest toward the practical, ordinary, and mundane, and by paying "the most commonplace activities of daily life the attention usually accorded extraordinary events, seek[s] to learn about them as phenomena in their own right" (ibid.). According to this argument, sociologists tend to overlook the workings of daily life and instead focus exclusively on 'big issues,' such as conflicts, power, oppression, and so on. As a consequence, the commonplace activities that make up much of our daily life tend to be missing in sociological reports. This line of reasoning has also been applied by ethnomethodologists to the field of education. In the introduction to an edited volume called *Doing Teaching*, Payne and Cuff (1982, p. 3) write:

> The fact of the matter is that whatever else may happen in schools, whatever far-reaching or revolutionary educational issues may be exhibited or addressed there, the routine, mundane practical activities are fundamental. For teachers and pupils in schools the mundane is inescapable; whatever else may be going on, whatever else may be consequential for wider educational matters, the mundane makes up most of what goes on day by day.

On the one hand, the argument by Garfinkel and Payne and Cuff is for the social scientist to take an interest in the routine, practical, and mundane. While routine and practical activities at first sight might look somewhat trivial, these activities are what makes up "most of what goes on day by day" and consequently are fundamental to the setting and its members. With reference to this, ethnomethodological studies are sometimes described as supplying the "missing what" (Lynch, 1993, p. 271) or the "missing detail" (Hester & Francis, 2007, p. 6) – that which the research literature largely misses but which nevertheless is fundamental to the organization of social life. On the other hand, the call for studies of commonplace activities as "phenomena in their

own right" points not only to a certain research topic, but also, and centrally, to an approach or agenda for the research. What is claimed to be missing in traditional sociological accounts is not only the mundane and routine aspects of social life but also the concrete specifics of these lives. According to Hester and Francis (2000), the notion of the "missing what" is thus "intended to draw attention to sociology's neglect of these local, situated, real-time organisational specifics of social activity" (p. 3).

With a focus on the situated specifics of social activity, the very enterprise of ethnomethodology is different from that of classical sociology. As pointed out by ten Have, "while classical sociology is in the business of *explaining* social facts, the effort of ethnomethodology is directed towards an *explication* of their constitution" (2004, p. 14, italics in original). The point of ethnomethodological inquiry is not to explain social facts and social order in terms of psychological or societal mechanisms – or by reference to intentions, predispositions, norms, or values – but to explicate the "endogenous order" (Garfinkel, 1996, p. 16) of various settings and activities, and thus describe the constitution of social facts as local and practical achievements. The focus on the local and the situated does not mean that ethnomethodologists "deny the historical and social 'contexts' in which social action and interaction take place; rather, they insist that specifications of such contexts are invariably bound to a local contexture of relevancies" (Lynch, 1993, p. 125). It becomes the analyst's task to investigate and describe just how historical, social, and other contexts become relevant in the particular case.

As pointed out in the introduction of this thesis, an ethnomethodological analysis is an analysis of a second order. It treats the "mundane interpretive work of everyday life as the first analytic exercise of the social world" (Macbeth, 1998, p. 150). Instead of replacing the mundane interpretations with more scientific ones – or trying to explain why members of a social scene have certain understandings or misunderstandings – the aim is to explicate and describe how social order is achieved as an analytic task by members. As formulated by Macbeth, "the natives are analysts too, and theorists, and we owe the worlds of our studies to their analytic constructions" (ibid.). A central incentive for this approach can be found in the writings of Schütz, who pointed out that "the constructs used by the social scientist are, so to speak, constructs of the second degree, namely constructs of the constructs made by the actors on the social science whose behaviour the scientist observes and tries to explain" (Schütz, 1953/1962, p. 3). Garfinkel and ethnomethodologists

took Schütz's observation as an opportunity to develop an empirical research program, which was radically different from how sociology and the study of social worlds traditionally were approached. Instead of attempting to explain or understand how social order is constituted with reference to some theoretical account, the project became one of explicating the methodic ways in which members themselves analyze and come to terms with endless social orders – as a property of that same order.

Ethnomethodology thus is interested in the resources and procedures that people use in order to make sense of the activities in which they are involved. Garfinkel writes about what he calls the documentary method of interpretation. On the one hand, this method "consists of treating an actual appearance as 'standing on behalf of' a presupposed underlying pattern" (1967, p. 78). On the other hand, the pattern is seen by looking at the individual appearances: the details "are interpreted on the basis of 'what is known' about the underlying pattern" (ibid.). Here, Garfinkel describes something similar to what is usually referred to as a hermeneutic circle; that is, the whole is understood in terms of the parts and the parts in light of the whole. However, what is central about the documentary method of interpretation, in contrast to the hermeneutic circle, is that this method does not refer to the methodological approach of the researcher. Instead, the documentary method is a starting point for understanding all social action. When a teacher tries to understand the issue of concern brought up by a student, for instance, the utterance is understood as 'standing on behalf of' a general issue or problem; at the same time, each utterance is interpreted based on 'what is already known' about this issue and topic. Thus, instead of suggesting a particular resource for doing research, this method points out something that everyone does all the time and which thus could be a topic for research.

Within ethnomethodology, there are no pre-determined or specified methods researchers should use; for example, classical studies within the tradition are based on experiments (Garfinkel, 1967, chapter 3), interviews (Garfinkel, 1967, chapter 7), ethnography (Bittner, 1967; Lynch, 1985; Sudnow, 1967), auto-ethnography (Livingston, 2008; Sudnow, 1978), audio-recordings (Garfinkel, Lynch, & Livingston, 1981), and video-recorded material (Heath, 1986; Macbeth, 1994; Suchman, 1987). Today, audio-visual materials are increasingly used as the primary material for ethnomethodological study. One reason for this change, many have argued, is the interest in the "insistence on empirical studies that are grounded in forms of data which capture naturally occurring

real-worldly phenomena" (Hester & Francis, 2000, p. 4; see also, e.g., Llewellyn & Hindmarsh, 2010; Knoblauch, Schnettler, & Raab, 2006). The use of audio-visual material has proven to be particularly useful in ethnomethodology's attempt to move "away from a foundational theory or rule-based method in order to show in the circumstantial details of each case how social order is endogenously produced" (Lynch, 1993, p. 275).

This focus on circumstantial details and endogenous social order has produced influential studies in the related areas of human computer interaction (Button & Sharrock, 2009; Luff, Hindmarsh & Heath, 2000; Suchman, 1987), workplace studies (Garfinkel, 1986; Orr, 1996) and science and technology studies (Garfinkel et al., 1981; Lynch, 1993). All these studies build on fieldwork, but as pointed out by Button (2000), this is somewhat beside the point, since fieldwork is common within sociology and anthropology. What really distinguishes these studies is the "analytic auspices that are brought to bear, and whether they preserve the practices through which those involved in work interactionally pull it off" (p. 327). As Button continues, "fieldwork that merely describes what relevant persons do may well be missing out on the constitutive practices of *how* they do what they do, the 'interactional what' of their complexes of action" (p. 329, italics in original). According to Button, this is a necessary move if the descriptions are to be relevant not only to sociologists or anthropologists but also to the practitioners who are being described (this argument has been applied to research in the field of education; cf. Hester & Francis, 2000; Lindwall & Lymer, 2005).

Not only have ethnomethodological studies of work, science, and technology provided this thesis with methodological insights. There are also topics in this literature with direct relevance, such as extensive analyses and informative discussions of instructions and instruction following. Suchman (2007), for instance, makes a distinction between face-to-face instructions and written instructions:

> Face-to-face instruction brings that context-sensitivity to bear on problems of skill acquisition. The gifted coach, for example, draws on powers of language and observation, and uses the situation of instruction, to specialize instruction for the individual student. Where written instruction relies on generalizations about its recipient and the occasion of its use, the coach draws pedagogical strength from exploitation of the unique details of particular situations. (pp. 44–45)

Several ethnomethodologists have discussed the ambiguity, indexicality, and incompleteness of written instructions (Amerine & Bilmes, 1988; Garfinkel, 1967, 2002; Livingston, 2000). In the context of lab work, furniture assembly, origami, and so on, these studies examine "the practical skills, the embedded activities, and the background knowledge, in other words, the competence by means of which constructing courses of action in accordance with sets of instructions is accomplished" (Amerine & Bilmes, 1988, p. 330). Even though written instructions are different from face-to-face instructions, if they are to be successfully followed, they, too, rely on a background of prior understandings. This is the "understandings that we rely on as teachers and students so that our instruction might go on" (Macbeth, 2011a, p. 443) – the "understanding-in-interaction that underwrite[s] the sequential production of classroom instruction" (ibid., p. 438).

This section has outlined how ethnomethodology provides the thesis with its analytic interest and "analytic mentality" (Schenkein, 1978, pp. 1–6). The studies of the thesis investigate some of the routine, mundane, and naturally occurring activities that take place in a classroom. The aim is not to seek distal explanations or to assess these activities based on some externally set criteria but to get a detailed understanding of how the activities are produced by students and teachers in the first place. By investigating the publicly visible and locally achieved properties of these activities, the studies adopt a naturalistic approach to the classroom interaction. Given the interest in the "sequential production of classroom instruction" (Macbeth, 2011a, p. 438), moreover, the studies draw extensively on the insights and findings of CA. In the next section, themes within CA of specific relevance to this thesis are presented: how CA investigates the sequential organization of interaction and uses this organization as a methodological resource; how the sequential organization has been investigated in 'ordinary conversations' and institutionally specific contexts; and how there has been a move from an exclusive focus on talk-in-interaction to include an interest in embodied actions and material structure.

## Conversation analysis

There are close links between ethnomethodology and conversation analysis as developed by Harvey Sacks (1935–1975) and his colleagues. Over the years, CA has been occupied with the sequential analysis of talk. As phrased by Sacks in his lectures: "The work I am doing is about talk. It is about the details

of talk. In some sense it is about how talk-in-interaction works" (Sacks, 1984, p. 26). At the same time, the interest is not so much talk in itself as in how social order can be rigorously investigated with reference to the circumstantial details of actual cases. Or, as Sacks continues in his lectures, "The specific aim is, in the first instance, to see whether actual single events are studiable and how they might be studiable, and then what an explanation of them would look like" (ibid.). Conversation analysts share ethnomethodologist's concern for "endogenous order" – how members themselves make sense of each other and their surroundings. In the words of Lynch (2000):

> For professional analysts and participants alike the sense and pragmatic implications of an utterance are made evident by the way they are *treated* by participants in the unfolding conversation. It is not just that contextual information is brought to bear on the analysis of details, but that an 'analysis' of sorts already becomes apparent as a local, constitutive property of the field of actions studied. The aim of the professional conversation analyst is not to override, undermine, or discount the endogenous analysis; rather, it is to formulate how it is achieved in and as a methodic procedure. (pp. 524–525, italics in original)

CA then moves away from "perspectives that begin, at one pole of the analytic enterprise, with a treatment of culture or social identity, or at the other pole, with linguistic variables such as phonological variation, word selection, syntax, etc." (Drew & Heritage, 1992, p. 17) and instead focuses on how activities are coordinated, accomplished, and realized by members themselves in different contexts. By having this premise – that activities are ordered from within – the conversation analysts then "seek to locate that order and to demonstrate its presence" (Lee, 1987, p. 21).

As has been repeatedly demonstrated in studies of talk-in-interaction, sequentiality is a fundamental part of this order. Members are oriented towards the practice in which they are involved, and they display their understanding of that practice moment-by-moment through their conduct. Sacks and Schegloff (1973, p. 299) write that members of an interactional encounter continually orient to the issue "Why that now?"; meaning that "recipients must work to recognize, what action some particular practice of speaking is being used to accomplish and, inversely, why this particular practice has been selected to accomplish it" (Sidnell, 2013, p. 83). The focus on how members' sequentially interpret each other has sometimes been instrumentalized in terms of next-turn proof procedure (Sacks, Schegloff, & Jefferson, 1974). In sum, this

means that the next action provides a display of a person's understanding of the prior action. If, for instance, the interrogative "who will attend the party?" is answered by "don't worry, there will be plenty of people you know there", this displays a different understanding of what the first person was doing than "it's none of your business". That the next turn displays an understanding of the previous turn, provides the members with resources for understanding how they have been heard and understood. Thus, they have the possibility of "repairing" potential mistakes or problems, for instance, by saying, "I was just curious and did not mean to snoop". It also gives the researcher a resource for analyzing the members' understanding of the setting. In the words of Schegloff (1984), the proof procedure makes "available to the analyst a basis in the data for claiming what the co-participants' understanding is of prior utterances, for as they display it to one another, we can see it too" (p. 38).

By investigating the ways in which participants in a conversation treat each other's contributions, conversation analysts have shown that sequences of turns are "not haphazard but have shape or structure, and can be tracked for where they came from, what is being done through them, and where they might be going" (Schegloff, 2007, p. 3). In the literature on talk-in-interaction, numerous types of organization have been thoroughly investigated, including turn-taking organization (how turns are distributed and allocated; e.g., Sacks et al., 1974), sequence organization (how actions are ordered; e.g., Jefferson, 1972; Schegloff, 2007), repair organization (how interactional troubles are handled; e.g., Schegloff, Jefferson, & Sacks, 1977), and preference organization (how some actions are preferred and how nonpreferred actions are marked as such; e.g., Sacks, 1987; Sacks & Schegloff, 1979). There has also been extensive work on specific actions and activities, including assessments (e.g., Pomerantz, 1984), questions (e.g., Merritt, 1976; Schegloff, 1984), and story-telling (e.g., Sacks, 1986).

Although this work is relevant to the analysis conducted in this thesis, interaction is not organized in the same way everywhere. Studies in the field of education have investigated the specific ways in which questions and assessments are used in classrooms (e.g., Mehan, 1979) and how turn-taking and corrections are differently organized compared to other settings (cf. Macbeth, 2004; McHoul, 1978, 1990). Similar studies have been conducted in other institutional or workplace settings, such as doctor–patient interaction, legal settings, and broadcast interviews (e.g., Arminen, 2005; Boden & Zimmerman, 1991; Clayman & Heritage, 2002; Drew & Heritage, 1992). According to Her-

itage (2004), the studies of "institutional talk" are different from those investigating "ordinary conversation", since they focus on "how particular institutional tasks, identities, and constraints emerge and are dealt with" (p. 112). An objective of these studies is to show how the members of a setting orient toward the identities and tasks relevant to that setting. An important argument is that the institutionality of an encounter cannot be taken for granted – it does not determine the character of the encounter. As argued by Drew and Heritage (1992), "interaction is institutional insofar as participants' institutional or professional identities are somehow made relevant to the work activities in which they are engaged" (pp. 3–4).

The argument that notions such as identity should be manifestly grounded in participants' actual conduct and publicly available orientations is tied to conversation analysts' treatment of interaction as empirical data – the focus on naturally occurring talk, the use of audio-recorded material, and the development of a certain transcription notation. According to Wooffitt (2005), the transcription system developed by Gail Jefferson is characterized by two things: first, it focuses on "the properties of turn-taking, such as the onset of simultaneous speech and the timing of gaps within and between turns; and second, it captures features of the production of talk, such as emphasis, volume, the speed of delivery and the sound stretching" (p. 11). The transcription notation was a key innovation, as it made possible a "systematic description and explication of the moment-to-moment, turn-by-turn unfolding of social interactions" (Mori & Zuengler, 2008, p. 15). At the same time, all transcriptions are of course reductions and refractions of the investigated settings, which highlight certain things while others of potential relevance remain invisible. In addition, the transcripts themselves are products of analysis.

Most of the early work in CA focused exclusively on talk-in-interaction, but analyses and transcription systems increasingly included gestures, gaze, and other aspects of embodied conduct (cf. Goodwin, 1994, 2000; Mondada, 2006). In an early and groundbreaking study, Heath (1986) investigates medical consultations and explores "the coordination between body movement and speech, the visual and vocal aspects of the interaction between the doctor and patient" (p. vii). Among other things, he shows how doctors and patients establish mutual engagement, maintain a common focus, disalign with activities, and coordinate leave-taking by coordinating gaze, gestures, and other bodily movements with the ongoing talk (see also Goodwin, 1981). These studies not only add a number of additional resources or "modalities" to the

analysis. As argued by Goodwin, Streeck, and LeBaron (2011), "research on multimodality complements the analysis of sequencing that is at the core of CA by an additional focus on *simultaneity,* that is, close attention to which behaviors are produced at the same time and how such synchronous productions are possible" (pp. 8–9, italics in original).

In relation to the studies of the thesis, CA makes many central contributions. First, this approach has demonstrated the strength of building on the ways in which members of a setting publicly and sequentially display their analyses of each other – how, for instance, an utterance displays an understanding of the previous utterance and provides the context for the next. Second, this tradition has investigated naturally occurring talk for a long time and showed the relevance of making detailed and systematic transcriptions of verbal and embodied interaction. Third, CA has provided a body of findings that are relevant to the studies, in the terms of interactional organization, such as turn-taking and repair, and the types of organization and topics specific to classroom interaction and instruction. Chapter 5 provides an outline of ethnomethodological and conversation analytical studies on classroom interaction. Before that, the next chapter (Chapter 4) discusses the impact of ethnomethodology and CA. With a focus on three concepts – situatedness, relevance, and learning – the chapter discusses how ethnomethodology and CA have been applied, understood, and critically discussed by proponents of other traditions.

# Chapter 4
# Critique and applications of ethnomethodology and CA

Although ethnomethodology and conversation analysis have roots in sociology, the impact of these traditions can be seen in other disciplines as well. As further discussed in the next chapter, central work in the field of classroom interaction has been conducted by conversation analysts and by researchers who have close ties to the tradition. In educational research, ethnomethodology is mostly known in discussions about "situated action", "situated learning", and "situated cognition" (e.g., Macbeth, 1996; Suchman, 1987), and for its role in the development of classroom research (e.g., Mehan, 1979; Payne & Cuff, 1982).

As with any tradition within the social sciences, however, the scope and premises of ethnomethodology and CA have not been uncritically accepted by everyone. Early on, influential sociologists raised what they took to be weaknesses or deficits with ethnomethodology. Gouldner (1971), for instance, accused ethnomethodology of being subjectivistic and idealistic, whereas (1976) and Habermas (1984) targeted ethnomethodology as being relativistic and without critical or emancipatory potential. Taken as a whole, the sociological criticism is hard to come to grips with – partly because ethnomethodology is associated with many and sometimes conflicting positions. As Lynch (1999) points out:

> Different scholars have linked ethnomethodology to virtually all of the major theorists in the sociological canon (Marx, Weber, Durkheim, Mead, Simmel, Schutz, and of course Parsons). Various expositors have traced the ideas, assumptions, and presuppositions in ethnomethodological writings to radical individualism, subjective irrationalism, behaviorism, operationalism, relativism, social constructivism, pragmatism, inductive realism, positivism, phenomenology, and analytic philosophy. It is difficult to imagine how ethnomethodology could be all of these at once! (p. 213)

Addressing the diverse adoptions and critical commentaries that ethnomethodology and CA have generated is outside the scope of this thesis. Instead, this section focuses on three interrelated notions – situatedness, relevance, and learning – and how these notions have been applied and critically discussed in the literature. By raising these notions, an aim for this section is to further characterize the approach of the empirical studies, including its relation to other approaches. The discussion of these notions is also motivated by questions and criticism that have been raised during the work with this thesis.

Concepts such as situated learning, situated cognition, and situatedness have been intensively discussed in the field of education for the last three decades. Often, there are references to the work of Lave (1988), Lave and Wenger (1991), Brown, Collins, and Duguid (1989), and others, whose work is more known to many within education than the work of Garfinkel or Sacks, but whose backgrounds are at some distance from ethnomethodology and CA. Therefore, discussing the history of the notion of situatedness, and how its has travelled between different disciplines, is relevant. It is also relevant to address a critique of situatedness that has often been raised in the educational research literature – that the approach leads to a too narrow focus on situated actions and singular events. The notion of relevance is raised in relation to the insistence in CA on grounding observations in the demonstrable orientations of the members of a setting. Today, research projects within education often use audio- and video-recorded material as the primary data. Most of these studies, however, analyze the recordings in a different way than work within CA, and it is often argued that CA is too constrained in its approach and therefore unable to produce results that are relevant to the field. By raising a discussion between proponents of CA and critical discourse analysis, the aim here is to show an argument for these constraints and thus provide the motivation for the analytical approach adopted in the empirical studies. Finally, numerous studies, inside and outside CA, investigate learning. A question has been raised, why the studies in this thesis are silent about what the students learn. In the last section, an answer to this question is provided.

## Situatedness – the focus on local order

For more than three decades, the idea that action, cognition, and learning are "situated" has been highly influential in fields such as education, human-computer interaction, and cognitive science. When reading contemporary

work, tracing the history of this idea is not always that simple. As noted by Macbeth (2011b), "when we inquire into the currency of the situated perspective in educational studies, we will be led to many places, but especially to prior work and formulations of situated action that are distinctively, even radically, sociological" (p. 75). His point is that many present discussions about situated action, although they do not directly acknowledge it, draw on prior formulations from sociology – and particularly on insights from ethnomethodology and CA. He further notes that "'situatedness' has come to educational studies more recently through the lens of cognitive and computer science, though it owns an entirely different, even oppositional intellectual history" (p. 76). Among other things, this means that there are takes on "situated action", which sometimes are grouped together or presented under the same heading although they are based on very different presumptions or traditions (cf. Brown et al., 1989; Greeno, 2011; Lave & Wenger, 1991; Suchman, 1987). In this thesis, there is an emphasis on the locally situated and practical accomplished character of social order and instructional interaction. While this can be seen as the core of "situated perspectives", the thesis builds only on a subset of the studies conducted under this heading. The thesis has strong ties to work done under the auspices of ethnomethodology and CA and weak to those that draws on cognitive science or critical theory, for example.

Suchman's (1987) seminal study *Plans and Situated Action* has been very important in discussions about the notion of action and cognition as situated. In her book, Suchman uses ethnomethodology and CA to discuss the limits of the plan-based, individualistic, and rationalistic model of human action that had been developed and applied within cognitive science and related fields. First, she argues that the plan-based model does not emphasize the immediate context enough – that the use of plans necessarily involves an orientation and adaptation to the contingencies of the situation and that this is something that a plan-based model is unable to handle. According to Suchman, plans do not determine action. Instead, they are used as one of several resources in the actual situation, and at times later on to account for what was done. Second, Suchman argues that most models of human–computer communication are based on a mistaken understanding of human interaction: about the characteristics of human interaction and in terms of the similarities and differences with interaction with machines. Instead, she presents some basic insights and findings from CA. Third, Suchman argues for a methodological move – from studies based on an experimental design to studies based on natural settings.

Suchman's arguments have been central to several fields, and particularly to those that deal with human–computer interaction, but they have also been criticized by proponents of other traditions. One typical argument is that Suchman treats plans and planning as irrelevant, and that this is highly problematic since research and our common experiences of everyday life tell us that plans have an important role in many circumstances (e.g., Vera & Simon, 1993). Suchman argues that this is a misunderstanding of her position. Her argument is that plans might be very important, but they never determine action. Instead, they are "conceptual and rhetorical devices (often materialized in various ways, as texts, diagrams and the like) that are deeply consequential for the lived activities of those of us who organize our actions in their terms" (Suchman, 2007, p. 20). Another common critique is that her work has a "slightly behavioristic undercurrent in that it is the subject's reaction to the environment (the 'situation') that finally determines action" (Nardi, 1996, p. 40). Again, this can be seen as a misunderstanding. To say that the actions only get determined in the actual situation is not to say that the environment or outside influence determines the action. On the contrary, it is to emphasize the active and creative work of the members of the setting – that it is impossible to define in advance how a person will act before the action has taken place (cf. Suchman, 2003, 2007).

Another critique of Suchman's study is that she does not take into account the cultural and historical aspects of artifacts. Wells (2003), for instance, argues that the study misses "the extent to which action is mediated by the historically produced cultural artifacts available in the setting, which both carry past knowing into the present in the form of practices that those artifact–tools afford" (ibid., p. 267). In a reply to this argument, Suchman (2003) notes that there does not have to be a conflict between her approach and an interest in the cultural and historical aspects of artifacts. She then raises an important caveat: "the commitment to situated action orients us, however, always to the question of just how, and for whom, culturally and historically recognizable formations take on their relevance to the moment at hand" (p. 303). The critique of Suchman and her response is in several ways representative. Ethnomethodology and CA are routinely claimed to focus too much on situated actions and singular events. This, it is argued, leads to a view that does not sufficiently address contextual matters. By focusing on situated actions and what is sometimes referred to as "micro concerns", ethnomethodology and CA are also accused of missing the "relevant macro concerns" of a setting – concerns

such as power, ideology, and gender. The counter-claim is that these issues might very well be part of the analyses, but if they are, they need to be shown to be relevant to the members of the analyzed setting as well. To rephrase Suchman, the analyst must show "just how, and for whom, culturally and historically recognizable formations take on their relevance to the moment at hand" (ibid.). The important lesson, which guided the analyses of the empirical studies in this thesis, is that social categories and issues should not be used to explain the interaction but instead be shown to be relevant in the actual analysis. What this means is discussed further in the next section.

## Relevance – for whom and on what basis?

Schegloff (1997), in a discussion of the claims a researcher can and cannot make based on interactional data, poses the following question: "Whose characterization of the conduct, and the context of the conduct, is to shape, to determine, to control our treatment of discourse?" (p. 167). This question addresses the core commitments that are made in a study of audio- or video-recorded material. Similar to Suchman's argument, the central argument here is that an analysis should be based on what is made relevant by the participants in the situation and not what is relevant according to some prior theorizing. Schegloff argues that many researchers ascribe issues connected to power, gender, and so on without demonstrating that the members themselves are oriented toward these issues. Although this approach might be appropriate within certain traditions, Schegloff (1997, p. 183) points out that if a researcher claims that such issues "connect up with discursive material", it needs to "at least be compatible with what was demonstrably relevant for the participants"; otherwise the "analysis will not 'bind' to the data, and risks ending up merely ideological".

Schegloff's position on this issue received many responses. One of the main criticism of CA is that it focuses on "tiny fragments" and that conversation analysts "rarely raise their eyes from the next turn in the conversation" (Wetherell, 1998, p. 402). According to Wetherell, "an adequate analysis would also trace through the argumentative threads displayed in participants' orientations and would interrogate the content or the nature of member's methods for sense-making in more depth" (ibid., p. 404). In order to do this, Wetherell argues for a post-structuralist view, which, according to her, would provide a fuller account of the meaning of an utterance – and a better answer to the

question "why this utterance here"  (ibid., p. 402). In a response to Wetherell's comment, Schegloff (1998) points out that "the why that now? question is in the first instance the *members'* question" (ibid., p. 414, italics in original), and that "for CA, it is the members' world, the world of the particular members in a particular occasion, a world that is embodied and displayed in their conduct with one another, which is the grounds and the object of the entire enterprise" (ibid., p. 416).

Billig (1999a, 1999b) joined the debate between Schegloff and Wetherell by claiming that conversation analysts are "imposing categories" that the participants themselves do not use in their talk and that CA therefore actually "disattend[s] the topics of conversation" (1999a, p. 543). Billig points out that the participants to a conversation do not talk about "recipient design", "adjacency pairs", "repairs", and so on – that these notions are part of conversation analysis "foundational rhetoric" (ibid.), that CA therefore "carry theoretical baggage" (1999b, p. 574), and that they do not acknowledge as such. In a response to Billig, Schegloff (1999b) agrees that the members do not use the CA terminology. Nevertheless, he maintains that the members still implement, introduce, and exhibit an orientation to these phenomena (cf. Schegloff, 1999b, p. 70). That members do not use the term "repair" in the same way as a conversation analyst does not mean that they do not do "repairs". The task then is for the conversation analysts to explicate how repairs are demonstrably done.

Billig (1999a) furthermore argues that CA is constrained in its ability to deal with certain issues. For him, a conversation analytic approach is "problematic if applied to episodes in which power is directly, overtly, and even brutally exercised" (p. 549). He questions whether conversation analysts in any relevant way could study issues of rape, racist abuse, and bullying. For Billig, framing these issues in terms of sequential organization, turn-taking, repair, and so on would miss the actual issues. In a reply, Schegloff (1999a) argues, "confronting an *instance* of an interaction in which such conduct featured, it is far from obvious that such an approach would be irrelevant and distracting" (p. 561, italics in original). His argument is that these are interactional phenomena as well, which belong to the same world as other social events. In order to understand their source and course, these phenomena might therefore be studied in the same way as other areas of everyday life, that is, "by addressing the units and resources and practices from and by which ordinary persons co-construct interaction" (p. 562). In addition, there are studies that

are grounded in or closely related to CA and that deal with such issues; for instance, date rape prevention and sexual refusals skill training (Kitzinger & Frith, 1999), insults, gossips and exclusions involving children (M. H. Goodwin, 1980, 1982, 2002a, 2002b) and the trials of the officers involved in the Rodney King beating (C. Goodwin, 1994; C. Goodwin & M. H. Goodwin, 1997).

To sum up, one of the main criticism of ethnomethodology and CA is that they are limited in their ability to make substantial contributions, that they focus too much on local orders, and that they would need to do something more than they are initially set up to do in order to say something meaningful or become relevant. This holds for the criticism aimed at Suchman's writings on plans and situated actions and the conversation analytic work of Schegloff and others. Although this thesis does not concern the issues that Billig discuss, whether and how ethnomethodology and CA are limited in their approach are being discussed in the field of education as well. On the one hand, there are those who, similar to Billig and Wetherell, believe that it is central to uncover the ideologies and power relations of the classroom, and who claim that ethnomethodology and CA fail to do so. On the other hand, another group might not be explicitly critical of CA (ethnomethodology is seldom mentioned in these contexts) but nevertheless focuses on its limits. One such argument is that CA in itself is not able to deal with learning – a topic within the field that is often held to be too important to ignore – and that one therefore needs a synthesis between CA and a theory of learning. Given that this is a common argument within the field of education, a field that also contains many hybrid approaches, the last section will review arguments and counterarguments surrounding this issue.

## Learning in interaction

Ethnomethodology and conversation analysis have produced a large body of research on classroom interaction. In this literature, there are studies of turn-taking, turn allocation, sequence organization, compliance, authority, and instruction. Until recently, however, few studies have explicitly dealt with learning. Among proponents of other traditions, the argument has been made that this is a deficit of the two traditions, which, in turn, makes them bad candidates for educational research. It is possible to discern three different responses to this criticism: that CA is a valuable resource in the study of learn-

ing, but that it needs to be combined with some theory of learning (e.g., Melander & Sahlström, 2009; Mondada & Pekarek Doehler, 2004), that CA in itself is enough for studying learning but that there is a need for longitudinal material as well as reconceptualizations of learning (e.g., Kasper, 2004; Koschmann, 2013), and, finally, that the attempt to "find learning in interaction" might in fact be a misguided endeavor and that the critique, as well as the attempts to come up with solutions, fall short (Lindwall, Lymer, & Greiffenhagen, 2011; Macbeth et al., 2011).

In the context of conversation analytic research on second language learning, Markee and Kunitz (2015) make a distinction between developmental and purist positions. While proponents of the former position search for a solution in the synthesis with other traditions, proponents of the latter argue a synthesis would lose the characteristic features of CA as a distinctive approach. Many agree that the very notion of learning, as it often has been treated in educational psychology and similar fields, must be reconceived if CA is to be used in investigations of learning. However, there is a disagreement whether this allows connections to other traditions. Some argue that there are other research traditions, such as sociocultural theories, situated learning theory, and social cognition, which are compatible with a conversation analytical take on interactional material. Others hold that the adoption of "exogenous, *a priori* theories compromises CA's *data‑driven* analytical approach to such an extent that it subverts CA's most distinctive contribution" (Markee & Kunitz, 2015, p. 430, italics in original).

In a text about CA and the study of learning in interaction, Koschmann (2013) quotes a passage from Schegloff: "since CA research is theoretically and methodologically grounded as a study of publicly observable phenomena, the view of competence it supports is one of situated practices rather than psycholinguistic models of learning processes and knowledge structures" (Schegloff, Koshik, Jacoby, & Olsher, 2002, p. 13). According to Koschmann (2013), this does not prevent a conversation analytic study of learning, but it necessitates a shift in the way learning is conceived. In the literature, there are a number of suggestions – many of which build on some kind of sociocultural theory of learning and cognition. Mondada and Pekarek Doehler (2014), for instance, provide such a re-orientation when they state "that cognitive processes in general and language acquisition in particular are publicly deployed, socio-interactionally configured, and contextually contingent" (p. 515). However, it is not enough just to make claim that "cognitive processes" are social.

These formulations must also connect to the interactional materials. According to Pekarek Doehler and Lauzon (2015, p. 409), the conversation analytic studies of learning must show "how learning processes emerge out of the minute details of naturally occurring (i.e., non-elicited) classroom interactions", and therefore, it is necessary to understand "how learning trajectories can be tracked down through close observation of those details". How one is to go about doing this, however, is far from obvious.

By using a hybrid approach based on CA and socio-cultural theories of learning and participation, Melander and Sahlström (2009) investigate a 12.5-minute interaction among three children who are reading and discussing a section in a book about animals. In the episode, one student makes a statement that the blue whale is the world's biggest animal. The children then make comparisons of the size of the blue whale in relation to other illustrations of animals in the book. Next, the children compare the size of the whale with a ship illustrated in the book. Finally, they discuss the whale's size in relation to other objects not represented in the book (e.g., the school and the school yard). The analysis shows how the children orient toward the pictures in the book and how they in relation to these pictures talk about the specifics of the animals. However, in the analysis of the episode, and the following discussion, the authors want to say something more than just what the children do and show. Their main concern is "how a topic, considered an intrinsic aspect of participation, is developed over time, and how this development can be understood as learning" (p. 1523). At the same time, it is not really clear what criteria the authors use to when the say that these changes demonstrates learning. As Melander and Sahlström point out, there are changes in interaction and participation all the time. How can one substantiate the claim that certain changes are demonstrations of development and learning? On what grounds and by which criteria?

These problems are regularly noted by the conversation analysts who want to study learning in interaction. Not everyone, however, is equally convinced that these are problems that have a solution. In an overview of conversation analytic studies of learning, Gardner (2013) argues that "while they may go some (small) way toward showing methods and practices that learners engage in when they learn, they do not show how learning takes place" (p. 609). If this is the case, a central question is whether more theoretical and conceptual work is needed or if the project itself is problematic – "it remains to be seen whether this will prove to be possible, or whether, as a reviewer for this chap-

ter noted, this may be an ever receding vanishing point" (ibid.). According to Gardner, an option for future studies to become more relevant might be to collect "longitudinal data to observe changes in behavior, participation practices and language use over time" (p. 608). The solution is thus not only one of finding the right theory or conceptual formulation but also of getting access to material that clearly demonstrates some relevant change. Similar points are made by Koschmann (2013), who argues that the need for "data sets that track individual participants over extended periods of time" (p. 4).

An alternative to the attempt to find a theoretical solution or collect new material would be to take the comment by the reviewer in the last paragraph seriously – that the attempt to find learning in interaction is an "ever receding vanishing point". A rationale for taking this position is formulated in a short paper on the problems of making learning visible and assessable in educational research on interaction.

> While many things relevant for our understanding of educational practices are labels of activities, and therefore available for warranted ascription to instances of saying and doing, the analytic use of the term learning requires us to import criteria, either from the setting itself, or from the literature, into our accounts. In either case we as analysts do something different when we say that learning has taken place, than when we say that for instance teaching has taken place, or instruction, or the working through of an assignment, or assessments of competence and skill, or overt orientations towards the relative understandings of participants, or practicing, discussing, reformulation etc. It may be that the potential of CA and ethnomethodology rather lies in a distinct answer to the question of how all those latter things are done, than in providing analytic access to learning. Rather than asking whether and what students' learn, the issue might be how members of various settings themselves attempt to make learning or understanding visible and assessable. (Lindwall et al, 2011, p. 8)

Although this thesis indirectly has an interest in learning – in the sense that the investigated settings are designed and aimed at student learning – the studies do not deal with "processes of learning" or attempt to find learning in the students' interaction. There are two reasons for this. First, and as pointed out in the quote above, "the analytic use of the term learning requires us to import criteria". This is problematic, given that a central premise for ethnomethodological studies is to refrain from analytic uses of criteria that are "obtained outside actual settings within which such properties are recognized, used, produced, and talked about by settings' members" (Garfinkel, 1967, p. 33). Se-

cond, there are limits to what the empirical material might show in terms of understanding, knowledge, and change.

As already pointed out, the studies in this thesis build upon video recordings of students working together at their desks and occasionally asking questions and presenting problems to the teacher. In the video-recorded episodes, the teachers obviously try to make the students learn something, and in some general sense, it would be strange if the students did not learn anything. However, exactly what they learn, and how, is perhaps not directly accessible to the researcher who watches the video-recorded interaction. In fact, this lack of access is not primarily a problem for the researcher. In the first instance, it is an issue that the members of the setting – the students and teachers – need to deal with as a normal part of classroom life. When a teacher provides help and guidance, she does not know if and how the students understand the issue addressed or what they will make of it later on. In the interaction, there might be claims and displays of student understandings, but as is shown in the studies, these understandings are intrinsically open to different interpretations. In a sense, the teacher has to wait and see and then rely on what the students present and hand in. Even at that point, the question of what the students learned is not settled once and for all.

While the video-recorded material does not provide a strong empirical basis for claims about student learning, the material does provide an empirical ground for claims about the social and practical organization of project work, about the ways in which instructions are given and received, and how the work of teachers and students is practically accomplished in the setting. In the next chapter, studies of classroom interaction within ethnomethodology and CA are presented in more detail. Here, the focus is on how teaching is organized and how instruction takes form in different educational constellations: whole class, task instructions, making rounds, and student-initiated interaction. The empirical studies presented in this chapter have in different ways been important in the writing of the studies included in this thesis. How these empirical studies have been used, and the similarities and differences in their results in comparison to the ones presented in this thesis, are further explored in the next chapter.

# Chapter 5
# Empirical studies of instructions, tasks, and advice

Over the years, ethnomethodologists and conversation analysts have addressed a wide range of educational topics. Hester and Francis (2000, pp. 8–11) identify six broad themes within this body of research: educational decision-making, assessment and testing, classroom order and management, the production of classroom activities, practical organization and accomplishment of academic knowledge, and the child as a practical actor. According to Hester and Francis, ethnomethodological studies of education have not only addressed a wide range of topics. Reflecting the diversity of ethnomethodological research more generally, there is also a "discernible diversity with respect to the analytic orientation taken by different writers" (ibid., p. 11). Nevertheless, these studies share an interest in the daily activities of educational life and how they are produced and maintained by the participants themselves.

In a recent chapter in a handbook on CA, Gardner (2013) discerns "two main strands of CA research on classrooms: work that investigates interactional practices of classroom talk, and work that attempts to investigate learning and knowledge transmission through talk" (pp. 593–594). In the conversation analytic work on classroom interaction, there has been a strong focus on classical themes within CA more generally, such as turn-taking, sequence organization, and repair and correction. As mentioned in the previous chapter (Chapter 4), however, a growing body of research focuses "specifically on issues of understanding, knowledge transmission, and learning: namely the official, institutionalized goals of the classroom" (p. 594). In an overview of conversation analytical studies that use video to investigate these latter issues, Rusk, Pörn, Sahlström, and Slotte-Lüttge (2014) make a distinction between setting-centered, participant-centered, and content-centered approaches. An aim of that overview is to show "how these approaches facilitate different as-

pects in the analysis of learning and cognition in social interaction from emic points of view" (p. 2).

As pointed out in the previous chapter, the empirical studies of the thesis do not analyze classroom interaction in terms of student learning or cognition. In line with this, this chapter summarizes empirical research on instructional interaction and students' work with educational tasks, instead of studies that attempt to capture learning in interaction. The chapter is organized into four sections: whole-class instruction, students' work with tasks, between-desk instruction, and advice in supervision encounters. In different ways, the four sections are relevant to how the empirical studies are framed, analyzed, and discussed: research on whole-class instruction forms a historical and analytical backdrop as well as an empirical contrast to the activities investigated in the thesis; tasks, and task instructions are central to all the episodes that are analyzed in the empirical studies; the organization of "between-desk-instruction" is one of the central themes of the thesis; and there are parallels to the findings of the thesis and those found in studies of feedback in academic text supervision.

## Whole class instruction

Although ethnomethodologists and conversation analysts were early in investigating classrooms, they were far from the only approaches used. In the 1960s and '70s, most studies approached the classroom by doing systematic coding of interaction (Dunkin & Biddle, 1974; Flanders, 1960, 1970; Lundgren, 1972). In these studies, the researcher observed the lessons while coding the conduct of teachers and students in real time according to some pre-determined categories. In an early and influential study, Bellack et al. (1966) used coding to investigate what students and teachers talked about, who said what, how much the teacher and students were speaking, the circumstances in which they spoke, and the consequences of their talk. The authors found that the investigated whole-class interaction overwhelmingly was teacher dominated, both structurally and quantitatively. According to these results, teachers talk for more than two thirds of the class period. In addition to lecturing to the whole class, much of this time was spent asking the students questions and evaluating the replies.

While widely adopted in studies of classroom interaction, coding has also been the subject of extensive criticism. Among other things, coding is argued

to provide a far too simplistic view of what is going on in the classroom. This issue was raised in one of the earliest ethnomethodological studies of classroom interaction. In his classical study, *Learning Lessons*, Mehan (1979) points out that:

> The quantitative approach to classroom observation is useful for certain purposes, namely, for providing the frequency of teacher talk by comparison with student talk […] However, this approach minimizes the contribution of students, neglects the inter-relationship of verbal to non-verbal behavior, obscures the contingent nature of interaction, and ignores the (often multiple) functions of language. (p. 14)

As argued in previous chapters (mainly Chapters 3 and 4), ethnomethodologists and conversation analysts take the organization and order of classroom interaction to be practically accomplished and locally situated. A consequence of this is that the researchers must identify the order and type of organization in the sequential circumstances of actual production. An important finding of ethnomethodological and conversation analytic work on whole-class instruction is that teachers and students together produce the activities in which they are engaged. These studies have repeatedly shown how students' responses are contingent on teachers' questions and how teachers' instructions are contingent on the students' contributions (e.g., Greiffenhagen, 2008; Lee, 2006, 2007; Lindwall & Lymer, 2014; Macbeth, 1994; Margutti & Drew 2014; Mehan, 1979; Vehviläinen, 2009).

Mehan was one of the first to show how "teachers and students work together to compose the social fact we call an answer to a question" (1979, p. 294). Macbeth (2003) describes Mehan's *Learning Lessons* as the start of "dismantling the 'black box' of classroom pedagogy that had been both the object and enabling premise of a prior generation of instructional research" (p. 240). Through his detailed studies of classroom interaction, Mehan outlined a new field of research. In the words of Macbeth (2003), the study was groundbreaking since it:

> was pointing to an orderliness of classroom lessons for which the participants themselves were actively engaged in producing their teaching and learning, its successes, failures, and relentless contingency, in full and public view, and moreover and especially, in the interactional detail of what indeed they were saying and doing. (pp. 240–241)

Another central contribution of Mehan's research was how it explicated one of the most recurrent ways in which instruction is sequentially organized – the

IRE or IRF sequence. Simply put, the sequence consists of three parts. In the first turn, the teacher poses a question (Initiation), which the student then answers in the second turn (Response). Thereafter, in the third turn, the teacher evaluates the student's contribution (Evaluation/Feedback). This is a simplification of how IRE sequences take form. The sequence may "consist of many more than three turns, or two speakers, yet in every case the sequence will come to completion when a positive evaluation in third-turn position has been produced" (Macbeth, 2004, p. 710).

IRE sequences have been found to be overwhelmingly present in classrooms and have been the topic of many studies (e.g., Cazden, 2001; Heap, 1985; Lee, 2007; Macbeth 1990, 2003, 2004; McHoul, 1978; Payne & Hustler, 1980; Sinclair & Coulthard, 1975; Wells, 1993; Zemel & Koschmann, 2011). The sequences have also been criticized by educational researchers and critical discourse analysts who claim that the IRE sequence "heavily favors the power of the teacher" (Lemke, 1990, p. 11). The questions that the teacher poses are typically ones that he or she already "knows" the answer to. Given this, student responses have been characterized as "abbreviated and tentative" (Nystrand, 1997, p. 6), since the students "try to figure out what the teacher is thinking or what someone else thought, not what they themselves think" (ibid.).

In this context, ethnomethodological and conversation analytic research seldom joins the criticism of the "question with the known answer". Instead of raising asymmetries of power or authority, these studies typically point to the instructional work involved in their production. Lee (2008), for instance, demonstrates how the questions are not only designed "to elicit answers from students but also to build resources for them" (p. 258). Margutti (2010) also investigates the dynamic and multifaceted function of these sequences and argues that "each question/answer pair is designed to lead to the next, so as to build a line of reasoning that will gradually guide students toward new forms of knowledge" (p. 316). Margutti and Drew (2014) show how the teacher through her questioning and with the students' answers builds up an argumentative line of reasoning. In this way, the sequence is central for the formation and maintenance of a particular social organization that makes knowledge publicly available to all the participants. As formulated by Macbeth (2000):

> The question with the known answer organizes the room with the assurance
> that knowledge is already in place, and thus organizes classroom instruction
> as a process of revealing it. The constitutive powers of the question with

> the known answer provide for a local way of knowing that is secured by the assurance that an adequate answer, explanation or account of whatever the task at hand may be, will be shown. (p. 37)

When used in traditional teacher-fronted classrooms, the question with the known answer and the ways in which it organizes classroom instruction as a process of revealing knowledge are tied to particular turn-taking organizations (cf. McHoul, 1978; Sacks et al., 1974). In a central sense, the sequence is designed to address the whole class, not only the active contributors to the interaction. Payne and Hustler (1980) argue that whole-class teaching can be seen as a two-party interaction between the teacher and the cohort: the teacher addresses the cohort as a whole with exceptions, such as when she selects a student by name or when students "offer a response from the class" (p. 59); the floor is given back to the teacher after a student response; and thus the students are "interchangeable as possible contributors to the talk; any one of them can be expected to respond to the teacher as a representative of the class" (p. 60).

The characterization of whole-class teaching as a two-party interaction can be seen as downplaying the differences between instructing the class and instructing individual students. Central here, however, is that Payne and Hustler (1980) describe the student who responds to the teachers' questions as "interchangeable" and as a "representative of the class" instead of as an individual. This does not mean that the ascription of turns among students is arbitrary (cf. Käänte, 2012; Mortenssen, 2009; Sahlström, 2002), but that the contributions of the students and teachers are designed to be heard by the whole class. This can be contrasted with instruction that is occasioned by the specific problems, questions, and needs of individual students. St. John and Cromdal (in press) investigate sequences in teacher-fronted classrooms that are initiated by student questions. As pointed out by the authors, the students' questions "set up tensions between the obligation to respond to the individual questioner and the responsibility to uphold the general instructional agenda" (p. 3). The study shows how the teacher responds to these questions through a "dual addressivity" – how she designs her answers for the individual student and the collective.

This section has presented a short overview of research on whole-class interaction. In addition to providing a historical backdrop for classroom research, the findings of studies of teacher-fronted classrooms are relevant in terms of their overlaps with and differences from the instructional practices

investigated in this thesis. When students who are working individually or in small groups call the teachers for help and guidance with a task, there is not the same need for the teacher to address individual students as representatives of the class or to design utterances so that they address individual students and the whole class. Following this, the instructional interaction that has been analyzed in this thesis is clearly different from that found in teacher-fronted classrooms. However, this does not mean that the instruction is organized in completely different ways. IRE sequences and questions with known answers have typically been associated with whole-class teaching and certain pedagogical agendas or ideologies. As is shown in the empirical studies of this thesis, however, IRE sequences are also used in other circumstances (cf. Greiffenhagen, 2008; Lindwall & Lymer, 2008), although these uses are differently organized from those found in whole-class interaction. In the investigated settings, the deployment of IRE sequences is regularly occasioned by the students' work with tasks, they address problems that have emerged in this work, and they provide instructions for how to continue with the tasks. Thus, the instruction is designed and understood against the background of the students' work with the tasks.

## Students working with tasks

As noted in Chapter 2, there has been a strong movement toward "student-centered activities" and "self-regulated learning" in Swedish schools. Central to this movement is the idea that students become more active and motivated when they are responsible for their own learning processes. On a more concrete level, there has been a movement from teacher-led lessons to an increased emphasis on activities in which students work individually or in groups with task. As is clear from the introduction, the aim of this thesis is not to evaluate this move; the thesis does not take a position on whether project work, according to some criteria, is more rewarding than whole-class teaching. Instead, the central aim is to investigate how project work is interactionally organized and locally accomplished. This section outlines two partly overlapping sets of studies that are relevant to this aim. First, studies have investigated how students understand educational tasks and the instructions for the task; or, as formulated by Greiffenhagen (2008), "How do participants understand their activities relative to such matters as 'setting a task', 'following a task', and 'evaluating a task' in whatever practical circumstances locally pre-

vail?" (p. 36). Second, studies have analyzed how students who work in groups interact with each other – how they jointly organize the production of a task through a "simultaneous and collaborative co-ordination of talk, gaze, gesture, reading, and the manipulation of objects" (Ford, 1999, p. 399). While the former set has a conceptual orientation that is grounded in ethnomethodology's treatment of instructions and instruction following, the latter presents detailed analyses of transcripts and recorded data and draws on previous studies of talk-in-interaction.

In an ethnographic study conducted in the third grade of an elementary school, Bergqvist (1990) investigate video recordings of how students worked with a task about optics that involved mirrors and light. The aim of the task according to the teacher was that the students should "discover 'what happened' when light hit an object, which, in fact, meant finding out on their own about the law of reflection" (p. 52). Given that the task was based on the idea that students should discover things for themselves, however, this aim was not formulated in the instructions. Instead, the instructions stated that the students should "test the equipment and 'discover things'" (ibid.) and that they should "reflect upon 'what happens' in the experiment" (ibid.). During their work with the task, the students expressed difficulty in understanding what to do, what to focus on, what to find out, and what was supposed to be happening during the experiments. In her commentary on this, Bergqvist writes:

> What did not seem to stand out as self-evident to the students was that the question here was not only one of 'what to do' with the equipment or about seeing something 'happening' in a general sense. Instead, it was a question of realizing why something *special* happened, that is, what 'this' was which was 'difficult to figure out by oneself.' (1990, p. 53, italics in original)

In her conclusion, Bergqvist points out that "there obviously is a dilemma concerning how to make students find out the specific point in a task that have been planned for them to discover by themselves" (p. 73). The study is partly presented as a criticism of student-centered approaches that leave the students to discover things for themselves with very little guidance. The critique ties into educational ideologies and curricular reform that emphasize "inductive learning" and student "autonomy" (see Chapter 2). At the same time, the study points to issues that confront all teachers who design and deploy educational tasks. Even though not all approaches are similarly extreme when it comes to what the students should do or find out by themselves, edu-

cational tasks still imply that the students should do something that they do not yet know and there is always the question how much and in what ways the students should be informed about the task in advance. As Greiffenhagen (2008) formulates it:

> The organisation of tasks is tied to what we might call teachers' 'how much is enough?' question of determining how much to tell pupils, before letting them work on their own. That is to say, in setting a task, teachers need to strike a balance between what to tell pupils and what to rely on pupils to already know or easily find out for themselves. In particular, teachers may not want to specify what pupils should do in every detail, in order to provide enough room for pupils to do 'more' than they were asked to do, since it is through this 'more' that pupils can demonstrate that they have understood the task and its objectives. (p. 55)

In formulating instructions, there might thus be educationally sound reasons for leaving out central parts. By leaving out central parts, the students must engage with the task in certain ways, they need to find out things for themselves, and the outcome of this work therefore become assessable in terms of the students "own achievements". This is not to say that the teachers would be able to completely specify the task if they wanted to. There is also a sense in which telling the students what to do, regardless the amount of detail provided to them, is never a sufficient condition for the students to be able to do what they are told. As has been repeatedly shown in ethnomethodological studies of instructions and instruction-following (e.g., Amerine & Bilmes, 1988; Garfinkel, 1967, 2002; Sharrock & Button, 2003; Suchman, 1987), there is an intrinsic and unavoidable openness to all instructions. The meaning of a set of instructions for how to do something is not found in the instructions themselves. The meaning is found only in and through the work of turning the instructions into concrete courses of action.

In a study of how students in primary school worked with a science experiment, Amerine and Bilmes (1988) thematize the relation between instructions and instruction-following. They note how "instructions and related explanations presuppose a range of competencies and conventional understandings, without which even the most detailed instructions are meaningless" (p. 326). They further note that the instruction "not only guides actions, but determines perceptions as well, in that it tells one what to look for, what to regard as relevant observations, and what to ignore" (p. 329) and that this "is necessary not only in order to regulate the practical course of action but to deter-

mine if the projected outcome is in fact achieved" (ibid). Given that the students in Amerine and Bilmes' study often lacked such competencies and understandings, the experiments – similar to the experiments investigated by Bergqvist (1990; cf. Säljö & Bergqvist, 1997) – were regularly transformed into something different from what had been envisioned by the teacher. As pointed out by Amerine and Bilmes (1988), this did not mean that the students did not learn anything. It just means that they learned something different from what the experiments was designed to teach them – "most importantly, the practical and creative skills needed to successfully turn a set of instructions into an accountable course of action, or, if necessary, to account for failure without discrediting the instructions" (p. 333). This means that the instructions not only have a prescriptive role in telling the students what to do but are also useful in accounts of what has been done:

> Successfully following instructions can be described as constructing a course of action such that, having done this course of action, the instructions will serve as a descriptive account of what has been done, as well as provide a basis for describing the consequence of such action. However, like instructions, this description leaves undefined the practical skills, the embedded activities, and the background knowledge, in other words, the competence by means of which constructing courses of action in accordance with sets of instructions is accomplished. (p. 330)

In addition to making general remarks about instructions and instruction following, this quotation also emphasizes something about the relation between doing a task and the results of this task. Even though the students might be able to complete the task, and the instructions together with the results of the task give a rough idea of what they have done, "a great deal more is necessarily done than can be comprised in the instructions" (p. 325). If one wants to have an understanding of the practical skills, embedded activities, and background knowledge involved in a task, it is therefore necessary to follow what the students are doing – not just get access to what they have done.

For instance, only through the recordings of talk and other conduct can a researcher get access to the ways in which the students work together as a group. In an early study, Barnes and Todd (1977) investigate how students who are working in groups with different tasks develop different strategies of communication when the teacher is not present; the study shows how discussions are initiated, how new topics are introduced, how coherent talk is sustained, how other's contributions are extended and qualified, and how the

boundaries of the tasks are framed. More recently, Ford (1999) investigates how a laboratory task is jointly accomplished by a group of students in and through their moment-to-moment interaction. The study analyzes how the students "constitute 'jointness' of the group" (p. 372), how they "co-construct their framework of participation as jointly managed" (ibid.), and how "the way the orientation to a shared task becomes a resource in their social organization" (ibid.). A central argument in the study is that group work requires a synchrony of talk and action among the students, and the interaction is organized to display such synchrony. The students show their progress with the task to each other, they show when they are ready to move on, and they show when they are unable to keep up with the rest of the group. Thus, in order to accomplish the task together, the students need not only science and lab-work skills, but also interactional skills for how to coordinate their actions and collaboratively construct the task activities.

In the study by Ford (1999), the notion of coordination is applied not only to the students' actions relative to each other. Ford also writes about how multiple interactional resources, such as talk, gesture, gaze, and written materials, are coordinated in the performance of particular actions. Among other things, she points out that written materials are coordinated with spoken words to provide "anchoring resources for reference interpretation" (p. 378). Käntä and Piirainen-Marsh (2013) also take an interest in the ways in which multiple embodied and contextual resources are used to accomplish an educational task. The study investigates how six junior high school students work with a task in physics, and the study focuses on instances in which a student shapes the conduct of another student by manually guiding an object or the hand of the other student. The authors contend that the physical manipulation of the action of another student "provide[s] an efficient and highly compelling, yet sensitive, resource for corrective action in peer interaction as well as a means for constructing a local action-in-progress as a joint achievement" (p. 325). In that particular case, the students are working with weights and movable planks. The relevant actions are therefore different from tasks that involve computers or the writing of texts. The study thus shows how the actions of the students are tightly connected to the nature of the task and the resources available to them.

In this section, two sets of studies have been outlined: ethnographically oriented research that examines how students attempt to follow instructions and solve tasks and studies that analyze the talk-in-interaction of groups that

are working with tasks. The studies in the beginning of the section mainly focus on instructions and instruction-following, whereas the studies in the latter part focus on practices of talk and how the students communicate with each other as constitutive of their work with the task. Several issues that have been brought up in this section are relevant to the empirical studies of the thesis. When the students in the investigated setting work on their projects and assignments, they struggle with instructions, and they display difficulty in understanding what to do, what to focus on, what to find out, and so on. What often happens in these cases is that the student turns to the teacher for help and guidance. In the next section, studies that investigate sequences where the teacher instructs students who are working on tasks are presented.

## Between-desk instruction

After the students have received initial instructions for how to work with a task, the teacher often provides further instruction to individual students or groups of students. Clarke (2006) refers to this as between-desk instruction, which is a literal translation of the Japanese term Kikan-Shido. A small but growing number of ethnomethodological and conversation analytic studies have examined between-desk instruction in contexts such as math classes (Koole, 2012), handicraft courses (Ekström & Lindwall, 2014; Lindwall & Ekström, 2012), geography lessons (Tanner, 2014), computer tasks (Greiffenhagen, 2008, 2012), second language learning (Cekaite, 2008), and lab work in science education (Lindwall & Lymer, 2008). Characteristic of all these settings is that several activities are going on in parallel. Individual students in the class might be working at different stages of a task, they could be working with completely different tasks, or they could be engaged in activities that have little or nothing to do with the tasks at all. The studies also show how the teachers' instructional role varies from one occasion to another. The teacher could be overseeing the students' work, making sure that they are working on task, helping the students who need or request it, and so on (cf. Clarke, 2006; Greiffenhagen, 2012). Furthermore, the instructional interaction can "be very brief, as in offering a passing remark or pointing out a spelling mistake […], or can be more prolonged and deal with more complicated matters" (Greiffenhagen, 2012, p. 37).

Some studies have analyzed how instructional sequences are initiated by students who request the teacher's help. In an early study, Merritt and

Humphrey (1980) investigate how pre-school children request the teacher's attention and the communicative demands such "service-like-events" place on both parties. More recently, Cekaite (2008) examined how students working at their desks solicit and secure the teacher's attention with the use of prosodic, syntactic, and embodied displays of "affective stance". The study shows how the students work "to secure the teacher's attention and interactional uptake in the context of many competing voices" (Cekaite, 2008, p. 27). A central feature here is the mutual monitoring (Goodwin, 1982) between the participants: the students have to monitor the teacher's current position and activities, and the teacher has to keep a record in what order the students' requests for help come. Other studies have analyzed how teachers initiate instructional sequences by intervening in the students' work. Greiffenhagen (2008, 2012) investigates a setting in which groups of students work in front of computers with a task that involves a storyboarding software. During this period, the teacher is "making rounds" (2012), which allow "the teacher to identify matters that pupils did not pick up in her instruction session, as well as matters that the teacher did not make plain enough or possibly overlooked" (2008, p. 56). In this way, the rounds become a way to check whether the students are doing the task in an acceptable or non-acceptable manner.

Most studies of between-desk instruction have focused on the instructional interplay that takes place after the teacher has approached the student. Greiffenhagen (2012) shows how the teacher's interventions are used to do a range of different things: the teachers might verify the students' work thus far, remind students about certain aspects of the task that have not yet been dealt with, give suggestions for how the students can move on with the task, maintain classroom control, raise individual problems in the whole class, and relate the students' work with the task to future exams. According to Greiffenhagen, there is a balance in the amount of help that the teachers provide: "teachers need to give pupils enough so that they can get started while still leaving room so that the task can be used as a basis to assess what pupils will have done" (p. 55). Although the teachers' instructions do not give away every detail of what the students should do, the instructions provide parameters thus increasing the likelihood that the students' work can be assessed as having correctly followed the task in the end. On the one hand, this has parallels with the discussion about textual instructions in the previous section. On the other hand, the instructional interaction that takes place when the teacher intervenes or responds to the students' request for help is markedly different from how textu-

al instructions or instructions to the whole class are designed and understood. As noted by Greiffenhagen (2012), between-desk instruction allows "the teacher to deal with the recursive nature of tasks, which in a sense are given shape (reflexively and always revisable) through the workings of the pupils" (p. 36). In contrast to textual instructions, this instruction is contingent on the students' work with the task, and to return to a quote by Suchman (2007), it "draws pedagogical strength from exploitation of the unique details of particular situations" (p. 45).

This latter issue is explored by Lindwall and Lymer (2008) in the context of an introductory mechanics course at a teacher education program. The study focuses on how the students present their problem to the teacher and how the teacher in return attempts to make the subject matter visible and learnable for them. In the investigated episode, the teacher does not simply tell the students what they need to know. As is demonstrated in the analyses, how the students also show the teacher what they need in order to continue is central. As formulated by Lindwall and Lymer: "whereas the students could potentially gain access to mechanics through the instructor's responses to their difficulties, the instructor gained access to the students' competence, or lack of competence, through their responses" (2008, p. 215). The instructional interaction does not simply consist of a question followed by an answer. Instead, the interaction is an extended sequence filled with instructions, corrections, and various claims and displays of understanding. Lindwall and Lymer describe how the students "begin asking the instructor questions about the shape of the graphs but without being able to specify in what way the graphs are problematic to them and without knowing what an answer to their questions would sound or look like" (p. 193). The teacher, in turn, starts to instruct without really knowing whether what he is instructing will solve the students' problems or whether it even addresses these problems.

How problems are formulated and addressed are in central ways tied to particular settings. In a study of mathematics classrooms, where the students are working at their desks and request the teacher's help, Koole (2012) identifies a two-part sequence for establishing problems: the student first localizes the problem and requests the teacher's help, and then the teacher initiates an explanation. The localization of the problem can, for instance, take the form of utterances such as "I don't understand C and D" where C and D refer to two elements of a textbook assignment. Koole (2012) argues that "in the vast majority of cases we come across the pattern exemplified here in which the

student localizes but not specifies a problem, and the teacher treats this localization as a sufficient ground for entering into an explanation" (p. 1907). According to Koole (2012), this implies that the "teacher assumes access to the nature of the student's problem, and students eventually align to a problem that was not stated by them but was presupposed in the teacher's explanation" (p. 1912). According to this argument, "what gets to be explained is the teacher's problem rather than the student's" (ibid.). In the last quotation, there two distinct uses of the term problem. While the student's problem refers to some kind of difficulty or misunderstanding with the task, the notion of the teacher's problem seems to refer to the task or the assignment (and not any misunderstanding or difficulty on behalf of the teacher). A way to formulate the interaction in those cases might thus be that the student points to the task with which he or she has problems, and then the teacher explains how it is to be solved. When the student requests are taken this way, however, it might not be that clear what it would mean for the teacher to explain the student's problem. Nevertheless, the study clearly shows how the teacher uses material displays of student understanding, or perhaps misunderstanding, as a starting point for instructions.

The extent to which claims and displays of student understanding can be used to secure whether the student has understood the instructions differ from situation to situation. There are significant differences between settings in terms of "how instructions are formulated, how these instructions are responded to within the fragments, the access the teachers have to student competence and understanding, what the relevant materializations of competence are, and the temporal organizations in which these instructions are embedded" (Lindwall et al., 2015, p. 154). When students are instructed in a practical skill, such as crocheting, dancing, or cooking (e.g., Lindwall & Ekström, 2012; Keevallik, 2010; Stukenbrock, 2014), the materiality of the project makes "it possible for both the instructor and the instructed to methodically and meticulously adjust their actions in accordance with the other party and towards the gradual realization of the aimed for results" (Lindwall & Ekström, 2012 p. 46). It is possible that the student must practice the skill before she becomes proficient, but the instructions can nevertheless be designed as a series of corrections that directly address the uptake of the instructions. When students are instructed how to write a text, in contrast, it is not similarly possible to see and follow how the students understand the instructions, since the actual writing of the text takes place at a later stage. In such circumstances,

what "the participants can do is to produce and operate on instructional talk and gesture (interpret, clarify, expand, reformulate etc.), but they can only *indicate* the actions that will be taken in enacting the talked-through instructions" (Lindwall et al., 2015, p. 152, italics in original). Given the central role that texts have in the investigated setting, the final section of this chapter summarizes several conversation analytic studies of advice in text supervision.

## Advice in text supervision

This section presents studies that analyze how advice is requested, given, received, and resisted in the context of peer tutoring in graduate writing centers (Park, 2012a, 2012b; Waring, 2005, 2007a, 2007b) and master thesis supervision (Vehviläinen, 2009a, 2009b; Svinhufvud & Vehviläinen, 2013). Something that characterizes these studies is how interaction is analyzed and discussed in terms of advice – instead of, for instance, instruction – and how the studies build on previous research on advice given in other settings, such as service encounters (Jefferson & Lee, 1981), radio call-in shows (Hutchby, 1995), and medical settings (Heath, 1986; ten Have, 1991). In an influential study of health visitors and first-time mothers, Heritage and Sefi (1992) state that a person who gives advice "describes, recommends or otherwise forward a preferred course of future action" (p. 368). This general description is equally applicable to advice-giving in academic supervision as it is to advice found in service encounters, medical settings, and family interaction. Reflecting the interest of the thesis, however, the focus here is the specific ways in which advice is requested, delivered, and responded to in supervision encounters – how manuscripts are used, the ways in which students seek advice by formulating questions, the "problem establishing and problem remedying work" (Vehviläinen, 2009a, p. 183) of supervisors, how students claim and display understanding of what the teacher is advising, and how students might resist and reject the advice that the supervisor provides.

Svinhufvud and Vehviläinen (2013) examine the opening of supervision encounters with a focus on how texts are used and oriented to. In some cases, the student has sent a manuscript to the supervisor before the encounter, and the teacher has read and written comments in the manuscript. In other cases, the student has brought a copy of the text to the meeting but has not sent it to the teacher in advance. In all cases, however, the manuscript has a central role in the organization of the supervision encounter. Svinhufvud and Vehviläinen

show how the teacher, in the opening phase of the encounter, fixes her gaze on the papers, how "the document is oriented to as the necessary and relevant object of the joint activity" (p. 141), how the manuscript is used as a representation of the student's work and progress, and how the document affects the topical progression of the encounter. In contrast to other forms of institutional interaction, the supervision encounters investigated by Svinhufvud and Vehviläinen do not include much talk about the agenda or purpose of the interaction: "it is as if the expert participant of the encounter is orienting to the academic supervision encounter as a form of service encounter with two purposes, providing feedback and answering student's questions" (p. 161). When the feedback is initiated by teachers, the comments are regularly located in the text. Vehviläinen (2009b) writes about such feedback in terms of a multi-unit turn, which "perform[s] at least four kinds of function: (1) locating the focus point in the text; (2) showing what is wrong in the text; (3) recommending what should be done; and (4) explicating the relevance of the feedback" (p. 188)

In relation to the setting investigated in this thesis, sequences where advice is initiated by student questions are particularly interesting. Vehviläinen (2009a) argues that two questioning formats are used by students when they seek advice. She calls these formats "invoking incompetence" and "proposing candidate solutions for potential problems". Student actions that "invoke incompetence" are regularly produced as open-ended questions (questions that begin with a "what", "how", "in what way", and so on) and are used to show that "the speaker is not able to continue without advice from the teacher" (p. 168). Actions that belong to the second format are formulated as polar questions (yes/no interrogatives), statements, or statements that are followed by tag questions. According to Vehviläinen, this latter set of questions is "designed as checks for potential problems or proposals for potential solutions or profitable courses of action" (p. 173). Furthermore, these questions indicate an "interest of either improving the work (making it better and keep working on it as long as necessary) or finishing the work (and minimizing work while still maintaining minimum quality)" (p. 174). In another study of student-initiated interaction, Park (2012a) makes a similar distinction and argues that there is a systematic interplay between the syntactic structure and the sequential environment of polar questions. In her account, an interrogative form is typically used by the students to launch a new topical sequence. The teachers' responses to these questions go beyond simple confirmations and are provid-

ed in extended turns. Questions that are posed with a declarative form, in contrast, are used by students at the end of larger sequences to provide up-shots of what the teachers have said and are used to initiate closings of the sequences.

Even though Park argues that a "response to a declarative question is likely to be a simple confirmation" (p. 625), she also holds that teachers tend to elaborate on their answers regardless of the design of the student's question. What this means is that the elaboration typically is done in different positions. When the interrogative form is used by the student, the teacher's elaboration is found in the turn after the question, whereas the elaboration to a declarative question is done after the teacher first has confirmed the understanding pro-posed by the student's question and the student then has acknowledged this confirmation. Park (ibid.) suggests that "students often convey that their pri-mary concern is finding out how the teachers' remarks can be pragmatically applied in revising their draft", whereas "teachers work towards giving a gen-eralizable lesson beyond the here-and-now issue". While the teachers initially might confirm the goal-oriented upshot produced by the student, they can then qualify their answers in a stepwise manner, thus gradually pulling away from the terms of the student's question. Vehviläinen (2009a) argues that teachers in their responses to student questions deal with two dimensions: "(a) presenting a solution to the problem, and (b) determining whether the prob-lem is relevant or exist" (p. 178). In the encounters investigated by Ve-hviläinen, the teachers accept the issues raised by student questions in most cases. In some cases, however, the teachers treat the "questions as irrelevant or nonanswerable" (p. 183) – thus showing "that the problem must be set in a different way" (ibid.).

After the student has asked a question, and the teacher has responded to this question by providing advice or feedback, the student typically acknowl-edges the feedback with a minimal response token, such as "okay" or a nod (Vehviläinen, 2009b, p. 187). As pointed out in the previous section, however, such responses do not really display whether and how the student understood the advice – that a student nods, says "okay", or takes notes does do not mean that the student will be able to follow the advice at a later point in time. Mac-beth (1994) – in a discussion of Sacks' (1992) distinction between claims and displays of understanding – writes: "Claims are made of head nods and words to the effect of 'yes, I understand.' Displays, on the other hand, produce evi-dence of understanding, most commonly statements that reveal something of

the affairs claimedly understood" (p. 331). Vehviläinen (2009b) argues that it would be possible for teachers to elicit display of student understanding, but that the teachers in her study "focus their concrete supervisory efforts only on what should be done with the text" (p. 187). No matter the teachers' effort, however, there is also a sense in which some displays of student understanding actually are inaccessible during the actual supervision encounters. As formulated by Lindwall et al. (2015): "Just as the proof of the pudding is in the eating, the proof of the students' understanding is, as it were, in the writing. The [advice] needs to be worked out, and in this case the work takes the form of re-writing and re-submitting" (p. 151).

The uptake of advice is not always about claims and displays of understanding. Several studies have also taken an interest in how advice is resisted and rejected by students. Resistance and rejection are common topics in the literature on advice in other settings as well. As noted by Hutchby (1995), the giving of advice "assumes or establishes an asymmetry between the participants" (p. 221). In some contexts, such as when a health visitor tells parents to change their routines, the assumed or established asymmetries might be treated as problematic. When a student meets a tutor or a supervisor to discuss a text she has written, the giving and receiving of advice are expected as central parts of the activity. Nevertheless, several studies (e.g., Vehviläinen, 2009b; Waring, 2005) demonstrate how students sometimes reject or resist the advice, and how teachers shape their advice to minimize this resistance. In the context of thesis supervision, Vehviläinen (2009b) shows how students mitigate and evade the problems, how complaints are raised, and how a student makes the point that the "draft does not represent what he has actually done" (p. 196). In the context of peer tutoring, Waring (2005) demonstrates how the characteristics of the resistance are tied to the topic of the advice – whether the advice concerns "general academic writing issues, specific content-related matters, or the mechanics of writing" (p. 146). Given that the advice is provided by student peers, Waring argues that the characteristics of the resistance can be accounted for by the competing expertise of the two parties.

In the literature on text supervision, competing expertise is not the only tension highlighted. Park (2012b) discusses how the "principle of learner autonomy" complicates the management of "epistemic asymmetry". According to Park, "Teachers, on the one hand, have to assume the role of epistemic authority and, on the other hand, encourage learner autonomy. For students, this means seeking advice from teachers and displaying self-awareness at the

same time" (p. 2007). Vehviläinen (2009a) makes a similar point when she argues: "Teachers need to support students' agency while controlling the quality and direction of their work. Students need to demonstrate autonomy and independent effort while seeking help for problems they cannot overcome on their own" (p. 189). Another tension that Vehviläinen raises is that the two parties "need to balance the aims of improving the work towards maximum quality with moving the work towards acceptable quality" (ibid.). In sum, these tensions open up a situation that "allow[s] multiple agendas, negotiations, and even disagreement on what is relevant and what problems are workable" (ibid.). In several respects, there are parallels between the supervision sessions described by Vehviläinen and Park and the settings investigated in this thesis. In these settings, too, there are multiple agendas, various pragmatic concerns, and negotiations between students and teachers about what is relevant advice and what should be done next.

As mentioned in the introduction (Chapter 1), this thesis aims to contribute to the understanding of how students and teachers deal with the inherent and designed openness of the tasks, how instructions are given and received, and how the encounters between teachers and students are materially, bodily, and interactionally organized in the studied setting. This chapter has presented ethnomethodological and conversation analytic studies that deal with these issues. The studies presented here also provide grounds for contrasting different educational arrangements. For instance, in teacher-led lecture lessons, the teacher has the possibility to address the class as a unit. When the students are working at their desks and the teacher is doing her rounds another type of organization emerges. A teacher who is addressing the whole class needs to manage potential tensions between responding to individual students and upholding a general instructional agenda (cf. St. John & Cromdal, in press). The teacher who instructs individual students at their desks, in contrast, does not have to address the whole class while she is doing this. Still, there are tensions between obligations to respond to individual students and concerns for the rest of the class that the teachers need to deal with; for instance, the teacher cannot "linger too long with a particular pair of pupils before other pupils begin to call for her or his attention" (Greiffenhagen, 2012, p. 37). What is important here is that parallels and contrasts between different educational formats need to be grounded in careful observations of actual practices. As pointed out in Chapter 2, educational formats such as project work are commonly associated with ideological ideas about "student-centered activities"

and "self-regulated students". As argued by Merritt and Humphrey (1979), however, it might be "that the most satisfying way to compare 'structured' classroom style teaching and 'open' classroom style teaching will turn out to be *not* in terms of differences in degree of teacher control but rather in terms of differences in the way control is manifested" (p. 302, italics in original). These issues will be further dealt with in the presentation of the articles (Chapter 8) and the discussion of the thesis (Chapter 9). Before that, a short overview of the investigated setting (Chapter 6) and the methods used (Chapter 7) are provided.

# Chapter 6
# The investigated setting

This chapter is an introduction to the investigated setting. The chapter first describes the selection of the school and how access to the classroom was granted and managed. The chapter then gives an overview of the project that the students and the teachers were involved in the time when the fieldwork and video recordings were conducted.

## A background of the setting

Before the empirical study started, a school that matched the interests of the overall research project TIK had to be found. This was done by searching the web for schools in nearby areas that mentioned project work or similar organization as a pedagogical method in their self-presentation. Although not many schools presented themselves in this manner, one school was found that had links to previous projects and themes conducted at the school. Contact was established with the principal of the school through an email in which the aims of the study were presented. After the principal had expressed interest in participating in the project, she turned to the teachers at the school and asked them whether someone was planning to run a project and was interested in participating in the study. This resulted in two teachers showing interest. The two teachers worked together and had already planned to conduct the project work that the data in this thesis built upon.

As the next step, it was agreed that I should give a more detailed description of the research project to the principal and the two teacher volunteers. At this first meeting with the school, I sat down with the principal and described the aims of the research project, how the fieldwork would be conducted, and how ethical issues would be handled. After this, the principal gave me a tour of the school. The school was built in 1968 and held 480 students at the time. It is a public school located in a suburb of one of the largest cities in Sweden.

During the tour, the principal said that the students previously could choose an environmental profile but not anymore. A former teacher who was characterized as very engaged in environmental issues initiated this profile. According to the principal, the teachers no longer had the time to maintain that profile. She explained this by pointing to a combination of administrative tasks, larger classes, and that the teachers now had to put more focus on mentoring the students. Another reason was that the principal thought that the students were too young to choose a subject to be profiled in. According to the principal, however, the environmental theme had not entirely disappeared from the school's program.

The school attempted to combine new ways of working with more "traditional lessons". This was regularly done with "theme work" or "projects". Many of these themes or projects were based on environmental issues, and they were commonly interdisciplinary with several teachers involved. The principal explained that she and many of the school's teachers would prefer that they worked more with themes or projects. Since some students did not manage to work in this way, however, this had proven difficult. The tour ended at the office of the two teacher volunteers. One teacher said that she and her colleague had started laying out a plan for a five-week project that would take place in a couple of weeks in a Grade 9 class (students ages between 15 and 16). This class had previously worked with similar assignments and projects.

When the project work was planned, the teachers set up a schedule that had been created based on their time, knowledge, and what they had decided to teach that time. The teachers mentioned that they really liked to work interdisciplinary with different academic subjects and that they attempted to support each other in planning lectures and examinations. As they described it, this way of working was a way to fulfill the goals of the curriculum and to prepare the students for future education that put more emphasis on academic writing. The students were in their final term of the comprehensive school, and many would soon continue their studies in secondary education. At this time, there was also an up-coming national test that included a section that focused on students' abilities to argue and discuss their opinions and account for certain issues and questions about the environment, life-styles, politics, and so on. The investigated project work was also planned to prepare the students for this national test.

# The project work

The theme of the project was *Resources and Industries,* and it concerned the uses of different energy sources and the global and local environmental consequences. The project was planned by the two homeroom teachers, one teaching natural science and one teaching social science. The project therefore also included a combination of several academic subjects, such as language (Swedish), natural science, civics, and technology.

The project work was divided into different sections and in lasted a total of approximately five weeks. During these weeks, the students worked in various arrangements – individually, in pairs, in groups, in front of the computer, etc. In the different tasks and examinations, the students were encouraged to be attentative to the environment and reflect about the future when discussing the use of natural resources (e.g., oil, natural gas, rain forest, fresh water). The teachers also pushed the students to validate different sources of information – newspapers, schoolbooks, articles, and the Internet – in terms of their relevance and validity for the task to be addressed. The tasks that the students worked with generally did not have a single, correct, or straightforward answer. Instead, the questions, within the particular subject, were often connected to several different concerns, such as moral, social, environmental, and economic issues.

Originally, the whole project comprised six sections. As a result of a lack of time, only four were carried through. The teachers, for the whole class, introduced all of the sections. In this introduction, the teachers explained what the section was about, what task the section included, the goals of the tasks, the work methods, and the types of examinations that the students should expect. A paper with instructions for the tasks, methods, examinations, and goals with the project work was also handed out to the students at this initial introduction. Overall, the sections included tasks in which the students were supposed to develop their argumentative skills (both orally and in written texts). The sections that were carried out are introduced below.

*Section 1 – Finding and writing down information.* This section, called "industrialization, trade and transport", worked as the first introduction to the whole project work. Here the students were supposed to work individually and to search for and write down facts in several different subject areas (about 13 areas), such as Swedish agriculture, transportation, forestry, industries in Scandinavian countries, and so on. An aim of this task, as formulated by the

teachers, was that the students should become acquainted with different con-
cepts, industries, and natural resources and to get the students to use different
resources in order to find information. At the introduction of the first section,
the students and teachers jointly created a mind map on the white board (Fig-
ure 1).
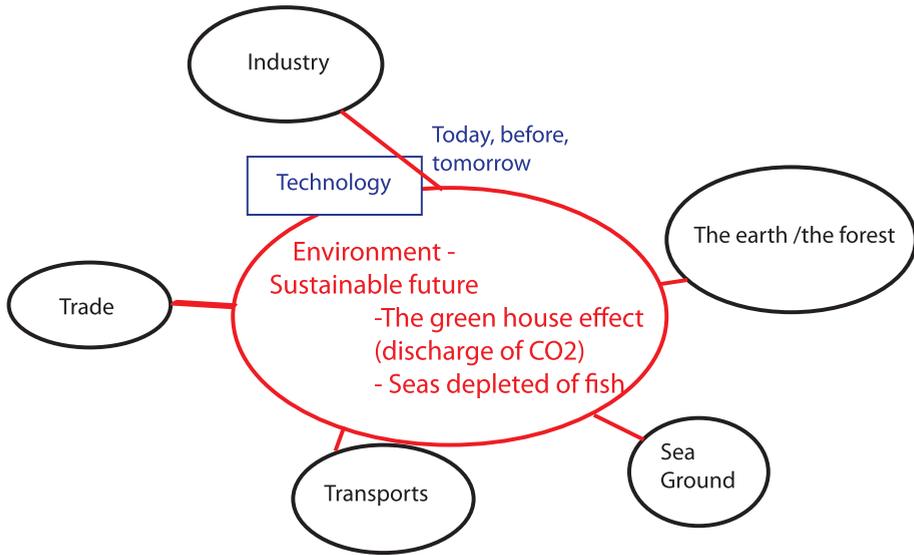


Figure 1 Reconstruction of the mind-map

This reconstructed mind map shows – in the large circle in the middle – the
threats (the green-house effect, discharge of CO2, and seas being depleted off
fish) to the environment and the sustainable future that the students and
teachers brought up during the discussion. The circles connected to the mid-
dle circle show what the environmental changes affect (the earth, forest, sea,
and ground) and what partly causes these effects (transportations, trade, and
industry). The teacher also marked out a square with the term "technology"
and the words "today, before, tomorrow" and indicated to the students that
they should consider the technological development in relation to how the
environment has changed. As part of this task, the students were told to find
facts about the subject areas written in the black circles. When doing this, they
were allowed to use several different resources, such as the Internet, school-
books, articles, and newspapers. The facts the students found should then be

put together in a booklet that included an analysis and their own reflections. They were also supposed to be critical of the sources they used and they were supposed to write a list of references. The students were to work individually, but they were allowed to discuss the subject areas with their peers.

*Section 2 – Writing an argumentative composition.* As the previous section focused on getting a broad awareness of different subject areas by using different resources to find information, this section focused on developing the students' argumentative abilities in writing. The students, one by one, wrote an argumentative composition about the climate and energy sources. The formulation of the task on paper (my translation) was as follows:

> An argumentative composition is about you convincing someone about your position. You should take a side in a problem (for or against). Then, in the composition, you have to convince your readers that you are right but it is important that you have based your arguments on facts. You cannot write down something that is not true because then your arguments will be seen as hollow.

The composition should then be 1–1.5 pages and not longer because the teachers wanted the students to practice conveying succinct arguments. Completed compositions presented, for example, the effects of long-distance transportations, ravaging of the rain forest, and the seas being depleted due to fishing.

*Section 3 – Building a sustainable city of the future.* In this section, the students worked in groups (three to five students in each group) building a model of the "sustainable city of the future". In this section, the teachers wanted the students to discuss different precautions for a more environmental friendly future. To help the students, the teachers gave several questions as guidelines in the planning: what do the houses look like? What do we eat? What technology is improved and/or has disappeared? What laws do we have? What do we do with our waste products? What kind of industries do we have? What kind of energy sources do we depend upon? In order to know what kind of energy sources the city should have, the students had to search for information on the effect of different sources on the environment and so on. The teachers had printed out articles that the students could use, and they were also allowed to visit the school library and search on the Internet. The articles the teacher had chosen concerned how different fuels (e.g., diesel, gas, and ethanol) affect the environment. The students started their planning by discussing these questions and commonly wrote down information about their city. This infor-

mation was later used to make a poster that was presented together with their models to the class at the end of the section.

*Section 4 – Planning and performing a panel debate.* In this section, the teachers wanted the students to practice verbal argumentation (both in presenting their own cases and in listening to others). The students were also supposed to use what they had learned in the previous sections. In the panel debate section, the students were divided into pairs (if possible, one boy and one girl). They were then assigned a country, continent, or union for example, Russia, China, the European Union, Africa, Vanuatu, etc. The panel debate was divided into two parts. In the first part, the students were given approximately four to six hours to prepare before the debate discussing their country's, continent's, or union's contribution to climate change. Here, the students were encouraged to search for information in the school library, on the Internet, and in books and articles that the teacher had in the classroom. The second part of this section was the debate. Before the actual debate, the teachers had a run-through of how to behave during a debate (you do not yell, you raise your hand if you want to say something, you try to be polite even though you do not agree, etc.). The debate then took place in the school's lecture hall where the students were divided into two groups. One group participated in the debate while the other acted as the audience, and they then shifted roles.

In all of the sections, and throughout the entire project, the students were supposed to organize their own work process. However, this did not mean that the two teachers did not supervise the students. The teachers themselves talked about their roles as supervisors or guides who scaffold the students' work instead of the authorities that instructed the students on the subject matter content. After the introduction of the different sections, and after the students had started their work, the teachers started moving around in the classroom walking between the desks. By doing this, the teachers made themselves present and available to the students if they needed help. In hindsight, the teachers were commonly occupied with giving the student, or groups of students, support.

Since the interest in this thesis is in the natural occurring activities that go on in the classroom, the project work was studied through extensive fieldwork during which the students' and teachers' activities were captured on video. The videos give access to the interaction and embodied actions taking place in the setting; however, the chosen method has certain constraints. The next chapter provides a description of how the fieldwork was conducted and how

the video recordings were accomplished. The chapter also discusses certain constraints in relation to video recordings as well as the analytical procedure. It then moves on to present and discuss the limitations and editorial revisions of the analytical representations. The chapter ends with reflections on the ethical considerations taken before, during, and after the video recordings where done.

# Chapter 7
# Methods

Fieldwork was conducted during the five weeks that the project work lasted. These five weeks resulted in approximately 30 hours of video recordings. There is a number of reasons why video recordings were chosen as the primary empirical material. As the thesis focused on naturally occurring activities in the classroom, video enables a detailed and repeated analysis of the participants' interaction and embodied conduct. As Knoblauch et al. (2006) argue, "compared to observations made by the naked human eye, video recordings appear more detailed, more complete and more accurate" (p. 11). Furthermore, as contended by Heath and Hindmarsh (2010), repeated viewing of video also makes it possible "to explore the ways in which participants accomplish practical activities in and through interaction with others" (p. 100) and to investigate how "the production and interpretation of action relies upon a variety of resources – spoken, bodily and of course material resources, such as objects, texts, tools, technologies and the like" (ibid.)

In the investigated classroom, the students were writing and reading text documents, building models, painting pictures, and using computers. Through repeated viewing of the recordings, it became possible to analyze how these resources were used. There are, of course, phenomena and activities that the video camera will not capture. Borrowing an argument by Sacks (1992), however, one could argue "the tape-recorded materials constituted a 'good enough' record of what happened. Other things, to be sure happened, but at least what was on the tape has happened" (p. 622). Finally, and particularly important in relation to the larger research project TIK, the video recordings provided "an archive, a corpus of data that can be subject to a range of analytic interests and theoretical commitments, providing flexible resources for future research and collaboration" (Heath, Hindmarsh, & Luff, 2010, p. 2).

# Fieldwork and video recordings

Before the fieldwork started, the research project TIK was presented to the class. This was done in two steps. First, the students received a written description of the aims and purposes of TIK's data collection. Along with this written description, a letter of consent was attached. Second, I gave a presentation about TIK in the classroom. At this presentation, I emphasized that the materials from the study would not be used to for grade or assess the students as individuals. During the meeting, the students and teachers asked questions about the project. Before I entered the classroom, I also emphasized that I was not to be considered a "third teacher" in the classroom. I would not help the students with their school assignments, report possible cheating, tell them to lower their voices, or, in any other way intervene in the organization of the classroom.

The students and the teacher were filmed with one high-definition camera placed on a tripod in a fixed position during the lessons (the cords were taped to the floor so that no one would trip on them). To increase the quality of the audio recordings, an external microphone was used. The microphone was placed on the students' desks, and a mouse pad was placed under it in order to decrease the risk of picking up unwanted sounds from the table. The microphone batteries were charged or changed between the recordings, and headphones were routinely used to check the quality of the audio.

There were several reasons for putting the camera in a fixed position. First, there was not much space in the classroom, and the teachers moved around a lot. With a fixed position, the camera became an interior element that was easy to move around. Second, the students and the teachers tended to be more aware of the camera if someone operated or stood behind it. This is not to say that a camera with a fixed position is totally ignored. Occasionally, the students paid attention to the camera. These were often episodes during which the students gossiped or told each other secrets or when a peer was looking at the recording through the LCD screen. As a response to the latter issue, the screen was eventually positioned in a closed position, which made the students stop looking (no students looked in the viewfinder).

In order to minimize handling of the camera, the tapes were mostly changed when the students or teachers were not present. Since the tapes could record up to 60 minutes, the lessons were 60 or 120 minutes in length, and the students had a short break halfway through the longer lessons, this could usu-

ally be done. This also made it possible to capture the classroom activities from the beginning to the end (cf. Mondada, 2006, p. 5). In the beginning of the fieldwork, the teachers seemed to feel a bit uncomfortable in front of the camera. The teachers were reminded of the purpose of study, and that their personality or performance was not the focus of the study. Quite soon, their initial insecurity seemed to disappear. The brief episodes of self-consciousness and insecurity hardly interfered with the quality of the corpus as a whole.

Since I wanted recordings that captured situations in which the students interacted with each other and with the teacher, I sometimes asked the teachers if they could help me identify students whom they knew were very active in talking to peers and initiating interaction with them as teachers. I particularly asked the teacher for help in situations in which the students were supposed to work individually and not in groups. When students worked in groups, they had to interact with each other, but when they worked individually some students were not very active in seeking guidance from their peers or their teachers. By preventing recordings of students sitting quietly, I chose students who were actively engaged in interacting with others. In the first two sections of the project work, several individuals were recorded. Although these two sections included individual writing tasks, the students often paired up and asked each other and the teachers for help and guidance. In the third section, one group of students was followed throughout the whole section. In the last section, the panel debate, the work of two pairs of students was documented. Occasionally the students finished their tasks before the lesson was over and then continued with other subjects outside the project (e.g. math or practicing English). On these occasions, the camera was moved to students who were still involved with the project work.

During the lessons, field notes were made concerning things that the camera did not catch, such as writings on the white board, names of books, addresses of web sites the students used or activities that took place outside the field of view (the reason for a student leaving his or her group etc.). Materials in the form of schedules, written instructions, and student reports were also gathered. The students and teachers were welcome to look at the research notes at any time. In the beginning, the students were curious, but they quickly established that the notes were neither amusing nor interesting. I also showed the students and teachers some examples of what a transcript could look like and what conclusions one could draw from it. This was also a way of showing the participants what kind of practices TIK and I were interested in.

The students did not show any greater interest in these, but the teachers were excited by the things one could tell by just looking at a short piece of interaction.

## Analytic procedures

After all the recordings were done, the video was digitalized, compressed, stored, and backed up on hard drives. Then the process of reviewing the data started. The reviewing process followed three steps similar to what Heath et al. (2010) described as the preliminary review, substantive review, and analytic review. At the preliminary review, a content log with a "simple description and classification of the material" was made. Here, I wrote up, for example, what kind of task the students were working with, how many students were recorded, if the teacher was part of the interaction, where the work of the students took place (e.g., at the desk or in front of the computer), and gave the participants pseudonyms. A second version of the log was produced while I viewed the whole material and "major shifts in participants (in and out of scene), of sustained postural and interpersonal distance configurations, and of major topics and/or speaking/listening activities" (Erickson, 2006, p. 184) were described. This was a more substantive review: the whole material was written out in a descriptive form and single utterances or smaller exchanges of talk were roughly transcribed.

As the next stage, recurrent activities were marked in the log, for example, all instances of student-initiated interaction with the teachers. After this, the log was sent to the participants in the research project in order for them to get a grip on the material. We then started to work together to find different interests in the material. The first thing we wanted to look closer at was how the students dealt with this kind of task when the teacher was not present. This resulted in looking deeper into the material where the students discussed how they should interpret the instructions and deal with the task that they had (see Study 1). Another issue that I found interesting was the student-initiated questions to the teacher (see Study 2) and how the closings were organized in the student-initiated talk (see Study 3).

When a point of interest was found, these instances were marked in the log for an analytic review, and the video was edited into shorter sequences. By repeatedly viewing these sequences, I was able "to explore the ways in which participants accomplish practical activities in and through interaction with

others" and to study how "the production and interpretation of action relies upon a variety of resources – spoken, bodily and of course material resources, such as objects, texts, tools, technologies and the like" (Heath & Hindmarsh, 2010, p. 100). Another part of the analytical procedure of the data is that the recordings and transcripts were shown to other researchers at local data seminars. At these seminars, several researchers from different traditions contributed valuable feedback, and they helped judge "the persuasiveness and validity of insights and analyses" (Hindmarsh & Heath, 2007, p. 158).

## Transcriptions and representations

Even though the "transcriptions and representations" are presented in their own section here, the work with these should not be seen as separate from the rest of the analysis. As explained in the previous section, the transcripts were made through repeated viewings of moments that enabled detailed transcriptions of those moments. Although the repeated viewings of video recordings provide the primary analytical access to the investigated phenomena, the transcripts can be seen as "constructive exercises" (Macbeth, 1998) that are necessary for the analysis and representation of interaction and bodily conduct. A transcript is, in this sense, not only an "object for interpretation, but also a record of interpretative work" (Macbeth, 1998, p. 152). During the transcription of the video recordings, several interpretative decisions need to be made – where the transcript should start and where it should end, if and how the transcripts are to include representations of bodily conduct, how the verbal interaction should be translated, and so on. In addition, editorial decisions have to be made in relation to the constraints of a book or a journal publication. As argued by Mondada (2007), a transcript:

> is an evolving flexible object; it 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. (p. 810)

All the analyses were initially done on the Swedish transcripts and through repeated viewings of the data. After the Swedish transcripts were analyzed they were translated into English. This proved to be quite a complex procedure since it was hard to match the original transcripts with English transla-

tions. Comments from native English-speaking colleagues who speak Swedish as a second language have contributed to making the translations as accurate as possible. The transcripts presented in this thesis were primarily done in line with the transcription convention originally developed by Gail Jefferson (1984):

| | |
|---|---|
| (.) | Micro pause (pause shorter than 0.3 seconds). |
| (0.5) | Pause (pause longer than 0.3 seconds). |
| = | Shows that there is no pause between two utterances. |
| [word] | Indicates the start and the end of overlapping utterances. |
| wo– | Indicates that the talk is cut-off. |
| word::: | Indicates a prolonged sound (the more colons the longer sound). |
| <word> | Indicates faster talk. |
| <u>word</u> | Indicates emphasized talk. |
| WORD | Indicates loud talk. |
| °word° | Indicates quiet talk. |
| ↑↓ | Shows a higher or lower pitch. |
| ? | Indicates question intonation. |
| , | Shows a continuing intonation. |
| wo(h)rd | The (h) indicates where there is a giggle in the talk. |
| .hh | Indicates an in-breath (the more h's the longer in-breath). |
| hh. | Indicates an out-breath (the more h's the longer out-breath). |
| (word) | Indicate insecurity on the transcriber's behalf about what was said. |
| ((word)) | Shows the transcriber's descriptions of, e.g., the participants' movement, gaze or orientation. |

There are some modifications of the transcription convention in the different studies. For Study 1, the parts where the students read pieces of texts out loud are indicated with *italics* as illustrated by the transcript below:

```
201. Benny: this is not particularly good ((points to a printout))
            really (.) that we have uhm (.) a lot of oil and that it's
            like (1 s)
202. Annie: n[o:: but uhm ]
203. Benny:  [one of our most impor]tant sources of income
204. Annie: uh(h)m nope (.) uhm ((reads her notes))(2 s) but I have
            written like this ((reads out loud from her notes)) over
            the years we have unfortunately built up a large nuclear
            and oil indust- (.) nuclear a- and oil industry or
            something like that
```

METHODS

The reading out aloud was sometimes hard to analyze, but the activities that we interpreted as reading out aloud occured when the student was looking down at the text and made a sweeping movement with his or her hand/pen over the text that was verbalized. Utterances such as "but I have written like this" (204) also indicated to us, and to the peer, that a text was to be read out aloud.

In Study 2, the descriptions of participant embodied actions "are delimitated between ** and synchronized with correspondent stretches of talk" (Mondada, 2006, p. 128). The embodied actions are marked in the original language to prevent misplacement in relation to the stretches of talk. In Study 3, pictures are also used to give an illustrative presentation of particular instances of bodily conduct (cf. Goodwin, 2000, 2009; Mondada, 2009; Reza Majlesi, 2014). Study 3 includes a closer analysis of the participants' overlapping orientations and actions, and Mondada's (2007) transcription convention of multimodal details is used.

```
208        *(0.5)* #
                  #im.4
     ten:  *makes a rolling movement with her hands*
209  TeN:   m::↑     (0.4)           ↑good
           #*m::↑*   (0.4)        #*↑bra
           #im.5                    #im.6
           *smiles, looks at Amy  *starts moving away,
           takes a step back*      move her hands back and forth, then leaves-->>
```



         4                      5                      6
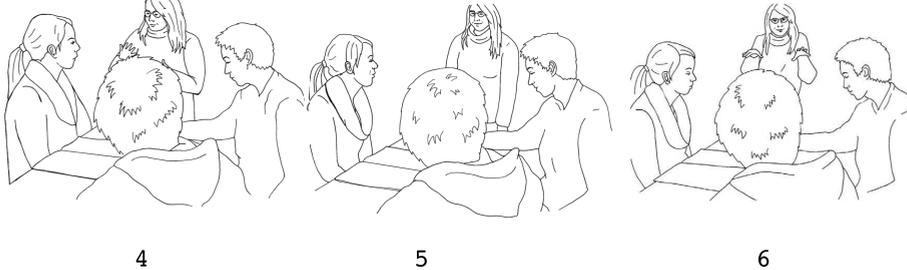
# Ethical considerations

The research project TIK and the plans for the associated fieldwork were examined and approved by the Swedish Regional Ethical Review Board for research involving humans. In line with the ethical guidelines, a letter of consent and an information sheet about the research project were sent to the students'

parents before the fieldwork and recordings started. This letter explained the purpose of the study and how the material would be used and stored. The letter also told the parents that all participation was voluntary and that the students could withdraw from the study at any time. TIK wanted the students and their legal guardians to give their approval. In the beginning of the fieldwork, one student, whose parents approved, did not want to be part of the recordings. After a couple of days, however, he changed his mind and said that he wanted to participate. In the end, the two teachers, all participating students, and their legal guardians, agreed to participate in the study, and no one backed out.

When it comes to the analytic work, all participants were given pseudonyms, and the name of the school is not revealed. When pictures are used, they are filtered to anonymize the participants. I hand-drew the pictures and changed features in the participants' appearance that could reveal who they are. The material is stored its original form as tapes in a locked and fire-resistant safe in a research lab (the LinCS-lab). In the lab, backups of the digitalized material are kept as well. Some of the material is also stored on a secure, password-protected server provided by the university.

# Chapter 8
# Summary of the studies

As pointed out in the introduction, this thesis raises three related research question: (1) How are instructions given and received? (2) How do students and teachers deal with the inherent and designed openness of the tasks? (3) How are the encounters between teachers and students materially, bodily, and interactionally organized? This chapter provides a summary of the three empirical studies and a discussion of each in relation to the research questions. Study 1 focuses on a series of episodes where two students work with the task of preparing and performing a panel debate. Studies 2 and 3 focus on instances of student-initiated interaction with teachers. Study 1 shows how the students interpret the task and how they position themselves in relation to the expectations of this task. Study 2 explicates how the student-initiated sequences are situated in the ongoing work with the project. Study 3 addresses how talk and bodily conduct are coordinated and sequentially organized in the closing of these encounters, and how the two parties negotiate the transition from instruction to the closing phase.

## Study 1: Knowing and arguing in a panel debate

This co-authored book chapter (Åberg, Mäkitalo, & Säljö, 2010) builds on a series of episodes where the students prepare themselves for and then participate in a panel debate. As mentioned in Chapter 1, this study takes a theoretical departure other than ethnomethology and CA. The study is situated within a sociocultural perspective and more directly addresses issues that frame the research project TIK. Nevertheless, the study has similar interests as the other two studies and addresses how tasks are discussed and approached within their local contexts.

In the investigated assignment, the teacher has assigned different countries to the students and the students' task is to represent their country's environmental politics in the debate. The study follows two students who have been assigned to represent Russia. The result of the study is divided into two parts. The first part shows instances from the preparation phase, and the second part shows instances from the actual debate. The analytical interest of the study concerns how the students produce accountable arguments before and during the actual debate. There is also an interest in epistemic responsibility – to what extent and in what manner the students take responsibility for the arguments they introduce. The following research questions are raised in the study: what stance do the students take to the information they have collected about their country? How do they position themselves as speakers in relation to this information? How do they respond to potential criticism and arguments from their opponents, i.e., how do they rhetorically incorporate such potential criticism in their own argumentation?

The results of this study show how the students give voice to their assigned country, and how they strive to display their responsive understanding of the environmental problems. The study also shows how the students organize the information so that it expresses an informed and well-argued point of view. When approaching the task, for instance, they make a clear distinction between what is considered 'positive' and 'negative' facts to be accounted for when describing the country they are representing in the debate. During their work, the students express frustration over not finding many positive facts about Russia's environmental policies. As one of the students put it, "we're lucky to at least having signed the Kyoto protocol that's something good". They are instead confronted with several facts about their country that they frame as "not particularly good". Two such negative facts are that Russia has nuclear power and that the country is economically dependent on its oil industry. In order to account for their own evaluative stance in relation to these "not particularly good" facts, the students invent future actions that will be taken against these facts. This is done by first presenting the negative facts in the form of a confession and/or apology, as for example, "over the years we have unfortunately built up a large nuclear and oil industry" or "this is not something we are proud of". Then they invent a future policy for how their country compensates this, as for example, "we will of concern for the environment from now on try to (.) cut down on that".

In the performance of the actual panel debate, the students are confronted with questions from their peers that concern these negative aspects of their country, and the two students answer these questions according to their preparations. An interesting aspect of the panel debate is that all the students seem to take a similar stance toward what is considered negative about a country (such as nuclear power) and what is considered an acceptable argument for future measures (for instance, replacing nuclear power with "water power" and "wind power turbines"). The interaction in the panel debate also shows that the two students representing Russia rhetorically invent arguments when they are approached with questions that they have not prepared an answer to. When, for example, an opponent student questions how Russia is going to deal with the poor safety of their nuclear power plants, the students invent the answer that they will "improve safety" and then "reduce the nuclear power".

Overall, this study shows that the students are not only representing the country they have been assigned but are also displaying their own evaluative stance as students. The study demonstrates how the students produce accountable arguments and how they display an epistemic responsibility in relation to the information they find, for example, how they rhetorically invent arguments that concern future measures that their assigned country would probably not endorse in real life (e.g., that Russia would raise the price on oil so that fewer people will buy it, and instead, the money from the oil industry will go to research on electric cars). The study further discusses whether and how the performance of the task is dependent on a normative preferred discourse in this educational setting.

## Study 2: Talk, text, and tasks in student-initiated instructional interaction

This study investigates episodes in which students call on the teachers to address an issue that have emerged in the work with the tasks. The aim of the study is to demonstrate some systematic ways in which the investigated interaction is contingent on, shaped by, and manifestly oriented to the students' work with tasks and the associated texts. The study analyzes three longer fragments (from the beginning to the end of the encounters) where the students have called the teacher over to address some issue or problem.

The first fragment shows a student who has just started to work on a task and who wants the teacher's help to interpret the written instructions. The

student initiates the encounter by asking the teacher what she means with the instructions and the teacher responds by specifying the instructions. As the teacher is the author of the instructions, the students question posed no immediate problems to the teacher. The teacher provides examples on how the students could continue with the task, at the same time as she leaves certain decisions of what to include in the text to the student. In the second fragment, the student is in the midst of writing up information that she has found about a subject in a textbook. In this fragment, the problem is situated in the particularities of the students work and the student needs to contextualize the problem, by telling the teacher what she has already done and read, before the teacher is able to respond. In the last fragment, the student has written a text and hands it over for the teacher to read. After having read the text, the teacher raises an issue that the student should develop further.

The study demonstrates how the teacher's instructions are contingent on the students' contributions and how the students' responses are contingent on the teachers' instructions. The three episodes are situated in different phases – in the beginning, middle, and end – of the students' work with a task, and the concerns are located in various texts that the students are working with. Since the project work does not consist of solving a series of well-defined tasks, it is not always that the students first point to the texts and then immediately get an explanation. Instead, the formulation of a problem can involve the extended efforts of the students and teachers. On a general level, the students' concerns can all be located in the relation between what they have done or are about to do, on the one hand, and what they are normatively supposed to do, on the other (or in the students' inability to secure this relation). If the students are to progress with the tasks, they continually need to make decisions about what to do next. The students also need to decide whether what they have done satisfies the standards set up by the teacher. What distinguishes the teachers' instructions in all of the sequences represented in this study is that the teachers do not provide a straightforward solution to the students' problems. Instead the teachers modify the students' questions, lead them into new areas to continue work with, qualify their problems, frame the tasks and prevent misunderstandings on the students side. The instructions are also held open even in the end of the instructional encounter; the teachers still leave some of the decisions of what to write, how to interpret the instructions, and how to position themselves in relation to what has been brought up, to the students.

To sum up, this study shows variations in the way issues are located in various texts, and how issues or difficulties are formulated and handled in the interaction between the students and teachers. More generally, this study sheds light on how students and teachers handle the complexities of project work. It also demonstrates and discusses how the actions of students and teachers are contingent on the formulation and localization of the issue that the students want to address.

## Study 3: Verbal, bodily, and material resources in the closing of instructional encounters

While Study 2 focuses on how problems are formulated and answered, this study investigates how the encounters between students and teachers are closed. Although most research on closings has examined telephone conversations, recent work has also investigated the closing of face-to-face encounters. As noted by Schegloff and Sacks (1973), "in face-to-face interaction, a whole range of physical doings and positionings, ruled out by the properties of maintaining a show of attention and interest, become available and/or required upon termination, for example, those related to leave-taking" (p. 323). In the recorded material, the students sit at their desks and work on various tasks. The teachers are mobile and walk between students by responding to their requests for guidance and instruction. This means that the interaction primarily is centered on the problems that the students have encountered (see Study 2). Given this organization, a central issue for the teachers and students is when the teacher is to leave the students and move on to someone else. The aim of this study is to show some of the methodic practices used to achieve and negotiate closings of these encounters. Two related issues are addressed: how talk and bodily conduct are coordinated and sequentially organized in the closing of the encounter and how the two parties negotiate the transition from instruction to the closing phase.

In all investigated sequences, the students have called on the teacher to address a problem that they have. The main business of the encounter is to address this problem – and thus to enable the students to move on with the task. The results show that at the end of the instructional sequence there is a transition from the business of the encounter to the activity of closing. This is done at a closing relevant environment – when the topic or question has been dealt with and the students are able to continue their work on their own. The analy-

sis shows that the teacher's pre-closing activities, such as high-grade assessment and gradual withdrawal while still looking at the students, make it possible to check whether the students are prepared to move on. The students might show that they are ready by orienting towards their work or they can show that they are not ready by posing another question or by signalling in some other way that they need further help.

The study also shows that the students do not share the same resources for initiating a closing as the teachers do. The resources available to students for initiating closings of the encounters are to be found in the register of hearership rather than speakership. The students can show that they are ready to move on by orienting toward the task, by gathering their books and texts, by not picking up on what the teacher is saying, or by displaying disinterest through reorientation of gaze and the design and position of response tokens. The teacher, however, often ignores this and she continues giving instructions until certain issues have been dealt with. In the end, not until the teacher moves away from the group is the encounter definitely terminated.

# Chapter 9
# Discussion

All the included studies of this thesis set out to explore the interactional organization of tasks, resources, and instructions in project work. Through detailed analyses of teachers' and students' interaction, the studies show how instructions are formulated and received, how the inherent and designed openness of the tasks and instructions are handled, and how the investigated episodes are sequentially, bodily, and materially organized. In this last chapter, results from the studies are discussed and some themes explored in previous chapters are discussed in light of the studies.

## Instructions and the openness of tasks

In the research literature and the public debate, it is easy to find a distinction between traditional teacher-led lessons and student-centered education (cf. Brown, 1992; Lemke, 1990; Postholm 2006; Skidmore, 2006). In many of these accounts, teacher-based lessons are described in terms of transmitting information or knowledge to the students. The teacher is the active party whereas the role of the student is to be receptive. Student-centered activities, in contrast, are conceived in terms of students' active involvement. The students are active whereas the teacher has a supportive role as a guide or supervisor. In this way, it is believed, that the authority is distributed more evenly among the participants. In these characterizations, it is also pointed out that students learn different things from teacher-led lessons and student-centered activities. Traditional lessons are associated with rote learning of stable facts, whereas project work is suggested to improve students' ability to find and examine facts and enable the students to assess the consequences of different positions and arguments.

While there evidently are differences between traditional lectures and educational arrangements such as project work, these very crude distinctions and

characterizations are also problematic. It is important to keep in mind that the metaphors used to talk about teaching and learning, such as transmitting knowledge and student active involvement, have a long history in educational debates and research (Reddy, 1979; Säljö, 2015; Sfard, 1998). To associate a metaphor with a certain type of educational arrangement, therefore, might be misleading. The metaphors, although they can be useful in thinking and talking about teaching and learning, might also distract and distort our understanding of what is done in actual practice. The idea of the teacher as a guide or as a supervisor can be useful in the design of instructional activities but does not necessarily say that much about what teachers actually do in these situations. To simply state that students are more or less active, that teachers have more or less authority or exert more or less control, does not say much about what students and teachers do in the classrooms. In Chapter 5, Merritt and Humprey (1979) were quoted saying that "the most satisfying way to compare 'structured' classroom style teaching and 'open' classroom style teaching will turn out to be *not* in terms of differences in degree of teacher control but rather in terms of differences in the way control is manifested" (p. 302, italics in original). The interest in this thesis has been in various manifestations, perhaps not so much of control but of instructions, instruction following, and instructional interaction.

As argued in Study 2, there is an inherent openness to all instructions (Garfinkel, 1967). In educational contexts, moreover, there is also designed openess to tasks and instructions. In the investigated setting, the teachers leave many central decisions to the students. An expressed aim of the assignments is that the students should learn how to use and critically examine different arguments and how to position themselves in relation to the information they find. The students are supposed to find information and organize this information in ways that are relevant to the task, and they are supposed to express an informed and well-argued point of view in their texts. Study 1 shows how the students are dealing with the openness of instructions when they are working with a speech for a panel debate. In the study, the students have to decide what kind of facts to include, formulate a position in relation to those facts, and give an account for their own evaluative stance in relation to the information they present. As shown in the analysis, however, the students not only position themselves in relation to the information they find, but they also address what they consider to be normative expectations by teachers and peers. In an empirical study of the teaching and learning of uni-

versity-level academic writing, K. Macbeth (2004) makes some parallel observations:

> Academic writing is filled with cultural reckonings, judgment of propriety, and figure-ground relations. The occasions for these reckonings are in turn tied to settings, tasks, and purposes that are neither fixed nor stable yet regular and recognizable. By these understandings, we might then expect that teaching these social practices to novices through a wholly formal curriculum is more than the most scrupulous lesson plan can do. For newcomers, who do not share in the larger cultural histories that ground the objects and arrangements of the community of practice they hope to join, learning then requires exposure to practice, both of which involve endless interpretive tasks. (p. 166)

Following this line of reasoning, the assignments in the project work expose the students to "endless interpretative tasks", which make relevant "cultural reckonings, judgment of propriety, and figure-ground relations". The teachers are the ones who set the agenda and plan the arrangements of the project work. They are the ones who formulate the instructions and aims, provide guidance, frame the tasks, and in the end assess and grade the students' work. This means that the students need to approach and address normative expectations in relation to what they have done and what they are supposed to do. While written instructions and guidelines are central to the students work, they cannot simply or passively rely on the instructions if they are to progress with the assignments.

The project-based nature of the students' work means that they continually have to decide what to do next. These decisions, in turn, raise issues about the students' work in relation to the instructions and the task. The students themselves do not have the full rights, responsibilities, or means to assess the correctness or relevance of a chosen course of action. Still, they are responsible for handing in something relevant in the end; otherwise they will fail the task. For the students, this poses a number of difficulties. Not only do they have to figure out what the instructions require, but they also need to assess whether what they have done satisfies the standards set up by the teacher (cf. Amerine & Bilmes, 1988). As exemplified by Lillis and Turner (2001, p. 55):

> Knowing that they had to write an introduction told the students little about what was required in an introduction; calls for the need to cite authorities and sources did not help them to work out when it was likely to be necessary to refer to sources: calls for the need to avoid plagiarism did not

> help them to work out what counted as plagiarism, nor how to write in their "own words".

In an important sense, these difficulties are unavoidable. The very idea with the project work is that the students should do things that they have not mastered. However, this does not mean that the difficulties are impossible to overcome. Most importantly, the students are not left alone. The project work is conducted in a classroom, and the teachers are overseeing the students' work. Among other things, this means that the students can attract the teachers' attention when needed. Study 2 and 3 focus on the interaction between teachers and students, and how instructions are given and received. In both studies, it is the students who initiate the instructional interaction. The students are checking whether they are on the right track and whether what they have done so far is correct or good enough. The students also ask questions about the instructions, what certain concepts mean, and so on. In most of the investigated cases, the students' questions are responded to by extended instructional sequences. Study 2 shows how the teachers lead the students through tightly structured sequences of instructions in which the teachers monitors the students' responses and adjusts their instructions accordingly.

Study 2 also shows how the so-called IRE-sequences are used in the instructional interaction. Ethnomethodological and conversation analytic studies of whole-class instructions have shown how teachers, through their questions and the students' responses, build up argumentative lines of reasoning (Margutti & Drew, 2014). These studies have also demonstrated that IRE-sequences are not only used to generate answers from students but to build resources for them (Lee, 2008). Similarly to instructions in whole class settings, the instructions in the investigated project work aim to model a method of responding and to guide the students into certain ways of reasoning. At the same time, the IRE-sequences found in Study 2 and 3 have some specific characteristics. Firstly, they are occasioned by a problem or issue experienced by a student or a group of students working with a task. Second, these issues are addressed in the interaction between the teacher and the students who called the attention of the teacher – they are not addressed to the whole class. Third, these sequences, and the instructions they provide, point to what the students should do next. Fourth, even though the sequences provide resources for the students to answer the teacher's questions, what the students should do next, when the teacher leaves, mainly remain unspecified and open. In these sequences, the teacher modifies the students' reasoning, addresses

potential misunderstandings or mistakes, frames the task, evaluates and points out weaknesses in the students' work, and so on. Still, when the teacher has left the students, and the students are to continue with their work, there is plenty of room for interpretation of what to do next, and how the teacher's comments should be used and transformed into action.

## The verbal, bodily, and material organization of instructional interaction

Studies of classroom interaction, similar to studies of interaction more generally, have mainly focused on talk. Early research was largely based on audio-recordings, and consequently, there was no technical access to bodily conduct, but even now, when most research projects record audio and video, the emphasis is on classroom talk. In one sense, this is not that strange. Teaching and talking are closely intertwined. There is much sense to Sharrock and Anderson's (1982) characterization of classroom instruction as "talking through a subject in such a way that it can be learned" (p. 171). At the same time, there is a danger of being blind to the visual, embodied, and material features that constitute classroom life. In contrast to a lecture, where the interchange between the teacher and the class might fill the room from the lecture's beginning to the end, much of the project work is done silently – by reading instructions, documents, and textbooks and by writing essays and papers. In Study 1, where the students are working in pairs and are preparing for the upcoming debate, the students search for information and turn this information into arguments that they then use in the upcoming debate. The formulations of the arguments are done both verbally and in writing. By reading what they have written out a loud, the students test if their arguments hold and they edit their text accordingly. The students' progress with their work is thus closely related to what they write, read, and talk about.

When the students encounter problems with how to progress with their work they call the teacher for help. The students' request for teacher attention is contingent on the physical arrangement of the classroom. The students are sitting down, working in peer groups with projects, whereas the teacher is mobile and moves around from group to group. While the teacher observes students' work, the students also monitor the teacher's current conduct in order to request her attention and establish "conversational access" (cf. Merritt & Humphrey, 1979). Before the students can request the teacher's help, they

need to locate the teacher's position. In doing this, they visibly orient their body toward the teacher (e.g., turn their whole body around to face the teacher), and they tend to gaze at the teacher trying to make eye contact. They then request the teacher's attention by verbally calling the teacher, by raising their hands, or a combination of the two. Whether the teacher is close or at the other end of the room, and whether she is moving around or helping another group of students, are critical for the way that the students design these requests. If the teacher is nearby and not occupied with other students, the students may say or shout the teacher's name. If the teacher is busy helping other students, the students often raise their hand in the air and wait.

In a study of hand-raising in whole-class teaching, Sahlstöm (2002) found it was "one of the most important devices used for turn-allocation" (p. 48). Although students in whole-class settings and the settings investigated here could be seen as competing for the teacher's attention, the way they do this differs. The students investigated by Sahlström raise their hands in order to get permission to answer the teacher's questions, whereas the students in the investigated project work raise their hands to signal that help is requested. In the whole-class activities, the students' contributions are contingent on what the teacher has asked as well as on previous contributions by other students. In the project work activities, the students do not necessarily have to rely on what the teacher just said or did. They do not raise their hands to answer the teacher's questions, but to ask question by themselves. The hands consequently stay up until they get the teacher's attention or they decide that they do not need, or do not manage, to wait for the teacher any more. When the teacher arrives, the students are expected to formulate the issue to which they want the teacher to respond. The teacher, in turn, is expected to find, address, and perhaps even resolve this issue. Sometimes, this is straightforward, but at other times, extended instructional work is needed before a problem is dealt with in a way accepted by teachers and students.

A central interest of the thesis is the ways in which material resources are used in the students' work and in their formulation of a problem: the students point out sections or sentences in texts, show pictures in books, read pieces of the texts out loud, and so on. When the students have a question that concerns something that they have written or read they regularly point to relevant elements of the text and give the teacher a background to their problem. In their work with the projects, the students are using newspapers and journals, texts found on the Internet, books collected from the library, and so on. The-

se texts have not always been read by the teacher and have to be both shown and contextualized in terms of the specific problems that the student have. As Study 2 shows, the students problems are contextualized in relation to what stage of work they are at and what specific material resource they are working with. In one of the cases, a student calls the teacher over to address a problem that she has encountered in a book. The student starts to give the background of her problem by telling the teacher what she has been written in her notebook at the same time as she points out paragraphs in her written text. When the student orients to another book to further specify her problem, the teacher breaks in and puts her finger in the student's notebook and highlights certain aspects in the writing. By responding to this by saying "but what I was wondering about", however, the student displays that the teacher's instructions do not directly address the problem that the student was experiencing. Instead, the student picks up another book, and in this book she points to a picture and starts telling the teacher what the book shows but also what the book does not say. The student is then able to formulate her question.

The materiality of the instructional interaction is also central to the closing of the exchange. Similar to many other communicative situations, the participants, "in very delicate and systematic ways, negotiate for conversation termination or conversation continuation" (Button, 1990, p. 344). As demonstrated in Study 3, the teachers and the students have different resources available to them when it comes to initiating the closure of the instructional encounters. The interaction between the students and teachers ends when the teacher leaves the student or the group of students. As demonstrated by previous studies of closings, however, the movement toward this moment is done in a stepwise manner. Before they leave, the teachers have regularly done two things. First, they have provided the students with some kind of "arrangements for future activities", which could be seen as a "way to bound off and shut down topics" (West, 2006, p. 385). Second, they have assessed the students' work thus far, which, as demonstrated by Goodwin and Goodwin (1987), is "one of the characteristic activities used to exit from larger sequential units in talk" (p. 38). That the closing by the teacher is done in a stepwise manner also give an opportunity for students to move out of closings – for instance, by pointing to an additional problem or by raising a question.

While students also might orient toward the closing of the interactional exchange – by re-orienting toward their work, packing up things, not providing the preferred responses, or displaying interest in their responses – they cannot

force the teacher to leave. As demonstrated by all studies in this thesis, however, the teachers' actions are nevertheless responsive to the verbal contributions, bodily displays, and orientations of the students.

Goodwin (2002) points out that the gestures and postures of the participants to a social encounter "display crucial information about the temporal and sequential organization of their joint participation in the current interaction" (p. 19). The studies of this thesis illustrate this general observation and show how postures and gestures are central for the ways in which the interaction in project work unfolds. More generally, the studies show how the interactional organization of tasks and instructions not only are dependent on talk but also on a wide range of material and bodily resources.

## Conclusion

Following Payne and Cuff (1982, p. 3), this thesis begun with the assumption that "the routine, mundane practical activities" which are found in schools are fundamental since the "mundane makes up most of what goes on day by day". During the last two decades, project work has become a common way of teaching in Swedish schools. There is no doubt that it is relevant to understand this shift in terms of learning or learning outcomes. The argument here, however, is that it is also important to get an understanding of what project work means in terms of actual classroom practice. Without assessing the educational value of project work, the thesis has aimed to show what teachers and students actually do when they are engaged in project work.

The attempt is not to provide a complete picture of project work, but to focus on some interesting practices and analyze those practices in detail. Taken together, the empirical studies can be used to substantiate and discuss general claims about "student autonomy" and "teacher authority" that are common in the field of education. As has already been pointed out, however, the purpose of this thesis has not primarily been to provide arguments to a debate, but to get a better understanding of how project work is practically accomplished. The studies have explored how instructions are given and received, how students and teachers are dealing with the inherent and designed openness of the tasks, and how the encounters between teachers and students are materially, bodily, and interactionally organized. The purpose of the thesis has thus been to provide an understanding of an educational format that is becoming increasingly common – to go beyond the rhetoric that surrounds

project work and provide an understanding of its interactional, practical, and material conditions.

# Chapter 10
# Swedish summary

## Att delta i projektarbete: Den interaktiva organiseringen av uppgifter, resurser och instruktioner

Som titeln på denna avhandling avslöjar ligger det övergripande intresset i hur projektarbeten skapas och hanteras i interaktion mellan lärare och elever. Det har blivit allt vanligare att undervisning organiseras som till exempel grupparbete, projektarbete eller eget arbete (Carlgren et al. 2006; Nyroos, 2006; Sahlström, 2008). Projektarbeten är dock ingen ny företeelse i skolan. Till exempel menade Dewey (1916) att undervisning måste ske på mer demokratiska grunder än de som oftast gestaltades i den traditionella katederundervisningen. Enligt Dewey skulle undervisningen helst organiseras utifrån elevers egna intressen och engagemang. Han hävdade bland annat att elever behöver få möjlighet att diskutera, analysera och ställa egna frågor för att de ska kunna skapa mening och förstå sin omvärld. Enligt Dewey är lärarens roll central i det att planera ett upplägg och att vägleda eleverna in i outforskade områden. Detta är tankar som är vanligt förekommande än i dag och som har varit centrala för framväxten av en så kallad "elevcentrerad pedagogik" (Englund, 2000; Lundgren, 1985, 2002; Säljö et al. 2011).

Trots dess långa historia och dess omfattning i dagens undervisning är dock det praktiska genomförandet och den interaktiva organiseringen av undervisningsformer som projektarbete ett relativt outforskat område. Tidigare studier av projektarbete har mestadels studerat det innehåll eleverna tar upp och vad detta kan innebära för deras lärande (Krajcik et al., 1998), de svårigheter som eleverna stöter på och hur lärare kan överbrygga dessa (Jiménez-Aleixandre et al., 2000; Edelson, Gordon, & Pea, 1999; Barron et al., 1998;

Marx et al., 1994, 1997) samt hur didaktiska modeller som tar upp ett specifikt innehåll bäst kan användas (Driver et al., 2000; Kolstø, 2001; Zeidler, 1984).

Studier av projektarbete handlar således ofta om att värdera elevers kunskaper, ge riktlinjer för dess genomförande, utvärdera lärares implementation och framställa normativa modeller för hur elever bäst lär sig. Det är också vanligt att projektarbete och liknande arbetssätt ställs i kontrast med lärarledda helklasslektioner. Elever i helklassundervisning beskrivs ofta som utan inflytande och som mottagare av onyanserad information. Medan kommunikationen i helklassundervisning påstås stödja lärarens makt och auktoritet, ska kommunikationen som sker i projektarbeten drivas av elevernas egen motivation, intressen och nyfikenhet (se t.ex., Lemke, 1990; Nystrand, 1997; Skidmore, 2006; Wood, 1992).

En något annan bild ges av etnometodologisk och konversationsanalytisk forskning av klassrumsinteraktion. Oavsett hur klassrumspraktiken är organiserad visar denna forskning hur lärare och elever tillsammans formar undervisningen. Genom att i detalj analysera det interaktiva samspelet mellan lärare och elever undersöker dessa studier bland annat hur lärarens instruktioner ramar in uppgiften, hur den leder elever in på nya förhållningssätt och förhindrar eventuella misstag eller missförstånd (Greiffenhagen, 2008, 2012; Lindwall & Lymer, 2008; Macbeth, 1994; Margutti & Drew, 2014; Mehan, 1979). Dessa studier visar också hur lärare försöker göra ett innehåll eller specifika aspekter av en lektion synliga och förståeliga för eleverna.

Den här avhandlingen delar de sistnämnda studiernas analytiska intresse för hur aktiviteter skapas och organiseras av de medverkande själva. Avhandlingen tar därmed sin utgångspunkt i etnometodologins och konversationsanalysens naturalistiska ansats när det kommer till att studera interaktion, instruktion och hur undervisning praktiskt organiseras.

## Syfte och frågeställningar

Som tidigare nämnts finns det inte så mycket forskning som studerar hur projektarbete genomförs i praktiken (några relevanta undantag är Bergkvist, 1990; Lilja, 2012; Lundh, 2011). Speciellt råder det brist på studier som undersöker lärare och elevers interaktion i sådana här konstellationer (Greiffenhagen, 2008; Sahlström, 2008). Ett huvudintresse i denna avhandling är därmed att studera hur olika meningsskapande aktiviteter organiseras och produceras av lärare och elever i projektarbeten. Det finns tre övergripande frågeställningar i

avhandlingen: (1) Hur formulerar lärare sina instruktioner och hur responderar eleverna på dessa? (2) Hur hanterar elever och lärare uppgifternas öppenhet? och (3) Hur organiseras klassrummet interaktivt, sekventiellt och materiellt? Dessa frågor förhåller sig inbördes till varandra och genomsyrar de tre empiriska studier som avhandlingen bygger på. Att avhandlingen utgår från ett etnometodologiskt och konversationsanalytiskt perspektiv innebär både möjligheter och begränsningar med avseende på dess bidrag. Avhandlingen tar till exempel inte ställning för eller emot projektarbete som arbetsform. Den bidrar heller inte med förslag eller modeller för hur undervisningen kan förbättras. I stället är bidraget detaljerade analyser av den interaktion som sker i klassrummet. Genom dessa analyser blir det tydligt hur nyanserad och kontextberoende undervisning faktiskt är. Dessutom blir det möjligt att visa hur pedagogiska och sociala aktiviteter konstitueras och organiseras in situ. En förhoppning är att avhandlingen på detta sätt ska ge en inblick i och ökad förståelse för projektarbetets konkreta villkor.

## Analytiskt förhållningssätt och metod

Etnometodologin och konversationsanalysen delar ett intresse för hur vardagliga aktiviteter organiseras och upprätthålls av aktörerna själva. Båda ansatserna bygger på antagandet att social ordning är något som kontinuerligt skapas och återskapas i själva situationen. Målet för ansatserna är att demonstrera hur detta går till. Studierna i denna avhandling bygger vidare på denna naturalistiska ansats och undersöker hur undervisning skapas och organiseras av lärare och elever i klassrummet. De bygger också på ett intresse för interaktionens sekventiella organisering, något som utmärker en konversationsanalytisk ansats. Konversationsanalysen har visat hur samtalspartners kontinuerligt visar hur de förstår varandra – exempelvis hur ett svar visar att det tidigare yttrandet uppfattades som en fråga och en fråga av en viss typ. Inom konversationsanalysen finns också ett intresse för koordinationen mellan talad interaktion, kroppsliga handlingar och användandet av materiella ting.

Analyserna i avhandlingen utgår från videoinspelat material. Genom videoinspelningar möjliggörs tillgång till deltagarnas interaktion, kroppsliga aktiviteter och användning av olika material och resurser. Videoinspelningar gör det också möjligt att gå tillbaka om och om igen till den analyserade aktiviteten, vilket är nödvändigt för att upptäcka deras detaljerade organisering. Videoinspelningarna som analyserna bygger på genomfördes under ett fältarbete som

varade i fem veckor, och stora delar av materialet har blivit transkriberat med stöd av Jeffersons (1984) transkriptionssystem.

## Avhandlingens bakgrund och den studerade praktiken

Avhandlingen är skriven inom ett avslutat forskningsprojekt kallat *att Transformera Information till Kunskap* (TIK). Forskningsledare för TIK var professor Roger Säljö och de medverkande forskarna var professor Åsa Mäkitalo, professor Anders Jacobsson, doktor Patrik Lilja (disputerade 2012) och jag själv. Ett övergripande intresse i projektet var att studera hur elever lär sig skapa ny och relevant kunskap med utgångspunkt i den uppsjö av information som finns tillgänglig – information som är omöjlig att ta till sig i dess helhet. Ett annat relaterat intresse var hur människor utvecklar så kallad digital "literacy", det vill säga hur vi lär oss att förstå och värdera vad vi möter i digitala medier och hur vi kan utnyttja detta för att besvara de problem vi arbetar med. Ett särskilt intresse riktades mot undervisning där lärare och elever bedriver forskningsliknande aktiviteter, såsom projektarbeten i skolan. Frågor som drev forskningsprojektet och dess studier framåt var till exempel hur undervisning organiseras i de olika empiriska materialen, vilka utmaningar elever och lärare kan tänkas stöta på, vilka kompetenser som krävs av eleverna inom detta arbetssätt, vilket stöd som eleverna behöver och vilken roll läraren får i dessa situationer.

Inom forskningsprojektet spelades tre relativt stora empiriska material av undervisning organiserad som projektarbete in. Jag var ansvarig för ett av dessa material och det är detta material som studierna i avhandlingen bygger på. Det studerade projektarbetet, som kallades för *Resurser och Näringar*, ägde rum i en nionde klass. Projektarbetet var interdisciplinärt (svenska, historia, teknik, naturvetenskap och samhällsvetenskap) och planerades av klassens två ansvariga lärare. Under projektet arbetade eleverna med frågor som bland annat berörde hållbar utveckling, växthuseffekten och hur olika länders miljöpolitik påverkar världen. Alla de uppgifter som eleverna fick var öppet formulerade och eleverna uppmuntrades att leta efter information i olika sorters källor (internet, biblioteket, skolböcker, nyhetsartiklar och vetenskapliga artiklar). Eleverna skulle också öva på att förhålla sig kritiskt till den information de hittade samt bidra med en egen analys och reflektion. Frågorna var öppna i bemärkelsen att det inte fanns ett förutbestämt sätt att lösa dem på. Det

kunde handla om växthuseffektens orsak och verkan eller hur en framtida stad kan planeras för att det ska bli ett hållbart samhälle. Läraren introducerade först uppgifterna för hela klassen och sedan skulle eleverna själva arbeta individuellt eller i grupper. Lärarna beskrev sig själva som guider eller vägledare och under projektarbetets gång gick de runt i klassrummet och hjälpte de elever som påkallade deras uppmärksamhet.

## Sammanfattning av studierna

Avhandlingens tre studier handlar om hur instruktioner ges och tas och hur elever och lärare hanterar projektarbetets planerade uppgifter. Studierna undersöker också hur de medverkandes verbala och kroppsliga interaktion koordineras (genom t.ex. positionering, blickar, gester och pekningar) och hur denna interaktion involverar olika material och resurser.

### Studie 1 – Knowing and arguing in a panel debate

Avhandlingens första studie (Åberg, et al., 2010) undersöker hur elever bearbetar och förhåller sig till den information som de hittar under projektarbetets gång. Mer specifikt bygger studien på ett material där eleverna förbereder sig inför och sedan genomför en debatt om olika länders miljöpolitik. Studien följer två elever som har blivit utnämnda av lärarna att representera Ryssland i debatten. Analysen av detta material visar bland annat hur eleverna förhåller sig till den information som de hittar om deras land, hur de positionerar sig själva som representanter i relation till denna information och hur de retoriskt inkorporerar en potentiell kritik från deras kamrater i argumentationen. Studiens resultat är uppdelat i två delar: en del som analyserar elevernas förberedande arbete och en del som analyserar den interaktion som sker under själva debatten.

Resultatet av elevernas förberedande arbete visar att de delar in de fakta de hittar om Rysslands miljöpolitik i "bra" respektive "dåliga" sidor. Till exempel lyfts det fram som positivt att Ryssland har skrivit på Kyotoprotokollet medan de uttrycker att det är negativt att landet är beroende av kärnkraft och olja. När de hittar vad de anser vara negativa fakta uppstår också ett dilemma. Eleverna är medvetna om att dessa negativa fakta kan komma att vändas emot dem i den framtida debatten och börjar utforma motargument för att kunna möta dem. I argumenten börjar de med att erkänna problematiska områden på ett ursäktande sätt för att sedan presentera fiktiva åtgärder som beskrivs mot-

verka de negativa sidorna. Att Ryssland har kärnkraft och är ekonomiskt beroende av olja framställs exempelvis som att de "tyvärr" är bundna till dessa källor och att detta inte är något som de "är stolta över" och att de nu "med tanke på miljön ska försöka dra ner på det" och i stället satsa på "forskning inom elbilar".

Den andra delen av resultatet i studien visar hur eleverna retoriskt använder sig av dessa argument i själva paneldebatten (där länderna Ryssland, Bangladesh, Kina och Sverige också fanns representerade). En intressant aspekt med paneldebatten är att alla elever verkar ha samma värderingar när det gäller vad som ses som negativa fakta och vad som anses vara potentiella lösningar av dessa negativa aspekter. Till exempel får Ryssland en fråga som berör deras kärnkraftverks dåliga säkerhet. Denna fråga besvaras med att Ryssland kommer att förbättra säkerheten för att sedan börja avveckla kärnkraften. Detta accepteras som svar – eller det ifrågasätts i alla fall inte öppet av deras kamrater. I klassen verkar det finnas en normativ orientering mot hur man ska förhålla sig till sådana här fakta och frågor. Motparterna skulle kunna ifrågasätta varför Ryssland inte bara förbättrar säkerheten och låter kärnkraften vara kvar eftersom den inte bidrar till växthuseffekten. Detta är dock inte något som görs. Det är inte heller någon som ifrågasätter huruvida Ryssland faktiskt skulle genomföra dessa åtgärder som presenteras – om det är en miljöpolitik som är reell i landet som representeras.

Sammanfattningsvis visar den här studien att undervisningsupplägget inte enbart handlar om att eleverna ska presentera fakta om deras land utan även att de ska visa en medvetenhet och positionerna sig i relation till dessa fakta. Vidare diskuterar studien de åtaganden som eleverna ställs inför samt vilka dilemman eller utmaningar de möter i förberedelserna och genomförandet av själva debatten. Slutligen diskuterar även studien hur elevernas arbete eventuellt påverkas av de normativa förhållningssätt som finns i klassrummet.

## Studie 2 – Talk, Text, and Tasks in Student Initiated Instructional Interaction

Studien bygger på ett material där eleverna ber lärarna om hjälp när de stöter på ett problem i deras arbete. Studien syftar till att visa hur eleverna formulerar och presenterar sina problem genom frågor till läraren och hur läraren tolkar och svarar på dessa frågor. På ett övergripande plan visar resultatet i studien hur elevernas problem lokaliseras till den uppgift eller text som de arbetar

med. Studien visar också hur frågeformuleringarna är kopplade till den fas av uppgiftslösande eleverna är i – om de är i början, mitten eller i slutet av en uppgift. Analysen visar också att eleverna ställer frågor som på olika sätt berör de instruktioner som de har fått: de vill att läraren specificerar uppgiften och instruktioner, de frågar om hur olika texter ska användas och tolkas och de vill att läraren läser deras texter för att sedan bedöma dem.

De analyserade sekvenserna demonstrerar sammanfattningsvis på sambanden mellan det eleverna arbetar med, de problem som de stöter på, den hjälp de söker och de instruktioner som läraren ger. Vid vissa tillfällen, som till exempel vid frågor som berör instruktionernas betydelse eller frågor om läraren kan bedöma deras arbeten, behöver eleverna inte ge någon bakgrund till hur deras fråga har uppstått. Detta måste de dock göra om de har arbetat med en uppgift ett tag. Vid frågor som berör innehållet i en egenförfattad text måste eleverna först presentera vad de har gjort innan de kan formulera det problem som de har stött på. Som visas av analyserna är detta inte helt okomplicerat. Eleverna har ibland svårigheter att formulera sina problem samtidigt som läraren aktivt letar efter ett problem att adressera i elevernas formuleringar; läraren kan bryta in med ett svar innan eleven har hunnit formulera sitt problem. Det sker då en förhandling mellan de båda parterna om vad problemet egentligen består av.

Vad som blir utmärkande för alla sekvenser i denna studie är att lärarna inte ger en direkt lösning på problemet utan att instruktionerna är utformade så att de lämnar en öppenhet för elevernas egna tolkningar. Tidigare forskning har visat att all instruktion innehåller en viss inbyggd öppenhet – det vill säga att den som ska tolka instruktionen kan göra det på en mängd olika sätt trots att instruktioner ger en steg-för-steg-beskrivning av hur aktiviteten ska gå till (Amerine & Bilmes, 1988; Garfinkel, 1967). I projektarbetet har både verbala och skrivna instruktioner en medvetet skapad öppenhet då de lämnar vissa beslut till eleverna: vad de ska skriva om, vad de ska fokusera på och hur de ska positionera sig själv i relation till det de hittar och så vidare (se studie 1). I själva uppgiften ingår det att eleverna kan tolka den på olika sätt. Även om det finns en öppenhet i hur uppgifterna och instruktionerna är formulerade, och eleverna själva ska ta vissa beslut i hur uppgifterna utformas betyder dock inte detta att lärarna avstår från att granska vad eleverna säger, förstår eller har skrivit. Lärarna modifierar elevernas frågor, leder in dem på nya vägar att arbeta vidare på, kvalificerar deras problem, ramar in uppgiften och förhindrar

eventuella missförstånd. Studien visar därmed också på lärarnas centrala roll i att se till att eleverna kommer vidare i deras arbete.

## Studie 3 – Verbal, bodily, and material resources in the closing of instructional encounters

Den här studien bygger delvis på samma material som studie 2 och innefattar situationer där eleverna har påkallat lärarens uppmärksamhet för att hjälpa dem med ett problem som de har stött på. Efter att ett område eller problem har hanterats går lärarna vidare till en annan elev eller grupp som behöver deras hjälp. Medan intresset i studie 2 ligger i att studera hur problem formuleras och hanteras av medverkande lärare och elever går denna studie djupare in på hur interaktionen mellan elever och lärare avslutas. Mer specifikt undersöker studien dels hur lärare och elever förhandlar fram att mötet dem emellan kan avslutas, dels hur själva avsluten verbalt och kroppsligt koordineras. Resultatet i studien är uppdelad i två delar, varav den första delen huvudsakligen fokuserar på de resurser som lärare använder sig av för att avsluta mötena och den andra delen fokuserar på de resurser som eleverna har till förfogande för att visa att de vill avsluta mötena.

Tidigare studier av hur avslut koordineras i klassrum har bland annat undersökt så kallade IRE-sekvenser i helklassundervisning. Förenklat beskrivet bygger dessa sekvenser på att läraren initierar en fråga som eleven i andra turen responderar på. I tredje turen ger läraren sedan en evaluering av elevens svar. Själva evalueringen har beskrivits som en "slutgiltig handling" i det att den markerar ett avslut av den instruktiva sekvensen (Mehan, 1979, s. 290). Dock betyder inte det att interaktionen mellan elever och lärare avslutas utan läraren fortsätter oftast med en ny instruktiv IRE-sekvens. I materialet som denna studie bygger på visar det sig dock att lärarens evaluering i tredje turen ofta innebär att mötet med eleverna avslutas. Evalueringar som "bra" och "kanon" används av lärarna som en resurs för att visa att innehållet i studentens fråga har behandlats och att samtalet också kan avslutas. I materialet visar det sig också att läraren tittar på eleverna när hon ger en avslutande evaluering och om eleverna då åter riktar sin uppmärksamhet mot deras arbeten lämnar läraren gruppen. Elevernas orientering uppvisar alltså ett instämmande i att mötet kan avslutas. Eleverna kan också avbryta ett avslut genom att ställa en följdfråga efter det att läraren har gett en slutgiltig evaluering och börjat röra

sig bort från dem. I dessa situationer fortsätter samtalet till dess att det som eleverna undrat över har hanterats.

Eleverna kan alltså visa att de är redo att gå vidare med deras arbete eller indikera att de fortfarande har saker kvar att diskutera med läraren. Dock har eleverna inte samma resurser som läraren när det gäller att bestämma när ett avslut av mötet ska ske. I studien presenteras två situationer där eleverna använder sig av olika resurser för att visa att de vill avsluta men där dessa försök ignoreras av läraren. I den första situationen är det två elever som har påkallat lärarens uppmärksamhet och en av eleverna visar att hon vill avsluta lektionen medan den andra fortsätter samtalet med läraren. I denna situation börjar eleven som vill avsluta lektionen fråga läraren om de inte ska avsluta samtalet för att gå vidare med en annan aktivitet. Hon packar också ihop sina och hennes kamrats papper. På detta sätt tar hon också bort den resurs som hennes kamrat använder som utgångspunkt då han ställer frågor till läraren. Trots dessa uppvisningar från eleverna fortsätter läraren i båda fallen att ge instruktioner tills vissa aspekter av elevernas arbete har behandlats. I den andra situationen orienterar sig eleven tillbaka till sin text efter det att ett svar har kommit från läraren. Trots att eleven visar upp en beredskap i att återuppta sitt arbete fortsätter läraren att elaborera frågan. Eleven uppvisar då en vilja att avsluta samtalet genom minimal överlappande respons, snabba bekräftelser, en orientering mot texten och suckar.

Den här studien visar alltså att elever och lärare inte delar samma resurser när det kommer till att bestämma när och hur ett avslut ska ske. Läraren visar att ett möte kan avslutas genom att ge positiva evalueringar och genom att stegvis börja röra sig bort från studenterna. Eleverna kan då visa att de är redo att gå vidare med uppgiften genom att orientera sig mot den. Eleverna kan också avbryta avslutet genom att ställa en följdfråga till läraren. De har alltså rätten att be läraren att stanna om det är något som de fortfarande inte förstår. Även om det är eleverna som har initierat ett samtal med läraren om det problem som de har stött på har de inte rättigheten att avgöra när detta problem kan räknas som utrett. Om eleverna vill avsluta samtalet innan läraren kan de uppvisa en ovilja att fortsätta samtalet men det är inte förrän läraren lämnar dem som samtalet helt avslutas. Studien diskuterar avslutningsvis elevers och lärares rättigheter och skyldigheter i klassrummet och hur det pedagogiska upplägget påverkar dessa.

# Diskussion

Som tidigare nämnts organiseras allt mer undervisning som projektarbete, grupparbete eller eget arbete. I forskningslitteraturen kontrasteras ofta elev-drivna arbetssätt med lärarledda lektioner (t.ex. Postholm 2006; Lemke, 1990; Skidmore, 2006; Brown, 1992). Undervisning i lärarledda helklasslektioner beskrivs ibland i termer av kunskaps- eller informationsöverföring. I projekt-arbeten och liknande undervisningsupplägg betonas istället elevers egna in-tressen, motivation och erfarenheter. Etnometodologiska och konversat-ionsanalytiska studier har problematiserat denna uppdelning. Merritt och Humphrey (1979) anser exempelvis att det är något missvisande att säga att 'strukturerad undervisning' är mer auktoritär och involverar mer lärarkontroll än 'öppna undervisningsupplägg'. Det intressanta är inte bara hur mycket kon-troll läraren har utan vilken form av kontroll det handlar om och på vilket sätt detta visar sig. Innan generella påstående görs om skillnaden mellan olika undervisningsupplägg är det viktigt att ha en förståelse för de pedagogiska ak-tiviteternas specifika karaktär och villkor.

Studierna i denna avhandling undersöker projektarbetets praktiska villkor och interaktiva organisering. Genom detaljerade analyser av klassrumsinterakt-ion synliggör avhandlingen hur elever och lärare hanterar uppgifternas öppen-het och hur instruktioner formuleras och tas emot. Studierna visar hur elever arbetar med information de hittar på nätet och i andra källor, hur de formule-rar om informationen och hur de positionerar sig i relation till den. Studierna visar också på lärarens roll och inflytande. Även om eleverna ska arbeta själv-ständigt med öppet formulerade uppgifter går mycket av deras tid åt till att stämma av med lärarna huruvida de är på rätt spår. Det är lärarna som sätter agendan och planerar arbetets upplägg. Det är också de som formulerar in-struktioner, ger vägledning, sätter upp mål, ramar in uppgiften och slutligen bedömer elevernas arbete. Eleverna måste därmed förhålla sig till normativa förväntningar om vad de ska göra och vad de har gjort. Eleverna ställer frågor kring innehåll som de inte förstår, de försöker ta reda på vad instruktionerna betyder och de frågar läraren om det de har gjort är bra nog.

Avhandlingens studier visar hur projektarbetet har en materiell grund. Framförallt visar studierna hur eleverna på olika sätt arbetar med text. Elever-na söker information i böcker, artiklar och på internet. De skriver ner vad de senare ska säga på presentationer. I interaktionen med lärare pekar elever på texter de har skrivit eller läst. Dels visar avhandlingen hur hela arbetet är riktat

mot text: mot skriftliga instruktioner, mot tryckta och elektroniska källor och mot de texter eleverna själva ska producera. Dels visar avhandlingen hur text och andra resurser är avgörande i interaktionen mellan lärare och elev. Eftersom läraren inte alltid vet vad eleverna arbetar med blir det ibland nödvändigt eller relevant för eleverna att grunda problem-formuleringar i texter de har läst eller skrivit. Eleverna kan också visa att de är redo att avsluta genom att orientera sig mot de texter de arbetar med.

Förutom textens centrala betydelse är projektarbete materiellt och kroppsligt organiserat i andra avseenden. Att eleverna sitter vid sina bänkar och läraren går runt bland dem har stor betydelse för hur interaktionen mellan elev och lärare initieras, realiseras och avslutas. Eleverna måste fånga lärarens uppmärksamhet för att få hjälp och för att göra det blir det relevant att förstå huruvida läraren kommer att vara upptagen länge med en annan grupp. Läraren analyserar elevernas kroppsliga orientering för att se om eleverna söker hennes uppmärksamhet, om de behöver ytterligare hjälp eller om de är redo att fortsätta med uppgiften. Studier av klassrumsinteraktion har traditionellt enbart fokuserat på hur lärare och elever talar med varandra. Avhandlingens studier visar hur materiella och kroppsliga resurser är centrala för den interaktiva organiseringen av projektarbete. Att bara studera den talade interaktionen skulle i detta fall ge en begränsad och delvis missvisande bild.

Sammanfattningsvis har denna avhandling undersökt hur projektarbete genomförs i praktiken genom att analysera den interaktiva organiseringen av uppgifter och instruktioner. Den har visat på hur instruktioner ges och tas, hur elever och lärare hanterar öppenheten i instruktioner och uppgifter samt hur mötet mellan lärare och elev är materiellt, kroppsligt och interaktivt organiserat. Syftet med studien är att ge en ökad förståelse för en arbetsform i skolan som blir allt vanligare – att gå bortom den retorik som ofta omgärdar projektarbete och därmed ge en förståelse för projektarbetets konkreta villkor.

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