

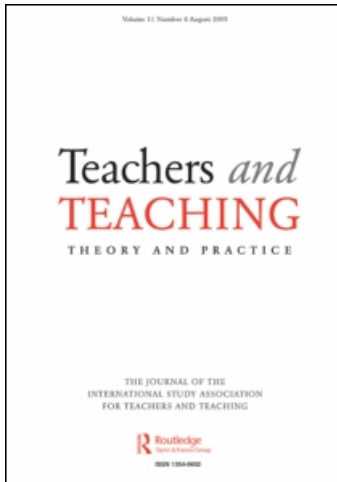
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Talk, planning and decision-making in interdisciplinary teacher teams: a case study

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Talk, planning and decision-making in interdisciplinary teacher teams: a case study

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A diverse range of social structures, for instance teacher teams, professional communities and teacher learning communities, are established to advance collaboration among teachers. In Norway, Interdisciplinary Teacher Teams (ITTs) have become a common way of organising teachers in schools, recommended in a national curriculum reform in 1997. This study explores the internal structure, social meaning and potential resources for learning and development inherent in the planning and coordination of work in ITT meetings. Most studies of teacher teams as well as teacher learning communities are based on teachers' experiences, expressed in interviews or surveys. The focus of this study is not on what teachers say *about* teams, but on what teachers say *in* teams. While most studies have addressed within-department, subject-specific teams, this study focuses on interdisciplinary teams. Team-talk in two ITTs in two different lower secondary schools in Norway has been videotaped and analysed. Four patterns of interaction have been identified – preserving individualism: renegotiating individual autonomy and personal responsibility; coordination: assuring the social organisation of work; cooperation: creating a shared object or enterprise; and sharing: clarifying pedagogical motives. The study illustrates patterns in team-talk, conceptualises the processes of decision-making that take place in these ITTs and identifies resources for learning and development inherent in certain forms of interaction. The study contributes to the research literature by both focusing on the details of the interaction in team meetings and analysing the dynamics of the group interaction in the perspective of the situatedness and the object-orientation of team-talk.

Keywords: teacher team; teacher learning; activity theory; interdisciplinary teaching

Introduction

An Interdisciplinary Teacher Team (ITT) is a social structure where teachers responsible for teaching different school subjects regularly come together not only to plan interdisciplinary teaching and coordinate their individual subject-specific teaching, but also to discuss their teaching practice, the challenges they experience as teachers and pedagogy. In many countries the teacher team structure has been implemented as part of school improvement initiatives (Fullan, 1993; Little & McLaughlin, 1993; Senge et al., 2000; Wagner, 2000) with the intention to transform the traditional individualised structure of teaching – the tendency to teach each school subject as an isolated field of knowledge – and promote a collaborative mode of teaching and a

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more comprehensive education for students (Carnegie Council, 1989; Crow & Pounder, 2000; Kärkkäinen, 2000; Pounder, 1999; Supovitz, 2002). Parallel to the ITT structure, or as an alternative, teachers may be organised in teams within disciplinary departments (Shulman & Sherin, 2004; Visscher & Witziers, 2004). In both cases, one of the overall aims is to create a community for distributed decision-making (Scribner, Sawyer, Watson, & Myers, 2007) as well as shared learning and development of the teaching practice of the team members (McLaughlin & Talbert, 2001, 2006), the ultimate goal being to improve student learning.

To some extent research findings show that teacher teams reach at least some of these goals, but it is a mixed and confusing picture. For instance, Pounder (1999) found that teachers working in teams reported significantly higher levels in a variety of skills: knowledge of students, general satisfaction, professional commitment and teacher efficacy. Meirink, Meijer, and Verloop (2007) found that teachers in a team-based school reported changes in their cognition, but only minor changes in their behaviour, as a result of collaboration with teacher colleagues. In his study of the implementation of teams in a US school district with 79 schools (49 adopted the team structure), Supovitz (2002) found more teacher collaboration in team-based schools than in non-team-based schools, but not more reflective dialogue. There was no clear difference with respect to instructional practices. Strategies for preparing classroom teaching were static (did not improve) in the team-based schools over the first three years of the project. Also, there were no differences in the frequency of collective teaching. Though teams had an impact on the school culture among teachers and the teachers expressed appreciation for the team structure (see also Kruse & Louis, 1997), there were no clear connection between teams and their students' achievements. On the other hand, a closer look at the different ways the teams worked, revealed that students taught by teachers from teams with a high level of group practice and 'higher level of group instructional practices performed better than did students on the teams with a low level of group instructional practices' (Supovitz, 2002, p. 1614). Thus, the impacts of teams on teacher collaboration, their teaching practice and their learning are questionable. Creating teacher collaboration with the double effect of supporting work and promoting teachers' learning seems difficult (Schoenfeld, 2004).

In this perspective it is problematic that we still 'know very little about how these teams actually work' (Scribner et al., 2007, p. 72), in particular the interactional and 'conversational processes whereby teacher teams identify and solve problems' (p. 73). '[I]t remains unclear what teachers actually do in collaborative settings that lead to learning' (Meirink et al., 2007, p. 146). The literature on teacher teams is prescriptive or normative (Crow & Pounder, 2000, p. 223) and has 'not attended to micro analyze which elements of a team have contributed to group effectiveness' (p. 225). One reason for this situation could be the research agendas and the methodologies that have been applied. Many studies of teams and teacher learning communities are based on implementation projects (e.g. Crow & Pounder, 2000; Shulman & Shulman, 2004; Supovitz, 2002), professional development groups (Clark, 2001), distributed school leadership (Scribner et al., 2007), and dominated by interviews (Achinstein, 2002; Crow & Pounder, 2000; Meirink et al., 2007; Ohlsson, 2004) and surveys (McLaughlin & Talbert, 2001, 2006; Supovitz, 2002; Talbert & McLaughlin, 2002).

This study is based mainly on video observations of talk and interaction in ITT meetings. The intention has been to come to terms with what goes on in teams, the group dynamics, and how the team-talk is linked to teaching and classroom practice.

Rather than analysing what teachers say *about* teams, as they do in interviews and surveys, the focus here is on what teachers say *in* teams. The reference of the team-talk observed is rarely the team and how it functions. Instead, a study of the team-talk informs about what the team is oriented towards – the theory-in-use rather than the espoused theory (Argyris & Schön, 1978). The article focuses on the dynamics of the interaction and, most importantly, on the object of planning, negotiation and decision-making. (The term ‘object’ is here used in the meaning of the ‘task’, ‘target’ or ‘enterprise’ of the interaction, as the term is understood within the Activity Theory framework (Engeström, 1987; Leontiev, 1981; Stetsenko, 2005). The ‘target’ or ‘enterprise’ *is* the activity and the ‘motive’ that drives the interaction.)

The article attempts to say something about the relationship between the team-talk and the social practices the team is engaged in as it works (Mäkitalo, 2003). ITT meetings are analysed as part of the wider sociocultural practice of schooling. A thematic analysis of team-talk should provide clues about the potential impact of the team-talk on the team members’ practice as teachers. What is the object of team-talk in the ITTs? How does the object(s) of interaction – and the group dynamics – potentially ‘propel’ or inhibit the accomplishment of the core goals associated with the ITT structure: interdisciplinary teaching, shared practice, teacher collaboration and professional development? Based on the theoretical position that changing practice is learning (Lave & Wenger, 1991), such an impact of team-talk on professional practice should also uncover aspects of team-talk that serve as resources for professional development and learning – for the team as a whole.

Both schools followed in this study had implemented the team structure prior to, and independently of, this study. The teams were established as work contexts not learning contexts. Teacher learning was not an attribute that the team members would associate with their participation in the ITT in the first hand. Learning is an aspect of the ITT interaction that is attributed to the ITT interaction through the analysis. When learning is addressed, the focus is not on the learning of individual teachers (Meirink et al., 2007) but on the establishing and development of the team-talk and the interaction in the team as a whole.

The article first addresses challenges of making ITTs work according to intentions. Secondly, it elaborates on the theoretical perspective on teacher teams as communities of practice and communities of learning and the methodology. Thirdly, patterns of team-talk are generated from video observations of teachers’ talk and interaction in team meetings and analysed in terms of their relevance for interdisciplinary teaching and the learning opportunities that are provided for the team and its members. Fourthly, the four patterns of team interaction are analysed in the perspective of Raeithel’s (1983) and Engeström, Brown, Christopher, and Gregory’s (1997) classification of three modes of interaction in terms of how the dynamics of team interaction emerge along both vertical and horizontal dimensions.

The article contributes to the research literature by both focusing on the details of the interaction in team meetings and analysing the dynamics of the group interaction in the perspective of the situatedness and the object-orientation of team-talk, and it is potentially relevant for interdisciplinary work structures more generally.

Challenges of making teacher teams work

As said, the intentions of ITTs are associated with a collaborative mode of learning, distributed decision-making, collegial communities for shared learning and a platform

for school development. In their study of an interdisciplinary pupil welfare team, Hjørne and Säljö (2004, p. 335) found that the team interaction could 'be seen as a rather efficient mechanism for maintaining the status quo'; there was 'little evidence that the multi-professional composition of the team resulted in differing interpretation or analysis of the problems' (see also Senge et al., 2000, p. 74). Huberman (1993) worries about what he calls the communitarian tradition, arguing that collective collaboration easily becomes 'bound up with the social organization of work' (p. 12) and tends to 'eat into time for ongoing instructional work in class' (p. 13). Teachers in Crow and Pounder's (2000) study expressed concern that teaming threatened teacher autonomy. Emphasising the difficulties in developing shared visions among teachers, Visscher and Witzier (2004) question if professional communities are realistic in secondary education and state that 'teachers mostly and usually prefer to work autonomously' (p. 797). McLaughlin and Talbert (2006) have demonstrated that creating collegiality within subject-specific departments is challenging, and, they argue, strong learning communities are not common in US schools. The problem of establishing productive teacher learning communities is probably general across national boundaries, school systems and cultures, as well as between subject-specific and interdisciplinary teams.

In spite of these sceptical voices, teacher teams are introduced widely, which makes it essential to explore what is needed for making them work according to expectations. Supovitz (2002) identifies three crucial aspects of teacher teams: group decision-making, collaborative preparation of teaching and shared instructional practice. Achinstein (2002) views dealing with conflict in teams as essential part of their dynamics. McLaughlin (1993) emphasises that schools are social and psychological settings 'in which teachers construct a sense of practice, of professional efficacy and of professional community' (p. 99), and which also nurture individual artisanship; strong learning communities support the teaching of their members (Talbert & McLaughlin, 2002).

Little and McLaughlin (1993) emphasise the significance of developing professional collegiality in schools to enhance teacher learning and development of educational practice. In the context of this analysis professional collegiality is given two main meanings: (1) a *pattern of communication and interaction* within a group (team, department or school) which is experienced as 'we-ness' and (2) *task- or object-orientation of the interaction*. The second point is of particular interest in this analysis: What is the object of the ITT interaction? To what extent do colleagues interact and talk about an object or a collective activity that motivates sharing of expertise and brings together the team as an operative unit, drives the team interaction, and establishes a common ground for negotiations and 'we-ness'?

Theoretical position: teams as work contexts and potentials for learning

As said, the primary focus of the team-talk in ITTs is work, not learning (Eraut, 2007; Lave & Wenger, 1991). In this respect the analysis takes another starting point than the analysis of teacher study groups, for instance, by Florio-Ruane and Raphael (2001). The analysis is based on observations of work, and learning in this context is regarded as aspect of work, often unintended, unconsidered and not expressed by the team members. Studying learning as an aspect of work practice – in ITTs and more generally – brings to the foreground three dimensions of learning that vary from traditional didactic learning.

- *Interpersonal relations*: Unlike the schooling and apprenticeship models there is usually no instructor, teacher, supervisor or master in charge of organising learning, and no one is ascribed the specific role as a learner. Instead, there might be a team leader whose task is to get the work done or lead the discussion.
- *Context of meaning*: Workplace learning is integral to the joint performance of the organisation or the company, the improvement of the quality of the production of goods and services. The focus is not particularly on the learning of individuals, but rather on improving or sustaining institutional practices.
- *Situatedness*: Instead of learning for a future situation, teachers need to relate to, and find ways of dealing with, the tasks in hand, building on previous experiences and planning future teaching. Instead of learning to *become* competent, we are dealing with (further) learning as an outcome of professionally competent action.

Because ITT interaction has collaborative action as the aim, the dynamics of learning expand beyond the mechanisms that foster individual learning: the main mechanisms for learning and development are those that establish, maintain and transform the social practice of a community of practice (Lave & Wenger, 1991), and these are embedded in the ongoing social practice of the team.

Such resources for learning and development in an ITT setting evolve from the interaction between agents with *diverse levels of expertise*, when there are ‘... participants who exercise differential responsibility by virtue of differential expertise’ (Cole, 1985, p. 155). ITTs are communities where teachers from different disciplinary areas (ideally) collaborate to produce teaching that incorporates the disciplinary knowledge of the different teachers. As a starting point, the teachers’ social position within the team is horizontal, meaning there is no *a priori* set hierarchy between the diverse school subjects or the subject teachers. In the planning and decision-making, the teachers are expected to participate on the basis of their differential expertise. For instance, the interaction between a social science teacher and a science teacher is grounded on their complementary expertise, not each of them being more competent in their field of expertise. Thus, the teachers’ interaction is embedded in *horizontal diversity* of teachers’ expertise, rather than in *vertical diversity* of expertise, which would be the case if one school subject (e.g. maths) had a superior position and thus would form the relationship between the teachers hierarchically. Taking horizontal diversity as the point of departure, the learning resources in teachers’ interactions are analysed in terms of the diversity of *fields of expertise*, such as maths, social science and English, constituted by the diverse disciplinary affiliations of the ITT members (they also belong to subject-specific departments). Traditional approaches to learning instead take as the starting point that learning emerges from interaction between agents with *diverse levels of expertise*, for instance that the teacher is more capable than the student. Of course, the teachers in ITTs are not peers within the same domain of an academic discipline or a subject (e.g. language, arts, maths, social science), but the teachers’ expertise is *complementary* in relation to an interdisciplinary tasks or projects. The interdisciplinarity, thus, is socially distributed among the team members and cannot be achieved by any one of them individually.

The learning and development that is at stake, then, is the joint achievement of the team; the main focus is on the social entity of ITT as a learning system rather than individual teachers’ learning within the ITT as a mediating social structure (Salomon & Perkins, 1998). Firstly, learning is regarded as transformation of participation in a

joint social practice – transformation of participation in team-talk and potential consequences of team-talk on participation in settings outside of the team setting. Secondly, the problem is *what* potential learning and development is inherent in the team-talk, not *whether* people learn. The resources for learning and development can then be conceptualised with respect to the *in situ* participation structure (which might change over time), and what the team-talk is oriented towards thematically (the object of team-talk), that is, what the team-talk might potentially have impact on.

Focusing on the object-orientation of interaction in work contexts, Engeström et al. (1997) differentiate between levels of interaction proposed by Raethel (1983): coordination, cooperation and communication. *Coordination* (Figure 1a) implies that ‘various actors are following their scripted roles, each concentrating on the successful performance of their assigned actions ... The script is coded in written rules ... or tacitly assumed traditions. It coordinates the participants’ actions as if from behind their backs, without being questioned or discussed’ (p. 372). Engeström et al. (1997) describe this mode of interaction ‘authoritative silencing’. *Cooperation* (Figure 1b) implies that ‘the

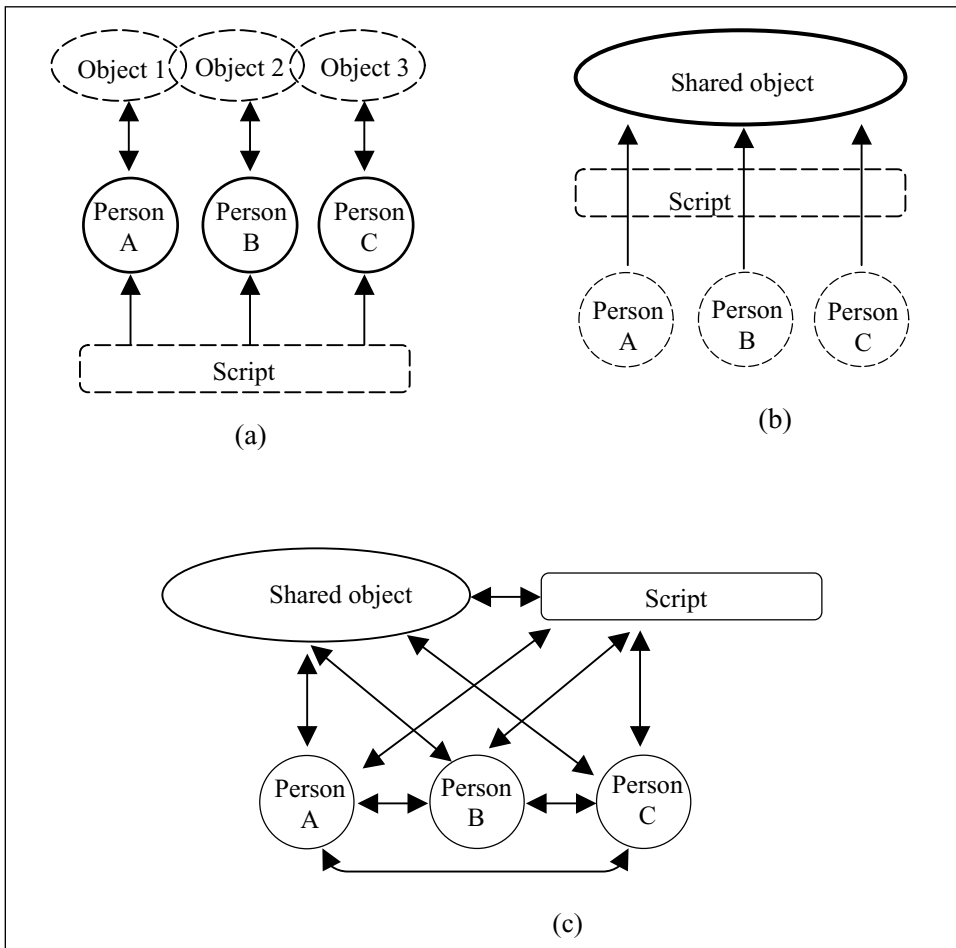


Figure 1. Levels of interaction – (a) Structure of interaction at the level of coordination; (b) Structure of interaction at the level of cooperation; (c) Structure of interaction at the level of communication. Modified from Engeström et al. (1997).

actors, instead of each focusing on performing their assigned roles ... focus on a shared problem, trying to find mutually acceptable ways to conceptualize and solve it. The participants go beyond the confines of the given script, yet they do this without explicitly questioning or reconceptualizing the script' (p. 372). *Communication* (Figure 1c) implies that 'the actors focus on reconceptualizing their own organization and interaction in relation to their shared objects' (p. 373) by renegotiating scripts, objects and participants' roles and responsibilities.

In a process of institutional development social practice could expand from the more basic (coordination) to the more complex (via cooperation to communication). In the context of this analysis we could expect that the diverse patterns of interaction afford more or less resources for collegiality and professional development for individuals and for teams.

Methodology

A series of ITT meetings in two lower secondary schools were observed over one-half (School 1) to three-quarters (School 2) of an academic year. School 1 had ITT meetings at two levels: Year Groups for teachers teaching at a specific year level, which again were divided into Teacher Teams with four teachers teaching a specific group of students. Twelve ITT meetings were videotaped (six each of Year Group meetings and Teacher Team meetings). School 2 had one level of ITT, two parallel ITTs at each year level, each having the responsibility for a group of 60 students. In both schools they had weekly General Teacher meetings for all teachers and a weekly Team Leader meeting led by the leaders of the school. Data from these are not included in this analysis. While the meetings were being videotaped, I made field observations. I also observed teaching, but these data are not included in this analysis.

The choice of schools was based on information (partly rumours, partly media exposure), indicating that these were ambitious schools that particularly emphasised team work among teachers. I was interested in sites where I could expect to find strong professional communities. Invitations to participate in the study were sent to the principals of the two schools. The choice of ITTs was made by the principals of each school, based on discussions they had with the teachers. As said, the teams were not set up for the purpose of this study or for the particular purpose of teachers' learning, which was the case in, for instance, Tillema and van der Westhuizen (2006), Meirink et al. (2007) and Clark (2001). Instead, the team structure was implemented by the schools themselves for the purpose of supporting teachers' work, independently of this study. Thus, teachers' learning was not a specific agenda for any of the teams. For my research purposes learning was regarded not only as a potential side-effect of teacher collaboration, but also a potential prerequisite for the development of the collaboration in the team. The selection of two schools was not done for comparative purposes, but for two other reasons: to ensure a wider intake of diverse ways of team practices and to afford analysis of the embeddedness of teams' functioning in diverse school contexts. In this article the intention has been to describe variation in interaction patterns in ITT interaction, not to compare schools.

The intention was to capture both the dynamics of the ITT meetings and the potential implications beyond the ITT setting. This implies analysing the data at two levels: as *in situ* team interaction (what goes on within the ITT setting) and with respect to its contextualisation within a sociocultural practice (how the team-talk is integral to the

institutional practice of the school and how it might develop or maintain the institutional practice). What Linell (1998) terms double dialogicality, is, thus, essential. Different from, for example, Mäkitalo and Säljö (2002), Mäkitalo (2003) and Hjärne and Säljö (2004), the main focus has not been on how the institution speaks through the individuals and the team-talk, but rather how the team-talk develops or maintains the institutional practice. The main interest has been to analyse the team-talk as 'consequential talk' – to identify its potential implications for teachers' practice. Though the video data do not provide data that show the implications of team-talk on practices outside of the ITT settings, such impacts can be analytically deduced from the team-talk, its social dynamics and its object-orientation. For instance, if the team-talk is mainly about the social organisation of work and not teaching and student learning, as Huberman (1993) suggests, how can it have any significant impact on classroom practice or establish a shared teaching practice?

Instead of relying on the teachers' accounts of the team processes by using interviews, I chose video recording, which enabled observation of the ITT interaction as it took place and developed over time. Videotapes from School 2 were fully transcribed, first by a transcriber who was hired in, and later carefully checked and corrected by me. In the case of School 1, parts of the videotapes were transcribed by me as precisely as possible. Other parts of the interaction were described in more general terms. The reason for these different ways of approaching the data was that the School 2 data turned out to be more relevant to my research questions than the School 1 data because the team-talk in School 2 had higher level interaction and demonstrated more aspects of teacher collaboration than School 1, which mainly functioned on the level of coordination.

The focus has not been on the individual teacher and his or her utterances, but on the patterns of the talk and interaction of the teachers. The unit of analysis was the team and the participation of the individual teachers in joint discussions and planning of their teaching practices. The meaning of team-talk emerges in the interrelatedness of the utterances of the team members, rather than in the individual utterances. To identify patterns of team-talk, the focus has been primarily on the communicative turns – the thematic continuities and shifts in the team-talk and the linkage between the individual teachers' utterances (Bakhtin, 1981).

Data from the two schools were first analysed separately, including reading transcripts and field notes and watching videotapes. Even though this is not a comparative study, striking contrasts between the schools soon became apparent, and observations from one school illuminated characteristics of the other school. At a later stage the focus was again on each school to catch the particularity of the different team-talk patterns. Variation in team-talk patterns and the characteristics of specific patterns mutually constitute each other even.

A preliminary analysis of the data was presented to the schools: as a presentation in the General Teacher meeting in School 1 and as drafts of analysis to the team members in School 2. It is not fair to compare the schools without taking into consideration their local histories, and based on data from only one team, we cannot attribute the differences to any of the schools. Also, we cannot compare the teams observed without taking their institutional context into consideration. For these reasons the analysis has to limit the expectation to discussing variations or practices, and we have to be careful about pointing to reasons why these practices take the form they do and why they vary. Instead, it is the variation, and the potential influence of diverse team-talk patterns on classroom practice, that is at stake here.

School contexts

School 1

School 1 had five parallel classes for each of levels 8, 9 and 10: about 450 students. (The data were collected in 2001/02. Now students start at the age of six, not seven, and in the current system the year levels would be 9, 10 and 11.) The normal class size was 30 students. Teaching had been mainly subject specific (maths, English, science, etc.), and individual teachers had been responsible for their own teaching. Co-teaching rarely, if ever, took place. The implementation of the national school reform of 1997, which implied a stronger focus on interdisciplinary teaching, project work and the organisation of teachers in teams, was urged by the Principal. The implementation of the ITT structure was integral to a process of change from individualised teaching to more teacher collaboration and also included two parallel processes: distributed or decentralised decision-making from the Principal to the Year Groups and Teacher Teams concerning the management of the school, and also a higher degree of shared planning of classroom activities. This change process started two years earlier.

The weekly General Teacher meetings were followed by the Year Group meetings (one for each of the levels 8, 9 and 10). Next, Teacher Teams, in groups of four teachers, met for more concrete planning of teaching. Each of these meetings lasted for one hour. The Year Group was assigned the role of being the core decision-making body to decide about how to teach and what to teach at its specific grade level, and it was to be the main context for pedagogical debate. The three levels of meeting were supposed to be interrelated in a 'linear' way: the General Teacher meeting addressing institutional issues, the Year Group meeting addressing the profile of the year level and the Teacher Team meetings were focused on the classroom level.

School 2

School 2 had about 360 students, 120 at each level (8–10) organised in groups of 60, and had a long history of ITT structure and interdisciplinary teaching. With a few exceptions, all teachers were organised in teams of four to six who shared the responsibility for teaching one student group. The team would follow their group of students through all three years of lower secondary education. The weekly team meeting lasted for two hours. All team meetings took place from Monday to Wednesday (two teams each day) and there was a General Teacher meeting on Thursday. There was a 'spiralling' relationship between the Team Leader meeting on Monday, ITT meetings from Monday to Wednesday and the General Teacher meeting on Thursdays: the Team Leader meeting summarised last week's General Teacher meeting and set the agenda for the next, which also included how all ITTs should prepare for the next General Teacher meeting.

The school year was divided into six periods organised around an interdisciplinary project which ran for about six weeks. Each period was collaboratively planned by the team. It was the responsibility of each subject teacher to ensure that his or her subject was properly covered in the interdisciplinary projects. If this could not be done, the subject was taught separately, which was often the case. The subject teacher had the final word about the inclusion of his or her subject(s) in a project, but the decision was discussed in the ITT meeting. This meant that before a new period started there were negotiations about the content, which subjects should be included and how they should be integrated and separated. All teachers were involved in supervising

students' project work across the whole range of school subjects. Co-teaching was common.

ITT and patterns of team-talk

Several patterns of team-talk can be identified in the observations of ITT interactions:

- Preserving individualism: renegotiating individual autonomy and personal responsibility
- Coordination: assuring the social organisation of work
- Cooperation: creating a shared object or enterprise
- Sharing: clarifying pedagogical motives

Preserving individualism: renegotiating individual autonomy and personal responsibility

The first meeting of the academic year for teachers in the eighth grade of School 1 took place in one of the classrooms, where students' desks were organised as a long table. First on the agenda was the planning of interdisciplinary projects this school year. But one of the teachers expressed her view on what needed to be discussed in this setting, taking her own plans as the starting point.

- Year Group leader: I am not sure how we should start now, to be able to work as efficiently as possible with this.
- Teacher: I have a suggestion. I have made my plans for the year. What we miss are the interdisciplinary [projects], such projects that will involve all of us, all classes, what is mutual for us. I have got the plans from the arts teacher and the plans in science and mathematics. ... So, I have made my plans. But I suppose it is important for all of us to get involved in the interdisciplinary, big projects, so that we know what they will be. So, if we could agree about this...
- Year Group leader: OK, I can say something about what I know about the interdisciplinary [projects] so far.

This framing of the discussion was accepted and the group started discussing ideas about alternative interdisciplinary projects. The main points in the discussion concerned the scheduling of these projects on the calendar and how they should be presented to students and parents. There was no discussion about overall purpose or details, what to focus on in the projects, how to organise, etc. Some teachers had suggestions for interdisciplinary projects, but there was no sharing of experiences from last year except, for example, 'This is what we did last year. Could we do the same this year?' Finally they agreed to have the same projects as previous year. The teacher quoted above had already made her plans. Scheduling the interdisciplinary projects made it possible for the teachers to adjust their individual plans accordingly. One teacher did suggest that they should clarify what project work is and how it could be organised. No one disagreed, but they did not come up with a shared agreement either.

These data illustrate a recurrent pattern: though a discussion theme might have been introduced as a shared project, task or event, the typical conclusion was that it was either up to the individual teachers to do what they preferred, or the final decision

would be made by the teacher team. Contrary to the intention of the ITT structure – increasing teacher collaboration and shared practice – this pattern of team-talk illustrates the potential implication of ITT interaction to renegotiate status quo and ensure the individual responsibility of the teacher and the subject-specific teaching pattern that had dominated the school. This maintaining of status quo (Hjörne & Säljö, 2004) could be interpreted either as a passive process whereby the ‘old’ system ‘speaks’ within the ‘new’ system – the perseverance of the historically mediated institutional practice (Mäkitalo, 2003; Mäkitalo & Säljö, 2002), or it could be seen as an active strategy of resistance against the implementation of the new system. In any case there was a covert negotiation ‘away from’ the need to negotiate the content of teaching across subject domains and shared reflection on teaching and learning. Anyway, dominance of this pattern of team-talk means that time is taken away from planning of instructional work in class (Huberman, 1993). Instead of a transition from an individual to a more collective mode of schooling, both systems operate in parallel and in conflict within the same system. In its consequences the ITT structure is then used to re-establish practices of the traditional system within the frame of the new ITT system.

Coordination: assuring the social organisation of work

The next observation is from one of the ITT meetings which followed the Year Group meeting. In the first meeting of the school year, the team of four experienced teachers – Mary (science teacher) Ann (social science, Norwegian and special education teacher), Sara (French teacher) and John (English teacher) – started out by discussing how to write up a plan for the year. The need for coordination of their work was apparent. For instance, Ann provided support teaching for one of the students in Sara’s class.

Sara: It is just this one student.
 Ann: Yes, but still it means that I have to relate to your weekly plan as a whole.
 ...
 Ann: So, you and I should make the plan for Norwegian together. I could make the plan for ..., if it is OK. ...
 Mary: About the subjects that you are not involved in – I could make the plan for mathematics. On the copy that I give you I can mark out the tasks that would suit this student, think about it when planning the maths.
 ...
 Ann: Good. [addressing John] It would be good to do the same for English.

John suggested that he and Sara could work out the plan. He was more capable on the computer and offered to make a table that could hold information about the plans in all subjects.

Sara: It is OK with me. ... We bring our own plans, don’t we? It should not take long.

The bottom line of these observations is that when it comes to concrete practice of teaching, teachers’ work is closely interconnected. Coordinating the responsibilities and tasks in classroom teaching is a puzzle. The social organisation of work was both complex and time-consuming. There was no time, or no initiative to discuss the substance of teaching – its content and process. At another ITT meeting later in the

semester, the topic was the organisation of an interdisciplinary project, ‘the International Week’. This time the content was also addressed, but again the same pattern emerged: the focus was restricted to who was going to teach which part of the project curriculum, except for some comments about the difficulties in teaching lower secondary school students about topics like AIDS and HIV (the topics of the International Week). The content and process of the International Week was not subjected to any negotiation. The teachers were helpful and supportive of each other throughout the discussions, but did not challenge or complement each other subject-wise. My interpretation is that when teachers value the team structure, while the effect is weak on, for instance, the content of teaching, instructional practice and reflective dialogue (Kruse & Louis, 1997; Meirink et al., 2007; Pounder, 1999; Supovitz, 2002), it could be because the teachers mainly use the ITT structure to deal with the complex issues of coordination of their interrelatedness and division of labour. And these coordination issues are essential aspects of teachers’ work. On the other hand, the object of team-talk may simply not be sharing of teaching experiences, planning and joint planning of the teaching practice.

Cooperation: creating a shared object or enterprise

The ITT that I observed in School 2 had four teachers who shared the responsibility for most of the teaching of a group of 60 students. Peter (English and music teacher) had just graduated from teacher education and Jane (science teacher) had worked for two years in another school close by. Kate (Norwegian teacher and team leader) and Tom (social science teacher) had been working at the school for some years.

In the first meeting Tom and Peter were planning the interdisciplinary project that was to start next Monday. Kate said, ‘The two of you start talking about what to do next week, focusing on history [included in social science] and music’. (Kate and Jane were going to set up the timetable for this period.) The project was entitled *Growth and Welfare* and was about the post Second World War history of Norway. Music and social science were the core subjects in this project. Peter and Tom started discussing how the two of them could introduce the project to the students. Peter, the new teacher, took an active role in specifying the project. On Monday morning, Tom gave an introduction about the project (called an ‘input’) to the class of 60 students. Next, the students were divided into groups of 30 with two teachers in each group to discuss the theme, before all 60 students got together again and worked in groups of four to discuss what they would like to focus on during the project period. At the end of the class, all the groups had formulated their project foci in writing and these were presented to the full class and given to the teachers.

At the next meeting (where I was not present), there had been a conflict between Tom and Peter about the plan they had made in the first meeting.

- Tom: You should have been here last week. We had a really tough discussion.
 Peter: We had conflicting versions of what we had been talking about. Tom had an idea about more social science, and I had an idea about more music. ... Students came to me and explained that they were going to do such and such, because Tom had said so, and it didn’t match with what I had suggested [to the students]. We were also planning to direct the students too much and we [the teachers] were choosing the material that they were going to work on. Now we have a more clarified framing of the project.

The conflict led to renegotiation and redesign of the project to accommodate social science more clearly and to give more room for students' initiatives. Two points are apparent in this example. First, the team-talk was a negotiation about the object of teaching. Second, the disparity in the teachers' instruction to the students was taken back to the ITT setting and took the form of a conflict between contesting views on what and how to teach the interdisciplinary project. (Normally, these negotiations went more smoothly, but different views and priorities were not uncommon, different views were accepted and negotiated.) What was at stake was classroom activities.

The next period was about oil production. The first ITT discussion about this topic illustrates how the team started to develop a shared object of teaching. The core subjects were mathematics and social science. Jane (mathematics and science teacher) had started planning Period 2 at the end of Period 1. The structure of Period 2 was a storyline, not project work as in Period 1.

- Kate: [Addressing Jane] Will you say something about Period 2? [Addressing Peter and Tom] Jane has been really clever – must praise you – she has been working on a storyline about an oil platform.
- Jane: Yes, but the problem is I have never made a storyline before. So, I don't know if this really is a storyline, and that's a problem.
- ...
- Jane: OK, OK, it is very, very – eh – I can say what I have been thinking.

Jane told about her plan, focusing on how oil was formed, the refining of oil, what professions are involved in the production chain, transportation, how she had been thinking about organising it, etc., linking it to teaching science and mathematics within the project. She kept talking more or less the whole time over a period of nearly ten minutes.

- Jane: Then we have the freight issue, and I have been thinking...

Tom (the social science teacher) made movements in the air, catching the attention of the other teachers.

- Kate: Finally social science.
[Tom nodding with big movements]
- Jane: Yes, now we come to social science.
- Tom: Now we come to a map of oil producers, freight routes and such.
- Jane: But this might not be what you would be interested in.
- Tom: Yes, yes, yes.
- Jane: ... The product here, of course, will be a map.
- Tom: ... It is just perfect, it's great.
- Jane: Yes, and those who own the platforms, renting them out, etc.
- Tom: Excellent.
- Jane: ... and how the freight is organised.
- Kate: [nodding to Tom and holding her thumb up] Does she [Jane] know a lot?

Comments from Tom and Kate added to Jane's talk, with supportive 'That's good' and 'Go on' utterances. The teachers went on discussing and made links to the project that was now coming to an end, the one on growth and welfare.

These observations demonstrate the emergence of teacher collaboration. The starting point for developing a shared practice was to establish a common ground for their joint enterprise through focusing on the content and process of classroom activity.

Planning interdisciplinary teaching required the shared participation of all teachers, but their roles and positions in the discussion were based on the relative significance that their subjects had in the upcoming project period. In Period 1, Peter and Tom played the dominant roles and in Period 2 Jane did. The shifting of the relative significance of the team members is one aspect of this collaborative interaction pattern. Another aspect is that the teachers' disciplinary interests in the projects were subject to negotiation and potentially in conflict. A third aspect of the collaborative pattern is that the team-talk was situated in the activity of planning and undertaking teaching. The ITT meetings took place on Wednesday afternoon. Two basic questions underpinned the discussions: (1) What has happened in the interaction with the students since the last ITT meeting? and (2) How are we going to move on?

The redefinition of the project that took place a couple of weeks into Period 1 implied a clarification and a redefinition of the content and practice of teaching. Imagine that Tom and Peter were teaching the students separately – Tom teaching the students in social science and Peter in music, and that students had different tasks in each subject: would they then discover any conflict in their understandings of the project? And if the conflict was disclosed, would they have to resolve it? Was it the sharing of the practice of teaching that ensured that the object of teaching also became the object of the interaction in ITT meetings? These observations accord with, for instance, Roth and Tobin's (2005) emphasis on the collective responsibility for the events in the classroom as a resource for teacher learning, findings that shared instructional practice (Supovitz, 2002) and dealing with conflict (Achinstein, 2002) are essential for teams to have impact on teaching practice. The developing and negotiation of a shared object of teaching was a core aspect of the team-talk in the School 2 ITT, but such a negotiation also elicited negotiation about the pedagogical principles of designing interdisciplinary projects and classroom instruction.

In this pattern of interaction team-talk teachers were planning classroom instruction. In contrast to the previous pattern (coordination) the ITT discussion did not 'eat into' time for ongoing instructional work.

Sharing: clarifying pedagogical motives

At the team meeting following Peter and Tom's initial planning of the *Growth and Welfare* project in Period 1, the teachers discussed the project questions that the groups of students had formulated. Again, Kate, the team leader, took the initiative.

Kate: ... what has happened now [in class] is that we have had a brainstorming session. Let me know if this is too elementary.

Jane: Yes.

Kate: I don't know how much you know about project work.

Peter: Not much.

Kate: The students have now chosen, or suggested, project themes that the groups want to work on.

...

Kate: ... and instead of these being formulated as a word, for instance 'Berlin', we want them to formulate research questions. So, one group has suggested, 'Why was the European Union established?' ... First we took it all down on the blackboard so that all students could see the variety of questions that were suggested ... Yesterday we had 15 themes or questions on the blackboard. The students wrote them down and put them in their project folders. ... And there were some [themes/questions] that were too similar. We said to the

students that we have to make some changes and negotiate about the formulation of their themes and questions. Next they were asked to write down and give good reasons for their choice of theme and why they would be the right people to work with the theme they have suggested and [they were asked to] ‘market’ their themes [in front of the whole class]. Now this bunch of papers is here on our table. Tom looked through them on the train on his way home yesterday and is satisfied with most of them, and now we have to go in and negotiate with some [student groups].

This explanation of how a project period starts took place in retrospect: this was how they worked on a project. But it was also a way of sharing and framing a teaching practice that they had all been part of. In the second ITT meeting for Period 2 the following exchange took place:

Kate: [addressing Jane] You are the one who knows how significant oil and platforms are for you in your subjects in relation to other things.

Jane suggested that they could have some learning goals and put them on the overhead projector.

Kate: We cannot put them on first. You see, storyline isn’t like that.
 Jane: They have to come up with ...
 Kate: ... their own ideas about what it looks like, and then go to the sources ... I can say something about the key questions that were used in a storyline about a truck company that I was involved in once, if it would give some ideas.
 ...
 Jane: We should rather find out together with the students what a platform looks like? But can we make 15 different platforms?
 Kate: Yes, that is exactly what is fun. ...
 Jane: OK.
 Kate: But there have to be directions. It has to be the right size, using these materials and finishing in two hours. It is very important with the time limit.

The teachers discussed in detail how to go about working with the students on the project. These observations point beyond the creation of a shared object. What is at stake here is the construction of shared object plus the sharing of the pedagogical scripts or premises that direct the way the teaching and learning is being structured. In the planning of both Periods 1 and 2, the two new teachers, Jane and Peter, had a key role in designing the projects, and their expertise was acknowledged by Kate and Tom. Their initial plans had to be renegotiated to be attuned to the historically mediated institutional practice of the school. Now another kind of expertise emerged. Kate and Tom, the more experienced teachers, guided them in accordance with the structures of project work and storyline. The team leader (Kate) explained the rules and norms of the school, but without questioning the expertise of Peter and Jane in their subjects. Jane’s superior competence in natural sciences and Kate’s superior competence in the storyline method complemented each other. There was an imbalance in the interaction based on two kinds of diversity: diversity of experience in the institutional mode of course design, instruction and learning, and diversity of expertise in school subjects.

Discussion

My starting point was that ITT interactions are task- or object-orientated. The potential impact of the team-talk on the teachers’ practices outside of the ITT setting was

expected to be inherent in the ways in which the teachers interacted as professionals, how the diversity of expertise emerged in the team-talk, and how the team-talk prepared the ground for shared practice, interdisciplinary teaching, collegial 'we-ness' and professional development of the team members and the team as a group.

The analysis has illustrated that team-talk represents a series of moments in a flow of social practice within an institutional context. The institution 'speaks' through the team-talk (Mäkitalo, 2003), but the team-talk also constitutes and moulds the institutional practice. In the School 2 ITT team-talk we can also see how new members are introduced to the institutional practice of the school, as well as how they are proactive in constructing the teaching practice of the team as a whole. In both institutions the team-talk tends to re-constitute the institutional practice of their school. What goes on in the ITTs, the team-talk patterns, is integral to the history of the school, and there is a tendency that the ITT structure will extend the traditional institutional practice of the school.

In this analysis the focus has not been on team-talk as an aspect of the institutional practice, but on the object-orientation of team-talk and its situatedness in and potential implications on out-of-ITT-setting practice. The observations illustrate the relationship between the object-orientation of team-talk and the dynamics of the ITT interaction. Some patterns implied the silencing of diversity and conflicts, while in other patterns diversity was a presupposition and conflicts were to be expected and accepted.

The first two patterns – renegotiation of individual teaching, and coordination of the social organisation of work – dominated in the ITTs observed in School 1. They can be seen as logically linked: when individualised teaching is re-established it needs to be organised, otherwise the complex, interrelated system might collapse, but there was no need to address the substance of teaching and learning. From this perspective it is reasonable to infer that ITT interaction dominated by these patterns potentially might have created an extra burden on the teachers. In practice the ITT settings might have served as a detour, leading to the re-establishment of the status quo. It is hard to see how team-talk could have any significant impact on the teachers' teaching in terms of shared practice, interdisciplinary teaching and professional development. It is hard to see how the team-talk served to make the ITT influential on classroom practice or create the social entity into a community of learning.

The third and fourth patterns – cooperation and sharing perspectives – which dominated in the ITT in School 2 – were predominantly related to teaching and learning, both in general and concrete terms. The planning of the teaching of students was the driving force behind the interaction. Coordination of the teachers' work was a sub-category of the planning of teaching students. If it was done in the ITT meeting, it followed in the wake of planning of teaching. Finally, the team meetings were clearly integral to a chain of events: they were closely chained to previous meetings and to previous and upcoming classroom activities.

There were striking differences in the object-orientation, the coordination and collaboration patterns and in how they identified and dealt with conflicts (Scribner et al., 2007). In the coordination pattern there seemed to be a social need, more or less, not to discuss the teaching and not to challenge each other about teaching and student learning. Diversity was silenced. The expertise of the individual subject teacher was taken for granted, and the content of his or her teaching was not subject to negotiation or in need of being made explicit within the ITT setting.

The cooperation pattern that emerged in this study was epistemologically grounded on an interdisciplinary and project-based teaching structure, which had its

own rules beyond the epistemological standards of a specific discipline. Each subject and teacher had to contribute to the interdisciplinary project and storyline methodology on the terms of the premises of these methodologies. A subject teacher had to qualify the other team members to supervise student groups in how his or her subject played a role in the project and what subject knowledge should be emphasised (subject-specific standards). First, the subject-specific could not be taken for granted. Secondly, the object of teaching (and planning) was framed within the context of the theme of the interdisciplinary project, not the specific subject.

Looking at the ITTs as organisational structures within their schools, both teams tended to extend the local institutional practice. But in one case it meant diminishing the influence of team-talk on classroom practice, while in the other case it meant strengthening such an influence.

The coordination, collaboration and sharing perspective patterns can be interpreted as levels of interaction, referring to how the diversities of teacher's responsibilities and tasks are dealt with in team-talk. The notion of 'level' implies that a pattern can be at a higher or a lower level of interaction and afford diverse resources for learning.

Levels of interaction: implications for planning and potentials for learning

McLaughlin and Talbert (2006) depict weak and strong professional communities as different stages of institutional development that offer different opportunities for teachers' learning. Weak communities are characterised by a technical culture and an absence of conversations about teaching: in other words, 'isolation enforced by norm of privacy' and 'expertise as developed through private practice' (p. 19). Strong communities are characterised by a mode of culture that 'breaks away from traditional norms of privacy' (p. 20) and emphasise 'collaboration around teaching; mentoring' and 'expertise as collective, based in knowledge shared and developed through collaboration' (p. 19). Such strong professional communities in schools are also termed *learning communities*.

In the ITT where the team-talk was dominated by the coordination pattern, the diversity of expertise among the teachers was the basis for this allocation of responsibility, but there was no attempt to work out the content or methods of classroom activities in collaboration. The team members did not find and conceptualise a shared project, educational challenge or enterprise. The explicit or tacit institutional rules, norms or scripts underpinning their approach to teaching and learning were not discussed. Scripts are potentially different from one teacher to another, or perhaps shared among teachers of a specific subject, for instance specific scripts prescribing how to teach mathematics might be different from scripts among English teachers – and the differences are not made explicit. In fact, the social contracts in operation within an ITT that operates on this coordination level of interaction are such that the making explicit of diverse scripts among teachers is unnecessary. It is hard to identify a collegial, teaching-oriented 'we-ness' in the team-talk within these patterns of interaction. In contrast, in School 2 ITT, where the team-talk was dominated by the cooperation and communication patterns, coordination of teachers' work was a subordinate part of the planning of teaching, which included negotiating the specifics of various school subjects and their interrelatedness in the interdisciplinary projects. Scripts underlying the organisation of teaching were made explicit, and the process of explanations and negotiations established the ground for scripts to develop into social contracts. But the scripts are discussed in the context of concrete planning of teaching

and tied to content. While scripts are general, they are negotiated as specific, object-related tools for instruction and learning.

In the terms of Engeström et al. (1997) the coordination pattern is integral to a weak professional community, while the cooperation and communication patterns are integral to a strong professional community – a learning community. The main difference is the construction of a shared object and sharing of ‘scripts’. The team-talk in the School 2 ITT illustrates how the negotiation of a shared object and the ‘scripts’ for teaching happened at this level. In the planning of Period 2, the discussion varied between addressing the core of the project theme (shared object) and its boundaries, and also the principles of the storyline method which represented a script for the process of teaching. The team-talk had negotiations at different levels: the project level, the role of the participating subjects and the subject teachers, the boundaries between the subjects, and the principles of the teaching method and how they should be applied in a particular project. The diversity of expertise was the starting point for the discussions – both the teachers’ subject-wise diversity of expertise and their expertise in the storyline method. The expertise of all teachers was needed and no one was redundant in the planning process.

We could question whether the team-talk in School 2 ITT was fully at the level of communication because in the ITT interaction the institutional norms (scripts) were not clearly reviewed and critiqued. I did not observe such discussions in the ITT meeting, but this can be explained by the fact that the meetings had a clear instrumental function: continuous planning of teaching and reviewing of the progress in the classroom activity. In this discursive context the scripts had the character of tools for planning and action. The object was classroom practice, not the scripts. In an interview, Tom and Kate expressed a concern that the interdisciplinary approach might have too much emphasis on incorporating as many school subjects as possible in a project. Instead, they argued, fewer school subjects could be included and the interdisciplinary projects could be more academically consistent. From their experience, there could be tensions between learning in a subject and more general, integrative interdisciplinary learning. The more critical discussions about the institutional scripts could have taken place outside of the ITT meetings, or at designated times, and not have been caught by my observations.

In their initial planning of Period 1, where Tom and Peter discussed a shared object, another aspect of their team-talk became apparent. In their first discussion they (seemingly) agreed what was the shared object of the Period 1 project. It was because the students expressed their confusion that the inconsistency in the teachers’ understanding of the project became apparent, the scripts were addressed and the discussion transformed to the level of communication. It means that the relevance of team-talk and its social meaning can be identified outside of the ITT setting. It illustrates the point that it is essential to identify what is the object of team-talk as an aspect of the interaction patterns.

In School 2 the ITT was also an operative unit in the classroom. They often taught in pairs or groups of four. The team members needed both to coordinate their teaching and to develop a relatively high level of unity with respect to the content of teaching and their expectations of the students. Inconsistent practices would generate frustrations among the students, as well as conflicts between the teachers and their disciplinary responsibilities, as happened in Period 1. Consequently, renegotiation was needed to create a common ground for teaching.

These different levels of interaction and collegiality conceptualise the differences between the team-talk in the two ITTs observed. The ITT in School 2 stands out as a

learning community to be investigated further for revealing mechanisms that afford learning in horizontal social communities. This takes us back to the question of how the diversities among a group of professionals are played out in social interaction.

Horizontal diversity and resources for learning and development

Earlier I emphasised the emergence of the horizontal *versus* vertical diversity of expertise as a starting point for discussing learning in workplaces. In the team-talk in the School 2 ITT, the relationship between the team members was emphasised as horizontal at the starting point because contributions from each teacher and each subject were required in the interdisciplinary project, and the relative significance of different school subject and the status of the teachers varied from one project to another. The dominant pattern in their interaction was that the team members who knew more about some aspects of the project theme had a major role in providing input to the planning process, but the project theme was negotiable. The team-talk was also characterised by invitations to other team members to contribute; it was supportive and complementary. Over time, all team members alternately had the position as more and less experienced within the team, depending on the relative significance of their subject in the interdisciplinary project or their teaching experience. Peter had a major role in Period 1 and Jane in Period 2. Kate had a major role in introducing the new team members to the pedagogical principles (scripts) of the institution. But generally speaking, at any time and in relation to specific aspects of teaching, the most competent team member took (and was attributed) a leading role in the discussion.

They started from a relatively broad idea about a project and worked towards shared ground, both with respect to what content should be emphasised and how the project should be taught. In this respect, learning referred to both increasing the competence of the individual teacher and the development of common ground for the shared and complementary practices. Wenger, McDermott, and Snyder (2002, p. 27) claim that for learning to appear in a community of practice, three elements are needed – ‘a domain of knowledge, which defines a set of issues; a community of people who care about this domain; and the shared practice that they are developing to be effective in their domain’. For the School 2 ITT the teaching of an interdisciplinary project was the domain of knowledge that generated their shared teaching practice and the ITT was a tool for developing the project. The team-talk expressed commitment to the emerging project, grounded on their competence in their subjects, and the joint planning of their shared teaching practice was their *raison d’être*. Their relationship was horizontal in terms of shared responsibility and equal social status as classroom teachers. But the horizontality may not have been observable at any given time; instead it emerged over time as a pattern within or across sequences of interaction, within meetings or across meetings. The dominant position of the team members in School 2 ITT was that they had distinct responsibilities and unequal competence when it came to subject knowledge and planning of the interdisciplinary project. For instance, Peter was more competent in designing the content of the Period 1 project, and Jane was more competent when the issue was the content of the Period 2 project. Another competence gap was related to their diverse experiences with the local teaching code of the school, for instance the project work and storyline methodologies. Peter and Jane, who had little experience and were new in this school, were less competent in the school’s local teaching code than Tom and Kate. Dependent on which team member was speaking, he or she would be more competent than the other team members in one way or the other.

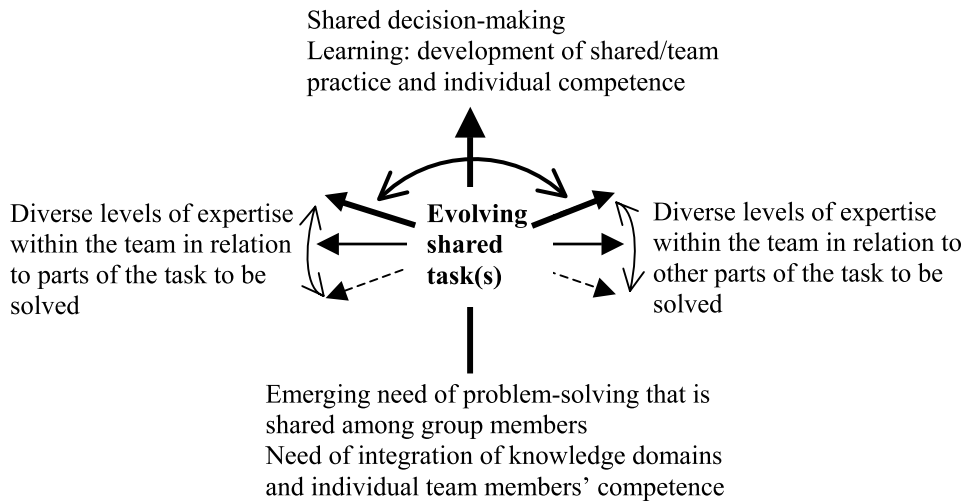


Figure 2. Developmental potential inherent in horizontal decision-making in ITT interaction.

It was from the position of higher competence that the team members predominantly contribute in team-talk, as indicated by the bended thick arrow in Figure 2. In this respect the teachers participated in team-talk where they, over time, were resources for each other: their alternating contributions created resources for developing shared practice and shared professional development.

Figure 2 illustrates the mechanisms whereby the development potential inherent in decision-making and learning is generated in team-talk in School 2. The vertical dimension of the model depicts the developmental dimension: from a position of uncertainty, the teachers created shared teaching. The middle, horizontal part of Figure 2 illustrates the communicative dimension of team-talk in School 2. The swinging of the arrows illustrates that the difference in levels of expertise among the team members was invariable over time and across tasks, but who was more competent varied in any specific task. The broken, two thicker arrows, pointing upwards in both directions, illustrate the fluctuating hierarchy of competence, and also how they contributed to the decision-making from a position as 'more competent'. It is a social system that affords learning in a different way from a situation where someone is attributed as, or takes a position of, being constantly more competent, which typically happens in teacher–student, master–apprentice or expert–novice relationships. It expands the approach to learning beyond seeing learning as changes in individuals. It includes, and in fact gives priority to, learning as a social process involving both individuals and social groups.

Conclusion

The data from the School 2 ITT show how teachers' collaborative work, starting from an initial 'big idea' (e.g. an interdisciplinary project on social welfare in post Second World War Norway), can be developed through joint planning, monitoring of practice and progress, and recurrent refinement of the content and process of teaching throughout the project period. Despite differences between teachers and subjects, the ITT structure established a ground for a process on which shared teaching practice was built and maintained through concrete negotiations of classroom activities. Jointly the data from these ITTs illustrate another essential point: it is a real challenge

to establish collaborative practice within a group of four teachers with diverse disciplinary backgrounds and individual preferences and histories. Generalisation from this case study is problematic. But the analysis has highlighted some factors that point out some springboards for developing teacher teams into productive planning units and learning communities, as well as showed obstacles that need to be dealt with. More microanalyses of what goes on in teacher teams, across diverse schools and school systems, are needed to understand the mechanisms involved in establishing well-functioning teacher teams. The object of teacher collaboration, the collegial relationship among teachers with diverse levels of expertise and the situativity of team interaction in wider social and institutional practices particularly need to be addressed. Most important, perhaps, is to get beyond what teachers say *about* teams and instead focus on what they say and do *in* teams.

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