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Chapter 15

Problem-Oriented Project Studies: The Role of the Teacher as Supervisor for the Study Group in Its Learning Processes

Jørgen Lerche Nielsen and Oluf Danielsen

Introduction

The paper contributes to the literature on problem-oriented project studies and problem-based learning (PBL), and it builds on and is a reflection of the experiences the authors have gained through decades of work with problem-oriented project pedagogy. Our primary focus will be on the Masters programme in ICT and Learning (MIL), where students from all over Denmark within a networked learning structure are studying in groups combining on-site seminars (four during a study year) with independent and challenging virtually organised project periods, which require a teacher who is flexible and aware of the different challenges in the new environment. We see the real challenge for a worthwhile education in the modern complex society with its ever changing conditions to open up for a personal, meaningful process, where new ways of thinking are made possible. Thus, students may learn to enter into new cultural patterns and to get involved in quite demanding but enriching practices. How can teachers through their supervision help students to meet these challenges?

Problem-Oriented Project Studies

The educational approach implemented by MIL goes back to the first half of the 1970s, when the new reform universities Roskilde and Aalborg University were founded in Denmark. The approach is called problem-oriented project pedagogy

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(Olesen and Jensen 1999). It not only shares certain characteristics with PBL, but it also differs from this approach (Kolmos et al. 2004). PBL goes back to the beginning of the 1970s, primarily not only in the USA and Canada, but also in Europe at Maastricht, The Netherlands, and Linköping Sweden (Barrett and Moore 2010). In PBL, the teacher finds and decides the questions and themes with which the students can work. It is the responsibility of the teacher as an expert to demonstrate how students in a constructive way can relate curriculum and theories to praxis. The professor assists the students in finding problems and challenging tasks in order to make it possible for them to work actively with theories and concepts. Within this framework designed by the teacher, the students are offered the opportunity to deal with some of the presented problems and shed light on the problem field using the recommended literature presented by the professor.

Problem-oriented project pedagogy, on the other hand, is characterised by collaborative project work in groups; it is an active kind of learning that is participatory-directed in a dialogue between students and the teacher as a supervisor. The teacher's role is to give the students critical constructive feedback as well as facilitating them in their learning processes. Furthermore, it is interdisciplinary in that it combines knowledge and ideas from different kinds of academic fields (Olsen and Pedersen 2005).

The starting point for the student groups is to investigate a topic or problem that the group is not familiar with and that represents a challenge for them. With a research question as a starting point, the group members embark on a dialogically organised process in which they collect relevant material, data and information; analyse it; and, guided by relevant theories and methods, work to transform this material with the goal of identifying and clarifying the research question.

The students draw conclusions that represent the range of differences in understanding among them, and they create a product that communicates their collective divergent insights to others.

It is the group members who jointly and in dialogue with the group supervisor discuss the formulation of an operative research question; the choice of theory and concepts; which methods to apply; and which practice field to analyse. The project work should be exemplary, which implies that analytical and methodological approaches are applied. The work with the theories and concepts goes beyond the specific project, thus helping to build and consolidate the students' broader study competence.

Through the acquisition and application of theory and method, the students ideally achieve an understanding of important aspects of the academic subject with which they are working. The goal of problem-oriented project pedagogy is that students relate their new insights to their previous experiences and hence through the study process construct new valuable skills and experiences.

Networked Learning in Relation to MIL's Project Work

According to Dirckinck-Holmfeld and Jones (2009, p. 261), two competing approaches can be found within networked learning: (1) *The broadcast model* – associated with the industrialised mode of e-learning – deliverance of content in large scale. This model has been part of the Open University e-learning. (2) *Discussion viewpoint* – closely associated with the social constructivist approach of networked learning. The MIL programme is an example of this model.

MIL, which has existed as a postgraduate Masters programme for 10 years, recruits professionals from all over Denmark and abroad. The programme implements new educational technology, which has made it possible to have flexible communicative patterns building upon the problem and the project-based pedagogical model within the structure of a networked learning environment. The virtual learning environment based on the First Class conference system is an integrative part of the teaching and learning environment. Students are organised in groups and have their personal folders within First Class. Here, they are able to write, store and organise their contributions. They constantly have dialogues and discussions both with their group partners and also with other students belonging to the cohort.

Furthermore, they have access to synchronous video (Adobe Acrobat, Connect Professional), peer-to-peer tools and Web 2.0 (Skype, Windows Messenger, Google Docs, blogs) and tools to support project and course work (Camtasia). They can also engage in discussions with their teachers during their group-based online project work, through the periods with online courses, and when they meet at the four yearly f2f-seminars. As teachers and researchers, we have been engaged in the MIL programme for 10 years. Thus, we have first-hand experience with the learning environment. The examples we will be referring to should be considered as generalised examples from our practice.

The Responsibility of the Students

In the problem-oriented project pedagogy, the students themselves are responsible for identifying which problem to work with, and the very act of formulating a problem is a large part of the learning process. To work in a group means that students must learn to work together in order to make decisions, and they must figure out how to share and coordinate work. Through these study processes, the students learn how to plan, manage and evaluate projects. We see this as part of the development of their study competences, which also must involve the ability to handle the large amounts of information that are within easy reach via the library, databases and the Internet. It is crucial that students learn to be information literate. This requires not only that students are able to locate data and information, but also that they are able to select critically within this huge body of information; that they are

able to judge and evaluate the use of the information and that they are able to eventually succeed in letting this information contribute to the construction of knowledge within the group.

This understanding goes back to the definition of information literacy from the American Library Association (ALA):

“To be information literate, a person must be able to recognize when information is needed and have the ability to locate, evaluate and use effectively the needed information [...] information literate people are those who have learned how to learn” (ALA, American Library Association 1989).

In this process, knowledge may be understood as the result of cooperative and collaborative actions in a context, where the students combine and connect relevant information with their previous knowledge and experiences. This knowledge creation takes place within an environment, where information and communication technology are

“(...) used to promote connections: between one learner and other learners, between learners and tutors; between a learning community and its learning resources” (Goodyear et al. 2004, p. 1).

Thus, we see information literacy in the context of a modern, complex society, where it is a vital competence to be able to reflect on one’s knowledge and learning in relation to ongoing changes and new challenges.

From this perspective, learning is not something that takes place exclusively in the individual’s mind in a special, “clean” educational context detached from practical, work-related contexts. Learning is viewed as contextual, situational and dynamic, and it is taking place when we as active persons become involved in social interactions with others in specific social practices (Lave and Wenger 1991).

Negotiation Among the Participants

Our definition of problem-oriented project pedagogy is related to a social constructivist theory of learning, where concepts such as collaboration, communication, dialogue, negotiation and interpretation play important roles in constructing knowledge. The final step in this process is the evaluation, both as a self-reflexive process and as feedback from other students and the teacher.

The idea is that students should not just passively receive teaching but be actively involved as learners. Thus, students and teachers are working together in acquiring, constructing and negotiating the meaning of knowledge. What kinds of problem are the students working with, what is the goal, and how are they communicating, negotiating and working together? What kinds of knowledge are they constructing? Those are some of the dimensions that can provide motivation and give meaning for the individual person and for the group as a whole.

The real challenge is to open up for a personal, meaningful process, where new ways of thinking are made possible. Thus, students may learn to enter into new

cultural patterns and to get involved in quite demanding but enriching practices. The goal of this problem-oriented project pedagogy is to help students become autonomous, yet collaborative and critically thinking individuals.

In relation to the challenges related to being involved in meaningful study activities, and being able to establish fruitful relations with others, we find it interesting to draw on some of the concepts developed by George Herbert Mead (1967 [1934]). According to Mead, it is in the intersubjective perspective that construction of meaning is created. Fundamentally, Mead uses the term “perspective” to describe the relationship between the experienced world and the experiencing subject. This means that the individual subject experiences his or her world in a situational, contextual and unique way. Perspective can furthermore be understood as a person’s performance images or way of conceiving the world that will guide the social practice for this person in a contextual way (Mead 2005 [1934], p. 352).

John Dewey shares this point of view with Mead. They both have an understanding of learning as processes in intersubjective fields, participation in activities within various communities, of communication consisting of communities of learners, where meaning is negotiated and created. In this way of working, it is important that the students participating in group work with fellow students are able to relate to one another in an open way. The ability to take another person’s perspective can be said to constitute the basis for learning. For the students, this ability is crucial. The Norwegian theorist Bråten discussing Mead writes: “It is through such a perspective construction, the ability to put yourself in someone else’s place that students can enable their reflective capability” (Bråten 2000, p. 116).

Further on in his investigation Mead continues: “The individual becomes aware of his relations to that process as a whole, and to the other individuals participating in it with him; he becomes aware of that process as modified by the reactions and interactions of the individuals-including himself-who are carrying it on. The evolutionary appearance of mind or intelligence takes place when the whole social process of experience and behaviour is brought within the experience of any one of the separate individuals implicated therein, and when the individual’s adjustment to the process is modified and refined by the awareness or consciousness which he thus has of it” (Mead 1967 [1934], p. 134). Other persons can also be seen as “generalised others”, understood as an abstraction: “[...] representing the general societal position” (Vaage 2000, p. 103). A successful construction of perspective is thus a prerequisite for successful communication. In order to take the other persons’ perspective in the group work, the participants should be open, reflexive and able to recognise new perspectives. In a group setting, it is important that the members are ready to acknowledge other people’s wishes and life situations.

Stressing the importance of reflexivity Mead continues: “It is by means of reflexiveness-the turning-back of the experience of the individual upon himself-that the whole social process is thus brought into the experience of the individuals involved in it; it is by such means, which enable the individual to take the attitude of the other towards himself, that the individual is able consciously to adjust himself to that process, and to modify the resultant of that process in any given social act in terms

of his adjustment to it. Reflexiveness, then, is the essential condition, within the social process, for the development of mind” (Mead 1967 [1934], p. 134).

For teachers as well as for students, this concept of knowledge and learning “involves significant change in underlying values and knowledge structure – is always the subject of an organizational predicament”, according to Donald Schön (1983, p. 328).

The Role of the Teacher as Supervisor for Students Doing Project Work

While students are working on their projects, they are receiving supervision from a teacher. In the next part of this chapter, we are going to analyse how supervision takes place in a networked learning environment. We further elaborate on the different roles that the supervisors take on as experts, facilitators and as social mediators, and how the different roles are supported and mediated by the learning infrastructure. The academic role as an expert can unfold with written communication through papers, giving feedback and advice within an asynchronously organised learning environment, such as a conference system. The other roles – especially that of a social mediator – require synchronous communication in personal meetings or, if that is not possible, through the use of Skype. This makes it easier for establishing a dialogical communication situation, where instant feedback and mutual response can take place. This is especially of importance since this supervisor role is in relation to social, cultural and psychological dimensions of the groups’ work and learning processes.

The role of the supervisor is different from the role of the traditional teacher, who instructs, assigns works, finds texts, makes decisions regarding curriculum and evaluates the contributions of the students. In problem-oriented project studies, the supervisor is expected to provide extensive feedback to the work in progress that is submitted by the student group. Each paper from a student group for the “consultation meetings” can be up to 30 pages long. The supervisor offers his or her advice, discusses the various elements of the paper, and asks stimulating questions. The supervisor is responsible for providing the group with the required attention, drawing on his or her own experience, being able to relate to the students’ experience, and thus helping the students to gain a deeper understanding of their own work. In this way, it is important that the teacher as supervisor is able to take the position of his or her students.

P. N. Dahl talks about student-tailored instruction (Dahl 2008). By this, he means that as a starting point the supervisor must go from the student’s current “zone of development” and try to stimulate the “zone of proximal development”. The zone of proximal development (ZPD) is the grey area between the things the learner can do alone and the things the learner can do with help from a more knowledgeable person or peer group (cf. Vygotsky 1978). By examining students’ ZPD, we as teachers may have a window into the possibilities that the students can reach in the immediate future and thus we have a picture of the students’ overall state of dynamic development. For a teacher as supervisor, it is not enough to be academically competent;

it is also crucial to be able to take the students' perspective, to try to interpret what kind of knowledge the students have, to be able to identify him- or herself with the specific kind of psychological and broader learning environment the students may need. A supervisor's ability to experience the ZPD of the students requires the capability to reflectively take the perspective of the other.

During the entire learning process, the supervisor as well as the students should make explicit their specific perspectives on supervision and guidance and inquire about the other's perceptions in order to be able to address possible differences in their mutual expectations. It is important to avoid defensive patterns by communicating openly and with respect for the other person's perspective. This is by no means easy, especially not for a teacher who is brought up in a traditional way. In such processes with challenges and no clear-cut answers, the supervisor must be able to cope with both his or her own and the students' uncertainty.

These understandings of imagination or horizons of understanding (Vaage 2003, p. 136) are constituted by the subject's experience, developed in an intersubjective and processual way. For example, a teacher has a specific perception of reality regarding the process of a learning sequence. This subjective perception may undergo changes during the learning process due to the self-reflection on the supervisor's side.

In a net-organised learning environment, the supervisor is expected to be even more flexible and sensitive in relation to the needs of the students. We take a look at some possible ways of filling out such a role

1. As the academically focused teacher, acting as an *expert* on a specific subject.
2. As the *process-oriented supervisor*, focusing on processes and methodological aspects.
3. As a *social mediator*, listening actively to what kind of psychological dimensions are taking place among the group members.

The Teacher as an Expert: Instructive Supervision

This kind of supervisor is providing guidance in relation to theories, methods and discussions within the philosophy of science. They see it as essential that the writings of the student group are thorough, coherent and adhering to the supervisor's norms. This supervision mode can be called *instructive* – the students are primed and instructed in how to provide answers to the research question. The students may ask questions such as: “can we” and “are we allowed”. This type of supervisor can use terms, such as “shall”, “please do”, “don't do”, “right” or “wrong”.

Donald Schön, in discussing two different notions or contracts between the professional and the “client”, outlines this traditional expert role in contrast to that of a democratically oriented, reflective practitioner. In our context, these two types of attitudes can shed light on the teacher–student relationship (Table 15.1).

As we have seen, Mead refers to the concept “to take another person's perspective” to describe the differentiation of experience in the common world of

Table 15.1 Two different dimensions of the expert role for the teacher – one the traditional expert approach – another as a reflective professional; borrowed from Schön 1983, p. 300

Expert	Reflective practitioner
I am presumed to know, and must claim to do so, regardless of my own uncertainty.	I am presumed to know, but I am not the only one in the situation to have relevant and important knowledge. My uncertainties may be a source of learning for me and for them.
Keep my distance from the client, and hold onto the expert’s role. Give the client a sense of my expertise, but convey a feeling of warmth and sympathy as a “sweetener”.	Seek out connections to the client’s thoughts and feelings. Allow his respect for my knowledge to emerge from his discovery of it in the situation.
Look for deference and status in the client’s response to my professional persona.	Look for the sense of freedom and of real connection to the client, as a consequence of no longer needing to maintain a professional facade.

experience, which we as persons are part of (Mead 2005, p. 353f). Mead’s concept corresponds to the reflective practitioner, whereas the expert is more on the distance of the students.

Process Supervision – Focus on Methodological Questions, Epistemology: A Learning and Knowledge Process

This kind of supervisor is focused on aspects related to the research questions, the whole learning process and the continuing evaluation of the knowledge process. The supervisor aims to guide the group towards the final project through stimulating discussions, supporting the students’ effort to reach a fruitful integration of the empirical data collected by the students and relevant theoretical positions. Important in this type of supervision is the students’ heightened awareness of their study and work styles. The students should be able to constantly reflect on their way of acting and working with the material, what kind of choices they make, and what they are writing.

However, some students may find it difficult to involve themselves in an approach of reflexivity and to recognise the value of continual process evaluation. They seem only to focus their attention on constructing the product – their final project.

The supervisor can help by asking questions to clarify and further investigate the students’ research question, theories and methods, and by indicating if working papers contain ambiguities and misunderstandings in relation to the study requirements.

Because the process supervisor has an open attitude, the students are using the supervisor as a qualified “opponent” – the supervisor poses “cheeky” questions, indicating there are no absolute answers – no solutions are entirely “wrong” or “right”. It all depends.

The students will inform the supervisor about their work, using the supervisor as a sounding board for their ideas, so to speak. Thus, this kind of supervision is aiming at facilitating the entire learning and work process for the students.

Social Mediator: In Relation to the Interactions Among the Students

This kind of supervisor is focused on aspects related to the difficult and challenging elements of collaborative group work. When members of the group are talking at cross-purposes or even talking down to one another, the supervisor as a social mediator will intervene, for example, if students have difficulties making decisions and embarking on constructive dialogical processes, the supervisor will intervene. The method employed by this mediating supervisor is mainly inquiring and questioning in order to facilitate student engagement in explorative dialogues. The wellbeing of the group members is very important in this context.

The Relationship Between Student and Supervisor

In order to experience a successful supervising process, the group must make sure that the teacher as a supervisor is involved in the project study process.

The supervisor is a resource person whom the group must learn to make use of (depending on what type of supervisor they are and what the students' learning styles are). The students express their expectations to the supervision process explicitly, and they make the purpose of their project study and the level of their ambitions clear to the supervisor.

For example, a problem will arise if the students want to work with a practically oriented problem in communications, such as making a booklet or producing a video, and the supervisor wants to provide process-oriented supervision. These students may want concrete guidance on how to make productions and not a process orientated comment or intervention.

If such students feel insecure in relation to the requirements they must meet, they may be reluctant to expose their insecurity—consciously or unconsciously they may give their supervisor the impression that they are in possession of the competences and experiences that the supervisor wants.

The supervisor in this situation may take on a supervision style that actually *overestimates* the students.

In contrast, if a supervisor is downplaying the academically oriented product supervision, students may consciously or unconsciously give the impression that they are less competent than they really are in order to motivate the supervisor to be more academic and “professional”.

Table 15.2 The teacher–student relationship seen as a traditional contract and a reflective contract, respectively; borrowed from Schön 1983, p. 302

Traditional contract	Reflective contract
I put myself into the professional’s hands and, in doing this, I gain a sense of security based on faith.	I join the professional in making sense of my case, and in doing this I gain a sense of increased involvement and action.
I have the comfort of being in good hands. I need only comply with his advice and all will be well.	I can exercise some control over the situation. I am not wholly dependent on him; he is also dependent on information and action that only I can undertake.
I am pleased to be served by the best person available.	I am pleased to be able to test my judgments about his competence. I enjoy the excitement of discovery about his knowledge, about the phenomena of his practice, and about myself.

The supervisor may in this situation take on a supervision style that actually *underestimates* the students.

In relation to this teacher–student relationship, we refer again to the concepts proposed by Schön. This time the dichotomy is viewed from the perspective of “clients” – in our case students (Table 15.2).

When practitioners are unaware of their own frameworks for roles or problems, they do not experience the need to choose among them. They do not attend to the ways in which they construct the reality in which they function; for them, it is simply the given reality (Schön 1983, p. 310).

These three roles should not literally be understood as distinctively isolated differentiated roles. Rather they should be considered as an attempt to construct a methodological model through which to view the complex situation. In reality, a good supervisor should be able to take on all three kinds of roles depending on the phases of the project work and the situational mood among the students.

The Networked Learning Process: An Example

A project pedagogy process in MIL has a variety of different phases, ranging from face-to-face meetings with the student group to communication through digital media in virtual learning environments featuring written communication, audio and video. The roles of students and teachers change during a project working period.

The *students* identify the problem area they want to work with, based on the study declaration of the MIL. Then, they proceed to write a constructive problem formulation with a number of research questions by formulating one or two open-ended questions beginning with: Why, How and What ...Next, the group members clarify which method they want to work with and the specific kind of philosophy of science the project must be based on.

The *supervisor* relates in a dialogical way to the situation described above of combining the roles of academically focused expert, process-oriented supervisor

and social mediator. His or her approach is a kind of “joint inquiry” that allows the students in a qualified and informed way to make the preliminary crucial choices in their study process – knowing that further delimitation will be a necessary part of the learning process. The ideal and best way is that the outset of the project-driven study process takes place in a face-to-face setting.

Based on the group’s independent work in literature searching, the completion of a number of interviews or other field work, and reading of relevant theory, the group will be able to present a comprehensive discussion paper covering 25–30 pages.

The supervisor acts as an *expert* relating to the students in an evaluating way as a starting point: Is the content presented in a coherent way? In the following phase, the teacher role will be more like a *facilitator*, helping to bring forward ideas for the continuing progress in the project work process. It may, for example, include assistance to the students in looking for supplemental references and additional literature.

The ability to write good papers is the focus of this phase of the work. It is beneficial if the students’ contributions can be uploaded to a conference system, where all participants have access to read, write and print.

Disagreements may occasionally arise among the group members, leading to difficulties in collaboration, which can lead to disintegration in the project group. But disagreements or students’ various viewpoints can also be seen as productive – even though they may be experienced as frustrating – and helping bringing different perspectives forward. At other times, they can be counter-productive and an obstacle to the continuing work in the group. In MIL, where students hold professional jobs while they are studying, they do not always have time and energy to deal with disagreements in a constructive way. There is consequently a tendency for more project groups to split up than we see in on-campus learning environments. A MIL group may split up into two smaller groups, or an individual student can continue as an associated member. This situation comes up once or twice nearly every year.

The supervisor functions as a social mediator for the students, asking questions to the two new groups separately. The questions concern (a) the participants’ relation to the topic of the project work and (b) the relationship between the group members personally. Agreement is reached regarding how each new group can benefit from the previous empirical work to implement and analyse the content of the interviews. The result is “the division of property” as is the case in a “regular” divorce.

In this situation, the oral discussions unfold. Therefore, face-to-face meetings are best; however, if they are not possible, phone or Skype meetings can be used to replace them.

The work of the two groups progresses separately, and each group then later presents its new paper to the “joint teacher role” of: *academically focused expert and process-oriented supervisor*. It may turn out that the two projects have evolved in different directions, demonstrating that the disagreement largely had been of an academic character and therefore not just relating to personal conflicts.

Feedback to the students can either be given through Skype or by written comments uploaded to the conference system – or a combination of the two forms of communication.

The two groups, of course, take their exams separately. Both groups in this situation still experience their teacher in the role of *examiner* because the heart of the matter concerns the final evaluation. However, sometimes there is a possibility for more inquiry-oriented dialogues as part of the examination, which means that even at this occasion a genuine learning process among the participants may still take place.

Communication: A Basic Tool of Networked Learning

As part of the group's learning process, communication plays a central and important role. This applies to both the internal communication between group members and communication between the group and its supervisor. Communication within the group consists of two different types of messages, according to Alderfer (1986, p. 202):

- Messages associated with the specific issue of inquiry-based work as part of the learning process.
- Messages associated with the relationships between team members.

Messages linked to the explorative work with problem solutions to the investigations may, for example, be related to making proposals, expressing opinions and asking for other group members' opinions, and also requesting and providing information for the continued work on the group's research question. This is the professional, academic communication, where literature studies are combined with collection of empirical data through interviews and observations with external informants whose statements play an important role in the group's further work. This professional, academic communication should constantly be related to the research questions that were the group's starting point. However, development of the study explorations and the group's findings may make it necessary to revise the original problem formulation.

This ongoing development of the learning process contains a process of negotiation between group members and the supervisor. It is as part of the negotiation process that the relational communication between the members of the group will increase and eventually be quite time-consuming, in order for the learning process of the group to move on and evolve further. The messages associated with relationships between group members can be *positive*, where the participants act friendly towards each other, declare consensus, and dissolve any tension among them. However, the messages may also be *negative*, where opposing views are highlighted in statements of disagreements so that communication can be perceived as unfriendly and perhaps stressful for the group's continuing work.

Table 15.3 The negotiation processes among students viewed as a dichotomy between *dialogues* and *discussions*; borrowed from Alrø and Kristiansen 2004

Discussion	Dialogue
Convince – Winning	Joint investigation
We need not get smarter	We can all learn from each other
I have the right answers	Together we will find a solution
I show how you were wrong	We go for a new joint solution
I listen to find fault	I listen to understand
My opinions represent the truth	Let us examine our attitudes
I defend my views	We are improving each other's thinking
I keep cards close to my body	I am submitting my doubts
I do not take into account how you feel	We create together a safe space where stupid questions are OK

The communication in the group work is part of the ongoing negotiations within the learning process and typically will contain three different types of communicative processes; namely (Stewart and Logan 1993, p. 128):

- *Interpersonal communication* where the communicators address each other as unique individuals, as persons.
- *Social communication* that takes place between the social roles with no interest in the person behind the role.
- *Cultural communication*, where the communication depends on the person's views on for example gender, age, social class and ethnicity.

When the group members actively take part in a specific learning process, their interaction can be seen as *social communication*. This means that they communicate in their role as students, engaged in the literature and the methodological approaches of the project work. They have a shared interest in constructing a project that is as good as possible. However, during the ongoing negotiations various viewpoints and differences in opinion among the group members may arise. If no agreement or negotiated compromise can be reached, the interaction can change into *interpersonal communication*; i.e. each participant in the group declares his or her personal opinion as part of the negotiations. Maybe *cultural communication* will prevail if the interpersonal communication becomes prominent. In most cases, the group will achieve a compromise, perhaps with the assistance of the supervisor in their role as social mediator, and the students will be ready to continue with their learning process and work together. If not, the group may split into smaller groups, which will be experienced by them as a rupture that takes place in a potentially contentious and conflicted atmosphere.

From the outside, the negotiation processes might be viewed as a dichotomy between *dialogues* and *discussions* as part of the group members' either primarily negative or primarily positive relational communication. This may be set up as opposites (Alrø and Kristiansen 2004, p. 14) (Table 15.3)

Habermas's distinction between strategic and a communicative action represents another way of characterising the contrast between discussion and dialogue (Habermas 1986). Thus, discussion can be seen as a form of strategic communication;

i.e. instrumental communication, where the strategic actors' intentional behaviour are oriented towards cognition and success. A strategic actor communicates with the other group members with the purpose of influencing their perspectives according to his or her goals. Thus, strategic action aims at acquiring the definitional power. The outcome is experienced as an attempt to achieve one member's specific goal as part of a win-lose dynamic.

Conversely, dialogue can be seen as an effort of communicative action, where the communicative actors with their interactive competences and interests are oriented towards consensus and performative acts, including an orientation towards cognition. Such actors are striving to accomplish a more open communication without specific intentions to dominate the other participants. For Habermas, the goal is to reach a situation with "intersubjective mutuality of reciprocal understanding, shared knowledge, mutual trust and accord with one another" (Habermas 1979, p. 3). In other words, the underlying goal of reaching understanding is to foster enlightenment, deeper insight in the problem area, and consensus among the group members. In a specific project group, the communication at times alternate between discussion and dialogue in the sense that is described here.

Conclusion

In a networked learning environment, the participants only occasionally arrange face-to-face meetings; primarily, they are working together in groups via the Internet using an online conference system, Skype and video conferencing. It is therefore important that supervisors have a clear idea of how the physical and virtual means should be used. To meet face-to-face is important in the initial phase, where a project group is established. Meeting in person makes it easier for the supervisor and the students to achieve an alignment of expectations for their future relations and the group work. The communication in the group at this point focuses on constructing an initial problem formulation with some related research questions. In this phase of the project work, dialogues between supervisor and students contain Habermasian communicative action.

Any disagreements among the participants about the academic direction of the project work should preferably be resolved while the participants are physically together. A successful construction of interrelational perspective is thus a prerequisite for successful communication, as we have learned from our exploration into the world of Mead. As we saw, it can be difficult, but it is crucial that supervisors as well as students have the capability to take another person's perspective. It is important to avoid defensive and rigid patterns by communicating openly and with respect for the other person's perspective.

In subsequent phases, the collaboration is mediated through the Internet and the relevant digital tools, services and devices. In this phase, students have the opportunities to write collaborative texts and discuss them online. If disagreements or conflicts arise in the project work, the interpersonal communication among the

participants cannot be confined to academic content alone. The participants' reciprocal, personal relationships come into focus; thus, each person must judge whether, for example, everyone's work performance has been adequate. If, for example, group members have different cultural backgrounds, it may also be necessary to clarify the more deep-seated perceptions of learning processes with the intent of bringing the project work back into a constructive direction. The supervisor must in these situations act as project manager and help negotiate differences, which is generally best done face-to-face. The supervisor as social mediator therefore from the viewpoint of Habermas has to understand and decode the strategic communication that is part of the discussions when students disagree.

To summarise, based on our experience and the ideas expressed in this chapter, we believe that successful network learning requires teachers or supervisors who are reflective and able to take the other's perspective. Further they should, in our view, be able to take on the three supervisory roles identified as important, of academic expert, process-orientated supervisor and social mediator.

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