ABSTRACT

Vartiainen, Tero
Moral Conflicts in a Project Course in Information Systems Education
Jyväskylä: University of Jyväskylä, 2005, 320 p.
(Jyväskylä Studies in Computing
ISSN 1456-5390; 49)
ISBN 951-39-2045-3
Finnish summary
Diss.

Project work is recognized as an essential part of studies in information systems development, because it provides students with good professional abilities like producing plans and managing schedules. A project course, which includes interplay of clients, students, and university instructors, is complex to manage in practice. Although ethical issues of these courses have been recognized in literature, there is no research on morally significant decision-making situations (i.e., moral conflicts) individuals of these courses confront. As a first step to tackle with moral conflicts in project courses, this study aims to fill this gap in knowledge by determining moral conflicts perceived by parties of a project course. In the selected course, instructors guide student groups, which learn to manage a project by implementing a project task for a real-life client in the IT field. Phenomenography was used in analysing moral conflicts. Information about moral conflicts was gathered with the help of participant observation, interviews, questionnaires, drawings, and diaries. Three themes of moral conflicts - objectives of parties, commitment and prioritisation, and treatment of individuals – are common to all parties. All parties have to take a stand on conflicting objectives of clients to benefit from the co-operation and of university to promote learning. Every party confronts commitment and prioritization conflicts relating to tasks of project co-operation and other duties. Treatment of individuals - especially intervening with someone's actions - was found to be one of the hardest of these moral conflicts. Derived from the results and by utilizing a theory of moral psychology, a framework of morally successful project course was formulated. Additionally, categorizations of clients' perceptions on morals and ethics, moral problems, and feelings relating to moral problems were determined.

Keywords: project-based learning, information systems education, moral conflicts, professional ethics

ACM Computing Review Categories
K.3.2 Computer and Information Science Education
K.6.1 Project and People Management
K.7.4 Professional Ethics

Author's address   Tero Vartiainen
University of Jyväskylä
Department of Computer Science and
Information Systems
P.O. Box 35
FIN-40014 University of Jyväskylä
FINLAND
Email: tvarti@cs.jyu.fi

Supervisors   Professor Pertti Järvinen
Department of Computer Sciences
University of Tampere
Finland

Professor Seppo Puuronen
Department of Computer Science and
Information Systems,
University of Jyväskylä
Finland

Reviewers   Professor Tarja Tiainen
Department of Computer Sciences
University of Tampere
Finland

Assistant Professor Cestmir Halbich
Department of Information Technologies
Czech University of Agriculture
Czech Republic

Opponent   Professor Reima Suomi
Department of Management
Turku School of Economics and Business Administration
Finland

ACKNOWLEDGEMENTS

FIGURES

TABLES

ABBREAVIATIONS AND TERMS

Client	An IT-firm or IT-department of an organization; client is also used as meaning a person, a representative of an IT-firm or IT-department.
CS	Computer science
DP	Development Project course; the name was used the last time during the academic year 2000-2001.
instructor	A university teacher teaching in the DP course
IS	Information systems
Moral agent	A term used in philosophy meaning an individual.
SE	Software engineering

CONTENTS

1   INTRODUCTION

Project work is recognized by computing disciplines (information systems, software engineering, computer science) as an essential component in educating future computer professionals (Gorgone *et al.* 2002; Computing Curricula 2001; Moses *et al.* 2000; Wohlin and Regnell 1999; Schlimmer *et al.* 1994; Ross and Ruhleder 1993; Tucker 1991; Mynatt and Leventhal 1987; Sumner 1987). Besides line functions of an organization (e.g., marketing, finance, operations), projects, which may run across several functions, are used to produce change in an organization. For example, development of an information system means change in the organization. Maylor (2003, 6) associates the following characteristics to a term project:

- There are constraints (usually centred around time and resources, but also including all aspects of the process and the outcome);
- Projects are a process – in many cases a core business process for organisations;
- The particular goal in mind shows that it is a focused activity and often this is *change*. Organisations carry out many different types of change through projects, and are a major area for application of the principles and practices of project management.

Project work gives students the possibility to prepare for the professional practice by practising programming-in-large (Oliver and Dalbey 1994) and producing plans, managing schedules, interviewing users and meeting project deadlines (Sumner 1987). Moreover, project work applies theoretical knowledge to practice (Rebelsky and Flynt 2000; Tourunen 1992; Byrkett 1987) and project work is recognized to have many educational and social benefits (Moses *et al.* 2000) like development of communications skills (Pigford 1992; Fritz 1987), and team-building and interpersonal skills (Roberts 2000; Ross and Ruhleder 1993). In some courses project work is conducted with a real-life client (Green 2003; Watson and Huber 2000; Cotterell and Hughes 1995; Tourunen 1992; Brown *et al.* 1989), in others instructors create assignments (Scott *et al.* 1994). Project-based learning is utilized across different fields (Olesen and Jensen 1999; Henry 1994).

Experiences from project courses show that there are ethical issues and dilemmas to deal with. Fielden's (1999) experiences stretching over ten years

show that ethical dilemmas in student projects relate to the functioning of a student group, the relationship between the group and users, and to the ability of the group to complete the project task. Scott's *et al.* (1994) recognized the functioning of a group as ethically troublesome when, for example, work tasks are distributed in an unequal way inside the group. As an example, a student from the University of Exeter, U.K., described his experiences with a good group and deliberated on consequences of getting into a bad team (Moses *et al.* 2000, 421):

> I didn't think I'd like group work, but I ended up in a good team and it was a great experience. But I feel if you end up in a bad team it can really get you down and will affect your mark.

Although project-based learning is utilized in computing disciplines and the existence of ethical issues and problems in these courses is recognized, the current literature lacks systematic research on moral conflicts of project courses (see Section 2.1 for details). Such knowledge is essential to increase understanding about moral conflicts in project-based courses in computing disciplines. From the practical viewpoint, knowledge about moral conflicts in project courses is essential if we aim to successfully manage courses from the moral viewpoint: although we cannot avoid confrontations with moral conflicts, knowledge of them makes organizing project courses easier, because with the knowledge it is possible to prepare to confront and solve moral conflicts. Philosophers have determined a moral conflict in a variety of ways (see Section 2.2 for details), but all of them agree in that in a moral conflict the moral agent:

- morally should do A,
- morally should do B,
- she is not able to do both A and B.

For example, if we discover that we have made two conflicting promises, we are in a moral conflict. We are in a moral conflict because one of the promises binds us to do A and the other binds us to do B. A computer professional may confront moral conflicts when seeking balance between the quality of the information systems and costs (see examples in Anderson *et al.* 1993).

The objective of this study is to fill the gap in knowledge concerning moral conflicts in project courses. To be exact, *the objective is to identify moral conflicts perceived by students, clients and instructors of a project course*. Development Project (DP) course - taught at the Department of Computer Science and Information Systems, in University of Jyväskylä, Finland – was chosen as a stage for this investigation. The DP course belongs to the information systems (IS) curricula at the department. The curricula include theoretical courses (e.g., development of information systems, design methods, project management) and the practice-oriented DP course, during which students are expected to put into practice theoretical knowledge acquired in the preceding studies. From the students' viewpoint the goals of the DP course are twofold: they are expected to learn project work (e.g., planning, group work) at the same time as they

implement a project task for the client (Tourunen 1992). The project task may include, for example, developing data processing in an organization, a report concerning a new emerging issue in the IT field, and an exemplary prototype of a solution for a computing problem. The project tasks are usually ill-defined and vague and can motivate the students to learn to redefine the task along the project. Typical clients are from private firms such as software houses or IT departments of other enterprises.

Interpretive qualitative research approach shall be applied in this study. Qualitative approach is suitable when the researcher approaches the field without predetermined categories concerning the research question (Patton 1990, 13). I used participant observation to get myself familiar with the project course and to observe moral conflicts perceived by instructors. Because the aim of this study is to attain a holistic view of moral conflicts perceived by all parties of the DP course and these moral conflicts are experienced and perceived by individuals, I decided that I should give these individuals a possibility to tell their own stories and express themselves with their own terms. Using this approach, my study is interpretative in nature, because I investigate individuals' subjective meanings and how they interact with the world around them (Trauth 2001). This study, which is theory-creating research in terms of Järvinen (2001), utilizes phenomenography in categorization of moral conflicts.

The results will show that representatives of clients, students and instructors confront moral conflicts during the DP course. The results consist of three categorizations of moral conflict – each considers moral conflicts of a party of the course. In all these categorizations moral conflicts are divided into two dimensions. In the first dimension, there are three groupings of moral conflicts:

- interpersonal conflicts (relationships with other individuals),
- project-level conflicts (administering and implementing the project), and
- conflicts related to outside parties (parties not directly related to the project co-operation).

Each grouping is further divided to themes and each theme to individual categories. There are three themes of moral conflicts, which are common to all parties: objectives of parties, commitment and prioritisation, and treatment of individuals. All parties have to take a stand on conflicting objectives of clients to benefit from the co-operation and of university to promote learning. Each party confronts commitment and prioritization conflicts relating to tasks of project co-operation and other duties. Treatment of individuals and especially intervening with someone's actions was found to be one of the hardest of these moral conflicts. In the second dimension, which illustrates the structure of moral conflicts, there are three stages:

- doing-wrong moral conflicts (a moral agent deliberates between doing a morally wrong act or not to do it),
- self-centred moral conflicts (decision-making situations, in which the deliberation is focused on the moral agent himself), and

- other-directed moral conflicts (moral agents are concerned about other individuals).

These stages are further divided into levels and each level into individual categories. These stages and levels illustrate developing continuum among moral conflicts. Finally, using the findings relating to moral conflicts and utilizing a moral psychology theory a framework for a morally successful project course will be presented.

The results of this study are focused on moral conflicts. The reader should be aware that this viewpoint leads to an over-negative image of the DP course, which has been considered, for example, by students as "the king of the courses". The focus on moral conflicts leaves other important viewpoints of human life aside: Individuals in this setting experience development, success, and joy, which are not reported in this study.

This thesis[1] includes an introduction, Chapter 1, and three Parts:

Part I:	Literature review and research design
Part II:	Moral conflicts
Part III:	Discussion and conclusions

Part I: Literature review and research design

In Chapter 2, existing literature concerning teaching project work in IS/CS, moral conflicts from philosophical and social science viewpoints, and individuals' behaviour in groups are considered. Chapter 3 states the research question in detail, and the process and the subjects of the research are presented. The Part ends with Chapter 4, in which the process of the DP course is presented.

Part II: Moral conflicts

Chapter 5 presents categorizations relating to what morals and ethics mean, what moral problem means and how it feels to be in a moral problem. Descriptions of moral conflicts perceived by parties of the study start in Chapter 6, which presents the division into doing-wrong, self-centred, and other-directed moral conflicts, the main categories observed in moral conflicts. Chapter 7 presents the results of moral conflicts perceived by representatives of clients. The results are based on client interviews spanning two academic years. Chapter 8 presents the results of moral conflicts as perceived by students. The results are based on students' diaries, responses to questionnaires, and drawings about moral conflicts in project work. Chapter 9 presents the moral conflicts perceived by instructors. The results consist of information gathered during participant observation over the two years of the DP course and of instructor interviews. Chapter 10 summarizes the moral conflicts by presenting the division into moral conflicts related to outside parties, to the project level,

---

[1]   Former version of this thesis was published in Vartiainen (2003b).

and to interpersonal issues. Finally, derived from the results of this thesis a framework for a morally successful project course is described in Chapter 11.

Part III: Discussion and conclusions

Chapter 12 discusses the findings in the light of existing literature on student projects and project management. The study is evaluated and limitations are presented in the same chapter. Part III ends with conclusions, in Chapter 13.

Finally, references and appendices are found at the end of this thesis.

PART I: LITERATURE REVIEW AND RESEARCH DESIGN

In this Part of the thesis background literature is reviewed in Chapter 2 and the research design is presented in Chapter 3.

2 LITERATURE REVIEW

This study concentrates on defining moral conflicts perceived by parties of a student project course. In this chapter, the main concepts relating to this study are examined: project courses and their organization (section 2.1), moral conflicts (section 2.2), group work issues (section 2.3), and normative theories of business ethics (section 2.4).

2.1 Student project courses in computing disciplines

In this section, the following issues are presented: the contents of student project courses at computing curriculum, the organizational issues concerning student project courses and the problems confronted in those courses.

2.1.1 Contents of project work courses

In this section, the contents of project work courses in computing are considered. Needs of work life and two curriculum recommendations are presented.

Relationship between the academia and business/industry

Academic-industrial partnerships in the IS field benefit both parties as findings of a survey conducted by Watson and Huber (2000) show. According to their results, in addition to student project courses, there exist other forms of co-operation like training programs, research centres, and industry advisory boards. They concluded that there are two fundamental drivers in maintaining partnership between academia and industry and that they apply to both parties: problem solving and resource acquisition. For example, for the academia, co-operation ensures that research and teaching activities are relevant and, for the industry, co-operation provides possibilities to acquire human resources. There exist pressures for educational institutes to expand and reshape education in IT field (Mathiassen and Purao 2002, 82; Ziegler 1983). Also shortage of work force

in the IT field puts pressure on colleges and universities to prepare students for job markets (Roberts 2000). Students, during their first years in the universities, are introduced to programming by simple assignments, which they do individually. Any other methods apart from just writing the code are seen as a nuisance rather than an aid to the process (Oliver and Dalbey 1994). This *programming-in-the-small* mentality does not promote abilities and virtues that are appreciated in work life like teamwork and communication skills. When emphasizing *programming-in-the-large,* the courses include larger assignments, which are conducted in teams and include essential processes of software development. If this programming-in-large is implemented with the co-operation of industry, the market value of students and faculty alike may increase, as Mehic's and al-Soufi's (1999) experiences in updating the CS curriculum of a CS department demonstrates. Departments of computer science and of other related disciplines (e.g., information systems) have been subjected to criticism about their curricula. The following examples of criticism illustrate some defects of curricula perceived in universities in USA (Roberts 2000, 86):

- Devoting too much attention to theoretical topic with little practical application
- Allowing curricula to become out of date with respect to technological advancements in the field
- Providing students with far too little experience in the practical techniques of building large systems
- Offering poorly designed introductory courses that do not attract good students into the discipline
- Failing to place sufficient emphasis on the nontechnical abilities that students need to work effectively in the field, including communications skills, management strategies, and the dynamics of working in a group

The above extract shows a need for practice-orientation and for keeping curricula up-to-date along with the developing IT-field. Associations in computing disciplines have produced curricula recommendations for computer science. First, joint recommendations of the Association of Computer Machinery (ACM) and the IEEE Computer Society are considered, and then joint recommendations of the ACM and the Association of Information Systems (AIS) are considered.

Computing curricula recommendations by ACM and IEEE

The ACM and the IEEE Computer Society have formulated recommendations for undergraduate programs in computer science (CS). The Joint ACM/IEEE-CS Curriculum Task Force published its report in 1991 (Tucker 1991) and 2001 (Computing Curricula 2001). Those reports include recommendations concerning preparation of undergraduate computing students for entry into computing profession. According to the Computing Curricula 1991 undergraduate students should also be able to comprehend how to solve computing problems in teams (Tucker 1991, 72):

… Fifth, undergraduate programs should prepare students to apply their knowledge to specific, constrained problems and produce solutions. This includes the ability to define a problem clearly; to determine its tractability; to study, specify, design,

implement, test, modify, and document that problem's solution; and to work within a team environment throughout the entire problem-solving process.

Computing Curricula 2001 includes core recommendations to all computing disciplines: computer science (CS), computer engineering (CE), software engineering (SE), and information systems (IS) (Computing Curricula 2001). These core recommendations include various elements, which should be included in all computing related curricula. The recommendations are structured hierarchically into areas (i.e. disciplinary sub-fields), units and topics. The upper category keeps within itself areas (see Figure 1 left box) and units representing thematic modules (see Figure 1 right box), which are either core or elective. According to the recommendations of core unit "SE8 Software project management [core]" all computing students should be taught human-oriented issues like team management and processes, roles and responsibilities in teams and also consideration of team problems (Figure 2).

Curriculum recommendations by the ACM, AIS, and AITP

The Association for Computing Machinery (ACM), the Association for Information Systems (AIS), and the Association of Information Technology Professionals (AITP) produced Model Curriculum and Guidelines for Undergraduate Degree Programs in Information Systems (Gorgone *et al.* 2002). Although the model is based on degree programs in the United States and Canada it is also meant for international use. The model takes into account the characteristics of the IS profession, the objectives of the IS curricula and proposes specific contents for the IS courses. The following characteristics relating to the IS profession have been relatively constant and they have been integrated into the curriculum (Gorgone *et al.* 2002, v):

1. IS professionals must have a broad business and real world perspective.
2. IS professionals must have strong analytical and critical thinking skills.
3. IS professionals must have interpersonal communication and team skills and have strong ethical principles.
4. IS professionals must design and implement information technology solutions that enhance organizational performance.

As the above list states, an IS curricula should include core knowledge of the field together with business and real world perspectives. Communications, interpersonal and team skills are definitive in studies. The curriculum is divided into five presentation areas:

1. Information systems fundamentals include, for example, introduction to the field of IS and improvement of personal productivity.
2. Information systems theory and practice include, for example, concepts and theories, which explain/motivate methods and practices in information systems development and use in organizations.
3. Information technology includes technical aspects of the discipline, for example, architectures and operating systems.
4. Information systems development includes teamwork, analyzing problems, designing and implementing information systems.
5. Information systems deployment and management include, for example, project management and systems integration.

Discrete Structures (DS)
Programming Fundamentals (PF)
Algorithms and Complexity (AL)
Programming Languages (PL)
Architecture and Organization (AR)
Operating Systems (OS)
Net-Centric Computing (NC)
Human-Computer Interaction (HC)
Graphics and Visual Computing (GV)
Intelligent Systems (IS)
Information Management (IM)
Software Engineering (SE)
Social and Professional Issues (SP)
Computational Science and
Numerical Methods (CN)
	SE1. Software design [core]
	SE2. Using APIs [core]
	SE3. Software tools and environments [core]
	SE4. Software processes [core]
	SE5. Software requirements and
	      specifications [core]
	SE6. Software validation [core]
	SE7. Software evolution [core]
	SE8. Software project management [core]
	SE9. Component-based computing [elective]
	SE10. Formal methods [elective]
	SE11. Software reliability [elective]
	SE12. Specialized systems
	      development [elective]

FIGURE 1   Recommendations of Computing Curricula 2001.

SE8. Software project management [core]
Minimum core coverage time: 3 hours
Topics:
    Team management
    Team processes
    Team organization and decision-making
    Roles and responsibilities in a software team
    Role identification and assignment
    Project tracking
    Team problem resolution
    Project scheduling
    Software measurement and estimation techniques
    Risk analysis
    Software quality assurance
    Software configuration management
    Project management tools
Learning objectives:
    Demonstrate through involvement in a team project the central elements of team building and team management. Prepare a project plan for a software project that includes estimates of size and effort, a schedule, resource allocation, configuration control, change management, and project risk identification and management. Compare and contrast the different methods and techniques used to assure the quality of a software product.

FIGURE 2   Recommendations relating to software project management in Computing Curricula 2001.

Further in the curriculum, the above presentation areas are developed for the courses (from IS 2002.1 to IS 2002.10), the basic building blocks of the curriculum. The fifth presentation area is to be implemented as the course IS 2002.10 Project management and Practice, which is specified in detail as follows (Gorgone *et al.* 2002, 31):

IS 2002.10 – Project Management and Practice (Prerequisite: IS 2002.7)

CATALOG: Advanced IS majors operating as a high-performance team will engage in and complete the design and implementation of a significant information system. Project management, management of the IS function, and systems integration will be components of the project experience.

SCOPE: This course covers the factors necessary for successful management of information systems development or enhancement projects. Both technical and behavioral aspects of project management are applied within the context of an information systems development project.

TOPICS: Managing the system life cycle: requirements determination, design, implementation; system and database integration issues; network management; project tracking, metrics, and system performance evaluation; managing expectations of managers, clients, team members, and others; determining skill requirements and staffing; cost-effectiveness analysis; reporting and presentation techniques; management of behavioral and technical aspects of the project; change management. Software tools for project tracking and monitoring. Team collaboration techniques and tools.

Next, the organizational issues relating to student project courses are considered.

2.1.2 Organizational issues of student project courses

In this section, the criteria for realistic student projects, and organizational issues relating to student project courses are presented.

Criteria for realistic student project courses. Joel (1987) defined the criteria for realistic student projects as follows: First, a student project should fit the time allocated. The project should be able to be completed in one or two semesters. Second, the project should use the existing knowledge base. This means that the project should rely on the student's existing knowledge, such as previous studies. Third, the project should challenge the student and grow him/her intellectually by testing and expanding his/her knowledge base. Fourth, the student's knowledge should be expanded horizontally and vertically. This means that the students should create links between parts of their knowledge bases. Fifth, the project should mimic non-classroom conditions outside university if at all possible. Farkas (1988) continued Joel's list by adding the following criterion: Projects should be large enough to allow multiple groups to handle different aspects of the problem.

Organizational issues relating to student project courses. Student project courses may differ from each other in team selection, in project definition, and in implementation. For the team selection, there are four methods (Scott *et al.* 1994, 111):

a) random student placement on teams, b) teacher chosen teams, designed to equalize the differing teams' capabilities, c) student chosen teams, and d) selection of

a team using one of the three methods described in a-c above, then moving students from team to team as needs dictate

Each of these methods has its advantages and disadvantages. On the one hand, choosing randomly may be fair but it may create homogenous groups. On the other hand, allowing students to choose their team-mates may result in teams, which include people they already know. According to Scott *et al.* (1994) grouping with those who one already knows should be avoided because in industrial projects one's team-mates mostly are not one's personal friends. The second way in which student projects may differ from each other is in the definition of projects (Scott *et al.* 1994, 112):

a) each team builds a version of the same project, b) each constructs one or more modules of a single large project, c) each constructs its own unique project, and finally, d) each completes a different life cycle phase in three or more distinct projects

In the case of different project tasks, university instructors' workload is much higher than in the case of the same project task. See, for example, Carver's (1985) analysis concerning advantages and disadvantages of single and multiple project approaches in software engineering courses. Project tasks may be identified and specified in various ways (Scott *et al.* 1994, 113):

a) teams identify and specify their own projects, b) the professor specifies all aspects of the project, and c) the specification is provided (initially) by an outside agency, working closely with the professor.

Also, implementation of the project tasks may be done in various ways (Scott *et al.* 1994, 113):

a) each team implements the entire project b) each team implements and tests a selected number of modules, c) each team implements and tests only its own project, d) each team implements another team's specifications, and tests still another team's implementations.

All the above mentioned variations have their own advantages and disadvantages. On the one hand, if the teams identify and specify their own projects, university instructors must spend extra time to understand the difference in the projects. On the other, if the instructors specify all the projects, managing becomes much easier. If each student team implements an entire project, they must deal with all the phases of software development. Teams may also test either their own product or a product of another team. Or, if projects are passed from team to team, inter-team communications demands are increased.

2.1.3 Problems in student project courses

Computing literature recognizes problems relating to student project courses. First, we take a look at organizational problems in student projects. Then, ethical issues of student project courses are dealt with.

Organizational problems. One major problem area in project courses is group work and what university instructors can do to prevent problems arising. Regarding these problems Moses *et al.* (2000, 422) determined six major areas, which each include various problems:

- Allocation. How do we allocate students to groups? And then groups to supervisors?
- Supervision. What sort of role should a supervisor take with respect to their group? Friend, mentor, project manager or technical guru? Does it make a difference?
- Assessment. How do we assess the contribution of an individual when deliverables are a team effort? Should we even try to?
- Motivation. What happens when students get into a "bad" team? How do we keep them motivated?
- Reflection. Especially when introducing teamwork into the curriculum, reflection is an essential part of the learning cycle. How do we plan to make sure we include time and opportunity for this?
- Teamwork. How do we encourage working together, when in some other academic circumstances this might be called "cheating"?

The above mentioned problem areas reflect problems from the beginning of the course till the end of those courses. At the beginning of a course students and supervisors are allocated to groups. When guiding students, supervisors confront problems relating to their role towards their groups, and they are forced to take a stand on motivational problems and teamwork problems. According to Moses *et al.* (2000) CS projects are expensive – they demand considerable supervision and technical resources. They are complex, because they demand considerable supervision and technical resources. They are also continually demanding: The context of rapidly changing technology demands ever-evolving skills from students and supervisors.

Ethical issues. There are few references in literature relating to ethical issues in project courses in computing disciplines. Scott *et al.* (1994, 112) consider some ethical issues in detail:

> … a) loners do not work well with others and want to "do their own thing", b) whistle blowing may not be done for various reasons, and c) handling the typical work ethic where "a few students do most of the work, some do just enough to get by and some do almost none."

The ethical issues above relate to individual students' acts and behaviour in the group. From the instructor's viewpoint assigning meaningful grades is ethically difficult (Scott *et al.* 1994). For example, whom the instructor should believe when a student or a team is complaining that another student or team does not do its share of the work? Or if a student complains that she would have been much more successful than other students in accomplishing the project objectives.

Fielden (1999) demonstrates experiences from over 10 years of conducting a student project course for the fourth year students at the Institute of Information and Mathematical Sciences in Massey University, New Zealand. Ethical dilemmas in student projects have emerged in the relationship between users and students when the users have had unrealistic expectations about

what the students can accomplish. Dilemmas emerge also when the student group does not come up with what was agreed when signing the contract with the client. The same kinds of dilemmas arise if a student from the group claims them to be able to accomplish something which they are not able to do (due to the lack of skills and expertise of the group members), or if there are different individual commitment levels inside the group. Also dubious work practices in a client organization can produce ethical dilemmas. When student groups confront an ethical dilemma, they are asked to reflect on the issue and produce viable alternatives amongst themselves. After that, if they cannot produce a solution, a meeting with the course coordinator is arranged to resolve the dilemma. Fielden does not consider a conflict in a student group as a bad thing. On the contrary, groups experiencing conflicts learn the skills to deal with such situations.

2.2 Philosophy and social science on moral conflicts

In this section, we first specify the usage of terms *moral conflict*, *moral dilemma*, and *moral problem* (sub-section 2.2.1). Then, we view moral conflicts/dilemmas from a philosophical viewpoint (sub-section 2.2.2). Then, from the philosophical views relating to moral conflicts, we come closer to practice and take a look at findings relating to morality in real life (sub-section 2.2.3). Finally, a short introduction to solving moral conflicts is presented (sub-section 2.2.4).

2.2.1 Usage of terms in this study

In this section, the usage of terms *moral dilemmas*, *conflicts* and *problems* is considered. Then, the relationship between avoiding and solving moral conflicts is considered from the viewpoint of investigating moral conflicts as perceived by individuals.

Usage of the terms moral conflict, moral dilemma and moral problem

First, the division between a moral dilemma and a moral conflict should be made clear. A moral dilemma is considered to be a special case of a moral conflict (Mason 1996b, 216). In a moral dilemma, the moral agent has confronted an irresolvable conflict in his mind. These kinds of situations have been called as, e.g., genuine moral dilemmas (Hill 1996, 173; Nagel 1987) to be distinguished from apparent moral conflicts, which are solvable. A moral conflict, if it is a solvable one, is not a moral dilemma. The practical difficulty, which emerges from these definitions, is how to draw the borderline between irresolvable and solvable moral conflicts. Statman (1995) approaches this difficulty by taking into account feelings relating to conflicts and dilemmas. He considers moral dilemmas as a subclass of moral conflicts. In the case of a moral dilemma, the moral agent is unable to produce a solution and feels anguish about it, and in the case of a moral conflict, the moral agent does not feel

helplessness about the conflict. The following extracts point out how Statman (1995) defines moral dilemma and conflict:

> Dilemmas, therefore, are not situations where two considerations merely clash, but where this clash weighs heavily on the heart of the agent and threatens him or her. He or she experiences feelings of helplessness and indecisiveness, a sense of being at a loss to know which path of action to follow. (Statman 1995, 1)

> To conclude, then, I suggest we distinguish between moral *conflicts*, situations where good reasons exist for two incompatible actions, and moral *dilemmas*, where the nature of the conflict is more serious and the agent consequently feels anguish and is at a loss as to what he or she ought to do. In other words, dilemmas are a particular and a problematic subclass of conflicts. (Statman 1995, 7)

Consequently, Statman considers that moral dilemmas are not central to our everyday life, but when a moral agent confronts a moral dilemma, it becomes central for that particular individual.

The Cambridge Dictionary of Philosophy (Audi 1995) offers seven definitions of a moral dilemma. These successive definitions restrict the definition of moral dilemma from broad issues, which can be defined as moral dilemmas, to very hard decision-making situations (Table 1).

The first and second definitions of moral dilemmas are broad in nature. For example, we may ask if forcing employees to use their free time for working purposes or unauthorized copying of software are morally right. According to the first and second definitions, if we did not know whether unauthorized copying of software is morally right or wrong, we could regard it as a moral dilemma. The remaining definitions describe a decision-making situation, in which a moral agent should select from two alternatives, but the alternatives seem to be evenly balanced. The third definition is broader than the fourth in the sense that it includes decision-making when one is not required to implement any specific course of action. The fourth definition is narrower, because it describes a moral dilemma as a conflict of moral obligation and/or requirement. This definition would include situations in which two competing obligations such as obligations towards two projects are in conflict. However, a business-critical project may be perceived by clients as more important than a student project, thus providing the choice with strong arguments. These resolvable conflicts are ruled out with the fifth definition, which declares that two alternatives are not overridden, and the agent cannot do them both. According to Audi (1995) the sixth definition rules out the moral dilemma by definition, because we consider an act morally wrong if it violates an overriding moral requirement (such as not to kill anyone), and overriding moral requirements cannot conflict. The seventh definition tries to exclude trivial conflicts and concentrate on tragic dilemmas by using the term "strong moral obligation or requirement."

TABLE 1   Definitions for moral dilemmas (Audi 1995, 508) and examples of them.

Definition of a moral dilemma (Audi 1995, 508)	Examples of moral dilemmas (imaginary and real life conflicts and dilemmas)
1) Any problem where morality is relevant.	A Finnish IT-professional deliberates whether it is morally right that employers in IT-field force their employees to use their free time for training (Vartiainen, 2004).
2) Any topic area where it is not known what, if anything, is morally good or right.	Disparate views on morality of software copying. Compare, for example, views of Stallman (1995, 1997) and Siponen (2001).
3) A situation where an agent morally ought to each of two acts but cannot do both.	By chance, an IT professional of a firm has extra time resources to use. She may deliberate about whether to allocate these resources to a student project or to a regular project for a client.
4) A situation where an agent has a moral obligation or requirement to do each of two acts but cannot do both.	An IT professional of a firm is nominated to two projects: to a collaborative IT-project with students and to a regular project for the client. Now she has to allocate her scarce time resources to either of them.
5) A situation where an agent has a moral requirement to adopt each of two alternatives, and neither requirement is overridden, but the agent cannot do both.	An IT professional has accidentally made two conflicting promises. Which of them she should fulfil?
6) A situation where every alternative is morally wrong.	According to Audi (1995) this definition itself rules out a moral dilemma.
7) A situation where an agent has a strong moral obligation or requirement to adopt each of two alternatives, and neither is overridden, but the agent cannot adopt both alternatives.	A young man thinks that he should go to army and fight for his country, but he should also care for his mother who is totally dependent on him; An example provided by Sartre (Blakeney and Blakeney 1992).

In this study, the terms defined above are used as follows. Moral conflict is the uppermost term and it is used to mean a situation, in which a moral agent confronts a decision-making situation, in which he considers that he has two incompatible actions and that the choice is of a moral relevance (for example, conflicting duties). A moral conflict can be solvable, but a moral dilemma is a special case of a moral conflict and it is considered as irresolvable. In this study, there is no need to specify the borderline between a moral conflict and dilemma. The term moral problem is used when communicating with laymen, who have not been taught about theories relating to moral conflicts and dilemmas. Moral problem is considered identical to moral conflict.

Preventive vs. crisis ethics

Moral conflicts can be approached from the viewpoint of solving them (crisis ethics) and avoiding them (preventive ethics). Philosophical literature recognized that we humans try to arrange our institutions and society so that the most severe moral conflicts would not emerge. Marcus (1987, 188) states

that the recognition of moral dilemmas motivates us to change our lives to avoid them:

> … the recognition of their [dilemmas] reality has a dynamic force. It motivates us to arrange our lives and institutions with a view to avoiding such conflicts. It is the underpinning for a second-order principle: that as rational agents with some control of our lives and institutions, we ought to conduct our lives and arrange our institutions so as to minimize predicaments of moral conflict.

Avoidance of moral conflicts is perceived in procedures produced for moral problem solving. A procedure created for solving moral problems in computing (Kallman and Grillo 1996) includes a step, in which the user of the procedure is guided to deliberate how a similar moral problem could be prevented in the future. Codes of conduct, ethical codes and even laws can also be interpreted to have a function of preventing major dilemmas arising.

In this study, which is targeted to identify moral conflicts perceived by individuals, the viewpoints of preventive and crisis ethics are considered. It is postulated that both viewpoints are present in our lives and that we do not just solve moral conflicts, which we may come across, but we also try to foresee and avoid them.

2.2.2 Philosophy on moral conflicts

In this section, moral conflicts are introduced from a philosophical viewpoint. The approach chosen here, introduction to differing views relating to existence of moral dilemmas, allows us to understand the basic paradox relating to moral dilemmas: the aim of the project of normative moral theory is to serve practice, and in moral dilemmas the decisive moral judgments seem to require incompatible courses of action (Mason 1996a, 3). The problem relating to moral dilemmas can be described by two simplified viewpoints: the rationalist and the experientialist viewpoint (Gowans 1996, 199-215; Donagan 1996, 14). The rationalist viewpoint denies the existence of moral dilemmas. According to it, ethics is based on a principle or a formula, with which moral dilemmas can be solved, and because of that moral dilemmas do not exist. The experientialist viewpoint accepts plurality of principles or values, and the moral dilemmas we actually experience are based on conflicts between these principles or values. Rationalistic and experientialist theories could be interpreted as monistic (including only one principle) and pluralistic (including many principles) theories. According to particularists (DeMarco 1996), because both monism and pluralism fails in giving advice in moral dilemmas, we should reject monism and pluralism, and confront the moral dilemmas without principles.

In the following sub-sections (2.2.2.1 and 2.2.2.2), we will take a look at moral conflicts from the rationalist and experientialist viewpoints.

2.2.2.1 Rationalists: moral dilemmas do not exist

Rationalist theories are based on reason, system, and order. Typically, they consist of a single, universal, and abstract principle, which is used for any action-guiding decisions (Gowans 1996, 200-204). Both Kantian and utilitarian thinking may be developed to an objection to the existence of moral dilemmas. The objection is based on the idea of the first moral principle, which cannot create a conflicting conclusion (e.g., categorical imperative and utility principle). From the first moral principle we may derive secondary principles to be applied to particular situations. These secondary principles may conflict with each other, but because they do not carry authority in themselves, the conflicts do not serve as evidence of moral dilemmas.

Kant and duties

According to Kant, we should universalize our principles by using categorical imperative "I ought never to act except in such a way *that I can also will that my maxim should become a universal law*" (Kant 1993, 22). A maxim is a principle of action, which the moral agent makes his or her rule, and any maxim that is contrary to the categorical imperative is against morality. When it comes to moral dilemmas or conflicts as we experience them, Kant denies their existence. According to Kant, there are necessary, impermissible and permissible actions, and an action falls into only one of them. It is not possible that an action is necessary (duty) and impermissible at the same time: "But a *conflict of duties* and obligations is inconceivable" (Kant 1987, 39). However, it is possible for a moral agent to face a situation with competing moral demands. In such a case, we have two grounds of obligation both present in us and in the rule we have made for ourselves. One or the other obligation does not oblige us, and that is not our duty. There is, thus, a difference between grounds of obligation and duties. Duties cannot conflict because they are necessities but grounds of obligations may conflict with each other. When two grounds of obligations conflict the stronger ground of obligation prevails.

Hare and utilitarianism

As an example of utilitarianism based moral system, Hare's (1981) two levels of thinking are presented: critical and intuitive thinking. Critical thinking is used when selecting the *prima facie* principles for our every-day lives, for the intuitive level. The selection of principles is made in utilitarian bases, and when we confront moral conflicts we should use critical thinking to solve the problem. If the *prima facie* principles are wisely selected, we confront moral conflicts only in exceptional situations, but those situations are most probably very agonizing because we are usually committed to our *prima facie* principles. Consider, for example, a situation in which one is forced to abandon the "do not kill anyone" principle. Difficult moral conflicts may make us to question the *prima facie* principles, in other words, we have to think critically. People who have gone through a deep moral crisis may change their principles (sign of critical thinking). Hare thus considers moral problems as apparent ones. Moral

problems are solvable if we knew enough facts of the situations in which they occur.

Ross' prima facie principles

Ross (1994) denies the existence of moral dilemmas: there are *prima facie* duties, which may conflict with each other, but it is always possible to determine the most stringent duty. Those *prima facie* duties, as he determined them, are: fidelity, reparation, gratitude, justice, beneficence, self-improvement, and nonmaleficence. The circumstances of the case must be investigated when one confronts a conflict between prima facie duties (Ross 1994, 335):

> When I am in a situation, as perhaps I always am, in which more than one of these *prima facie* duties is incumbent on me, what I have to do is to study the situation as fully as I can until I form the considered opinion (it is never more) that in the circumstances one of them is more incumbent than any other; then I am bound to think that to do this *prima facie* duty is my duty *sans phrase* in the situation.

As the extract above describes, in a conflict of duties we have to determine the most influential duty, which becomes the actual duty. When choosing, we have to consider the fact that any of our acts may have direct or indirect good or bad effect on people. All our acts have therefore *prima facie* rightness and *prima facie* wrongness, and what we have to do is to determine the balance of rightness in our actions. According to Ross (1987, 99) there is no rule for the determination of that balance.

2.2.2.2 Experientialists: moral dilemmas exist

Experientialism seeks to determine moral dilemmas by the moral experience of persons (Gowans 1996, 201). In contrast to rationalists, experientialists place emphasis on living a human life. In experientialism, plurality and concrete moral considerations are taken into account. Experientialism does not deny the usage of reason and reflection, but for the experientialists there is no higher authority for judging moral conflicts – moral experience is the initial foundation. As an example of an experientialist thinker, we shall introduce Nagel's and Lemmon's systems. Additionally, Brink's thinking relating to moral conflicts is also presented.

Nagel and five value types

Thomas Nagel (1987) perceives moral conflicts as conflicts between types of values and conflicts within those values. Values come from many different viewpoints of life and we can view the world from many perspectives such as individual, relational, ideal, etc. Each of those viewpoints and perspectives presents different kinds of claims on us. Nagel estimates that the conflicts between different types of values are more difficult to resolve than conflicts within the types of values. Nagel determined five fundamental types of value that give rise to basic conflicts:

1. There are *obligations* to other people or institutions. Their existence depends on the subject's relation to others: e.g. obligations to patients, to one's family, or university.
2. There are *general rights* to do certain things or not to be treated in certain ways: e.g. freedom from assault and coercion.
3. One's actions have effects on others' welfare. One may e.g. benefit and harm other people. *Utility* is consideration about these effects.
4. *Perfectionist ends or values* mean intrinsic value of certain achievements or creations apart from their value to individuals. For example, there is intrinsic value in a scientific discovery or an artistic creation.
5. The last category is that of *commitment to one's own projects or undertakings*. Partly it is a matter of justifying earlier investment of time and energy. These projects make autonomous claims on us.

Nagel divides the above mentioned values into two types: agent-centred and outcome-centred value types. Obligations, general rights and commitment to one's own projects or undertakings are agent-centred value types. Obligations refer to our relations with other parties. Although good relationships with other people must be a part of any utilitarian system, according to Nagel's view, basically it is about our personal outlook and our relations to other people, institutions and communities, which move us. We fulfil our obligations because we may think that it is a good thing to do so, not just because fulfilling our obligations have good outcomes. General rights is an agent-centred value because it is concerned about individuals' actions, which might infringe on someone's rights (e.g. to be free from interference or assault). Commitment to one's own projects is also an agent-centred value because it involves one's own life and it is partly about being a person who is able to accomplish what he sets out to do.

Utility and perfectionist ends or values are, in Nagel's view, outcome-centred value types. Perfectionist values are related to the level of achievement and not with the spread of achievement. Utility is an important factor in decision-making and it is concerned about e.g. the number of people whose interests are affected.

Nagel thinks that the major distinction in sources of conflicts (agent-centred vs. outcome-centred) is so profound that they cannot be unified. These types of values are formally and fundamentally so different from each other that a solution to conflicts among these types is not possible. Such conflicts and conflicts within a type of value may be *genuine moral dilemmas*. In such dilemmas decisive support for two or more incompatible courses of action (or inaction) can be found, and the choice is evenly balanced. However, decisions must be made. But producing a unitary decision might demand a unitary justification, and it is impossible when disparate values are in conflict. Regardless of this perceived impossibility, Nagel perceives that one is able to produce good judgment without total justification. He refers to Aristotle and his idea of practical wisdom, which means that an individual's decisions in the long run reveal his/her wisdom – not the enunciation of general principles. With a practical justification, in which conflicting reasons are taken into account, one may be able to proceed – after the conflict - without further justifications. And to make responsible decisions we must identify important

ethical questions. Although there is no consensus in ethics (lack of unifying theory), it does not rule out the possibility of consensus concerning aspects of our problems.

Lemmon: duties, obligations and moral principles

Lemmon (1987) perceives that the simplest class of a moral situation is that we know what we are to do and simply do it. Within this class there are several subclasses:

- *Duties* related to our status or position (e.g. a duty as a soldier). These duty-situations can be seen as status-situations.
- *Obligations* that are incurred by previous committing actions (e.g. if you promise something then you are obliged to do what you promised). These situations may be seen as contractual situations.
- *Moral principles* that the moral agent holds (e.g. a moral rule to tell the truth).

There may be conflicts between the above mentioned subclasses or within the subclasses when, for example, one makes two conflicting promises (two obligations conflict) or when one's moral principles are in conflict with one's duties. What is characteristic to moral conflicts is that these subclasses are generically different from each other (Lemmon 1987, 105):

> … there are generically different ways in which it can come to be true that we ought to do something or ought not to do something.

In an extreme case, it is possible that the moral agent changes his/her fundamental attitudes as a consequence of a grave moral dilemma. The moral agent may adopt a new morality as a consequence of the change of a moral outlook (Lemmon 1987, 111):

> …the dilemma is so grave a one, personally speaking, that either decision in effect marks the adoption on the part of the agent of a changed moral outlook. … Indeed, it is hard to see what else would be likely to bring about a change of moral outlook other than the having to make a difficult moral decision.

Such situations are, according to Lemmon, rare in human life and one may never be forced to confront such a situation.

Brink's recipe for moral dilemmas

Brink (1996) approaches the difference between genuine and apparent moral dilemmas by using all-things-considered obligations as the basis for analysis. According to Brink the traditional account of *prima facie* and all-things-considered obligations (based on Ross's views) is as follows. *Prima facie* obligation to do x means that there is a moral reason to do x or that x possesses a right-making characteristic. But *prima facie* obligations may be defeated by other obligations, which have more weight in the moral sense. A *prima facie* obligation x, which is superior to all others, constitutes an all-things-considered obligation to do x. In this case, there must be a morally relevant factor F which x

possess. F-ness makes actions *prima facie* obligatory and F will be undefeated if (Brink 1996, 103):

1. There are no committing moral factors,
2. There are competing factors that cancel each other out, or,
3. Competing factors not cancelled out do not override F's support for x.

To determine all-things-considered obligations we must do moral factor addition, which means that we add the moral forces, positive and negative, contributed by the various morally relevant factors, and the act with the highest moral total is all-things-considered obligatory. According to Brink (1996), in genuine moral dilemmas neither claim can be weightier than the other and there must be insoluble conflicts of *prima facie* obligations. If a conflict is soluble, e.g., there are moral reasons for an agent to do A and moral reasons to do B but the agent cannot do them at the same time, but finally he is convinced that there are more reasons to do A. That being the case, there is a *prima facie* obligation to do A and it is the agent's all-things-considered obligation. Brink denies that soluble conflicts are genuine moral dilemmas. Moral dilemmas must be insoluble, involving claims that are (metaphysically) equipollent. Brink (1996, 106) defines a recipe for moral dilemmas:

1. One has a prima facie obligation to do A.
2. One has a prima facie obligation to do B.
3. One is under an all-things-considered obligation to do x just in case one is under a prima facie obligation to do x, and there is no greater, simple or complex, competing prima facie obligation one is under.
4. One's prima facie obligation to do A is no greater than one's prima facie obligation to do B, and vice versa.
5. One is under no other prima facie obligation, simple or complex, that competes with A or B and that is as great an obligation.
6. Hence one has an all-things-considered obligation to do A. [1, 3-5]
7. Hence one has an all-things-considered obligation to do B. [2-5]
8. It is possible for one to do A.
9. It is possible for one to do B.
10. It is not possible for one to do A and B.

What makes insoluble conflicts problematic is the incommensurableness of conflicting moral claims (Brink 1996, 107): the acts x and y cannot be assessed with the same scales or dimensions (e.g., fidelity and nonmaleficence). Acts may have weak or strong incommensurability. In the case of weak incommensurability, acts can be partly compared to each other, but in the case of strong incommensurability acts are utterly incomparable (see discussion about incommensurability in Chang 1997).

2.2.3 Empirical social science on moral conflicts

In this section, we approach moral conflicts from an empirical viewpoint, namely, from the viewpoint of empirical research on morality (in contrast to the previous section, which concerned a philosophical viewpoint). First, research on moral behaviour and moral development is briefly presented. These theories

describe components of moral behaviour and how moral behaviour can develop from immature to mature stages in making judgments in moral issues. Second, the research about confrontations with moral conflicts is considered from an individual's viewpoint. These studies analyse the event of confronting moral conflicts and interpreting them.

2.2.3.1 Theories of moral behaviour and development

In this section, we get to know the basics of moral behaviour, with the help of a theory of Four Component Model created by Rest (1994a) and the theories put forward by Piaget (1977), Gilligan (1982), and Kohlberg (1981), which deal with the way in which part of our moral behaviour can be developed. These theories are considered from the viewpoint of confronting moral conflicts.

Four Component Model. The Four Component Model created by Rest (1984; 1994a) describes four components in moral behaviour. These components consist of four simplified and overlapping processes, according to which an individual may fail in acting morally. Expressed from another perspective, the components can also be said of consisting of four issues to be developed in individuals. The four components are:

1. Moral sensitivity,
2. Moral judgment,
3. Moral motivation, and
4. Moral character.

Moral sensitivity implies awareness of how our actions affect other people. It also involves being aware of alternative actions and how those actions affect other parties. For example, a teacher may not notice that he favours boys at the expense of girls, but when someone points out to him his actions, he may begin to observe his own behaviour in a new light. Moral sensitivity is a key component in recognizing moral conflicts – it is possible that an individual does not observe that the decision-making situation has moral relevance. As moral judgment develops, a person's problem solving strategies become more directed towards others and more principled in nature. Moral judgment is about judging which courses of actions are the most justified. Kohlberg's (1981) six stages of moral development are based on the theory that people change their moral problem-solving strategies as they grow. People at higher stages can understand the principles they used when at the lower stages although they no longer prefer them. Moral judgment and sensitivity were observed to develop with the help of small-group discussions on moral issues (Rest 1994a; McNeel 1994). Moral motivation refers to prioritizing moral values above non-moral values. Here a moral agent asks "why be moral?" For example, if by lying one can profit economically, one is to select between an economical value (profit) and a moral value (honesty). If one chooses to lie, one has failed in moral motivation. Usage of role models and heroes has been proposed for developing oneself in virtues (Grodzinsky 1999; Apostolou and Apostolou 1997; Somners 1993). Moral character refers to the psychological strength to carry out a line of

action. A person may be weak-willed and if others put enough pressure on him to act immorally, he may fail in this component. Moral motivation and character are harder to affect by teaching.

Theories of moral development. Different theories of moral development exist, including those of Piaget (1977), and Gilligan (1982), which are briefly introduced. Kohlberg's (1981) theory of cognitive moral development and its connections to moral conflicts are considered in detail.

Piaget's (1977) theory concerns children's maturation and consists of two stages. In the first, heteronomous stage, moral reasoning is based on adherence to rules and duties, and obedience to authority. At this level, the child is not capable of perspective thinking in moral reasoning (i.e., consider things from others' viewpoints). At the second stage, the autonomous stage, the child is able to take a perspective (i.e., consider things from others' viewpoints) and she is able to consider rules critically. The step from the first stage to the second stage can be described as a movement from an egocentric to a decentric perspective (Parker 1998).

Gilligan's (1982) theory covers two moral orientations: those of justice and care, of which the first one is more likely to be applied by men and the second one by women. In the caring orientation, Gilligan distinguishes three levels: the preconventional level, which is egocentric in nature, the conventional level, in which one is concerned about caring for others, and the postconventional level, in which one cares not only about others but also about oneself.

Kohlberg's (1981, 19) theory of cognitive moral development (CMD) comprises three levels, each of which has two stages (Table 2). The levels are preconventional, conventional and postconventional. They represent progressive development of moral judgment among individuals from early childhood and adolescence to adulthood. Each new stage (from 1 to 6) reinterprets equality and reciprocity in a more adequate way: there is more generalizability and higher perspective at a new stage compared to the previous one (Kohlberg *et al.* 1983). Each stage reinterprets justice in a more developed way. At each stage there exist two levels. At the preconventional level (level I), children consider right and wrong in relation to physical or hedonistic consequences of action (e.g., punishments and rewards). At stage 1, the motive is to avoid punishments, and at stage 2 the motive is to satisfy one's desires and occasionally those of others. The transition from stage 2, the preconventional level, to stage 3, the conventional level (level II), means adoption of a third-party perspective. At the conventional level, morality is based on cultural expectations, for example of one's family, group or nation. Individuals at this level do not only conform to those expectations, but they are loyal to those parties and aim to maintain social order. At stage 4, the law and order stage, reciprocity is viewed from the viewpoint of a single social system and its maintenance. Reciprocity develops from stage 4, the conventional level, to stage 5, the postconventional level (level III), in the way that at stage 5, a moral agent adopts the society-creation viewpoint. The norms have cross-systemic applicability, that is to say, practices are defined so that they could be accepted

by individuals prior to the establishment of any particular society. At the postconventional (autonomous, principled) level moral values and principles are defined regardless of the authority of people or groups holding these principles. Individuals at this level do not necessarily identify themselves with groups. At stage 6, universal ethical principles guide decision-making. At this stage social arrangements are derived from the moral viewpoint, and as a basic moral premise respect for other persons is adhered to, that is to say, persons are respected as ends, not as means.

TABLE 2   Kohlberg's (1981, 17-19) theory of cognitive moral development.

Level I. Preconventional Morality (age 4 - 10)	Stages	
	Stage 1. Punishment and Obedience Orientation	Avoidance of punishment
	Stage 2: Instrumental-Relativist Orientation	Individual's moral judgment is motivated by a need to satisfy his/her own desires, and occasionally the needs of others
Level II. Conventional Morality (age 10 – 13)	Stage 3:"Good Boy-Nice Girl" Orientation	One's moral judgments are motivated by a need to avoid rejection, disaffection, or disapproval from other people
	Stage 4: Law and Order Orientation	"It is the law" argumentation; maintenance of social order such as legislation for its own sake
Level III. Postconventional Morality (adolescence - adulthood)	Stage 5: Social contract Legalistic Orientation	General individual rights and standards critically examined and agreed on by the whole society
	Stage 6: Universal Ethical principle Orientation	One's moral judgment is motivated by one's own conscience, in accordance with prescriptive universal and logical self-chosen ethical principles

Moral conflicts and moral development are connected to each other in ways that experiencing a value-threatening life experience (e.g., moral dilemmas) make it possible for an individual to grow in terms of Kohlberg's stages (Blakeney and Blakeney 1992). However, growth is not the inevitable outcome of experiencing moral conflicts, although studies show that stress and depression may be symptoms of a stage transition - in Kohlberg's (1981) terms - in individuals. During a stage transition, when one may lack a stable moral system, it may be emotionally hard for one to solve moral conflicts relating to life crises. For example, one may confront moral disorder when a member of a group (e.g., family, peer group) starts to move from the group to a wider social world. Conflicting expectations (e.g., rules, laws) of one's group and those of the wider social world may cause disorder. Resolving moral conflicts in these kinds of situations may make individuals emotionally depressed if they do not posses capabilities to solve them (see also Manning 1981, 1-26).

2.2.3.2 Studies about moral conflicts and dilemmas

In this section, division into hypothetical, internal and exogeneous moral conflicts is presented. Then, results of a study on perceptions of moral dilemmas are presented.

Hypothetical, internal and exogeneous moral conflicts

In his study concerning social interactions of ten groups engaged in the prisoner's dilemma game, Packer (1985, 1) considers moral actions from a viewpoint of reasoning about moral conflicts, for example, solving hypothetical moral conflicts, and from a viewpoint of acting in real-life moral conflicts. These two phenomena are not directly related to each other. Real-life moral conflicts include immediacy, that is to say, emotions like fear, love, and respect. This kind of immediacy is lacking from hypothetical moral conflicts, which are used in investigating moral development and in ethics teaching (cf. Kohlberg 1985). Haviv and Leman (2002) found that there is a difference between deliberating on a moral dilemma from an impersonal viewpoint and from a first-person viewpoint: in the latter case consequences were more important than in the former case. In addition to this, according to Packer (1985), real moral conflicts usually consist of struggle between principles or obligations and one's inclinations or egoistic impulses. In addition to separation between hypothetical and real-life moral conflicts, Packer points out two kinds of moral conflicts in our real-life experience. He refers to Hoffman (1982), who considers internal conflicts as conflicts, in which egoistic impulses/inclinations and moral (often altruistic) impulses confront each other. Packer observed in his study a form of conflict, which he calls exogenous conflict. In this kind of conflict, one has acted in good faith, but others condemn his actions as immoral. Or from the other viewpoint, one trusts the other one to act morally, but finds that she does not act morally. Packer (1985, 4) distinguishes these two ways to experience a moral conflict: conflicts, which are experienced before acting (internal conflicts), and conflicts, which are about clearing up the consequences of problem solving (exogenous conflicts). The point is made clear in his examination of the processes of these conflicts and the differences in these processes (Packer 1985, 4):

> When one examines cases of exogenous conflict, morality is seen less as a process of reflecting and of resolving conflicting tendencies, *before* acting, and more as the clearing up of injusticies and wrongs that were unanticipated.

The internal type of conflict, which relates to 'oughts' and 'wants', is, according to Packer, experienced rarely compared to exogenous conflicts, in which it is not immediately known what sort of moral issue is at stake. In the case of internal conflicts, the situation is known, and the 'oughts', which apply, are known.

A study about individuals' perceptions of moral dilemmas

Gillian and Krebs (2000) investigated individuals' interpretations of real-life moral dilemmas in terms of internal moral orientation and the content of the dilemma. Regarding moral orientation, they used Gilligan's (1982) findings about the idea of the internal moral orientation. Gilligan had determined that women and men consider moral dilemmas with different moral orientations: men view moral problems in terms of justice or equality and women in terms of care. According to the results of Gillian and Krebs, Gilligan's results underestimate the influence of dilemma content. As a result of their study, Gillian and Krebs formed categorizations of issues of moral dilemmas. The categorizations were based on responses of 60 undergraduate students, who were provided with six types of moral dilemmas, which dealt with real-life prosocial, antisocial, and social pressure themes, and who were asked to assess main issues involved with the decision. The researchers categorized the answers and formed four main categories and for each of them subcategories (in parenthesis):

1. Upholding justice (procedural justice, combating immorality, positive reciprocity, normative order, general utilitarian considerations),
2. Upholding self (self-autonomy, consequences to self, consequences to self-respect, consequences to self-reputation, others' respect for and trust in self),
3. Upholding others (caring for others, respect for others and their rights and autonomy, listening to, considering, and understanding perspectives, adapting self's response to anticipated reactions of others, positive social influence, putting self in others' shoes), and
4. Upholding relationships (maintaining relationships, quality of relationships, trust and honesty in relationships).

The researchers found that the subjects interpreted presented dilemmas differently. The researchers of the study pointed out that all the dilemmas, which were presented in the study, were interpreted by the subjects as involving either predominantly care-based or justice-based issues. According to researchers, the subjects may interpret structures of the dilemmas differently (Gillian and Krebs 2000, 7):

> These findings demonstrate that moral dilemmas may differ in the strength of the structure they impose on those who view them. Like objects in the physical world, some moral dilemmas are simple; others are complex. Some clearly assume one form; others, like ambiguous or reversible figures, may be viewed in different ways. Even the social pressure, parent dilemma, which was interpreted strongly as being orientated around the issue of self-autonomy, was not viewed in entirely this way by all participants; it was viewed in other terms by a substantial number of participants.

The researchers concluded that the subjects of the study differed in what issues they saw in dilemmas and how many (Gillian and Krebs 2000, 9):

> Individuals differ in their tendency to view dilemmas in terms of features of the dilemma, versus in terms of the issues that are personally salient or important to them. Some individuals are more "projective" or "constructive" than others. Individuals – at least the university students in our sample – differ in both how many issues they see in dilemmas and what issues they see in dilemmas

The researchers suggested that the differences could have stemmed from personal experiences or internal cognitive phenomena, like values, but that the reasons for these differences should be examined further.

Usage of empirical social science theories in this study

Theories of moral behaviour and development are presented in this study as follows. First, it is postulated that individuals' capabilities to observe moral conflicts are diverse and depend on their moral sensitivity (Rest 1994a), i.e., capability to observe morally relevant issues. This applies to all representatives of each party, and data gathering is therefore dependent on subjects' moral sensitivity. Four Component Model (Rest 1994a) is applied in a framework for tackling with moral conflicts. Second, theories of moral development, by Piaget (1977) and Kohlberg (1981), are used in this study in determining the structure for moral conflicts perceived by the subjects. Third, results of Packer (1985) and Gillian and Krebs (2000) are compared to the results of this study.

2.2.4 Solving moral conflicts and affects relating to it

In this sub-section, the act of solving moral conflicts and affective issues relating to that process are considered. Solving moral conflicts is considered from the ethics education viewpoint, namely, what kind of procedures ethics teachers have taught in moral conflict solving in their ethics courses. The affective issues relating to moral conflicts concern anguish, moral uncertainty, remorse, regret, and compunction, which are closely experienced during and after solving a moral conflict.

Solving moral conflicts

Procedures determined for solving moral conflicts are briefly described next. The procedures are similar to each other in the way that they utilize major traditions in ethics (consequentialism, non-consequentialism, virtues) and the user of the procedure is guided to provide arguments for a solution in the light of these traditions. The first two methods are examples from computer ethics education, and the third one is from humanities discipline.

The paramedic method by Collins and Miller (1992) applies consequentialist, non-consequentialist, and contract traditions in ethics, and it demands a very detailed analysis of each alternative. For example, each alternative open for the moral agent is analysed in detail from the consequential and non-consequential viewpoint. Additionally, a contract – applying Rawls' veil of ignorance – is attempted to achieve for a possible resolution for the conflict. Finally, arguments for the solution are to be presented.

Kallman's and Grillo's (1996) method includes application of basic traditions of ethics (utilitarianism, Kantian ethics) and also more practice oriented methods like mother-test (Could you express to your mother what you plan to do?), publicity-test (What if the course of action would be published?), etc. After providing a defensible solution, the user of the procedure is asked to deliberate on how similar moral problem could be avoided in the future.

Ruggiero's (1997, 71-84) procedure consists of four steps: 1) Study the details of the case. In this step, one should look carefully at the circumstances, and determine the relevant details. 2) Identify the relevant criteria. In this step, one should specify the criteria relevant to the case. The criteria represent basic traditions in ethics: obligations, ideals, and consequences. 3) Determine the possible courses of action. In this step one should determine all the possible actions. 4) Decide which action is the most ethical. In this last step, one should make a decision using the information acquired in the first three steps.

Affective viewpoint to moral conflicts

Confrontations with moral conflicts and dilemmas are rarely experienced without any feelings. Statman (1995, 7) highlighted the difference between a moral conflict and dilemma by arguing that in a dilemma one feels anguish and helplessness, and that such total feelings are not associated with conflicts. When a moral agent solves the problem, there may be *moral uncertainty* related to the process when there are moral values at stake (Baumann 1997). Each time we make choices we cannot be absolutely sure that our decision is the right one. In real life we are dealing with these uncertainties all the time. When some kind of solution is produced, for example, in conflicting duties and/or obligations, and the moral agent has chosen a duty or obligation, the other duty or obligation still remains unfulfilled, and the unfulfilled duty or obligation bothers us. This may be observed as negative feelings such as *remorse*, *regret* or *compunction* (Hare 1987, 208). If we cannot fulfil a certain duty or obligation, it may be rational to feel regret and to be sorry about the situation, but it may not always be appropriate to feel remorse. Compunction may be felt during or before an act, unlike remorse, which only occurs afterwards. Compunction is not normally so strong a feeling as remorse, but compunction may be just as irrational as remorse. According to McConnell (1987, 161) it is appropriate to feel remorse if we have done something morally wrong.

2.3 Groups and norms

In this section, the main terms relating to groups and norms are presented. First, we start with the terms relating to group work and its features, then continue with the terms related to roles and norms in groups as well as cohesiveness in groups.

Features of groups. According to Hollander (1971, 470; referenced in Boethius 1983, 8) a small functional group consists of three or more persons:

> … who are mutually involved in ongoing social interaction aimed at achieving a common goal. This is accomplished through their interdependent action within an organized pattern of roles and norms called group structure.

Characteristics of a group are as follows: i) they have a set of shared values, ii) they acquire or develop resources or skills, iii) they conform to a set of norms,

and iv) they have a specific goal and leadership to coordinate their resources (Hare 1976, 4-5, 12-13; referenced in Hare *et al.* 1995).

Roles in groups. An individual assumes a role in a system when she identifies herself with and becomes identified with that system (Fisher and Ellis 1990). Role may be defined as a position in an interlocking network of roles that make up the group. Role behaviour could be defined as a behaviour that is expected by other group members. Members of a group develop a system of informal roles. These are created in addition to roles imposed by an external authority. *Role strain* means that a member of a group finds that the demands of the group on his or her behaviour are more than can be performed (Fisher and Ellis 1990, 207). *Role conflict* means that the role behaviour in that group is contradictory to her or his role performances in other groups. Role conflict may be perceived when the role performance in the group and the role performance consistent with the member's own personality or self-concept are in conflict.

Norms in groups. In social systems we experience pressure to conform to certain behavioural conventions (specified or unspecified). The definition of *norm* includes some characteristic of necessity or obligation (oughtness) (Fisher and Ellis 1990, 215). The degree of oughtness may vary from role to role and from situation to situation. Also, any punishment may be determined by these roles and situations. There are *explicit norms,* which are formal and which are intentionally adopted by the group (e.g. procedures or roles it abides by in its meetings). *Implicit norms* emerge during the interaction of the group members and they become "knowable" as the interaction continues. Group members may be aware of both kinds of norms, but the implicit norms are more changeable as the members continue to interact with each other. Some norms (either explicit or implicit) originate from the values of the members. The members may bring their values from the larger society to which they all belong (e.g. university, community, church, national culture, etc.). According to Fisher and Ellis (1990, 216) groups establish norms in order to reduce tension. Norms seem to develop through feedback loops and interaction. Individuals have ideas and norms of their own, but in the group an individual must exchange his/her ideas with others. Eventually they notice that their views do not coincide and they start to work to reduce the difference by finding a consensus, which is satisfactory to all. If someone moves from the group to another she is subjected to different norms because of the difference between the groups. There is also *conformity* to and *deviation* from group norms. In fact, there are enormous pressures in groups and societies on their members to conform to the norms of that group. A certain range of deviation from norms is expected and allowed. There is a certain range of deviation of allowable behaviours, which are not perceived as deviant.

Group cohesiveness. According to Tuckman (1965; referenced in Semprevivo 1980, 35) there are four stages in the dynamic group processes: i) at the forming stage the group begins to identify with its common task and creates a team structure, ii) at the storming stage the proposed structure becomes unacceptable to the individual team members as they perform the tasks and meet situations

in which they have to compromise, iii) at the norming stage the group restructures itself with team norms (formal and informal rules) and iv) at the performing stage the group becomes a problem-solving entity.

The process of group decision-making includes task and social dimensions (Fisher and Ellis 1990). *Task dimension* refers to the relationship between group members and the work they are to perform. *Social dimension* refers to the relationships of group members with one another. It seems that task and social dimensions of group process are highly interdependent. In theory these could be distinguished from each other but in practice they are inseparable. *Group cohesiveness* means the ability of group members to get along, determining their loyalty and commitment towards each other and the group. Cohesiveness may be seen as output from group's social dimension. It is not a process as much as a state of being. The output from a group's task dimension may be described as *productivity*. Cohesiveness and productivity are not easily determined, but they seem to have an interdependent relationship. The more cohesive the group, the more productive it is. Cohesive groups are able to tolerate some differences in people but too much variety in the norms and values of the group reduces cohesiveness (Fisher and Ellis 1990, 40). If group members develop the norms for which they feel a sense of commitment, they will support and accept these norms.

2.4   Normative theories of business ethics

Three major normative theories of business ethics, the stockholder theory, the stakeholder theory and the social contract theory (Smith 2002, 8-22) are applicable to this study, because most of the clients are representatives of business. Next, each of these three theories is considered.

The stockholder theory holds that managers have an obligation to maximize profits, because in that way stockholders get the greatest value for their investments. The basic idea behind the stockholder theory is that those firms, which provide society with goods and services that are the most valuable to society, are rewarded, and in the long run the stockholders of these firms get the profits. Smith (2002, 15) summarises the idea of the stockholder theory as follows:

> … all of society is best off if managers take actions that maximize returns to stockholders, since this means that the firm is providing what society most desires.

The stakeholder theory holds that a corporation has to take into account all those who are affected by the actions of the corporation: employees, consumers, suppliers, surrounding community and the society at large. Social responsibilities towards these parties are seen as parts of concerns of a corporation as well as responsibilities towards investors or owners of the corporation. There is a fundamental distinction between the normative

stakeholder theory and the stockholder theory. Smith (2002, 14) summarises the distinction as follows:

> stakeholder theory demands that interests of stakeholders other than stockholders be considered along with those of the stockholders even if it reduces firm profitability

The third major theory, the social contract theory, demands that managers should consider not only consumers' and workers' interests but also the canons of justice. The social contract theory implies a hypothetical contract between the society and some individuals who form an enterprise. The contract would include expectations and obligations between these parties: those individuals forming an enterprise would ask the society to have a legal recognition as a single agent (e.g., to sign contracts) and to use resources to hire employees. From the other viewpoint, the society demands firms to adhere to social welfare, which means that consumers' and workers' interests should be satisfied by maximizing advantages and minimizing disadvantages. Managers of firms should also take into account the consequences of their actions to society: they should avoid pollution, should not misuse political power, etc.

Theories of normative business ethics are utilized when discussing the results of this study.

3 RESEARCH DESIGN

In this chapter, the goals of the study, research methods and data gathering techniques are presented in detail.

3.1 Goals and subjects of the study

This study is aimed to increase understanding about moral conflicts in a project course in computing. Studies on student project courses (e.g., Moses *et al.* 2000; Fielden 1999; Mehic and al-Soufi 1999; Scott *et al.* 1994) show that the key players of these courses are students, university teachers and agencies, for which projects are implemented. Therefore, this study focused on determining moral conflicts perceived by these key players. It is possible for these key players to recognize moral conflicts (moral sensitivity; Rest 1994a), and as philosophers' categorizations show moral conflicts may be more or less easy to solve or even irresolvable, that is to say, genuine dilemmas (e.g., Nagel 1987). Additionally, according to moral psychologists, decision-making situations in which obligations and egoistic impulses collide can be regarded as moral conflicts (e.g., Packer 1985). As these key players are forced to react to moral conflicts they have to make decisions about the conflicts (moral judgment; Rest 1994a) and implement those decisions (moral motivation and character; Rest 1994a). Identification of moral conflicts is the first step before one is able to solve them (moral sensitivity; Rest 1994a; Clarkeburn 2002, 439). Therefore, to make it possible to determine the means to tackle with moral conflicts in a project course this study focused on determining moral conflicts as perceived by these key players. To be exact, the goal of this study was as follows:

> *The objective of this study was to identify moral conflicts perceived by clients, students, and instructors of a project course in computing.*

When determining moral conflicts perceived by individuals, both the viewpoints of preventive and crisis ethics are taken into consideration (see

Chapter 2), that is to say, possible moral conflicts and confrontations with actual moral conflicts are considered. For this reason, in this study, I have made it possible for the subjects to express themselves freely and openly about *possible* and *actual* moral conflicts. Because it is hard for a layman to make difference between a moral and a non-moral conflict, moral conflicts, about which the subjects were *hesitant*, were taken into consideration.

To achieve the above objective I conducted an empirical qualitative research at the Department of Computer Science and Information Systems, in the University of Jyväskylä, in Finland. The selected course was titled Development Project (DP) course till the end of the academic year of 2001 and Project Leading course after that. Although the name of the course was changed during the investigation, for simplicity reasons I use the acronym DP throughout this study. The characteristics of the key players of this course will be described next – as well as other related parties, which are left out from the scope of this study.

Clients. Typically client organizations represent private IT-firms, which may vary from small to big enterprises and computing departments, which are responsible for the development of information systems in their organizations, e.g., in industrial plants. Representatives of clients, with whom the project co-operation is implemented, typically are managers and specialists in their organizations.

Students. Students are typically third-year-students in CS/IS representing the ages from 21 to 25. Some of them work and study simultaneously. Generally students form groups of five members but groups of four members are also possible.

Instructors. Instructors guide their groups (from 1 to 4 per an instructor). Usually these instructors have teaching experience from the department, and some of them have experience on developing information systems in IT-projects outside university. The leading instructor manages the whole course and guides the instructors' group. He may also have student groups to guide.

Other related parties. There are parties closely related to the project-teaching environment, but nevertheless left out from the scope of this study, because they are not the particular key players of this study: The head of the department, who decides about monetary and legal issues relating to the course, administrative and technical support personnel, communications instructors, who arrange a communications course during the DP course, and a psychologist, who coordinates group formation and consults student groups and instructors.

In the next section, interpretive research approach and phenomenography as a research method are described.

3.2   Research approach and method

To identify moral conflicts perceived by each party of the DP course I chose qualitative and interpretive research approach. I decided to give the subjects a possibility to express themselves freely and openly when collecting data about moral conflicts they perceived in their lives. I chose this approach because it made it possible to find something, which probably could not have been achieved if the subjects had been presented with a pre-defined framework about moral conflicts. In this way, I aimed to let the complex nature of human life to emerge into the results of the study. According to Packer (1985, 5) in studying moral action, the complexities of moral actions should be taken into account:

> Moral action should be studied in a way that takes accounts of its complexities, and such peculiar phenomena as akrasia, the unanticipated consequences and unintended effects of disingenuous action, self-deception, and so on.

Consequently, following the ideas of the interpretation theory (Little 1991), to achieve understanding about moral conflicts perceived by the subjects, the investigator has to interpret the subjects' statements to discover meanings of their perceptions relating to moral conflicts. According to a phenomenographer, Uljens (1991), the best way to understand reality is to investigate people's understanding of it, which is the focus of interpretive research (Klein and Myers 1999, 69):

> Interpretive research does not predefine dependent and independent variables, but focuses on the complexity of human sense making as the situation emerges ... attempts to understand phenomena through the meanings that people assign to them.

Because there are no prior systematic investigations on moral conflicts perceived by the parties of student project courses in computing, this kind of research, which is theory-creating in nature in Järvinen's (2001) terms, was applied to construct categorizations about moral conflicts perceived by the parties. From among the interpretive research methods I chose phenomenography when analyzing moral conflicts perceived by the parties of the course. Regarding clients, data was gathered with interviews. Diaries, responses in questionnaires, and drawings were used in collecting students' perceptions, and, in the case of instructors, participant observation was used. Participant observation helped me to understand and experience the process of the DP course, and I was able to experience what happened behind the curtains, in the "heart" of this course, namely, what happened among the instructors, who were responsible for managing the whole course and who were, as it was shown, forced to deliberate on the most difficult human-oriented problems relating to this kind of course.

Phenomenography is used to investigate and describe variation in subjects' perceptions, and I chose this method because it makes it possible to attain a holistic view of subjects' perceptions about the studied phenomena. Moral conflicts perceived by the subjects were the focus in this study, and the aim was to let the subjects express themselves freely so that the possible complexities of moral conflicts (cf. Packer 1985, 5) could come out.

The results achieved with participant observation represent the so-called first-order perspective, which means that the researcher describes some aspect of reality directly (Uljens 1991; Järvinen 2001), and phenomenographical results represent the so-called second-order perspective, which means that the researcher describes some aspect of reality as it is conceived by individuals. Figure 3 presents the difference between the first and second order perspectives. Figure 4 presents how these perspectives are realized in this study: Students' and clients' perceptions represent the second-order perspective and my experiences as an instructor (and those of a few others) the first-order perspective.

Next, phenomenography as a research method is presented in detail.
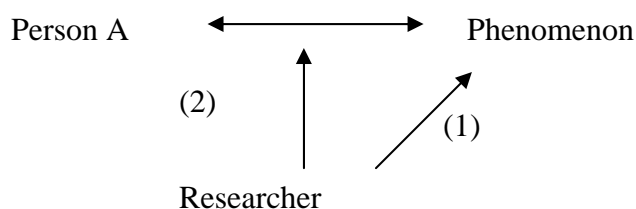
FIGURE 3   First-order (1) and second-order (2) perspectives (Järvinen 2001, 74)
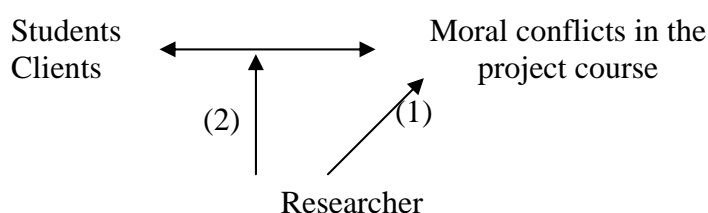
(1) Researcher as an instructor interpreting his own perceptions (and those of a few of other instructors)
(2) Researcher investigating students' and clients' perceptions

FIGURE 4   First-order (1) and second-order (2) perspectives in this research (applied from Järvinen 2001, 74)

Phenomenography

The phenomenographical research method was developed at the Gothenburg University to study human understanding of a specific phenomena (Marton 1992). The aim of the phenomenographical method is to identify and describe qualitative variation in individuals' experiences of their reality (Marton 1986, 31):

> Phenomenography is a research method adapted for mapping the qualitative different ways in which people experience, conceptualise, perceive, and understand various aspects of, and phenomena in, the world around us.

The aim of a phenomenographic researcher is to attain a holistic view of a selected phenomenon, and - according to Marton (1995, 178) - it is possible because there are a limited number of qualitatively different ways to experience a phenomenon:

> …had the number of potential aspects (we are talking about essential aspects that define the phenomenon) been infinite, we could have experienced every situation, every phenomenon differently, each one of us. … We have variation and resemblance in our way of viewing the world. In order for this to be the case the number of critical aspects that define the phenomenon must be limited. And the number of critical aspects must be limited because we learn to experience them by successive differentiations from each other. Oversimplifying things a bit, the different ways of experiencing a phenomenon reflect different combinations of the aspects that we are focally aware of at a particular point in time.

Following the ideas of Marton, it is possible to attain a holistic view of individuals' conceptions concerning a phenomenon under study. What is characteristic to the phenomenography is that it tries to capture conceptualizations, which are faithful to the individuals' experience of a selected phenomenon. Those conceptions, which are typically gathered with interviews, are then categorised and relations between those categories are further explored (Francis 1993, 69). A phenomenographic researcher seeks qualitatively different ways of experiencing the phenomena regardless of whether those differences are differences between or within individuals.

Phenomenography is used in the following three main areas (Uljens 1991, 98): 1) Research on general aspects of learning (approaches, strategies), 2) Content oriented studies on learning (focusing on educational effects), and 3) Studies on people's conceptions of everyday life phenomena (e.g., taxes, death). In phenomenography, the researcher tries to achieve a so-called second-order perspective about the investigated aspect of reality: the researcher describes the conceptions of a group of individuals (see Figure 3) - instead of using first-order perspective, describing reality directly as it is done in ethnographical studies (Uljens 1991, 99; Järvinen 2001, 74). In addition to this, there is a distinction between the first-order and second-order perspectives and relations. If the researcher describes some individuals' conceptions at a certain time (T1), he is describing these individuals' first order relations, but if he describes a change in the individuals' conceptions from time T1 to T2, he is describing second-order

relations. When investigating learning, the phenomenographic researcher concentrates on the qualitative change in the way a person conceives some aspect of the reality (Uljens 1991, 99).

In this study, regarding moral conflicts perceived by the representatives of the clients and the students, the focus is on the second-order perspective and first-order relation: the goal is to attain a holistic view of moral conflicts perceived by the subjects in the project co-operation. The focus of this study is not to observe change in the subjects' thinking, but instead the focus is on the subjects' perceptions about the project co-operation when the subjects have experienced or are experiencing this co-operation.

"What" and "how" aspects. People's awareness contains two aspects: a "what" or the referential aspect, which corresponds to the object itself and a "how" or the structural aspect, which relates to the act (Marton and Pang 1999). The "what" aspect is about what a mental act is directed towards. From the phenomenological standpoint it is called noema, which stands for what is experienced (Ihde 1979, 44). The "how" aspect denotes the different aspects of the phenomenon, which constitutes its overall meaning. From the phenomenological standpoint it is called noesis, which stands for mode of experiencing (Ihde 1979, 44). To understand the whole mental act we must understand both the object and the mode of a person's mental acts (Uljens 1991, 84). The categories of description should include both the "what" and the "how" aspects to express the whole mental act (Figure 5). The structural aspect relates to how the phenomenon is discerned from its environment and how the phenomena's parts relate to each other (Isomäki 2002, 63). The structural aspect consists of external and internal horizons: the external horizon relates to that which surrounds the phenomenon including the contours, and the internal horizon represents the parts and their relationships and the contours of the phenomenon.
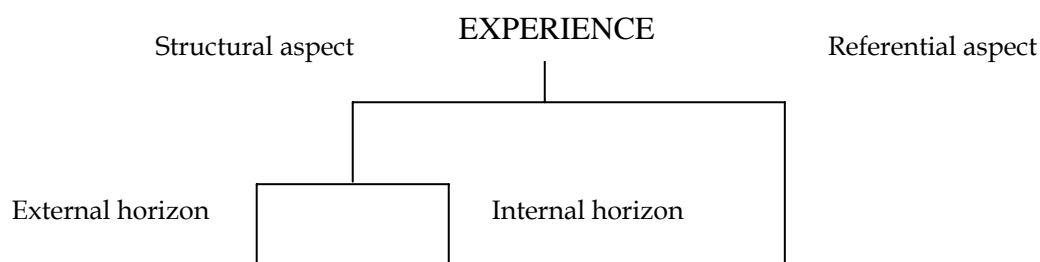
FIGURE 5   The referential aspect (what) and the structural aspect (how)

Data gathering in phenomenography. Interviewing is the most commonly used data gathering method in phenomenographical studies, but, for example, drawings also have been used as research material (Uljens 1991, 89). Data gathering by interviewing enables the researcher to access the perspective of the

person being interviewed (Patton 1990, 278). By direct observation it is impossible to get information about how people feel or think and about their intentions. By direct observation we are not able to observe behaviours that took place in the past, or how people have organised the world and what kind of meanings they attach to what goes on in the world. By interviewing people we are able to enter the other person's perspectives. However, this data gathering method is very much dependent on the researcher. The quality of the information obtained during an interview is largely dependent on the interviewer (Patton 1990, 279). In phenomenographic interviewing the task of the interviewer is to direct the discussion towards the phenomena being studied and get information about how the interviewees understand the concept (Bowden 1994, 9). Usually the questions employed by the phenomenographic interviewer are open-ended and the interviewer uses additional questions like "What do you mean by that", "Could you explain that further?" In this way the interviewees reflect on what they have said and explain their understanding more fully. An interview protocol or an interview guide (Patton 1990, 283) should be produced for the interviews to guarantee that the information is obtained from interviewees in the same manner.

How to analyse data in phenomenography. The aim of a phenomenographical study is to differentiate, group and interrelate data and then determine the categories of description as the result (Svensson and Theman, 1983). A category may include several concepts, which may be compared with each other. The phenomenographic aim is to explore relations between the obtained categories to derive a meaningful structural model of the conceptions (Francis 1993, 74). This search for a meaningful structure demands the identification of the distinguishing features of the categories and determination of logical or other relations between them.

There are variations in the way of analysing interview transcripts. One could extract quotes and deal with them away from the interviews or one could keep the context of the quotes in mind (the whole interview transcript) (Bowden 1994, 11). Bowden himself prefers dealing with the whole transcript instead of a cut-and-paste construction. The next step is to shift the attention to the meanings embedded within the quotes (Bowden 1994, 11). The interest is focused on the 'pool of meanings' instead of what the interviewees individually have said. As a result of this work, quotes are arranged and rearranged and narrowed into categories. Finally they are defined in terms of core meanings and borderline cases. In phenomenographic research it is not necessary to try to obtain a comprehensive account of the conceptions of each individual (Francis 1993). But the researcher should be able to show that no more categories would emerge if the selected sample size were increased. Sandberg (2000) observed that after 20 interviews the conceptions start to saturate.

Phenomenography has been used in studies concerning, e.g., conceptions of matter (Renström 1988), and systems designers' conceptions of the human being (Isomäki 2002). A collection of phenomenographical researches is found

in Marton and Wenestam (1984) and from the website Land of Phenomenography (2002).

3.3   Data gathering

In this study, data gathering is divided into two phases:

1. Preliminary phase (period 1999-2000), and
2. In-depth phase (periods 2000-2001 and 2001-2002).

The goal of the preliminary phase was to get familiar with the parties of the DP course and to produce a tentative model of moral conflicts of each party. After the preliminary phase, I sharpened the data gathering methods and, consequently, during the in-depth phase, I gathered information about moral conflicts perceived by each party. The chronological order of these research efforts is described in Table 3. It shows the academic years of this study and the research efforts for each year. The first year of the in-depth study will later in this study be called "the first year" and the second as "the second year". Next, the preliminary and in-depth phases are presented.

TABLE 3   The chronological order of the phases of this study.

Academic years	The research efforts
1999 – 2000, Preliminary phase	Introduction to the DP course by discussion with the leading instructor Ethics of Project Work course Preliminary client and instructor interviews
2000 – 2001, In-depth phase (the first year)	Participant observation Client interviews Ethics of Project Work course
2001 – 2002, In-depth phase (the second year)	Client interviews Ethics of Project Work course
2002 – 2003	Analysis of data and writing licentiate's thesis (Vartiainen 2003b)
2003 – 2004	Writing dissertation thesis

Preliminary phase (period 1999-2000)

The goal of the preliminary phase was to get familiar with the parties of the DP course and to achieve a tentative understanding about what happens during the course and what kind of moral conflicts the parties of the course may confront (see Table 4 for a summary of data gathering). During this phase, the main strategy in my interviews with the instructors (including the leading instructor) and clients was to ask the interviewees to describe issues that they had been forced to think about a long time. During those interviews I put the stress on

relationships between parties because morality deals with humans and how they relate to other beings and how they treat them (Thiroux 1986). In the interviews I used a variety of open-ended questions to find out what happens during the DP course and what moral conflicts they encountered (Appendix 1). I interviewed six client representatives and three instructors, and six student groups, who wrote ethics diaries during the academic year 1999-2000. It was observed from the results acquired that there was a need to make the clients and the instructors to focus on deliberating about moral conflicts directly, that is to say, to make them deliberate about moral conflicts they perceived in the project co-operation. This had already been realized in the case of the students, but as regards the clients and instructors, the data gathering had to be developed. The resulting tentative model of moral conflicts perceived by the parties of the DP course (see Appendix 2) expresses at surface levels the issues, which include moral conflicts. The tentative model as such is not a particular result of this study, but it was an important intermediate result from the viewpoint of implementing this study: First, it showed that the parties of the course confront moral conflicts. Second, it showed that data gathering methods should be developed in the way that the subjects (namely the clients and the instructors) would be asked more directly about their perceptions of moral conflicts in project co-operation. Third, the process behind the creation of the tentative model introduced me to the parties of the course and the terminology they used, and I was convinced that it was possible for me to take a deeper look at the course. For example, I noted that I understood the expressions used in the co-operation (although some terms and acronyms relating to the project tasks were new to me). Consequently, I ended up with implementing participant observation during the in-depth phase and developing data gathering techniques when interviewing the clients and the instructors. The in-depth phase of the study is considered next.

TABLE 4   A summary of data gathering during the preliminary phase.

Subjects	Data gathering	Usage of information gathered.
Clients	6 interviews	These interviews were used to get preliminary understanding about project co-operation. They were not used in determining moral conflicts perceived by clients.
Students	6 group diaries; 5 personal diaries	These diaries were used together with diaries acquired during the in-depth phase in defining moral conflicts perceived by students.
Instructors	3 interviews	These interviews were used in describing the process of the course (chapter 4) and determining moral conflicts perceived by instructors.

In-depth phase (academic periods 2000-2001, 2001-2002)

The goal of the in-depth phase was to gather information about moral conflicts perceived by the representatives of clients, by the students and by the instructors. In contrast to the preliminary phase, when I did not put pressure on the clients and instructors to focus on moral conflicts, during the in-depth phase I directly asked them to deliberate about perceived moral conflicts. Regarding students, I continued developing the Ethics of Project Work course, which included writing of an ethics diary. In Table 5, there is a summary of subjects of this study. It should be noted that the number of clients (21) refers to the number of client interviews during the in-depth study (client interviews from preliminary study were not used in defining moral conflicts perceived by the clients).

TABLE 5   A summary of subjects and data gathering of this study.

Subjects	Data gathering	Location of results	Codes of subjects
Clients	21 interviews	Chapter 7	C1…C21
Students	13 personal diaries, 6 group diaries; 17 responses to a survey	Chapter 8	Individual students: S1…S13, Student groups: G1…G6
Instructors	Ethics diary, 3 recordings of meetings, 2 recordings of personal interviews during participant observation	Chapter 9	I1…I3, The leading instructor, my colleague

Next, data gathering in this study is presented in detail.

3.3.1 Clients

In this section, the selection of the individual representatives of the clients (in in-depth phase) and the formulation of the interview questions (including probing questions) are described.

The selection of representatives of clients. Client interviews were implemented during the first and second year. Client selection was based on the idea of theoretical sampling (Glaser and Strauss 1967, 62-63):

> Theoretical sampling is done in order to discover categories and their properties, and to suggest the interrelationships into a theory. … The adequate theoretical sample is judged on the basis of how widely and diversely the analyst chose his groups for saturating categories according to the type of theory he wished to develop.

The aim was to interview the representatives of the clients a) representing different hierarchical levels like chairs of board (who typically were managers in their organizations) and support persons (who typically were technical specialists), b) representing different ages, c) representing both men and women (Table 6). Some representatives of clients were clearly either managers or direct

support persons for their groups, but some subjects worked in a managerial position and specialist roles simultaneously during the course (e.g., some managers of small firms guided the students in technical/specialised issues). As an exception, there was a client organization, which included two representatives who worked close to each other, so that it was natural to interview them simultaneously. Additionally, the aim was to avoid male biased interviewee selection by selecting also women to be interviewed. However, most of potential interviewees were male and as a consequence there were only five women (ca. 24%) among subjects. At the time of these interviews, 33.3% of subjects were in their twenties, 42.9% in their thirties, 14.3% in their forties, and 9.5% in their fifties.

During the first year of the in-depth phase, I interviewed subjects at the middle and after the end of the course. There were exceptions to this: interviews with some subjects were conducted after the course. I observed that the second interview after the course did not bring out new conflicts, so during the second year, I interviewed most of the subjects after the course.

TABLE 6   Client representatives, their status and age in the order of age (the order of presentation here is not equivalent with the clients' codes).

Status	Age	Gender
Contact/technical	23	F
Contact/technical	26	M
Contact/technical	27	M
Management	27	M
Contact/technical	28	M
Management	29	M
Management/contact/technical	29	M
Contact/technical	30	M
Contact/technical	33	F
Management/contact/technical	33	M
Management	35	M
Contact/technical	36	M
Contact/technical	36	M
Management/Contact/technical	37	M
Management	38	M
Contact/technical	39	F
Management	42	M
Management	47	M
Management/Contact/technical	49 and 50	M and F
Management	56	F
Management	56	M

Formulation of the interview question. Because the goal was to let the interviewees to describe, as freely and openly as possible, the moral problems that they perceived, I tried to formulate the interview question as understandable as possible for individuals who were not familiar with specific terms concerning

morality and ethics[2]. I sensed that the goal of this study, attaining knowledge about moral conflicts perceived by each party, includes the term "moral conflict" ("moraalinen konflikti" in Finnish), which is not a suitable term for the use during interviews. It is not a suitable term because it has not been used in e.g. mass media or ordinary Finnish language. But in our daily life the term "moral problem" ("moraalinen ongelma" in Finnish) is well known because, for example, in the Finnish media there have been discussions concerning moral problems in gene technology, health care and human rights issues[3]. I had my interviews with clients and instructors simultaneously during the period 2000-2001[4]. First, when interviewing instructors I used the question "*Would you, please, describe the kind of moral problems there are relating to acting as an instructor in the Development Project*". During an interview I realised that my question somehow restricted my interviewees from properly expressing *probable* moral conflicts, and I needed to widen the question. The following extract describes how an interviewee helped me in finding this out:

> The researcher: "In your teacher's role, in the counsellor's role … you were talking about … is this a moral problem?"
> The instructor: "Yes, mostly, yes, … or … well, I do not … I cannot say that it is a problem … it is not a problem but an issue which should be taken notice of."
> ….
> The researcher: "An issue, which should be noticed … would you tell what you mean by this."
> The instructor: "An issue worth to be taken notice of is not a problem … it is not part of daily procedures .. if you refrain from thinking about it and, now and then, remember this! … it might end up with a problem."

This instructor explained that he did not see any moral problems but issues that should be taken into account and that without proper attention some issues could become moral problems. I concluded that by asking a wider question about "*issues worth noticing from the moral viewpoint*" interviewees would be encouraged to describe issues that might become moral conflicts if they were not noticed somehow. In this way, I gave the interviewees more space to express themselves and could receive wider and more holistic descriptions concerning the moral conflicts perceived by my subjects.

When interviewing the clients, I ended up using the following phrase (in English and in Finnish, respectively):

---

[2]   Terms ethics and morals have been used interchangeably, for example, by Singer (1993, 1), Rest (1994b, xi), and Johnson (2001, xv).

[3]   Especially, during the spring 2001 (right in between the first and second interviews with the clients) morals and moral problems relating to sports were brought up because four famous and talented Finnish skiers were found to have been using doping. Direct television broadcasts about this scandal reached over one million viewers (Finland's population is ca. five million). During the scandal the term "grey area" ("harmaa alue" in Finnish) was used to describe issues in which the good and the bad were mixed.

[4]   Instructor interviews were left out from the scope of this thesis. Results of instructor interviews will be published later.

Describe the kind of moral problems and issues worth noticing from the moral viewpoint that are related to the fact that you participate in the Development Project as a client.
Kuvaile mitä moraalisia ongelmia tai moraalin näkökulmasta huomionarvoisia asioita liittyy siihen että olet toimeksiantajana Kehittämisprojektissa.

Interview protocol. During the first year, I interviewed the clients twice. First, I interviewed them after the middle assessments during December and January, and the second time after the final assessments during April and May (see Appendix 4). Because the second interview did not bring up any new moral conflicts, during the second year, I interviewed the clients after the course using the same questions from both of the protocols. A description of the first protocol follows (see the protocol used during the interviews in Appendix 4):

1. At the beginning of an interview I took my recording machines from my bag and chatted about them. I doubly recorded the interviews with a traditional tape recorder and an electronic mini-disc device. This sometimes raised humorous discussions about the risks of technology.
2. A short description of the research method (phenomenography) and what it means concerning the interview situation (the interviewer does not express his views but just asks questions) followed.
3. Confidentiality. I described the process of producing a research report: there can be quotes from the interview but in such a manner that no one could be identified from those quotations. The researcher would do his best to hide the interviewees' identities.
4. Then I asked how does the interviewee feel about the interview. With this question I tried to relax the interview situation.
5. Then I asked the interviewee to describe shortly his/her background in working life. In addition to this, I asked his/her age.
6. Then I asked the interviewee to describe what moral and ethics means: "*Describe what morals and ethics mean.*" This question aimed to focus the interviewee's thinking towards morals and ethics.
7. Then I asked the interviewee to describe what a moral problem means: "*Describe what a moral problem means*" This question aimed to focus the interviewee's thinking towards moral problems.
8. Then I asked how does it feel to be in a moral problem: "*Describe how does it feel to be in a moral problem*" This question aimed to focus the interviewee's thinking more profoundly towards moral problems and feelings engendered by such a situation.
9. Then I asked the main interview question: "*Describe what moral problems and issues worth noticing from the moral viewpoint there are related to the fact that you are as a client in the Development Project*"

For the second interview, which was arranged after the course during the first year, I used the following interview protocol (see Appendix 4):

1. During the first year, I asked the clients to specify, from the transcript, those issues, which I had not considered to be clear. Because there were few such issues and the client's responses did not reveal any new ones, this step was not conducted during the second year – in fact, this was one reason for merging both of the interview protocols during the second year.
2. Then I asked the client to describe what an issue worth noticing from the moral viewpoint means. "*The last time I asked you what a moral problem means. Describe what does an issue worth noticing from the moral viewpoint mean.*"
3. Then I asked the client to describe moral problems during the springtime: "*Describe what moral problems and issues worth noticing from the moral viewpoint comes to your mind about events during the spring time.*"

4. Then I asked the client to deliberate about the consequences of the DP project from the moral problems viewpoint: "*When thinking about the future, what moral problems or issues worth noticing from the moral viewpoint are connected to the consequences of this development project.*"

Probing questions. The aim of interviewing is to make the interviewee thematize the phenomenon of interest and make his/her thinking explicit. According to Francis (1993, 69) the researcher should make it clear in the report in what ways the interviewer led the interview. To highlight my own effect during the interviews I have listed below the probing questions I used:

Would you describe more of what you said?
What does it mean?
Would you tell me more about that?
Is it a moral problem?
What makes it a moral problem?

During these interviews I gave the interviewees time to think and answer in depth. I allowed the interviewees to have pauses in their speech. When the representative of a client stopped talking I asked him "*What else comes to your mind?*" When he did not have anything to add I made him deliberate about different incidents with parties of the DP course and go through them chronologically from the start to the end:

Thinking about the parties of DP, what moral problems or issues worth noticing comes to your mind? Clients, students, instructors…
When thinking DP from the start to the end, what comes to your mind? September, October, November, December, etc.
The beginnings of the project, task exhibition, middle-assessment, final assessment, etc.

3.3.2 Students

Moral conflicts perceived by the students were gathered with the help of ethics diaries, drawings, and questionnaires (see a summary of data gathering in Table 7). Student selection was based on students' voluntary participation in the Ethics of Project Work course and voluntary responding to questionnaires. Ethics diaries were acquired during the Ethics of Project Work course, during the preliminary phase, in the academic year of 1999-2000, and during the in-depth phase, in the academic years of 2000-2001, and 2001-2002. Drawings were gathered during an exercise of the Ethics of Project Work course in the academic year of 2001-2002. Questionnaires were delivered to all students at the end of the academic year of 2000-2001. Additionally, I interviewed the students of my groups with the same indirect questions that were used in questionnaires.

TABLE 7   Data gathering from students

Academic year	The content of EPW course	Research material acquired
1999-2000 (Preliminary phase)	Writing ethics diary, participation in the interview	Six group diaries; Five personal diaries
2000-2001 (In-depth phase)	Lectures (2h), exercises (2h), three discussions (a 2h, 6h in total), writing ethics diary; Interviewing students	Three personal diaries; 17 responses to questionnaire; Notes from the interviewing students
2001-2002 (In-depth phase)	Lectures (6h), A web-based exercise, Exercises (4h), writing ethics diary	Five personal diaries; 13 drawings

Students' perceptions were gathered during the Ethics of Project Work (EPW) courses, and its goals are presented next. Participants of the voluntary EPW course were limited to students of the DP course. Regarding diaries and drawings the students had the possibility of denying their usage as research material, and as a consequence, a student denied usage of his diary as research material.

The goals of the Ethics of Project Work (EPW) course

During the academic periods of 1999-2000, 2000-2001 and 2001-2002 I arranged the Ethics of Project Work course (EPW) (1cr) for the DP students. The course had two goals: first, to collect information about moral conflicts perceived by students, and second, to conduct an experimental computer ethics course based on students' direct experience and usage of diary. The main instrument was the ethics diary, that is to say, the students were expected to jot down experienced and probable moral conflicts and reflect upon them in the diary. Development in the capability to observe morally relevant issues and capability to construct new alternatives in conflicts situations, development in moral sensitivity in Rest's (1994a) terms, was expected to take place when students wrote ethics diaries and reflected on perceived moral conflicts. The implementation of the course developed during these years, and I will describe these developments next.

The first year of EPW

During the first year (1999-2000) I organized the EPW course as a voluntary group-based course: student groups were expected to reflect on perceived moral conflicts in their group diary while issues which could not be handled in the group diary were to be handled in a personal diary. I did not organize lectures but my plan was that the students participating in the EPW course would attend lectures of the Computer Professional's Ethics (2cr) course,

during which I lectured on ethics theories. This course started in January 2000, but just a few of the EPW students participated in that course. During the year, six student groups wrote group ethics diary, three students from these groups wrote personal diaries, and one student from outside these groups wrote a personal ethics diary.

The second year of EPW

During the second year (2000-2001) of the EPW course, the course included, in addition to writing an ethics diary, a two-hour lecture, a two-hour exercise, and three two-hour discussions. I lectured about ethics theory (consequentialism, non-consequentialism, virtue theory) and the exercise included moral problem solving. During the discussions we deliberated about the perceived moral conflicts. There were over fifteen students at the beginning of the course, but many students dropped, and finally only three students completed the course. At the end of this particular year, I delivered a questionnaire concerning moral conflicts to the students of the DP course, and 17 students answered to it.

The third year of EPW

During the third year (2001-2002) I developed the course further. I lectured six hours about ethics theory, moral problem solving, and moral problems in computing. There was a so-called X-exercise, which considered solving a moral problem in a web-based discussion forum (WebCT). Then I arranged two exercises. The first included moral problem solving with Ruggiero's (1997) method. The theme of the second exercise was avoidance of moral problems. During that exercise the students were to develop ethical guidelines for the DP course. In addition to these exercises, there were three discussions during the DP course. For the first discussion I divided the students into two groups of ca. 7 students. I asked them to draw a) moral conflict in project work, and b) the moral conflict as solved. After drawing the pictures, I asked them to present the conflict as unsolved and as solved to other students in the group and talk about the conflict and the way it was solved. Finally, moral conflicts of both groups were summarised. The idea behind the drawing exercise was to develop students' moral sensitivity concerning moral problems in project work. For the second discussion I did not plan any educational intervention, but I asked an experienced computer professional to have a two-hour lecture concerning mental violence and work place harassment. The leading instructor and I decided that the lecture was to be compulsory for all the students in the DP course. The lecture included a play, a lecture of realistic descriptions of mental violence in work places, a description of results of few studies relating to mental violence in Finnish work places, and lecture's recommendations for the students. The lecture seemed to have an impact on the students – at least they kept extremely silent during the lecture. The third discussion included my lecture on universalization principles, Golden Rule (Hare 1963), John Mackie's third stage universalization (Mackie 1981), and veil of ignorance (Rawls 1971). During the discussion – which was in fact, an exercise, I asked the students to formulate societal contract between all parties of the DP course. This exercise

was too hard for the students, because they did not seem to be able to comprehend the total scope of the DP course.

When I read the feedback from the course, some students told that they should have got more credits for the course. Some students complained that all the students in my course had not been interested in participating in the discussions (I observed the same). Some students considered formulating ethical code as a very interesting exercise, but some did not want to the responsibility for producing an ethical code for the following years.

An example of guidelines given to students about ethics diary

The students were asked to reflect on experienced and probable moral conflicts during the course. An example of the content of a handout given to the students represents the goals of the EPW course:

- To analyse moral conflicts with the help of one's own experience,
- To develop moral sensitivity (capability to observe morally relevant issues and produce new courses of actions),
- To aim to understand the nature of project work and moral conflicts related to it both in educational environment and in working life, and
- To become aware of one's own moral decisions and analyse them.

During exercises I pointed out that they could reflect on possible moral conflicts in the project work they were implementing.

Interviewing students

During individual discussions with my students about the experiences from the project manager's phase, I interviewed some of my students with indirect questions found in Appendix 3. Because of lack of time only a few students were interviewed.

Summary of data gathering concerning students

There were six group diaries and four personal diaries from the academic period of 1999-2000, three personal diaries from the period 2000-2001, and six personal diaries and drawings of 13 students from the period 2001-2002. In total, there were 13 personal and 6 group diaries, and 13 drawings. In addition to this, during the period 2000-2001, I delivered a questionnaire for the DP students and 17 of them answered to it. When I delivered the questionnaires I emphasized that those who are in the EPW course, need not return the survey. The survey was voluntary for the EPW course during all the other years also.

3.3.3 Instructors

In this study, I conducted participant observation to identify moral conflicts, which I would confront during the participation and which my colleagues would also confront. As an ethnographic study aims to be holistic its aim to describe a group or culture and its patters (Fetterman 1998, 11), this study is not a full-scale ethnographic study but instead it narrows its viewpoint to moral conflicts perceived by instructors. Participant observation combines the

participation in the lives of the people under study at the same time keeping professional distance so that the researcher is able to observe and record findings (Fetterman 1998, 34). A researcher conducting participant observation should reside in the community for from 6 months to 1 year or more. During that period the researcher immerses him or herself to the observed culture and internalizes the basic beliefs, fears, hopes, and expectations of the people under study. Participant observation makes it possible to observe what happens at the observed stage (Jorgensen 1989, 12):

> Though participant observation, it is possible to describe what goes on, who or what is involved, when and where things happen, how they occur and why – at least from the viewpoint of participants – things happen as they do in particular situations.

Participant observation is a suitable research method when there is no knowledge or the knowledge is considered contradictory (Jorgensen 1989):

1. Little is known about the phenomena (e.g. a newly formed group or movement),
2. There are important differences between the views of insiders as opposed to outsiders (e.g. ethnic groups, labour unions),
3. The phenomenon is somehow obscured from the view of outsiders (e.g. private intimate interactions), or
4. The phenomenon is hidden from the public view (e.g. crime and deviance, secretive groups).

The first item and the third item above fall within moral conflicts relating to student project courses in IS/CS education. Although university teachers, clients, and students undeniably confront moral conflicts during project courses, systematic investigations from this viewpoint are lacking. Similarly, because moral conflicts are confronted inside client organizations, in student groups and among university teachers taking part in these kinds of courses, the outsiders may not be aware of those problems.

Covert vs. overt, insider vs. outsider

In participant observation the researcher involvement may be overt, which means that insiders are aware of the researcher and his goals, or it may be covert which means that insiders are not aware of the researcher's involvement. The researcher's involvement may be between overt and covert in the way that just a few insiders are aware of the researcher and his or her goals at the stage (Jorgensen 1989). The participant role may be somewhere between a complete insider and a complete outsider (Jorgensen 1989, 55). The researcher may be more or less inside or outside of the phenomenon of interest. The outsider role may be more effective if the setting is public and more or less accessible to anyone (e.g. observing people at bars). On the other hand, insider roles are effective when we want to attain information about important aspects of human existence, which cannot be attained except from the inside (Jorgensen 1989, 59).

TABLE 8   Data gathering events and tasks during the first and second years.

Event or task	Date/Timing
Discussion between four instructors from previous years	Autumn 2000
Interviewing the leading instructor	19th December 2000
Instructors' meeting	31st January 2001
Interviewing my colleague	5th February 2001
Instructors' meeting	6th February 2001
Writing ethics diary	From Autumn 2000 to Spring 2001
Memories from the second year	The second year

In this study, participant observation was conducted as a total insider and overtly. Becoming an instructor allowed me to immerse into the phenomena to observe and feel the problematics in the field. It would also have been possible to choose the role of an observer, following the instructors to their meetings and recording the events taking place there. The overt way to conduct participant observation was chosen in the name of openness and honesty towards all participating parties. Hiding the information about my involvement as a researcher intending to write a public study report would have gone against openness, which was considered as an important value in the setting of DP course. At the beginning of the participant observation phase I made it known to every party that I had two roles in DP, that of an instructor and that of a researcher, and that I was conducting participant observation research during the year and that the focus of the research was moral conflicts in project co-operation.

During the academic period 2001-2002 I did not conduct participant observation as I had conducted it during the first year, but I have added the experiences of the critical incidents from the period to this study. At the beginning of the course, I made it known to the students that I would continue my research on moral conflicts of the parties of the course.

Data gathering during participant observation

During the first year, I recorded moral conflicts that I had confronted or could possibly confront and also conflicts that I observed my colleagues to have confronted. I interviewed the leading instructor and my colleague during the first year about moral conflicts they perceived in their work. Additionally, I made notes about critical occasions relating to the course, about such things as negotiations with clients, guidance meetings and instructors' meetings as well as about my own development as an instructor. The summary of these data gathering events and tasks is shown in Table 8. A detailed description of my experiences and instructor interviews are in Appendix 6.

Instructors' meetings considered mainly issues relating to organizing events like guidance meetings, project managers' meetings, etc., but sometimes we discussed the instructor's work, duties and problems. Sometimes during these discussions I led the discussion to moral issues.

One recording is from a discussion among four instructors (the leading instructor, my colleague and two former year instructors) at the beginning of DP (autumn 2000). I interviewed the leading instructor about moral problems in assessment during December 2000, and my colleague twice during the period 2000-2001.

At the end of DP I delivered questionnaires to all students (Appendix 3). In that questionnaire I presented the parties to DP and asked the respondents to describe moral conflicts that these parties might confront.

I conducted few interviews with my students during the in-depth phase. In my role as an instructor I was to have discussions with all the students in my groups after their project manager periods. In fact, I did not attain this goal mainly because my schedule towards the end of the DP course was so tight. The motivation behind those project manager discussions was to reflect students' experiences concerning the role of a project manager and possible problems confronted with the group. I conducted these discussions in two ways: first as a normal instructor-student discussion, after which I interviewed my students as a researcher. The latter discussion was confidential, and because of this confidentiality, these discussions lead to a role conflict between the instructor's and researcher's roles (see Chapter 9).

3.4   Data analysis

In this section, data analysis is described. First, I describe the process of constructing categorizations of clients' and students' moral conflicts, and then, I explain how I constructed a categorization of instructors' moral conflicts. In all the analyses, I utilized Atlas.ti software (Muhr 1997), which is built for qualitative data analysis.

Phenomenographical analysis. Regarding clients and students, the data analysis followed quite the same pattern. First, I read the source material and coded the main issues, which emerged from the data. In this phase, the aim was to acquire understanding about the issues which were raised by the subjects. Then, I started to group similar conflicts between the subjects, that is to say, I produced "pools" of moral conflicts. This coding phase was repetitive in nature, and I studied the extracts numerous times. I used flap boards and so-called network views of Atlas.ti software to visualize the categorization procedure. Finally, I ended up with three main themes in moral conflicts: moral conflicts relating to outside parties, to the project itself, and to interpersonal issues. Additionally, I observed different ways of perceiving moral conflicts, that is to say, the structural aspect or "how" aspect of perceiving moral conflicts (doing-wrong, self-centred, and other-directed moral conflicts). Finally, after analysing differences between conflicts and reading and comparing conflicts with each other, I ended up with a two-dimensional structure of moral conflicts, the first dimension representing the "what" aspect and the second representing the

"how" aspect. Chapter 6 summarizes the "how" aspect and Chapter 10 the "what" aspect determined in this study. The categorizations consist of categories, which represent the second-order perspective, that is to say, how individuals perceive moral conflicts. Moral conflicts perceived by clients are presented in Chapter 7, and those of students in Chapter 8.

Interpretive analysis. Regarding moral conflicts perceived by instructors, I constructed a structure similar to that used in the case of clients and students. Because the results are based on perceptions of the leading instructor, of my colleague and of a couple of instructors from the previous years, these results rather than illustrating the second-order perspective illustrate the first-order perspective. However, I constructed my categorization in the similar way as in the case of clients' and students' moral conflicts, because the issues in instructors' conflicts considered the same three main areas: outside parties, project and interpersonal issues. Similarly, the "how" aspect observed in the case of clients' and students' moral conflicts could be observed in instructors' moral conflicts. The results relating to moral conflicts perceived by these few instructors suggest that similar categories could be produced regarding instructors. Moral conflicts perceived by the instructors are presented in Chapter 9.

I used an interpretive approach in analysing clients' perceptions of morals and ethics, moral problems, and feelings relating to moral problems. I did not find any internal structure from these perceptions (Chapter 6).

3.5   Quality of an interpretive study

The terms *validity* and *reliability* have been used in evaluating investigations. Validity is assessed by using a research instrument, which accurately represents the phenomena to which it refers. Reliability refers to the extent to which a procedure (e.g. measurement) produces the same results when the procedure is repeated (Jorgensen 1989, 37). In phenomenography and ethnography it is, however, difficult to define reliability by the traditional view of repeating the measurement procedure because, in participant observations, the participant observer does not measure anything, but participates and observes simultaneously, and in phenomenography, it is impossible to talk about absolute truth (Uljens 1991, 97). Instead, as Uljens (1991, 97) states, the goal is to attain an appropriate, acceptable and defendable interpretation, and as Klein and Myers (1999, 79) state "Interpretive researchers need to write an account that is not only interesting, but also plausible and convincing". The concepts of validity and reliability are not used in these kinds of studies, but instead the high quality of the study can be assessed with principles derived from interpretive studies. For example, Lacity and Janson (1994, 149) see validity in interpretive research in terms of its acceptance by the scientific community. In other words, if fellow scholars find the research meaningful, the results can be

considered valid and worthwhile. In this study, the following principles put forward by Klein and Myers (1999) are applied in evaluation of the study:

- the fundamental principle of hermeneutic circle,
- the principle of contextualization,
- the principle of interaction between the researcher and the subjects,
- the principle of abstraction and generalization,
- the principle of dialogical reasoning,
- the principle of multiple interpretations, and
- the principle of suspicion.

The first principle, the fundamental principle of hermeneutic circle, stands as a basis for other principles. According to this principle, the understanding of phenomena is achieved by iterating between parts and the whole of the studied phenomena. This and other principles referred to above will be considered when evaluating findings in the third Part of this thesis.

4   THE DEVELOPMENT PROJECT COURSE

In this section, we take a look at the environment - the university and the department - of the DP course, a brief history of the DP course from the 1970's to the beginning of the year 2000, and the yearly process of the DP course.

4.1   Overview of the university and the department

University of Jyväskylä (http://www.jyu.fi) is situated at central Finland in its principal town, Jyväskylä. University of Jyväskylä has nearly 15 000 students (spring 2003) and it consists of six faculties, one of which is the Faculty of Information Technology. The faculty and its departments are situated at Agora building (Figure 6; the above picture by Jorma Kyppö and the lower by Tero Vartiainen). The faculty consists of two teaching oriented departments: the Department of Computer Science and Information Systems (Dept. of CS and IS), and the Department of Mathematical Information Technology (Dept. of MIT), and a research-oriented department, the Information Technology Research Institute (ITRI). The faculty has experienced rapid growth in terms of enrolled students and number of teachers and researchers. The number of masters students is ca. 2000 and Ph.D. students ca. 150. This growth is based on computer industry's need for work force and the government's support for universities to educate more and more computer professionals. The Dept. of CS and IS concentrates on teaching, for example, in information systems, electronic commerce, group work technologies, while the Dept. of MIT concentrates on (mathematical) computer science. The Development Project course belongs to the curricula of Dept. of CS and IS and it is obligatory for most of the study lines.

FIGURE 6   Pictures from Agora

4.2   Goals of the course

Usually, students participating in the DP course are third year students, who have completed the approbatur-stage in their studies and some cum laude approbatur-stage courses. Those theoretical studies are to be put into practice during the DP course. The main goals of the DP course are as follows (Tourunen 1992; Tynjälä and Tourunen 2000):

- to integrate theory and practice concerning IT development,
- to provide students with a holistic and realistic concept of the systems designers' work, and
- to provide students with personal experiences in the project work.

In addition to producing results of the project for a real-life client, students are expected to reflect on necessary project work abilities, which are named in the assessment framework of the course: group and project work, use of methods in IT, planning and follow-up, communications and interaction, own contribution and orientation.

Applying classification presented by Scott *et al.* (1994), during the DP project each group implements and constructs its own unique project. The groups are formed by the students themselves (with the guidance of a psychologist), and the specification is provided by an outside agency.

4.3   A brief history of the DP course

Here we take a brief look at the history of the DP course. The roots of the course are on the student revolution at the end of the 1960's (see discussion in Olesen and Jensen, 1999). Figure 7 presents the changes during the course (the figure is translated from Finnish to English by the author). The changes during the course can be observed from the changes in project tasks and the relationships between the clients and the student groups: in the 1970's the project tasks dealt with programming, in the 1980's more complex applications like registration programs appeared, Internet applications emerged during the 1990's and the development of processes of client organisation started taking place during the 2000's. Especially during the 1990's and early 2000's, the project tasks reflected the interests of clients (IT-firms) in the IT field. Similarly, the client's role in its relationship with a student group changed from the provider and receiver of the project task to that of a co-learner of a new emerged issue in the IT area. Professors Pertti Järvinen, Eero Peltola, and Kalle Lyytinen have contributed to the development of the DP course. The DP course is considered in the history of the department in Roiko-Jokela (1992, 100-103; in Finnish).

The course began as a Work Project ("Työprojekti", in Finnish) in 1977 (Tourunen and Sundbäck 2002). During the course, students were to implement a predefined programming task, which was implemented for the research groups of the department. In the next phase, during the 1980's, when the course was titled Information Systems Project ("Tietojärjestelmäprojekti", in Finnish), student groups were to implement a registration application or transformation of a manual system to a computerized system. The client's role during the course was to comment and test the implemented application. At the end of the 1980's, the name of the course was changed to Development Project ("Kehittämisprojekti", in Finnish). Project tasks included Internet applications, component technology -based tasks, and students were also to take into account

business issues. The name of the course changed to Project Leading ("Projektin johtaminen", in Finnish) in the academic year of 2001-2002, illustrating a change of focus from project work to project management. At the same time, Project Work course was created for those students, who had been incorporated into work life and who aimed to complete the compulsory project course. The courses have been co-ordinated and developed by the leading instructor - his autobiographical information is presented next.

Introduction of the leading instructor of the DP course. Eero Tourunen (the leading instructor in this thesis) aged 54 at the beginning of this research, began his work as a teacher at the Department of Computer Science, University of Jyväskylä, 1977. He started a student project course, Work project, and continued teaching and developing it with occasional research breaks. He estimated that until the year 2002 he had been guiding 150 student groups (ca. 700 students) either directly as an instructor or indirectly as a leading instructor of the course. In addition to teaching project work, his research covers the same area (Tourunen and Vartiainen 2002; Tynjälä and Tourunen 2000; Eteläpelto and Tourunen 1999; Tourunen 1996; Tourunen and Tourunen 1996; Tourunen 1992; Vihmalo *et al.* 1990). Because of his experience on administering the DP course, the leading instructor was the key informant of this study, and is highly appreciated by the department staff and students because of his experience in project teaching. An instructor named him as "*a walking tacit-knowledge*", and, indeed, interviews with this talkative instructor were fruitful.

Project tasks. During the academic years 1999-2003 project tasks ranged from extreme coding projects to surveys and researches. In typical cases, project tasks are ill-defined and need to be redefined during the project year. Four examples of project tasks follow. The texts are translated from Finnish to English from the course website (http://projekti.it.jyu.fi), where students have produced homepages of their projects:

> The task of the [name of a project group] group is to investigate the usage of EJB (Enterprise Java Beans) in n-layered environment. The goal is to examine the possibilities to use EJB in delivering information between client and server components. In addition to this, the project group is to program a small prototype.

> The task of the [name of a project group] group is to investigate product management and different sectors of software engineering in [name of a client], and analyse and describe the salient concepts and processes relating to them. In addition to this, the task includes production of a report, which is based on concepts, methods, tools, and best practices found in the market, and which assesses the functionality of new operations models in managing infrastructure products in workstation environment in [name of the client].

> The purpose of the project is to implement an information transportation protocol for [name of system], which is a client-server system developed by [name of a client] for reading and managing information about energy.

> The task of the project is to map the security level of [name of a client] and to produce real recommendations and solution models for making those security levels better.

Project space. When a new five-storey house, Agora, was built for the Faculty of Information Technology, during the autumn of 2000, the DP course was provided with project space on the third floor. Student groups share the project space, which consists of twelve rooms, a kitchen, a seminar room, two meeting rooms, and a technical room (including a copy machine, a fax and a scanner).
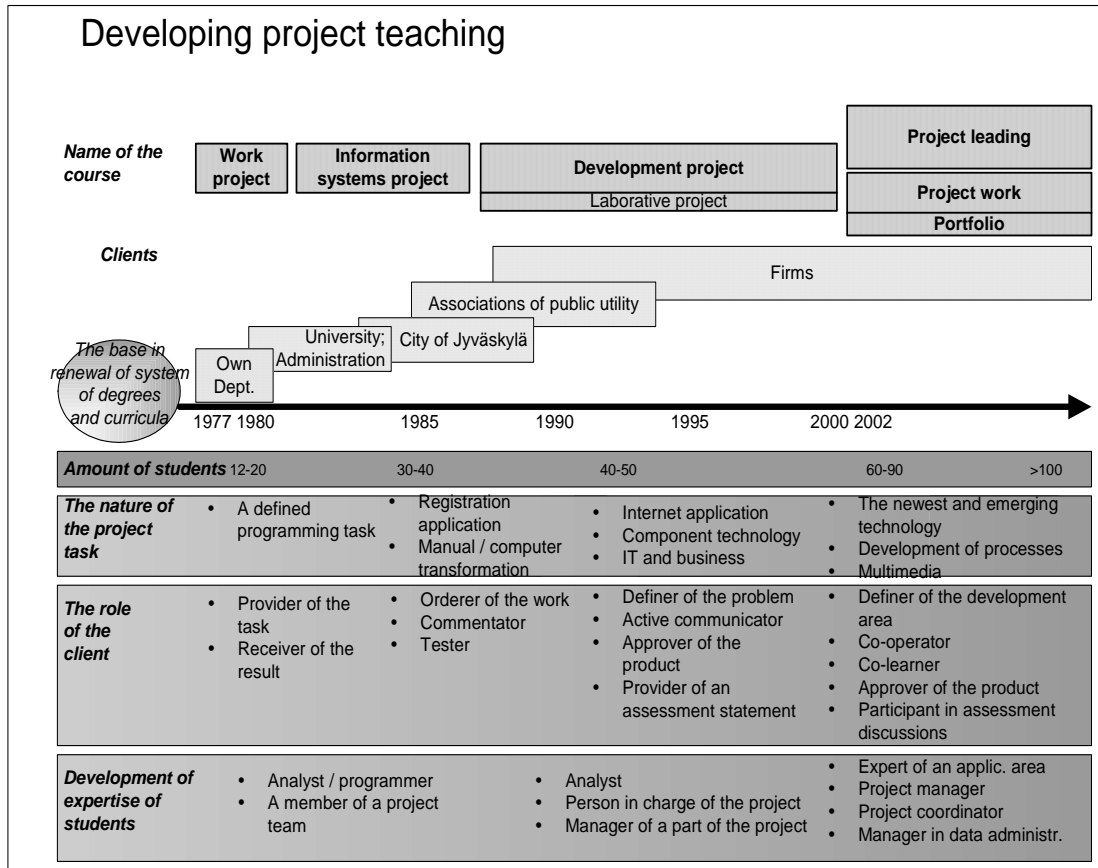
FIGURE 7   History of project teaching at the department (Tourunen and Sundbäck 2002).

4.4   The yearly process of the DP course

The yearly process of the DP course can be divided into four phases (Figure 8):

- a preparation phase,
- a start-up phase,
- a guidance phase, and
- a consequential phase.

The preparation phase and the consequential phase of the preceding academic year are overlapping. To sum up, the DP course induces students, clients, and

instructors to a resource-limited co-operation, which is, simultaneously, targeted both at producing project tasks, and at learning project leading/working abilities. The phases of the course are considered next.
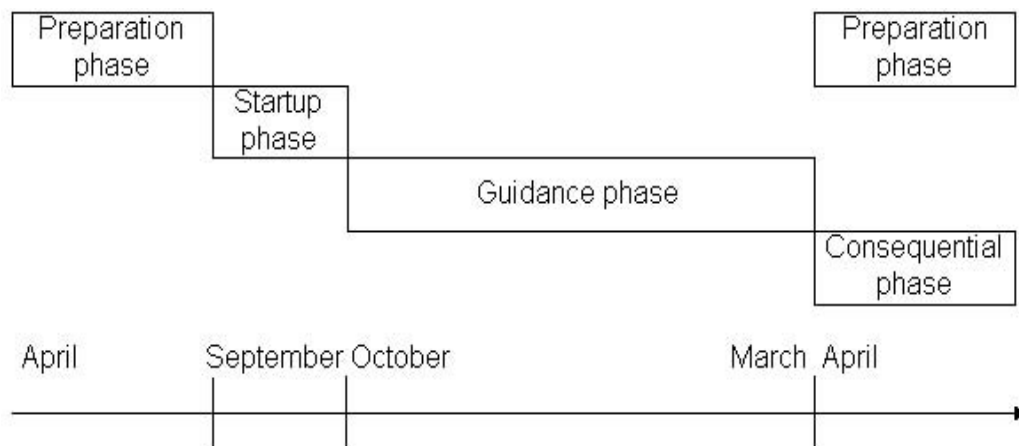
FIGURE 8   The phases of the DP project

Preparation phase (from April to September).

During the preparation phase, clients, students, and instructors are selected for the course, and they are provided with information about the following DP course (Table 9). First, during April, the leading instructor arranges preliminary info for the next-year students, who are introduced to, for example, basic idea of the course (learning aspects). Then, the leading instructor starts negotiations with IT-firms about the project tasks at spring and summer time. During those negotiations conditions attached by the university are considered (see contract in Appendix 5). Likewise, the potential project task for the student group is discussed. The leading instructor conducts preliminary discussions about nominating instructors for the course. During August, students are to apply for the course, and those students, who are assessed to have sufficient capabilities, are selected for the course. At the end of this preliminary phase, all the key players will have been selected for the course, and the actual course may start with its start-up phase.

To sum up, at the end of the preparation phase, all the key players (students, clients, instructors) are selected for the course, and introductory information about the course is delivered to them.

TABLE 9　　　Events and tasks of the preparation phase and their consequential end-states.

Events and tasks	Timing	Resulting end-state
Preliminary info	April/May	Preliminary information for the future students of the course
Client selection	From April to September	Clients get information about the project co-operation and about the conditions set by the university
Student selection	September	Students with adequate background knowledge are selected to the course
Instructor selection	August, September	University teachers for the DP course are selected

Start-up phase (September)

The goal of the start-up phase is to introduce students to basic issues relating to the project work and management and to allocate the individual students to groups with their project task and client for each group, and, finally, assigning an instructor for each group (Table 10). The start-up phase consists of lectures relating to the project work, and introductory exercises, in which students get familiar with past student projects. These introductory lectures and exercises are followed by group formation, during which students get to know each other to form groups, by task exhibition, which consists of presentations provided by the clients, and, finally, by task negotiations among the student groups. During the negotiations the student groups are expected to negotiate about the distribution of the tasks. After each group has its project task, instructor allocation is made known to the students.

TABLE 10　　　Events and tasks of the preparation phase and their consequent end-states.

Events and tasks	Timing	Resulting end-state
Lectures and exercises	September	Students learn basics of project work
Group formation	September	Individual students form groups
Task exhibition	September	Clients present the project tasks for students
Task negotiation	September	Student groups negotiate about project tasks
Instructor allocation	September	Instructors are allocated to groups

To sum up, by the end of start-up phase, all individual students will have been allocated to groups and the project tasks allocated to these student groups. Similarly, instructors will have been nominated for the student groups.

Guidance phase (from October to March)

The phase starts with lectures and a guidance meeting with the instructor of the group (Table 11). Student groups start their co-operation with the clients with an introduction meeting, in which parties get to know each other, and, after

that, with a workshop, in which the client and the group discuss and plan the implementation of the project task. Students are expected to produce the first version of a project plan for the first board meeting. Then, after the board has accepted the plan, the student group start the implementation of the project task. In guiding students in their projects clients and instructors have different roles. Client representatives guide the implementation process: Typically they meet the group weekly, and inspections and walkthroughs are arranged before the following board meetings. Instructors guide processes of groups: A student group and its instructor meet in weekly guidance meetings, in which they critically reflect about working and learning process of the group. For example, functioning of group work, planning the project and communication methods are discussed in guidance meetings. In the middle of the phase, developmental discussions (previously called middle-assessments) are arranged for each group. Co-operation between groups is encouraged with the help of work method seminars, in which student groups present good work practices to each other. Near the end of guidance phase, the students hand over the final results to the client during the last board meeting, which close the student project. Then, each party produces assessment reports about the performance of the student group during the seven-month project period. These discussions are the final assessment discussions. After those discussions instructors discuss and compare development of their groups to formulate a grade for each group and an individual grades, if necessary. After grading students and instructors meet to discuss about the grading. The course ends with a seminar arranged during a cruise.

To sum up, by the end of this phase, the student groups will have implemented the project task, and learned project leading/work skills. Each individual student is provided with an individual grade.

Consequential phase (from March to April).

During the consequential phase, experiences gained during the year are analysed and implications for the next year are produced. During this phase, the instructors arrange developmental seminars. Students, who are unsatisfied with their grade, may produce a complaint about the assessment and grading. The head of the department considers these complaints. This phase overlaps with the preparation phase (Table 12).

To sum up, during this phase students' complaints are handled and experiences of the past course are examined for the benefit of the next course.

A detailed description of my experiences and observations of the DP course are in Appendix 6.

TABLE 11   Events and tasks of the guidance phase and their consequential end-states.

Events and tasks	Timing	Description
The first guidance meetings	October	Instructors and student groups get to know each other
Introductory and workshop meetings with clients	October	Instructors, student groups and clients get to know each other and the project task is discussed
Contract and board meetings	October	Contract sets up the board, which makes decisions about the project
Guidance meetings	From October to March	Meeting between an instructor and his group
An evening meeting for clients	November, December	Seminar about co-operation between clients and the DP course
Work method seminar	November and February	Student groups present best practices to other groups
Developmental discussion (former middle assessment)	December	The autumn period is assessed and implications for the springtime are inferred
The last board meeting	March	In the last board meeting, acceptance and closing of the project are considered
Final assessment	March	The process of each student group (incl. autumn and spring) is assessed
Grading meeting and feedback meetings	March	Instructors discuss about grading of each group. During feedback meetings, instructors and each group discuss the grade
Cruise	March	The project year ends with a developmental seminar participated by all parties

TABLE 12   Events and tasks of the consequential phase and their consequential end-states.

Events and tasks	Timing	Resulting end-state
Handling of complaints	April	Students' complaints are considered and grades are changed if necessary
Developing the course	April, May	Students', instructors' and clients' feedback is considered and conclusions for the following year are produced

PART II: MORAL CONFLICTS

The second Part of this thesis starts with Chapter 5, which presents findings regarding clients' perceptions of ethics and morals, moral problems, and feelings relating to moral problems. The description of the two dimensions regarding moral conflicts starts with the structural aspect, the "how" aspect, in Chapter 6. The chapter describes the division of moral conflicts into doing-wrong, self-centred, and other-directed moral conflicts. Then, moral conflicts perceived by clients, students, and instructors, are presented in Chapters 7, 8, and 9, respectively. The second dimension, the referential aspect, the "what" aspect, of moral conflicts is presented in Chapter 10. The chapter describes the division of moral conflicts into interpersonal, project-level, and outside-parties related moral conflicts. Finally, a framework for a morally successful project course is presented in Chapter 11.

5 PERCEPTIONS OF MORALS, ETHICS, AND MORAL PROBLEMS

In this Chapter, findings regarding clients' perceptions on morals and ethics, moral problems, and feelings relating to moral problems are presented.

5.1 Meaning of morals and ethics

In this section, the categories of clients' perceptions of morals and ethics are presented. The analysis ended up with four categories, which characterize morals and ethics:

1. *Common ground and disagreement.* People tend to have similar and dissimilar ideas concerning morals and ethics.
2. *Right and wrong.* Morals and ethics are bi-polar in nature: right and wrong (or acceptableness and non-acceptableness) exist.
3. *Treatment of actors.* Morals and ethics are about relationships between actors (individuals, organisations).
4. *Commitment.* Morals and ethics are about commitment to act morally and ethically.

These categories are presented in the following sub-sections.

5.1.1 Common ground and disagreement

In this category, clients perceive that people agree or disagree on issues of morals and ethics. There is a common ground in morals and ethics so that individuals are able to live together and co-operate but they can also disagree on certain issues. Additionally, individuals affect each other in morals and ethics.

Common ground on morals and ethics

Clients described the existence of a common ground on morals and ethics. This common ground consists of norms, which, for example, prohibit certain acts. Client C7 considered that although individuals' moralities are not the same, the basic morality is the same among all[5]:

> The researcher: "Yeah, how is it with morals – you considered them at a personal level. So, how is it expressed?"
> C7: "Well, one makes decisions, in which, well, one acts in accordance with one's own morality. *Of course, it does not mean that someone's - not all moralities are the same. Someone may conceive that you have done morally right, and it may not necessarily be perceived right by all the others. But the basic morality is nearly the same among all* – you ought not lie nor kill nor steal. This is from the viewpoint of the society."

Client C1 thought that morals and ethics are prerequisites for co-operation. We need common rules and norms so that co-operation succeeds:

> C1: "… well, *morals and ethics at a general level, well, they are prerequisites for co-operation in general*. We may determine common rules and norms, which we can follow and which are accepted by all. *Co-operation is not possible without these kinds of norms and, in the way, morals and ethics*. That is to say, it is an important issue, which is related to it."

Individuals disagree on morals and ethics

Clients were of the opinion that morals and ethics are not the same among individuals and they disagreed on issues relating to morals and ethics. Client C7 thought that every one's morality is not the same and that while someone may think that your act was morally right someone else might disagree (see the extract above). Client C8 said that because every one interprets acts from one's own viewpoint, we often disagree about ethicality and morality of acts:

> C8: "… and how you deal with the matters among individuals so that no one would be mistreated. This is how I see it."
> The researcher: "Mistreated … what does it mean to be mistreated?"
> C8: "In the way that, it is a very subjective conception. I could – I think – treat you well and you may get hurt nevertheless. From my point of view I could act morally and ethically right, but you may perceive it differently. *Every one interprets it from one's own viewpoint.*"

Client C1 stated that she appreciated honesty, trustworthiness, exactness and that there are, in a societal level, issues, which she does not appreciate as much as other people do:

> C1: "… all the matters like honesty, trustfulness, exactness, all these kinds of matters, which I appreciate. *There are matters, which I do not appreciate at the societal level as much as perhaps others do.* Well, what could be an example here, well, say someone loves taxes, I do not love them but I do not try avoiding them either. It is hard to describe it succinctly. But perhaps the honesty is the most important matter both in private and work life."

---

[5]   In the extracts the most essential parts are emphasized in italic.

Other people affect individuals' morality

Other people affect individual's morality in a society. Client C21 expressed as his opinion that although everyone has his own morality, other people affect it:

> The researcher: "Well, you mentioned that - when people then behave differently concerning the matter – in relation to morality…"
> C21: "Yeah, to my mind *every one has his own morality*. And then, *the surrounding people affect it - to what direction it will go*. For example, copying games in the net, is it good or bad– it depends on what kinds of people you have been living with…"

5.1.2 Right and wrong

In this category, clients expressed their belief that morals and ethics is bi-polar in nature in the way that morals and ethics is about right and wrong, or acceptableness and non-acceptableness. One is able to distinguish between right and wrong but it may be hard to do it.

Client C4 said that morals and ethics is a conception about what is right and what is wrong and what is acceptable and what is not acceptable.

> The researcher: "What does morals and ethics mean to you?"
> C4: "Morals and ethics … well, it is – in a way – *a conception of what is right and wrong and what is acceptable and what is not acceptable* in this society here in the business world…"

When I asked the client to give examples concerning right and wrong, she told that right and wrong might emerge in any organization among personnel in the form of power struggles. According to the client in projects like these (presumable he meant the DP course) right and wrong emerge related to the amount of information made available to the client. Client C5 was of the view that morals is about noticing the difference between right or wrong from the ethics viewpoint. It is possible to notice the difference:

> C5: "… morals is perhaps that *you notice the difference* when you act either ethically right or ethically wrong."

Client C9 said that morals and ethics is about distinguishing between right and wrong:

> C9: "It is about *distinguishing between right and wrong* – that is to say that you deliberate about it every day. What is right and what is wrong in my mind or in our minds. This it is what we constantly deliberate upon – in simplified terms."

Later the same client added that morals and ethics is not a black-and-white issue but it comes to one's mind when one is going to slip or there might be danger to slip or one was forced to slip from the right. An individual confronts the borderline situation if she is able to recognize it:

> C9: "… as it surely is in everyone's work – it does not show itself as black-and-white but it makes you wonder if you start to slip or if there were a danger that you started

> to slip or you were forced to slip from the right. *A human being confronts it in border-line situations if one recognizes it* (laughter)."

Client C11 told that there are issues that one is either allowed or not allowed to do:

> C11: "… we talk about ethics of diverse professions – doctors' ethics has been under discussion lately – there are *issues, which one is allowed to do, and which one is not allowed to do, which are acceptable and which are not acceptable…*"

5.1.3 Treatment of actors

In this category, clients perceive that ethics and morals are related to actors (individuals, firms) and to how they treat and behave towards each other.

Client C2 stated that ethics and morals are terms that should be reflected towards something like one's own firm, university, employees, employer or student group:

> C2: "Well, it means that *they are sort of exact terms, which must be reflected towards certain issue* – morals and ethics *towards one's own firm* – in this case *towards the university. Towards employees*. It gets different meanings depending towards what they are reflected. For example, well, when we sign a confidentiality contract it requires a sort of *morality towards the employer*, or from the viewpoint of *a group, towards the client*. But, well, how I treat them or, for example, what side – shall I give feedback with negative or positive tone. Here there is the *morality towards them*."

Client C8 held the view that morals and ethics is about the ways individuals deal with matters with other people:

> C8: "Perhaps they are sort of – I could say that unwritten rules about what is suitable and, sort of, according to good manners and *in what way the matters are dealt with among people so that no one would end up mistreated*."

Client C5 mentioned that ethics and morals are seen in a work community as the behaviour within the work community:

> C5: "… who is allowed to behave and in what way inside a working community."

Client C17 said that ethics and morals relate to the human being and how they are treated:

> C17: "That was the hard question. Well, I understand these issues in the way that, well, they are not familiar to me as conceptions and they do not need to be, but I understand them in the way that *they are from a human being's viewpoint. A human being must be treated in a human way. You may not fool a person in whatever way.*"

Client C3 perceived that morals and ethics include honesty and trust in every branch of life, in working life or in partnerships, for example:

> The researcher: "Could you tell me about some other areas apart from the area of working life."

C3: "Well, in my opinion, it is similarly related to honesty, and to a sort of atmosphere of trustfulness in all areas whether in *working life or in marital relationships or in friendships* – everywhere."

Client C5 understood that there are ethical issues in relationships between firms:

C5: "In working life it can be observed from inside the working community. … Perhaps, it is related a little bit more to these contracts and others. *When we start to consider firms as actors. Relationships between them and the ethics in relationships between them.*"
The researcher: "Do you have any example of that – a practical example?"
C5: "Ethically right. Well, I could deliberate on whether it is ethically right to use knowledge with which *one is able to force another firm to bankruptcy*. Causing a lot of destruction."

5.1.4 Commitment

In this category, clients perceive that morals and ethics include a commitment to act morally or ethically. Morals and ethics were seen to be about one's attitudes towards rules, laws, customs, and virtues. It is possible for individuals to act or not to act in accordance with them, however, it was interpreted from the clients' expressions that conformity was preferred over non-conformity; that is to say, one should act according to rules and laws. A few exceptions to this were found among the clients.

Client C5 agreed that ethics is about acting according to generally accepted customs, norms and rules:

C5: "Ethics, well, perhaps it is an ability – lets say, how one could express it with a sentence - *acting in accordance with generally accepted customs, norms, and rules.*"

Client C8 stated that morals and ethics are unwritten rules and good customs:

C8: "Perhaps it is – most I could say is that it is the unwritten *rules* about what is suitable and in accordance with *good manners.*"

Client C11 expressed as his view that morals mean that there are generally accepted norms concerning how a good person should behave:

C11: "… somehow generally accepted norms about how a good human being *should behave.*"

Client C3 held the view that morals and ethics are related to how one considers duties, requirements and wishes:

C3: "What are one's own duties and – sort of requirements that have been set or wishes and requirements and *how one considers them…*"

Client C15 said that ethics means having rules, and morals means sticking to those rules:

C15: "Ethics is about *rules*, someone sets the rules in general, or someone sets the rules for oneself."
The researcher: "I see. Would you give an example of someone setting a rule for himself or for others"
C04: "If one sets a rule for oneself, well, for example, say, you do not cheat your client. Morals means that *you stick to that rule in its spirit*."

Client C21 considered that ethics means that one does not partake in corruption by opportunistically breaking morals:

C21: "Let me say that if a vendor offers you a holiday trip to reward you for buying with a certain amount of euros … *you do not use that opportunity to benefit yourself*."

5.2 Meaning of moral problems

In this Section, clients' perceptions of moral problems are described. There are two categories which characterize moral problems:

1. *Compulsory decision-making.* In a moral problem, one is forced to make a decision.
2. *Compulsory wrong doing.* In a moral problem, one is forced to act in a morally reprehensible way (e.g., against a moral rule).

Both of these categories illustrate the compulsory nature of a moral problem. These categories are considered in the following sub-sections.

5.2.1 Compulsory decision-making

In this category, clients perceive that in a moral problem one is forced to make a decision. The decision-making may include choosing from alternatives or just making a decision what to do.

Client C7 had the opinion that in a moral problem one is forced to decide what is right in the situation:

The researcher: "What comes to your mind about moral problem?"
C7: "Well, *you have to make a decision and there is not one single right matter* there but you have to make a decision, you have to make a decision by yourself about what is right here. You know that it is right from one viewpoint and that it is right from another viewpoint as well."

Client C2 stated that in a moral problem there are two solutions but both of them are undesirable, and one should choose from the two evils the one with less evilness:

C2: "... there is a problem, for which there are two solutions, but both of them are in a way poor ones. And then *you should choose the lesser evil from two evils* but both of them are targeted, for example, towards an employee or towards anything…"

Making a difficult matter known to someone may be a moral problem and in cases like this one is forced to deliberate on how to express it. Client C1 explained that how one expresses a difficult matter to one's client might be a moral problem:

> The researcher: "... what kind of perception do you have about what is a moral problem?"
> C1: "Well, it is of course a very individual question. You may confront moral problems in working life, for example, in certain projects. If a project is late for a reason – *how do you express it to the client?* Here you may confront a moral question…"

5.2.2 Compulsory wrong doing

In this category, clients perceive that in a moral problem one is forced to behave in a morally wrong way. That is to say that one is forced to break a moral rule or some other rule (a rule of a firm or an employer) or one is forced to act against one's own moral stands.

Client C1 told that many people may consider many necessary issues as immoral:

> C1: "... many *people may consider as immoral issues which nevertheless are necessary…* to do or follow - from the viewpoint of others or perhaps for the sake of the individual himself. But like I said that people experience these issues in very diverse ways."

Later during the interview she continued by saying that sometimes it is not rational to conform to generally accepted ways of acting or to norms:

> C1: ... "*you know what is the way of living that according to norms is the right way.* You may know the generally accepted way to deal with issues, and, nevertheless, you may see that *in a particular situation it is not rational or it may even be harmful.* As a result we get these hard moral-ethical questions to solve…"

Client C6 suspected that moral problem might mean that one is forced to behave against one's own morality when e.g. one's employer tries to coerce one to act against one's own morality:

> The researcher: "What does a moral problem mean?"
> C6: "Well, perhaps as an example – what I could give you as an example, surely it relates to relationships between individuals, or it could occur to one that *one could think contrary to one's employer– but, say, if you were forced to act as if – or you were forced to agree with him or to act as if you agreed with him – against one's own morality*"

Client C11 maintained that one is forced to act contrary to a moral rule:

> C11: "It might mean two things to me. The first is that I might have a personal moral problem about *how I would behave in a certain situation because it might be that I might have to act contrary to a moral rule but according to another [moral rule] and that they are in conflict with each other.* Such situations emerge often in life. We talk about white lies…"

I asked the client to give an example of acting against a moral rule. She replied that when raising children or in traffic situations one is often forced to act against a moral rule:

> C11: "Well, to find a proper example. With children you are forced to do this all the time. *Lying, describing things so that they look fine, which is contrary to my moral rules –* or, in the case of traffic, you may have to speed to be flexible."

Client C8 said that in a moral problem one feels that one should do something that does not feel right:

> C8: "Perhaps it is such [a situation] that *you feel that you should do something which is not totally right, in your mind.* And that you have drifted to such a situation that you are asked to do something that is against your thinking, or *you have drifted to a situation, from which the only way out is to do something which does not feel to be right towards all the parties.*"

5.3 Feelings relating to moral problems

In this section, clients' conceptions concerning how does it feel to be in a moral problem are described. Two categories emerged:
1. *A hard situation.* A moral problem is a mentally hard situation.
2. *A challenging and developing situation.* A moral problem is a challenging and developing situation. One may get positive feelings like pleasure after solving a moral problem.

These categories express two distinct feelings relating to moral problems. A moral problem is considered as a hard situation but it may also be considered mentally challenging and developing situation. These two categories are presented next.

5.3.1 A hard situation

In this category, clients perceive a moral problem as a mentally hard situation. They described a moral problem as a troublesome situation, in which one may feel anxiety, depression, or stress, and stated that in a moral problem one may feel conflicting and destructive feelings.

Client C5 thought that a moral problem is a destructive situation, which you cannot escape:

> C5: "It is *a destructive situation –* you cannot escape it. On the one hand you would like to – on the other, you are not able to. In conventional working life you meet similar situations. As a foreman you are preparing decisions – decisions, which should be brought into the notice of personnel as soon as possible so that they could prepare for them. On the other hand, certain orders and rules may prohibit that."

Client C6 viewed a moral problem as a very hard situation, which she would not tolerate for a very long time:

C6: "*It would surely have to be very hard*. Personally, I would not have enough strength to stay in such a situation for very long."

Client C10 said that after choosing in a moral problem one feels qualms:

C10: "… there is little harm as a consequence of a small problem and greater harm from a bigger problem. It is about how you have learned to handle these problems. Can you get rid of them or do they bother you long time? *You get over the smaller problems with smaller qualms*. In the case of a bigger problem, you may be forced to explain to yourself why you have done it in that way…"
The researcher: "What are these qualms?"
C10: "Qualms. A bad feeling. You know that you have done something, which is not necessarily – that is to say *qualms can be seen as a conflict with oneself*. These issues are dependent on the person…"

Client C12 said that when one realizes that one has made a wrong decision one feels awkward:

The researcher: "Yes. What else comes to your mind about how does it feel to be in a moral problem?"
C12: "Well, well. When you have decided that you are to act in a certain way, and, later, you realize that 'It is not okay! I have done wrong!' then you have this – you have to start to handle it and to fetch the documents about what have been done, seek for the emails and letters and so on. *And when this happens, it is an awkward situation*."

5.3.2 A challenging and developing situation

In this category, clients connect positive feelings to moral problems. They feel that a moral problem is a challenging and developing situation, and that after solving a moral problem one may have positive feelings like pleasure. Wrestling with moral problems forces one to deliberate on the situation carefully, which makes moral problems challenging. In the long run, confronting moral problems develops a person. Solving a moral problem may give satisfaction and it may make the atmosphere among people better, for example, in a workplace.

Client C12 considers moral problems as challenging situations, in which she sees discussions with her colleagues very important:

C12: "*Such situations are challenges*, and, in my view, colleagues are very important in that you are able to discuss the problem and you are able to have a confidential discussion as well."
The researcher: "I see."
C12: "And one is able to, well, I seek for a sort of – in the cases of harder situations – someone to discuss with and to test my ideas…"

Client C18 explained that a moral problem may be a depressing situation if one is not able to solve it, but when solving a moral problem, it may even be a pleasurable:

The researcher: "Right. How does it feel to be in a moral problem?"
C18: "It may even be depressing if one is not able to do anything about it. But if you are able to solve it – well – let me say that *it is possible that one may even feel pleasure in overcoming something…*"

Client C21 considered a moral problem as a detestable situation, but she also pointed out that confrontation of moral problems develops an individual. Moral problems and tackling them gives experience and wisdom:

C21: "It is a conflict. On the one hand, it brings up a person to be able to confront, in my opinion, it also develops stress-tolerance. On the other hand, it is awkward to be in such a situation because you have to make a decision. Will you decide it from your viewpoint or will you consider it from someone other's viewpoint like a firm or an individual if it feels right from their viewpoint?"
The researcher: "Go on."
C21: "Well, there are some good and some bad points. *When one confronts them [moral problems], they give experience and wisdom – along with this experiential learning.*"

Client C11 considers a moral problem as a normal and even pleasurable situation, because in such a situation one is forced to deliberate carefully:

C11: "In my mind, it is a sort of normal situation, to which one is driven. *I do not consider it hard in any way*. I know that all people confront them … – sometimes one is forced to choose between hard matters. I have experienced that *it may be, in a way, even pleasurable because one is forced to deliberate and use one's intuition*. If everything were easy, for what use I would be, then? I feel that working in this work place and generally, working with people, *it is a sort of salt of life when you are forced to confront difficult situations which you are able to solve.*"

6   THE STRUCTURAL ASPECT OF MORAL CONFLICTS

The aim of this chapter is to introduce the structural aspect, the "how" aspect, of moral conflicts perceived by the subjects of this study, and, to briefly introduce the categories of moral conflicts and how they are allocated in the structural dimension. The following three stages were observed in moral conflicts of this study:

1. Doing-wrong moral conflicts,
2. Self-centred moral conflicts, and
3. Other-directed moral conflicts.

This division to three stages is based on so-called *maturity continuum of moral conflicts.* Observation of the continuum, the stages, and levels of the continuum are presented next.

   Observation of the maturity continuum. When reading over and over again interview transcripts and diaries, I observed a continuum among the moral conflicts, and I named it *a maturity continuum of moral conflicts.* The maturity continuum found in this study is similar to the idea that individual's moral thinking is capable of developing from less adequate to more adequate levels (Parker 1998, 268), but in the case of the maturity continuum, the focus is not on individuals but on moral conflicts and differences among them. The continuum is about "maturity" of moral conflicts, which highlights the fact that there are moral conflicts, which can be defined as immature compared to other moral conflicts. Thus there is an indirect connection between moral maturity of the subjects of this study and moral conflicts that they have expressed. In fact, when defining maturity continuum, some theories of moral development are utilized (see Chapter 2). However, the maturity continuum as such is value neutral in the sense that a subject expressing an immature moral conflict cannot be assessed as an immature moral agent from the moral development viewpoint. To assess moral maturity of the subjects we would need to use techniques presented in a moral psychology discipline (Kohlberg, 1981; Rest 1994a). In addition to this, the maturity continuum does not aim to describe the

structure of all possible moral conflicts that human beings confront – instead it merely aims to describe the structure of moral conflicts perceived by the subjects of this study.

In the first stage of moral conflicts, doing-wrong moral conflicts, the moral agents deliberate about the choice between good and bad. Subjects of this study have confronted decision-making situations, in which they are about to leave their duty unfulfilled or violate a moral value. These moral conflicts are assessed as the most immature ones because the subjects themselves consider, or I as a researcher have interpreted when the subjects confront such a consideration, that they are about to implement an immoral act. From the morals and ethics viewpoint, the choice between moral and immoral, good and bad, should always be on the morally good side. Aquinas (1994) illustrates this first principle idea as follows:

> "… *good is that which all things seek after*. Hence this is the first precept of law, that *good is to be done and ensued, and evil is to be avoided*" (Aquinas 1994, 247)

A deliberation about making an immoral act illustrates the most immature moral conflict among moral conflicts found in this study.

The second stage of moral conflicts, self-centred moral conflicts, and the third stage of moral conflicts, other-directed moral conflicts, are more mature than the first stage of moral conflicts, because in the second and third stages subjects do not express deliberation between doing something which they perceive wrong, but instead the conflicts are focused on the subjects themselves (self-centred) or other parties (other-directed). I got the impression that the third stage of moral conflicts is more mature than the second stage because it can be claimed that perspective taking, that is to say, taking others into account, is more mature than not taking other individuals and parties into account, that is to say, concentrating on oneself only. This claim is supported by Piaget's (1977) theory of individual's development. According to Piaget, there is a shift from heteronomous stage, where a child is not able to take other parties into account, to autonomous stage, where a child has matured to perspective taking (see Chapter 2 for details). This theory from moral psychology supports the view that other-directed moral conflicts can be assessed more mature than those that consider the agent alone, the self-centred moral conflicts.

The "conflicts are focused on" statement above needs a clarification. What does this focusing mean? The maturity continuum of moral conflicts takes cognizance of the underlying intention behind the deliberation about a moral conflict. For example, let's imagine a moral agent deliberating about a moral conflict, in which he takes his fellow beings into account, but in which he is genuinely concerned only about his own wellbeing and others' wellbeing does not matter to him. Although he notices the other individuals, the intention behind his deliberation is self-centred. Consequently, the moral conflict upon which he deliberates belongs to the self-centred stage. Let's imagine another example: a moral agent ponders whether he should steal something from someone, just because he wants to have it. He knows that stealing is morally

wrong and that he does not have any other reasons for stealing apart from his desire to have the object. This conflict belongs to the doing-wrong stage because he deliberated between doing something wrong and refraining from doing it. It would be illogical to locate this (and the previous) conflict in the other-directed stage because the intention behind his deliberation was not about caring of someone. Consequently, "focusing" can be interpreted meaning not just noticing someone (self, others) but also the underlying caring motivation towards (self, others). If the caring motivation is genuinely targeted to others, the conflict is other-directed in nature, and if not, it is either doing-wrong or self-centred in nature. Caring is interpreted, for example, as deliberating about undesirable consequences towards someone or taking cognizance of a duty, which is allocated to someone and which may be left unattended. There is an analogy between the division to scope of observation and focus of caring, and Ladd's (1989) definition of different sides of responsibility. This analogy is described next. Ladd (1989, 213) defines two sides of responsibility as follows:

1. subjective side (mental), which relates to concern, or lack of concern, for welfare of other individuals; and
2. objective side, which means the causal connections between agent's actions and outcomes of those actions.

Applying Ladd's definition we would assess individual's responsibility differently depending on whether the harm caused to someone was unintentional or intentional. Similarly, according to the maturity continuum if one takes note of the other parties (objective side in Ladd's terms) but is not concerned about them (the subjective side in Ladd's terms), the deliberation is self-centred in nature.

The three stages are described in the following sections. Each stage consists of various levels, which are ordered according to the maturity continuum.

6.1 Doing-wrong moral conflicts

In this section, doing-wrong moral conflicts stage is presented. This stage includes one level, named the same way as the stage it belongs to, doing-wrong.

Level 1. Doing-wrong moral conflicts

At this level, the decision-making concerns the choice between doing and refraining from doing an act, which is morally wrong. This kind of interpretation was based on the subject himself or on my interpretation about the decision-making the subject was confronting. This level was observed in moral conflicts of all parties of the study. Many of the following titles of the categories start with the word "inclination" or "possibility". Possibility means that it is possible for a party to commit a particular act, and inclination means

that a subject is tempted to commit the act. In both cases the subject has not necessarily committed the act, but it is, nevertheless, possible that it has been committed or could have been committed by the subject. Next, each party is considered.

Clients. At this level, there exist two categories, which relate to acting in a dishonest manner towards others. The motive for dishonesty is clients' beneficial goals relating to the co-operation. The categories at this level are as follows:

- Possibility to safeguard utility by dishonesty towards individuals, and
- Possibility to be dishonest to get a project task accepted for co-operation.

Students. At this level, seven categories exist, and they include acts, which can be interpreted as morally questionable, like piracy, causing harm to others, usage of others' resources for own purposes, wilful carelessness, and pursuing one's own interests while neglecting one's real duties (intriguing for one's own interest). The categories are as follows:

- Inclination to piracy,
- Possibility of back-stabbing another,
- Inclination to use university resources for one's own purposes,
- Dishonesty in formal issues,
- Carelessness in protecting confidential information,
- Inclination to avoid fulfilling one's duties, and
- Possibility to intrigue for one's own interests.

Instructors. Instructors' moral conflicts at this level relate to avoiding fulfilling one's duties and possibility to harass one's colleagues. The categories are as follows:

- Possibility to avoid fulfilling one's duties, and
- Possibility to harass one's colleagues.

Next, the following stage of moral conflicts, self-centred moral conflicts, is presented.

6.2 Self-centred moral conflicts

The self-centred moral conflict stage is divided into two levels: the utility selections level and the utility and objectives of co-operating parties level. Moral conflicts at the utility selections level relate to conflicts which are focused on subject's own preferences and objectives. At this level, other parties are taken note of but their preferences are not considered. Moral conflicts at the utility and objectives of co-operating parties level relate to conflicts in which other parties and their preferences are noticed but the subjects are not genuinely worried about those preferences – instead the subjects concentrate on

their own preferences and knowingly suppress other parties preferences. Next, these two levels are considered.

Level 2. Utility selections

Moral conflicts at this level were observed among clients. These moral conflicts refer to decision making between alternatives, which relate to beneficial consequences for the clients. Although other parties are noticed in these conflicts, the caring is targeted towards the clients' own organizations. Categories at this level express the motive behind the functioning of an IT-firm: co-operation must produce utility for the firm. The categories are as follows:

- Utility based decisions relating to relationships between competitors,
- Utility selections concerning objectives of the project,
- Conflict between time resources and utility, and
- Student related decisions to take care of the results of the project.

Level 3. Utility and objectives of co-operating parties

Moral conflicts at this level were observed among clients. At this level, subjects notice other individuals and parties and also their preferences – but the underlying motivation relating to conflicting objectives is the desire to promote one's own beneficial goals. Considering the maturity continuum, this level is more developed than the previous level, because other parties are present at this level and their objectives are noticed, although the motive for the concern is one's own utility at this level. There is one category at this level, and it is the:

- Inclination to emphasize one's own utility in decisions relating to the objectives of the parties.

Next, other-directed moral conflicts are presented.

6.3 Other-directed moral conflicts

The other-directed moral conflicts stage is divided into three levels: not harming anyone, maintaining relationships, and justice. In moral conflicts at these levels, subjects express respect and concern for other individuals and parties. Duties, which are targeted to others, are also present at these levels.

Level 4. Not harming anyone

Moral conflicts at this fourth level include deliberation about harmful consequences produced to other parties.

Clients. Clients are concerned about the consequences of their actions, which might be harmful towards students, employees in the client organization and other organizations.

- Exercise of power towards outside parties,
- Prioritisation of work tasks may harm individuals, and
- Fulfilling clients' objectives could harm students.

Level 5. Maintaining relationships

At this level, subjects are concerned about maintaining relationships between parties of the co-operation. Respect for other parties and their objectives, fulfilling one's duties and taking care of others' rights are concerns for the subjects. The moral conflicts at this fifth level take a broader view as regards the other parties than moral conflicts at the previous, fourth level. At this fifth level it is the question about moral conflicts relating to proactive acts like existence and fulfilment of social responsibilities in relation to the objectives of individuals and parties of the co-operation. Doing well is more demanding than just avoiding causing harm, which is the issue at the fourth level. It is more mature, in the maturity continuum of moral conflicts, to do well towards others and consider proactive acts than just to avoid causing them harm.

Clients. The following categories express clients' concern for respect or lack of respect towards co-operating parties, university, and students:

- Implementing social responsibilities,
- Respecting or being loyal towards co-operating parties,
- Respecting objectives of university and students,
- Conflict of assuming duties relating to work tasks,
- Respecting or being loyal towards individuals, and
- Fulfilling duties concerning students and taking care of their rights.

Instructors. Instructors' perceptions at this level include consideration about local markets in the IT-field, objectives of other parties, and taking into account other instructors' and students' actions:

- Maintaining balance between conflicting objectives,
- Instructors' role conflicts,
- Disclosing students' information in collegial discussions,
- Intervening into instructors' and students' actions, and
- Surpassing one when implementing one's duties towards students.

Students. Students' categories at the maintaining relationships level refer to their relationships with other groups, university, group members, representatives of clients and instructors:

- Taking into account societal problems in project work,
- Taking other groups into account,
- Taking into account parties dependent on or affected by the client,
- Fulfilling duties related to university resources,
- Fulfilling project formalities in accordance with rules,
- Openness about the problems,
- Fulfilling duties relating to objectives of a client,
- Allocating time resources,
- Taking into account individuals when assigning work tasks,
- Intervening in someone's actions, and
- Honesty and ways of interaction with clients and instructors.

Level 6. Justice

Moral conflicts at this sixth level, justice, are the most mature ones observed in this study. Just and fair treatment of parties of the co-operation was of concern at this level. Representatives of each party confronted conflicts at this level. What makes this level most mature compared to previous levels identified in this study, is considered next. Kohlberg's (1981) theory of cognitive moral development (CMD) is used as an underlying theory in placing justice-based moral conflicts above all other maturity levels perceived in this study.

When it comes to the maturity continuum of moral conflicts, moral conflicts at the previous fifth level of maturity continuum represent similar thinking, which is present in Kohlberg's (1981) CMD-theory at the conventional level, in stages 3 and 4 (see details in Chapter 2). The similarities are as follows: taking care of students' rights and fulfilling duties towards other parties - university, society, and students - represent the conventional level, because with these deliberations subjects aim to maintain co-operation between parties. As an exception, regarding rights there a is hint of the post-conventional level in these statements. Moral conflicts at this sixth level of the maturity continuum are justice-based conflicts, which represent just and fair treatment of individuals. Here representatives of clients are concerned about providing students with equal opportunities like employment and thesis. The fulfilment of an ethical principle, justice, is for concern for the representatives of the clients, representing Kohlberg's postconventional level. The clients are concerned about impartial treatment of students when providing them with opportunities (e.g., employment), and when assessing them objectively. These concerns are concerns of implementation of justice, the highest level of maturity continuum observed in this study.

Clients. Clients are concerned about just treatment of individual students:

- Treating students in a just way.

Students. Students' categories relate to justice among groups and among individual students:

- Dividing project tasks equally,
- Equality in booking of hours,
- Just grading among group members,
- Students' equal commitment to the project,
- Justice in giving feedback to the project manager, and
- Equal distribution of gifts.

Instructors. Instructors' perceptions relate to just treatment of local IT-firms, and to just treatment among all the clients, students, and instructors:

- Just treatment of local IT-firms,
- Taking parties' objectives into account in selecting them to the course, and
- Students' just assessment and grading.

7   MORAL CONFLICTS PERCEIVED BY CLIENTS

Sixteen categories concerning moral problems perceived by representatives of clients were identified (Table 13). All these categories are comprised of referential and structural aspects. Six referential aspects (what-aspects) were found from the descriptions of moral problems: moral problems related to relationships with the society, relationships with other organizations, objectives of the parties, commitment and prioritisation, conflicts of interest, and treatment of individuals. These six aspects can be divided into moral problems related to outside parties, the project-level, and interpersonal issues (rows of the Table 13). These aspects will later in this study be referred to as themes of moral conflicts.

All categories reflect six ways of perceiving moral problems. Six structural aspects (how aspects) were found from the moral problems. The first relates to doing-wrong: utility overrides honesty. The next two relate to self-centred moral conflicts: utility-based decisions, and conflicts where utility overrides other parties' objectives. The following aspects are other-directed moral conflicts: harmful consequences, maintaining relationships, and justice (columns in the Table 13).

In the following sections, the categories are presented in the following order: outside-parties, project-level and interpersonal moral conflicts.

7.1 Outside parties

In this section the categories consider moral problems relating to outside parties from the clients' viewpoint, namely other organisations and society.

7.1.1 Relationship with the society

The category presented in this section relates to social responsibility issues towards society and educational institutes.

TABLE 13   Categories of moral conflicts perceived by clients

		Doing-wrong	Self-centred		Other directed		
		Utility overrides honesty	Utility-based decisions	Utility overrides other parties' goals	Harmful consequences	Maintaining relationships	Justice
OUTSIDE PARTIES	Relationship with the society					1. Implementing social responsibilities	
	Relationship with other organizations		2. Utility based decisions relating to relationships between competitors		3. Exercise of power towards outside parties		
PROJECT	Objectives of parties	4. Possibility to be dishonest to get project task accepted for co-operation	5. Utility selections concerning objectives of the project	6. Inclination to emphasize own utility in decisions between objectives of parties		7. Respecting objectives of university and students	
	Commitment and prioritising work tasks		8. Conflict between time resources and utility		9. Prioritisation of work tasks may harm individuals.	10. Conflict of undertakings relating to work tasks	
INTER-PERSO-NAL	Conflicts of interest					11. Conflicts of interests between parties	
	Treatment of students	12. Possibility to safeguard utility by dishonesty towards students	13. Making student related decisions to take care of the results of the project		14. Fulfilling clients' objectives could harm students	15. Respecting individuals	16. Treating students in a just way

Category 1: Implementing social responsibilities

Although clients openly declare that their motives in co-operation with the university are based on beneficial objectives, they consider it as a moral problem if there are social responsibilities towards the university and society in general, and if so, whether they should fulfil them. The questions relating to the existence of social responsibilities are brought up when a client considers the benefit to the society and educational institute when co-operating with an educational institute.

Selection of an educational institute and social responsibilities. Selecting an educational institute includes a moral problem relating to the contributing to the local community around the institute. As the firm selects between the institutes, it contributes to the community where the selected institute is located. Client C10, as a so-called long-distance client, practising co-operation from a town far away from Jyväskylä, took into account the question about contributing to the development of the local community and practising co-operation with an educational institute far away from the town the client is located:

> C10: "*Should we favour educational institutes located there* [at the town where the client is located] or, or should it be, well, this is very much dependent on me that we have directed [the co-operation] to Jyväskylä … … This kind of social, or how can it be said, social responsibility … *firms have this kind of social responsibility to employ people where they are.*"

Is there a social responsibility to contribute to the development of an educational institute? Whether to contribute to the development of an educational institute or not, was considered a moral problem. Client C5 considered the choice between two educational institutes, in both of which student projects courses are arranged. The problem expressed by the client related to the incompleteness of the other course and to whether one as a client should contribute to the development of such a course:

> C5: "Is it morally right to give up co-operation, which is at its first steps, and when one observes that it does not function well … … or should one get tougher and develop the activities and put one's resources to them so that they would develop … this is perhaps a moral problem if one wishes to make it such."
> The researcher: "What makes this a moral problem … or question or issue worth noticing?"
> C5: "… if we could take part in ready-made [co-operation] or, regarding co-operation with educational institutes, *to what extent can we expect ready-made things and to what extent we ourselves have to produce [co-operation]…* if we think about these project issues."

According to client C11, the motive behind the co-operation with the university could be the benefit expected from the co-operation or altruism, which means the existence of social obligations:

> C11: "We could mix morality to this in the way that should a firm have social responsibilities, in this case, I consider, in the social side, whether *we should take part in education unselfishly or whether we should deliberate in relation to finance.*"

In this category, moral problems are related to IT-firms' relationships with society. The structural aspect deals with the IT-firm's activities in the society and decisions relating to social responsibilities towards the society. The internal horizon of the category is the decision relating to the implementation of social responsibilities and the external horizon is the co-operation between the client organisation and the society around it (Figure 9). In this way the referential aspect is the moral problem relating to whether the clients should implement social responsibilities towards the society and educational institutes.

Category 1

Structural aspect   *Referential aspect*

External horizon
An IT-firm
functioning in a
society and co-
operating with
educational
institutes

Internal horizon
A decision relating
to implementation of
social
responsibilities

Should the clients
implement social
responsibilities
towards the
society and
educational
institutes?

FIGURE 9   The meaning structure of the first category.

7.1.2 Relationships with other organizations

Project co-operation between clients and university does not happen in a vacuum but the co-operation has connections with other parties. In this case there are moral problems relating to the clients' relationships with university, competitors of clients and vendors. The categories in this section relate to concern for leaking of confidential information and know-how to the clients' competitors, and power play towards outside parties.

Category 2: Utility based decisions relating to relationships between competitors

In this category, the moral problem relates to the fact that a client has competitors, who might benefit from the co-operation with a student group. The competitors might benefit by employing the same students with whom the client has the project, and thereby getting confidential information and know-how. The client may also have to face the fact that educating students (sending them to expensive courses) might mean educating them for their competitors.

   Confidential information. During project co-operation clients share in-house information about the firm, work processes, products etc., with the student

group. Leaking out the in-house information to a competitor may be detrimental to the client. However, because student projects do not normally relate to business-critical or economically critical functions, the secrecy level of the information delivered to the students is not very high.

After asking about moral problems client C3 told that secrecy issues could relate to morality:

> C3: "I do not know, well, could there be any moral, perhaps… issues related to *security issues, which all cannot be necessarily expressed.*"

Also, client C8 considered that relationships between competitors include a moral problem relating to transference of confidential information. However, he admitted that although he referred to the competing firms, in which the students ought not to be employed, the possible leaks would not harm the client:

> The researcher: "Lets think about moral problems and issues worth noticing, what you see in the development project … for your own role or someone else's role … perhaps we stick to your role or your viewpoint."
> C8: "I remember that, at the beginning, even during the evening meeting for the clients, it was brought up that the project tasks can be at a close proximity to each other, more or less, and then, *each client is possessive about the tasks involving secrecy issues … … although I wrote down the information about where these people are not allowed to be at work, well, when I came to this project and I wrote down our present and potential competitors, well, it appears that there are no amazingly secret issues in the way that if something leaked, it would not harm us badly.*"

Educating for the competitor. Representatives of clients deliberated about which members of the student group should be sent to the course. One of the representatives of these clients thought that they should enrol those students who would be employed. In another client organization, the employees had discussed the issue and decided that they would not select possible employees from the student group:

> The researcher: "Was there any moral problem with him working for someone else and the same time implementing [project] for you?"
> C: "In this group, there were three students working in different places … … *there was a certain kind of erronous idea that we would pay for their IBM courses, and these expenses would come out from the education expenses of [name of student's employer] … …* but at the beginning we decided that we would not select them from this group, and in the long run, they got the correct idea."

Another client expressed the hope that they should interview the students to get to know what they plan to do. To get the maximal utility from the project they should be aware of the students' plans and refrain from educating them if they did not want a job from the client organisation. The fact educated students might be employed by other (possibly competing) IT-firms affects the decision making for the future:

> C: "We have seen that, I do not know if this is related to morality at all, but if you think from the employment viewpoint, it is the opposite, the people in these projects,

they now have such good contacts to their present employers, so that *we, in a way, educated them for our competitors … and while we did not have opportunity to employ any one of them."*
…
The researcher: "So, you learned this, well, you have experienced this – so, does it have any consequences for the future?"
C: "In future we will interview them in a more detailed manner… if we think that we invest and put our resources in education and in guidance and in these sorts of things… with better information we can see if there is any potential or are they going to our competitors."
The researcher: "Are there, in your opinion, in this problem any issues worth taking notice of from the morals viewpoint if you think of this issue within your organization?"
C: "In a certain way, of course, in a way if we think from the viewpoint of project work and success, this kind of education and guidance and these kinds of things are needed. In principle, *we think selfishly and, well, if we got, if we invested to get, the maximum benefit, then it would not pay to put our resources to education*, that is to say, it would be rational conclusion, if we would anticipate that they would not come to us, [in that case] we should put our resources somewhere else. We should identify any potential available."

Co-operation with competitors. A representative of a client organization, which co-operates in a large project with its competitors, may confront moral problem relating to co-operation and competition. If the co-operating organization produces valuable information, a moral problem relating to revealing or not revealing the information to its competitors emerges. Client C8 participated in a large project and a student group produced information relating to the issues that the large project handled. The representative of this client confronted a moral problem relating to the results of the student group: should the results be revealed to the competitors who have similar objectives to the client's objectives? He concluded that there is a temptation to sit on the information:

"The researcher: "If we come back to the events of the spring time, what kind of moral problems or issues worth noticing from the morals viewpoint comes to your mind from the spring time, such that have not been considered here."
C8: "It came to my mind, well, yes, … … we started to participate in [a name of an organisation] research project, which is funded by [a name of an organization] and it started at the end of March … … it is a three-year-project and there are many researchers from [a name of an organization] and, well, in addition to us there are other firms like [four names of organizations], and, well, we are talking about [name of a theme of discussion]. This is the first year and it will be spent in [producing] requirement specification and, in generally, *we deliberate on what should be done, and perhaps on these grounds, we start to build equipment, and the work of this [name of a student group] group would be a good starting point for this project, and well, but then there are two questions here like what is the price that we pay for getting into this project, say, we have paid money to get the material, well, what would be the price with which we could deliver this material for this project … …* our role in this project, on the one hand … what is our role in the project, we are increasing knowledge and helping the project so that we can get back what the project produces – but on the other hand, there are our competitors and if we transfer this kind of nice concept about [the theme of the project] which is in our usage only, well, then I cannot say, well…"
"The researcher: "Your competitors take part in the project?"
C8: "Yes, these [name of a group of companies], and thinking about [a name of a bank] and these, which partly are our competitors, and they are trying the same kind of issues, at least partially comparable to our goals."
The researcher: "So, is the problem here about the price you pay for it or is it about some general issues?"

C8: "It is more like generally, the fact that support is expected from us, and knowledge to support the project and that we can get it back, this situation is such that *we would like to sit on the information.* But on the one hand, I know that the project is similarly at its beginnings like this [name of a student project group] project is at its beginnings."

…

The researcher: "Is there any moral problem here?"

C8: "Yes, there really is, how one could deliberate on this (laughing) what is the most important thing here."

The researcher: "Would you describe the choice that you are confronting, to sell or not to sell?"

C8: "On the one hand, *you deliver the information to the competitors, although it is a fact that such knowledge is not enough* but you must be able to put it in practice, and what is written there is not that valuable when compared with what's there within the future employer."

To sum up, this category is concerned about a moral problem relating to benefiting the competitors of the clients (referential aspect). These competitors may benefit by employing the same students that the client has co-operated with, and thus confidential information and know-how might be transferred to the competitor. The structural aspect of this category consists of the decision-making about secrecy and educational issues in co-operation with the students and competitors (Figure 10). The internal horizon of this category is the decision making about secrecy and educational issues, and the external horizon is the co-operation with students.
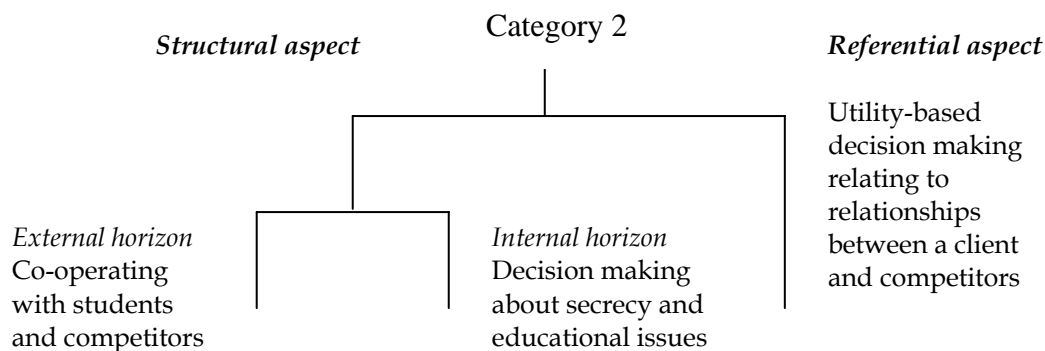
FIGURE 10   The meaning structure of the second category.

Category 3: Exercise of power

In this category, exercise of power towards outside parties is considered as a moral problem. By exercising power one is able to cause detrimental consequences. The representatives of the clients considered that they could exercise power towards vendors and co-operating parties in the project.

Exercise of power towards vendors. Client C4 told about the project task, in which the students were to compare information relating to products sold by different vendors. He considered that selecting vendors for students'

assessment work included a moral problem relating to the grounds for the selection. In addition to this, the results of the project, assessment of products of different vendors, would affect some vendors by taking away some of their possibilities for economical growth. Interestingly, the client hesitated on deciding whether the problem was a problem of this student project course at all:

> C4: "Many times, one party here, well, there are different vendors, in our case [three names of software houses], what would be a moral problem, in a way it is problem of the project that we give the information that these should be investigated – how have we chosen them. *Are these deliberations based on personal thinking or other issues or based on facts, or how have we used our power to get these?* Power must be used – in a right way when we have mobilized vendors around this project. Perhaps this does not fit into a development project."
> … …
> C4: "… and then it is, of course, although they all are functional, *it is out from their sales and our from their activities and growth possibilities.*"
> … …
> The researcher: "Could there be any kind of moral problem or issue worth noticing?"
> C4: "Well, there is no big deal … here it is that any one who gives recommendations to anyone else – *how correct the judging done is.* Was it so bad at all or was it so good, and from this it could follow so-and-so-on. It could harm one or another."

This category relates to the exercise of power towards outside parties. The co-operation with a student group may affect outside parties in the case that the object of the project task is somehow focused on them. The structural aspect consists of making decisions which affect outside parties, for the student group (Figure 11). The internal horizon is the decision making relating to outside parties, and the external horizon is the co-operation with the students.
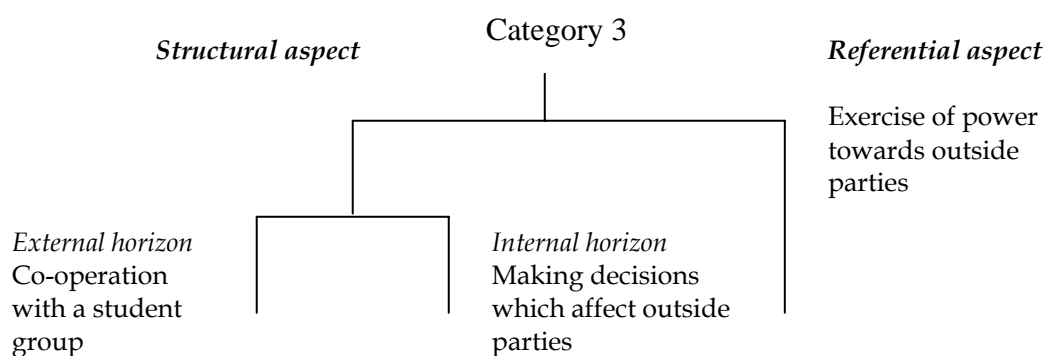
FIGURE 11   The meaning structure of the third category

7.2 Project-related moral problems

In this section, moral problems deal with project-level issues, such as objectives of parties and implementing work tasks and duties related to the project.

7.2.1 Objectives of the parties

In this section, the categories of moral problems are focused on general objectives of the parties in project co-operation. Moral problems relating to objectives relate to concern for implementation of the objectives and respect towards objectives of university and students.

Category 4: Possibility to be dishonest to get a project task accepted for co-operation

A university instructor and representatives of clients negotiate for a probable project co-operation before the co-operation starts. During negotiations it is possible for the client to give a dishonest or biased image of the organisation, project task and even of the commitment to co-operation with the university. Client C3 thought that he had had been trying to sell the project task for the university, and that it is possible that wrong expectations or visions emerge about the future co-operation:

> The researcher: "What issues worth noticing from the morals viewpoint are there relating to the start-up?"
> C3: "Of course, that I tried to sell our project already then, and, of course, such issues that *wrong expectations or visions are not entertained by you* … about how committed we really are and if this is, as a matter of fact, such a project that is worth taking … … in that situation, *it would have been morally wrong to leave knowingly unexpressed something that I would have known to affect the possible decision*."

Client C1 considered the openness of objectives relating to the project co-operation and other things as morally important. Pies in the sky should not be promised:

> The researcher: "Let's move to the beginning of the development project … task exhibition, in some occasions group formation … do you have any ideas about what moral problems or issues worth noticing could be related to these issues?"
> C1: "Well, *it is possible to provide a too good a vision about the probable task or give empty promises for students or for the university alike about the task*. Yes, a moral consideration belongs to this … … the most important is that the project is described correctly and we do not provide a wrong idea about the consequences … … I am quite sure that all [clients] have other goals also related to this work or activities apart from this project. We have openly said that recruiting occurs here, that is to say, we are looking for good people by using this opportunity also."

In summary, it is possible to provide the university with false information about the client to get the project task accepted for co-operation. The utility of the project co-operation may tempt clients to dishonest behaviour. The structural aspect of this category relates to what to tell to the university within the co-operation between the client and the university (Figure 12). The internal

horizon of this category is the decision making about what to tell the university when it is making decisions about co-operation. The external horizon is the co-operation between the client and the university. The referential aspect is, therefore, the possibility to be dishonest to get a project task accepted for co-operation.

Category 4

Structural aspect

Referential aspect

Possibility to be dishonest to get a project task accepted for co-operation

External horizon
Co-operation between client and university

Internal horizon
Decision-making about what to tell to the university

FIGURE 12   The meaning structure of the fourth category.

Category 5: Utility selections concerning objectives of the project

This category comprises of moral problems concerning utility selections regarding clients' objectives. Clients' objectives are targeted at different kinds of benefits: the results of the project, employment of students, and positive image of the firm. For the co-operation, clients use financial and time resources. Utility selections concerning these objectives and resources represent the results of cost-benefit calculations.

Making changes to the project task. During projects clients have to make decisions relating to the project task and to the continuance of the co-operation. They considered decision-making situations relating to changes to project tasks and quitting the project as moral problems. Making changes to a project is based on fast-changing IT technology and the clients' aims to benefit from the resources they have spent for the project. In the following extract, a client deliberates about a moral problem relating to making changes to a project. Although there is concern for students' usage of time, usage of money in the client organization is also a concern:

> The researcher: "What would make this - or did you say that it could be a moral problem? - what could make it a moral problem – the situation there?"
> C3: "Perhaps, well, perhaps it is about how you relate to a decision-making situation. *Shall we decide with this knowledge or shall we break it off and start over*. In a way, it is a moral problem. To my mind, it is honest to break it off and to start over again. In my opinion, *it is morally wrong to continue the project till the end knowing that the results will not meet the demands, they will never be used … it is a question about misuse of money* and, in a certain way, of students' usage of time."

Quitting the project. A client may observe that the co-operation may become a failure if they do not obtain the objectives. The reasons for the failure may be, e.g., in the overall co-operation and in the functioning of the student group. To give arguments for quitting the project and also the timing of quitting was considered as a moral problem. In the following extract, client C5 deliberates whether it is justified that the client does not "fight till the death" to keep the project alive – representing a form of cost-benefit analysis:

> C5: … "then moral problems relating to *in what phase a client is justified to resign from it [project] start to emerge. On what grounds it is justified that the client does not fight till the death to keep the project alive* but says "ah, fifty thousand so-what"."
> The researcher: "Would you describe how such a moral problem could be born?"
> C5: "I suppose that it is mostly based on that the expectations are so far away from what the bare reality is. And if we add that the group does not act in an expected way, as one could generally expect."

Selecting employees from a student group. Employment of students is an important beneficial objective for the clients. Selecting employees from a student group is a moral problem in the sense of criteria for the selection: the selection should be based on selecting the right persons for the work tasks in the organization - not on "mug value". Thus, the selection of employees is a utility-based selection:

> C5: "… you have to make a choice and making the choice could perhaps cause a phenomenon relating to 'this is for you and this is for me' or who's favourite are you? *Or it could cause a some kind of moral problem – also for the client who is recruiting. What are the grounds for selecting those whom the opportunity was offered in the end?*"
> The researcher: "What do you mean with 'this is for you and this is for me' principle?"
> C: "Well, is there competition relating to who is employed and who is not employed? Does it affect the actions of the group? If in the middle [of the project] it is known that a certain person is offered something and 'I am not offered anything, so what is wrong then?' I cannot be bothered to do anything. There are multitudes of scenarios relating to what can happen."
> …
> The researcher: "You talked about the grounds, what are your grounds for offering a job to someone? What are they?"
> C5: "They are all these talents, with which one works in the future work place. …. … *It [recruiting] is based on that there is a right person to be recruited.* It cannot be based on that you have to select one to employ. The grounds are different based on for what kind of task the person is wanted. Or if you anticipate that a certain person could become - if you see that a person is very good in extreme programming then you do not put emphasis on other issues but the recruiting takes … you see that there is such a good coder that you have to get him, or you see that someone else is so good in handling and taking care of issues and you observe that he can manage them. Perhaps, after a couple of years he can manage larger projects in working life. Lets take him to grow and guide his development to that kind of purpose."
> The researcher: "Is there any moral problem or issue worth noticing here?"
> C5: "*I do not know if it is a moral problem.* In Finland, it is the Finnish way that you treat everyone equally in giving – there are five individuals in a group – why don't they all get something? A Finnish issue, well, I do not know if it is a Finnish way, perhaps it is more related to the Scandinavian way. In Finland it is if I do not get it, likewise, no-one else should get it either. It is not a big moral problem for the firm, but *for the person who makes the selection – for that person it is a moral problem*. As a firm there is no moral duty to accept five or to accept one. There is no duty to take a minimum of one either. It is not any problem."

In summary, this category is concerned about utility selections in co-operation between the client and the student group (structural aspect). The internal horizon of this concept is the utility-based selection, and the external horizon is the co-operation with the student group (Figure 13). Thus, the referential aspect is the utility selections concerning objectives of the project.
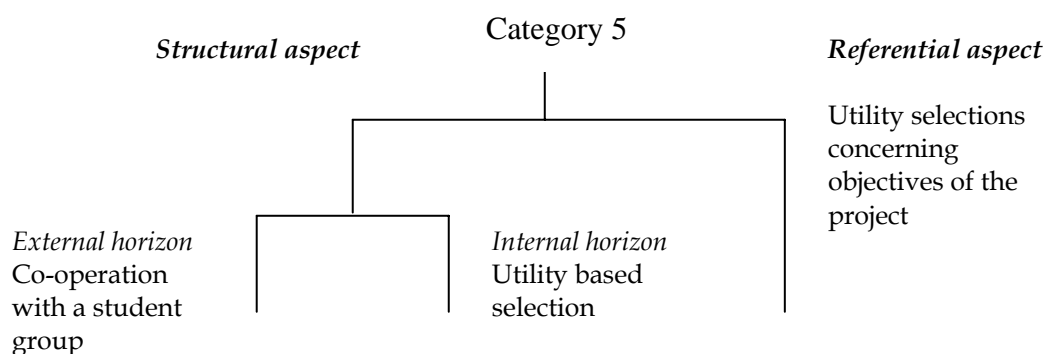
FIGURE 13   The meaning structure of the fifth category.

Category 6: Inclination to make utility-based decisions between objectives of parties

In this category, moral problem relates to conflicting objectives between clients and university. The underlying motive behind the conflict is concern for clients' utility. On the one hand, the clients perceive and accept that the university aims to guarantee that the students learn project work at the same time as they implement the project task for the client. On the other hand, the client wants to guarantee some benefit from the results of the project, and in possible conflict situations there is a tendency to stress utility issues on the expense of learning aspects. The conflict between these objectives may come out when decisions concerning the students have to be made. For example, certain phases of a project might be useful for the students to implement so that they would learn, even though the client could implement those phases more efficiently:

> The researcher: "What moral problems or issues worth noticing from the morals viewpoint and relating to you as a client in a development project, in a project leading [course] might arise?"
> C13: "Well, there is a matter, which comes to my mind, well, the *client has its own advantages and objectives relating to the whole project – about the end results. Well, how does it correlate with education, that is to say, relating to the objectives and advantages of the students? Do they get the benefit they are expected to get? And this in relation to us as clients – do we get the benefit that we are expecting?"*
> The researcher: "Would you tell more about what you mean by this?"
> C13: "I mean - is it, perhaps, morally wrong to expect certain kinds of results from the project although one knows that attaining them does not benefit students from the viewpoint of education?"
> The researcher: "I do not fully understand what you mean. Would you say it again?"
> C13: "Yeah, if we think that, well, when there is a client, who pays for the project, and he wants to attain certain objectives, which have been set for the project. If these

> objectives do not go hand in hand with the objectives that the university has set as educational objectives for the students."
> The researcher: "Could you tell me with an example or in somewhat more specific way what it could mean in practice?"
> C13:" In practice, *it could mean*, for example, well, *we bypass certain educationally important phases in the project and use professional skills with the project in the name of efficiency.*"

As the extract above describes, the client seems to accept the learning aspects declared by the university, but admits that there might be a tendency to suppress the learning aspects because of the beneficial aspects of the project. Client C4 thought that the results are the most important objective and there might be a temptation to suppress learning for the benefit of the results:

> C4: "Well, for the client there is a moral problem in that, well, the results and the value for money and for the leaders' time could easily be the most important matter for a client. In this kind of matter the client would want to aim at implementation for good end results, and with what terms - we are talking about a course, individuals' learning is at least as important as [client's objectives]. *There is a moral temptation to get the results done, absolutely, in the expense of learning.*"

In summary, moral problems in this category are based on the utility of the objectives for the clients. The structural aspect is the conflict of objectives between the parties in the project co-operation (Figure 14). The internal horizon of the category is formed of the conflict of objectives between the parties of the project. The external horizon is the co-operation between the parties. Thus, the referential aspect is about making utility-based decisions concerning the objectives of the parties.
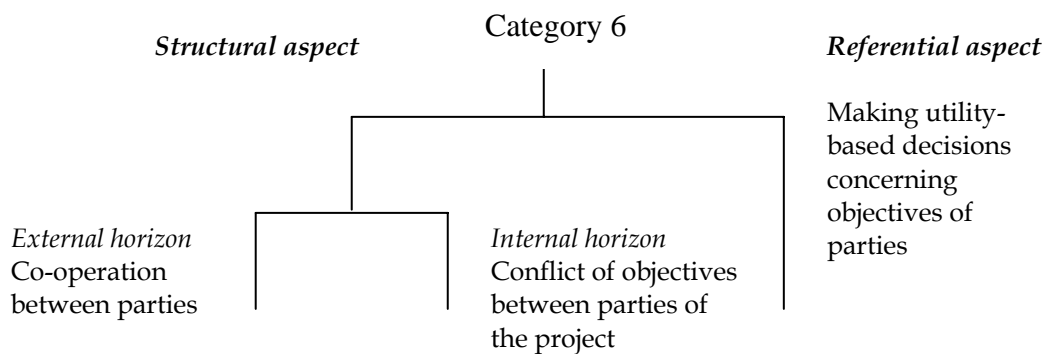
FIGURE 14   The meaning structure of the sixth category.

Category 7: Respecting objectives of university and students

In this category, moral problem relates to respecting objectives of university and students. Clients adhere to their objectives but they also show respect for the objectives of university and students. The clients consider as a moral

problem the possibility that they would not respect the learning aspects of project co-operation. They also are worried about students' learning and they are ready to give up some of their utility-based demands because of the students' status as students.

A representative of client C15 deliberated about their role towards the students. Is it a normal client-consultant relationship or are they participating in the project co-operation because the students need the credits? He concluded that the project task should be beneficial for the students from the learning viewpoint, but because they (clients) had invested in the co-operation, the students' credits should not be the only result of the project:

> C15: "I think that I have, concerning the project, in a way, when thinking about moral problems, ethics … okay, well, yes, in the sense that, naturally, at the beginning - I wondered that, now, that we have this project, so I had to consider whether there really is a kind of client issue – is it a sort of a client-consultant relationship in question here, or is it more like that we are the client and then there are the students who do the job, and who need these credits then … I had to consider *if this is a work done for us, or if it is done for the students*, anyway."
> The researcher: "Yes. I see."
> C15: "And, and *I think that everybody at our place wrestled with [the problem] that there was a kind of desire to help the students to get this study attainment, but on the other hand, we had money invested in it, fifty thousand, or what was the amount that we invested in it in old money, so we wrestled with that* ... and there was another kind of, kind of not a problem, but which we actually stuck to, then we agreed already at the beginning that this project, when it starts, we do not make them do anything .. but we kind of morally stick to it that we did not put them, lets use the expression – to format floppy disks."

Client C5 considered as a moral problem making demands on students who are not paid anything about the project. He considered that a moral problem, because usually one is paid for one's job. Because they get economical benefit from the project co-operation, the representative of the client felt that they had exploited the students:

> The researcher: "Lets get to the main question: describe what moral problems and issues worth noticing from the moral viewpoint there are related to the fact that you participate or your are acting in the Development Project as a client … moral problems from the client's point of view."
> C5: "Well, for a start it occurs to me that the students are not paid for it [the project] and, in a way, we have work done by the students, but they are not paid at all, we pay to the university some amount of money, but it goes to the university, however, on the one hand, one can understand that it is a part of the students´ studies and it is good for them, also, that there are clients that have these kinds of ... tasks, from which students benefit, but *sometimes one really ponders what one can demand from them since they are not paid at all* – for example, make very large demands now, for example, the length of the Christmas vacation is one thing that we deliberated about here at our place … it has not proceeded [the project] .. or, it [the project] is a little bit late from the schedule, and we thought among ourselves whether we should suggest the students to take, you know, a Christmas holiday, well, we decided that, especially on the basis that because we did not pay, so let us not interfere with their holidays."
> The researcher: "Well, in what way, you described here that what one can demand, if one does not pay, and make demanding claims, so how is this, or could you describe how this is a moral problem, in your view. What makes it a moral problem?"
> C5: "Well, probably the fact that one has the idea that *when someone works he is paid for it, now we, however, get this concrete result that we can benefit financially from in the future,*

and anyhow those students are not paid at all, here one feels that these students have been exploited."

In summary, this category relates to respecting objectives of university and students. The structural aspect of this category is the conflict of objectives between the parties in the project co-operation (Figure 15). The internal horizon is the decision-making in conflicting objectives, and the external horizon is the co-operation between the parties.

Category 7

Structural aspect

Referential aspect

Respecting objectives of university and students

External horizon
Co-operation between parties

Internal horizon
Conflict of objectives between parties of the project

FIGURE 15   The meaning structure of the seventh category.

7.2.2 Commitment and prioritising work tasks

In this section, categories concerning moral problems relating to prioritising work tasks are described. Representatives of clients consider moral problems relating to prioritisation. They are forced to make prioritisations between ordinary work tasks and work tasks relating to student projects. Prioritisation emerges as a moral problem in three categories: conflict between time resources and utility, harmful effects of prioritisation, and conflict of work tasks.

Category 8: Conflict between time resources and utility

This category consists of a moral problem between scarce time resources of clients and utility. The more the client is able to put its resources into the project, the more it benefits from the co-operation, and vice versa. Co-operation with educational institutes requires time and resources, and like a representative of a client expressed, corporate politics should be defined for co-operation with educational institutes.

The results of the project vs. time resources. Clients confront moral problems relating to prioritisation of their time resources. The more time the representatives of the clients put to the co-operation, the better they attain the beneficial objectives they have. The client's whole attention may be taken by other work tasks, and the preliminary results of the student group may not be as expected. In the following, the client considers this problematic as an issue worth noticing from the morals viewpoint:

> C8: "… *I tried to start up so many things that I almost drowned in them* (laughter) lets say in October – November and, and then, there are still things that are still incomplete … like the worst ones should be fixed before the end of the year and …. at times one remembered that, oh, yes, the project is going on also, I wonder how it is.."
> The researcher: "Do you consider that as a moral problem?"
> C8: "Well, maybe it is not about morals - more like kind of conscience (laughter)."
> The researcher: "In the original question I referred to moral problems or issues worth noticing from the moral viewpoint."
> C8: "Yeah."
> The researcher: "Would this be then if not a problem an issue worth noticing from the morals viewpoint."
> C8: "Yes, probably one of the kinds of issues like *this could culminate and lead to issues, which could be problems of morality*, yeah, so ... *if this creates friction between the project and the client, so that ... I read the first version of the report and I think it is a poor one, in other words, the project thinks that I have not helped, damn it, ... then we are pointlessly in a situation where the issues culminate ... both are a little wrong there* ... the report is not so poor really and the group should understand that they should ask for help more often."

Co-operation with educational institutes and the time resources. In the client organization there may exist a policy demanding co-operation with educational institutes. Such policies of the client organization and their usable resources may conflict with each other, as the representative of client C10 describes in the following:

> The researcher: "Yes, yes, you said that in a firm there are principles, which demand that this kind of co-operation must exist, and then, that is it wrong if we do not take a new project in the winter."
> C10: "Yeah."
> The researcher: "Is it a moral problem?"
> C10: "Well, isn't it in the sense *that if we consider that we just do not have the resources to commit, commit to this, and, however, the policy of the firm is that we have to increase co-operation with educational institutes and we have to improve the image and things like that, so it will create a conflict while the general principles of the firm would demand it done in this way, but at the moment, you know that there are no resources for it, these are like two things fighting with each other."*

Creating will in organization - beneficial goals. In a client organization the selection of individuals from the staff for the co-operation and the development of their motivation affects the beneficial objectives of the client. Client C7 considered as a moral problem the selection of an individual who should maintain the will and motivation inside the client organization – similarly, the non-existence of policies concerning the co-operation was seen as a moral problem. The underlying concern and motive behind the moral problem is the goal to benefit from the co-operation:

> C7: "… *the moral question actually relates to who is organising and exposing the state of will at the client's side.* I do not know how these processes are in firms – I have a sort of understanding how we do it … … a sort of moral question would be that *we should have a strategic starting point to these kinds of co-operations, and it should be at a high level in this organization so that the moral questions in the client's side would be handled systematically.* For example, we do not have any framework pertaining to what our objectives are relating to these kinds of issues. We have discussed these issues and someone may have written about it. But we are not aware of any brilliant way of action."
> The researcher: "Then, what makes this a moral problem?"

C7: "Perhaps, well, I do not know if, perhaps, perhaps we take this too lightly. *We should deliberate more seriously about what and to what extend – but we are not standing in the air either.* But if one deliberates how matters could be handled in a better way, so the reasons are quite clear, the viewpoints of recruiting and the image of the firm are important, and, well, on the other hand we get a working resource. But it might be that there might be something more profound if one sat down to deliberate."

This category deals with scarce time resources of the representatives of the clients and decision-making relating to what work tasks to implement. The more the clients put their resources on the student project, the more utility they get. The structural aspect, therefore, consist of decision-making concerning work tasks inside the client organization (Figure 16). The internal horizon of this category is the decision making about work tasks, and the external horizon is about working within the client organization.

FIGURE 16   The meaning structure of the eighth category.

Category 9: Prioritisation of work tasks may harm individuals

In this category, the moral problem concerning harmful effects of prioritisation emerges. Representatives of clients are usually forced to prioritise their ordinary work tasks above work tasks relating to student projects. But they may also be prioritised for the students' advantage. Both ways of prioritisation include moral problems because both ways may cause harm to the students.

Prioritisation for students' advantage gives a false image of working life. Representatives of clients may prioritise for students' advantage by prioritising work tasks related to the student project above ordinary work tasks. In that case prioritisation is considered as harmful because it provides the students with a false image of working life. For example, quick responses to the students' queries may give a false impression, because in genuine projects there are many more difficulties in prioritisation:

C6: "… … perhaps one problem has been such a one, which is not, as it turns out, a problem. I understand very well that because these students have not been in working life, *one thing, which will be revealed to them, is that matters do not happen as fast in working life*. Perhaps, they have assumed that because I am the contact person and

a member of board, we have time for them whenever they want us. Well, that is not how it really is. In working life there are people whose calendars are full for many months ahead. … … I have tried to prioritize to be able, if possible, implement quickly the issues, and I have done so, but in real working life it does not happen that way. I hope that they do not get a wrong impression – when they start working and may anticipate that issues proceed so fast."

Prioritising for students' advantage may cause harm to an employee in the client organization. A client in a management position deliberated about the moral problem of giving an order to a specialist to take part in project co-operation. The extra work task would create unnecessary pressure for the specialist:

> The researcher: "If you think, for example, about this organization where you work at the moment … what moral problems would you see here with regard to the development project co-operation? Others than those that you just told from your experiences."
> C6: "Well, at most, a sort of problem could be that I have to force some person to take part in this - from our viewpoint. *It could be a problem in that I have to force an expert to take part in this development project* - in order that he presents our views to the group so that the group can develop the issue. But this has not been a problem."
> The researcher: "In what way could it be a problem?"
> C6: "It could be [a problem] in the sense that *this person is very busy with other projects and having told him to take part in this, too.* And that you present your views because you have the knowledge. So, I would pressurize him. I would put pressure, needless pressure, on him. Luckily, situations like this have not emerged at the moment, anyway. And I do not think they will."
> The researcher: "So, this could be…"
> C6: "It could be that kind of a problem."

Prioritisation for students' disadvantage harms students. The representatives of the clients considered prioritising ordinary work tasks above work tasks relating to student project as harmful for the students. Harmful effects would be the absence of proper guidance, and effects to the students' studies and grades. Client C5 expressed the moral problem as follows:

> C5: "Perhaps, the end results affect to some extent the assessment, and if guidance is poor or defective it may affect the quality of the results and, that way, it is reflected on the grade. On the one hand, the assessor should take these kinds of issues into account – well, they are not assessing the client but the students. But there is always this kind of possibility."
> The researcher: "Is there any moral problem relating to this?"
> C5: "Yes, there is clearly [a moral problem] – we have thought about this quite a lot that *if we pare down resources, so how does it affect these students' studies and grades and the completion of the whole course.*"

To sum up, this category relates to harmful effects of prioritisation of work tasks inside the client organization. The structural aspect is the decision making about work tasks relating to co-operation between the client and the students (Figure 17). The internal horizon of this category is the decision-making about producing harm to students by prioritisation, and the external horizon is the co-operation between client and students.

Category 9

Structural aspect   *Referential aspect*

Prioritisation may
have harmful
effects to
individuals

External horizon   *Internal horizon*
Co-operation   Making decisions
between client   about prioritisation
and students   and its harmful
                                           effects to an
                                           individual
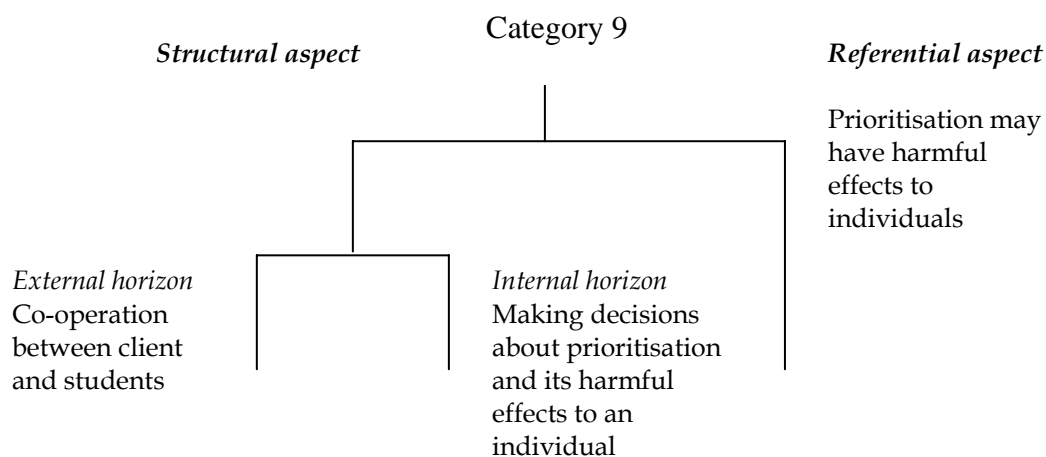
FIGURE 17   The meaning structure of the ninth category.

Category 10: Conflict of undertakings relating to work tasks

In this category, moral problems relate to conflicts of work tasks. Representatives of clients see the conflict between the selection of ordinary work tasks, and the co-operation with the student project. In many cases, the ordinary work tasks are judged as more important from the economical viewpoint than the student projects. The conflict between work tasks is a conflict between duties or undertakings, because the clients have committed themselves to the co-operation, but their duties relating to ordinary work tasks bind them also:

> C11: "Perhaps a problem that occurred here, which came to my mind, *a moral problem relating to the lack of time – if it is a moral problem.*"
> The researcher: "Go on…"
> C11: "There are plenty of issues going on, so have we put enough of our resources in this, do we participate sufficiently on this, or have we only thrown the topic in and then just let the people do the work?"
> The researcher: "Yes, in what way is it moral, or if it is related to moral, how the morality is related to this question of taking charge of it."
> C11: "Well, it could be related through, that, that *if we take charge of this kind of a project, we should put our resources into it* - it would surely be irrational if we took something in our care and, then, we did not do anything about it - it belongs to the sphere of morality, keeping one's promises is an important issue, but it confronts the practical issues … one is forced to choose how one uses it [the time] because it is never enough [time] for taking every issue into account. Perhaps, there is a little conflict sometimes … *one is forced to choose where to put one's resources - to this project or to something else.*"

In summary, this category considers the conflicts of undertakings in prioritisation. The structural aspect is the selection between work tasks in co-operation between the client and the students (Figure 18). The internal horizon of this category is the decision-making between work tasks, and the external horizon is the co-operation with the student group.
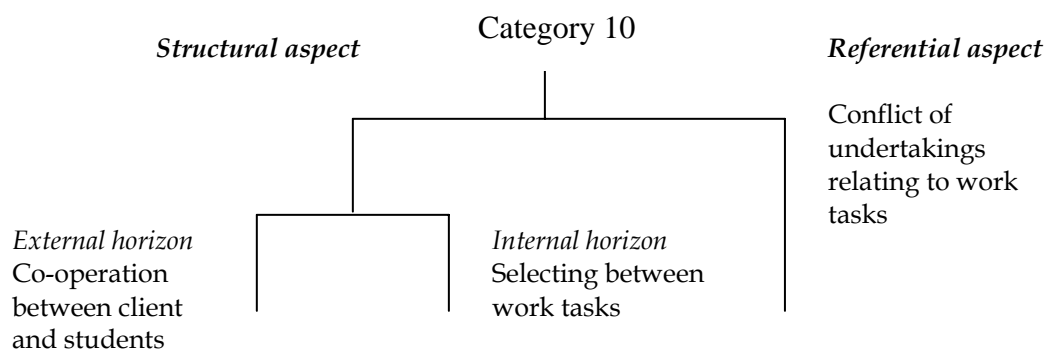
FIGURE 18   The meaning structure of the tenth category.

7.3 Interpersonal moral problems

In this section, moral problems consider interpersonal issues like conflicts of interests and treatment of students.

7.3.1 Conflicts of interests

This section includes one category relating to conflicts of interest between the parties of the DP course.

Category 11: Conflicts of interests between parties

Representatives of clients consider as moral problems those conflicts of interests that may occur between the representatives of clients and other parties (students, instructors). Conflicts of interests may emerge in the treatment of the students, in the creditation of the results produced by students, and in the case the clients make friends with the instructors.

    Justification for decisions relating to conflicts of interests. A conflict of interest is seen in a case of a long-distanceclient: a representative of a client deliberated whether it was right to ask the students to travel instead of travelling himself when having project meetings. The moral problem is based on the deliberation about what justifies this treatment of the students who are human beings like any other people. This thinking shows some respect towards students:

> C21: "Well, perhaps this kind of, well, travelling – does one demand the group to travel to the client's location, this is about the usage of time – is it about the usage of one's own time or that of the group, or should one feel pity towards the students, that is to say, should one make them come to a location a few hundred kilometres away (laughing) is is about seeking one's own advantage – if you are a client you dictate the times and locations of the meetings. Morality in practice (laughing)."
> The researcher: "Well, what it is that makes it a moral problem?"
> C21: "Perhaps the fact that, well, *is it right that you use your position for your own advantage … they are human beings, these students also*. What justifies or mandates this –

is the money always the only measurement or is it that you possess the mandate or justification to dictate in all matters."

Students' credit for the results. The representatives of the clients brought out the issue concerning very good results and students' right to be credited for them. Although according to the contract, rights to the results are transferred to the client organization and the students cannot demand for any compensation, the representatives of the clients recognizes the credit for the results as a morally relevant issue. Client C15 held the view that the students should get credit for work well done:

> The researcher: "One last question. When thinking about the future – the project ends and from thereon to the future, what kind of moral problems or issues worth noticing from the morals viewpoint there are relating to the consequences of this development project? That is to say, how does it affect the future what these students do, or what about this co-operation in general. You may ponder it also. And what about the moral problems relating to the future."
> C15: "Well, this is a very good question – I have not thought about it from that viewpoint. You may ponder whether the group has generated something really good, excellent, and is it shown. Is it morally right that the results are transferred to the firm? And the group then. If the individuals from the firm's and the group's side do not decide otherwise, the co-operation ends. So, are the producers of these excellent results brought into attention in the future?"
> The researcher: "Producers of the excellent results? What do you mean? Would you make it a bit more clear?"
> C15: "If we think that the group generates something revolutionary or excellent, and if the firm desperately wants it and because, as I see it, *the rights of the results of the project belong to the firm, so the particular workers are not to be seen anywhere. They do not get the credit for it.* Because of secrecy clauses these kinds of things must be hidden."
> The researcher: "Yeah, so you mean that the credit is not where the credit is due."
> C15: "Exactly, yes."

Client C16 thought that there is no moral problem in taking advantage of a students' work but that the question is not so straightforward if the client gets great utility from the students' work:

> C16: "Okay, yes, if we contemplate the future. In theory, well, in theory there could be a moral problem, well, if it is a moral problem, but *one surely deliberates about the results, which we have obtained for a reasonable price. If it turns out to be a big issue, if something big starts from it – then one surely makes plans to get the good thing downmarket and make goddamn money from it.* I do not think that it is a problem, but one surely thinks about it – the rules of the game are, however, clear. We are allowed to utilize the results as well as we are able to."

Loyalty to one's firm and to a friend. Friendship with individuals with whom one has business contacts is considered a moral problem. There may be the temptation to infringements like bribery in the case of a close friendship. The problematic described by client C19 is shown with the help of two extracts of his interviews. In the first extract he describes a moral problem as a conflict of one's own interests with the interests of the firm. In the worst cases those conflicts might lead to bribery:

> The researcher: "What else comes to your mind about moral problem, what does it mean?"
> C19: "Yes, of course, these conflict situations where *personal, well, could I say, advantage and interests of the firm are in a collision course with each other*, which, in worst cases, leads to corruption."

The second extract from the same interview describes a moral problem relating to a friendship with a university instructor. Client C19 considered making friends with an instructor as a moral problem in the case that the results of a student project were poor. The moral problem is based on a conflict between the interests of the client organisation and the interests of those who are friends with each other:

> C19: "Well, again, … in principle it would be possible that, for example, when I asked the instructor to do a favour for me – we could think about this further – if an instructor and me had become friends and had we hit if off, and on the one hand *if the results from the previous year had been poor, a moral problem regarding the future could emerge.* But this is supposition, with many dimensions to it. But relating directly to this I do not perceive any problems in the future."
> The researcher: "You described a kind of likely problem, so what makes it a moral problem?"
> C19: "*There is a clear conflict between the interests of the firm and personal interests*, that is to say, I consider it dangerous, well, not dangerous but as something that should be planned and carefully thought over, whether to make friends with suppliers. It is allowed but then one has to be very careful and remember one's own moral code and objectives."

In summary, the moral problem in this category relates to conflicts of interests between the parties. The problem is based on respect or probable lack of respect towards other individuals. The structural aspect constitutes of the conflict of interests between parties in co-operation (Figure 19). The internal horizon in this category is the conflict of interest between two parties, and the external horizon is the co-operation between the two parties. Thus, the referential aspect is the respect or being loyal towards individuals.
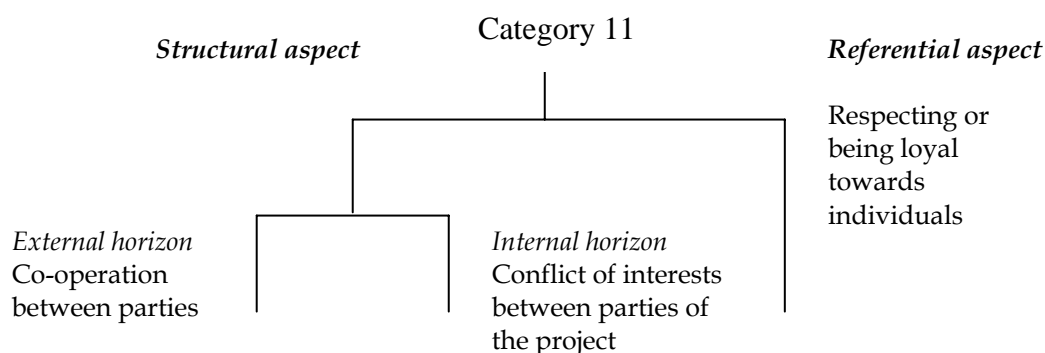
FIGURE 19   The meaning structure of the eleventh category.

7.3.2 Treatment of individuals

Representatives of clients included the treatment of students within moral problems. When co-operating with students, the clients give guidance and feedback to them. For example, university instructors recommend the arrangement of workshops (for exchange of ideas and knowledge) for students and clients as well as walkthroughs (for the inspection of results). The representatives of the clients also take part in assessing students' project work of the middle and final assessments for which the representatives of the clients produce feedback. Sometimes they make promises and create expectations among the students (e.g., future employment). In this interaction, the clients perceive moral problems relating to giving feedback to the students, employing them, and in treating them in an impartial or fair way. In addition to this, the representatives of the clients interact with other employees inside the client organization. Demanding that they should be working for the student project is stressful for them.

Category 12: Possibility to safeguard utility by dishonesty

In this category, clients believe that their utility-based objectives could be safeguarded by not being open, by refraining from telling the truth or by being dishonest about various issues like the project task or about their attitude towards the functioning of the student group. Getting a good team for the project, keeping up the spirit of the student group, and employing students are the benefits that the clients are aiming for by refraining from telling the truth or by lying.

Presenting a shiny image of the project task to get a good team. At the task exhibition representatives of clients have 10-15 minutes for the presentation and two hours for holding a poster session and for discussing with interested students in the project learning space. During the exhibition the clients want to persuade those students who are interest in the project task to participate in the project. In that interaction, the representatives of the clients recognize a moral problem relating to truthfulness of the presentation and discussions with the students: the clients want to get a good team for their project, and it is possible to polish the image of the project task. Client C4 put it as follows:

> C4: "When we come to morals, at the phase when we were thinking about the task we had to decide to what extent to transform it … How much to oil it so that we could persuade the students in order to get a good team. And *here we stretched morality a little bit so that they would really be interested in us*, and because, we thought, we had an attractive task to offer."
> …
> C4: *"But it was more like marketing - there was not any intention (laughing) to cheat anyone, but to express with terms, which are known…"*
> ….
> The researcher: "Well, yes, does this difficulty include any moral problem?"
> C4: "To some extent in the way that *you are forced to express, well, you are a professional, you want to express yourself in the language of your profession…"*

Here, client C4 continued describing how in their branch of IT this type of hype is presented and that they did not want to take part in this. Then I asked again what made the difficulty in which they found themselves a moral problem:

> The researcher: "Yeah, well, so what makes this question a certain kind of moral problem?"
> …
> The researcher: "When you were at the task exhibition you stretched your morals a bit …"
> C4: "Scale… Well, what I tried to say was that *we used such terms and expressed ourselves using concepts, which are related to hype, to be frank with you*. We knew that it could attract people – a some kind of magnet."

Possibility to present a false image to students to get them interested in the client. The clients are interested in getting new employees and creating contacts with students who want to write a thesis for them. The clients thought that the possibility to provide the students with a better image of the client organisation to create contacts with them presented a moral problem:

> C8: … "it could be possible that the firm tried to give a false image, a better image than the reality, about itself for the students, and why not for the instructors as well … … there is the possibility, lets say that there would be an individual in a student group, and he would be recognized as very bright and, perhaps, the firm would use all the means to ensure that the student would be interested in starting as a summer trainee, or perhaps writing the thesis, and as a regular employer. There is a risk factor here, let's see, even such things as entertaining and so on. Here we can find, as well as from the things mentioned previously, seeds for moral conflicts emerging."
> The researcher: "Well, what makes it a moral conflict or a problem?"
> C8: "If, *with the help of a false image, you – so-to-speak - buy a student or influence him consciously using his weak point or something like that.*"

In summary, this category considers moral problem as relating to safeguarding beneficial aims of the clients by being dishonest towards students. The results, the image of the firm, and possible employment are in danger if the representatives of the clients openly and honestly express their thoughts to the students. The structural aspect in this category relates to making decisions about being honest and open towards students (Figure 20). The internal aspect consists of making decisions about being honest and open, and the external aspect is the co-operation between parties. The referential aspect is the inclination to safeguard utility by dishonesty.

Category 13: Making decisions related to individuals when safeguarding objectives of the project

In this category, there are moral problems relating to decisions, in which the students are the objects, and which are made to safeguard results. According to the clients, making demands on students, giving them feedback, and employing them along the project co-operation include moral problems.

Structural aspect   Category 12   *Referential aspect*

Possibility to
safeguard utility
by dishonesty

External horizon
Co-operation
between parties

Internal horizon
Making decision
relating to honesty
and openness
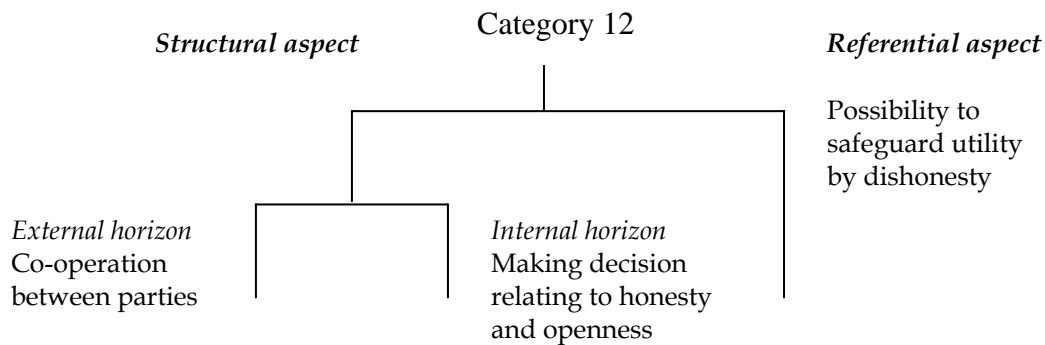
FIGURE 20   The meaning structure of the twelfth category.

Employment of students affects the functioning of the group. Employing a student or students from a group may affect negatively the functioning of the group and thereby the results of the project. Client C8 considered timing of the employment as a moral problem because employment was one aim of the project and making decisions about employment could affect the inner functioning of the student group and the results of the project:

> The researcher: "This recruitment issue you were deliberating … have there been moral problems relating to recruiting during this year?"
> C8: "Luckily, there have not been any, but there could have been because the situation was such that there is a clear goal in this matter, and how to do it when there are five individuals and they are all good ones. You cannot hire them all, and the situation is such that not all are suitable or they do not fit the needs. *How you do it neatly in the group so that it does not affect the internal functioning of the group and the final results, especially because you have to do it during the project … you have to solve this summer-job issue during February at the latest and the most critical part of the project is ahead.*"

Open feedback may negatively affect the results. Results of the project are a concern for the clients when they give feedback to the students. Client C3 considered the choice between giving feedback by telling all about his observations and giving simple feedback:

> The researcher: "Just a moment ago, you told about a situation in which you could consciously refrain or not refrain from telling … would that be a moral problem."
> C3: "Well, I do not know, well, when we started - I started to describe honesty. Well, I think that you may leave ready-made matters untold if it does not harm – of course, if it clearly starts to have harmful effects, if we think about this from a new viewpoint. *If refraining from telling clearly makes the final results better, so why, on earth, I should make it more complex? If we deliberate that we should get it straightforward, I do not consider as my duty that I should assess it the hardest way … …* I consider that my task is to build it positively with the help of assessment."

To sum up, in this category a moral problem relates to decision-making which affects both individuals and the results of the project. The structural aspect consists of decision making in co-operation with students and employees in a

client organization (Figure 21). The internal horizon of this category is the utility-based decision making relating to individuals, and the external horizon is the co-operation with students and employees.

Category 13

Structural aspect   *Referential aspect*

Making individual related decisions when safeguarding objectives of the project

External horizon   *Internal horizon*
Co-operation   Utility based
with students   decision-making
                                                relating to students

FIGURE 21   The meaning structure of the thirteenth category.

Category 14: Fulfilling clients' objectives could harm students

In this category, clients consider it as a moral problem if some of their acts harm students. Proper feedback, employment of the students, and excessive guiding of them are in some cases considered to produce harm to the students. Also students' failures during the project co-operation are considered as a risk for their future, and a representative of a client considered that the students should be protected against possible negative consequences in those cases.

Harsh feedback could harm students. Giving feedback is a sensitive task for the clients, because they want to guide and make the co-operation even better with the students as the project matures. The students are taking their first steps in their careers, so their first results are usually incomplete. When the representatives of the clients confront the students to give feedback and guidance for the incomplete results, they may face awkawrd situations in selecting ways to give feedback. They may fear that corrective/negative feedback may depress students. Additionally, the clients produce assessment papers in which they give feedback about the functioning of the student groups in the middle and at the end of the project co-operation. The clients considered it as a moral problem that by an honest feedback a client could make the students depressed or worsen their grades. Client C6 held that giving too harsh feedback might harm the students:

> The researcher: "What could you find out from the morals viewpoint relating to that kind of assessment?"
> C6: "It might come out that [a Finnish expression, which means giving straightforward and harsh feedback]. If you were unsatisfied, it would not be acceptable from the morals viewpoint or you might confront your own moral perceptions. You might not tell all that you think. *Whether one tried to be considerate or not.* Here, every one's morality affects the situation quite a lot."

The researcher: "What could those moral perceptions be? Is there any conflict here?"
C6: "In a way there might be. *It might be that you wanted to give feedback but not in that way. But then you do not have the guts to do it. You confront the morality that you should not haul people over the coals or hurt someone …*"

Employment of students makes their studies to last longer. Employing students besides their studies is considered as a moral problem because employing students makes their studies last longer. Client C5 explained that a moral problem could consist of how much the firm invests in student's studies or whether the students are regarded as just a labour force reserve or something more than that:

C5: "These moral problems emerge from the notion of how much we put our resources, *how much the firm puts its resources to finalization of their studies or whether the students are used as a labour force reserve who code from morning to evening getting a pizza as wages …* in this area there surely are many kinds of actors, a responsible firm, which acts morally right, making it possible to a some extent to finalize their studies while working by supporting their studies"

Too much guidance prevents learning. The more the student group co-operates with the client, the more benefit the client gets from the results. But this may suppress the learning aspect – just taking instructions from the client does not have the effect of teaching the students. Client C4 considered this as follows:

C4: … "if we take the other extreme, that is to say, *the firm very strongly participates, as I heard that at least once a week they have meetings, well, then we are approaching that if we do it every week, very specific way deliberate what the project is to do, then they could be working for the firm.* At worst it could be so, and then the learning issue there. *Is it learning or is it taking instructions?* You learn how to do it in firm X."

Treatment of a student employed after the project. A client confronted a moral problem relating to the treatment of students after the project. In this case, the students in the group had previously been working for the client and would continue working. The client considered that he should take care that students' possible failures in the project would not affect their treatment in the client organization after the project:

The researcher: "Okay. You described the issue, so is it, in your opinion, a moral problem?"
C6: "Yes it is. At least I think so. I do not want to be the cause – or I do not want that it is associated with me, with me as an individual, this problem, I mean. *I do not want that these individuals suffer afterwards about work probably poorly or unsuccessfully implemented by them. In this way, it is possible for me to have some influence on the matter to avoid undesirable consequences for them – at least this is my aim.* Because in this firm the results are looked at carefully. They are important here."

In summary, the structural aspect of this category consists of the decision-making relating to attaining objectives of clients in co-operation between clients and students (Figure 22). The internal horizon consists of the decision-making relating to the objectives of client, and the external horizon is the co-operation between clients and students. Thus the referential aspect is the fulfilment of clients' objectives that could harm students.

Category 14

Structural aspect   *Referential aspect*

Fulfilling clients'
objectives could
harm students

External horizon   *Internal horizon*
Co-operation   Decision-making
between client   concerning
and students   fulfilment of an
                                      objective of a client
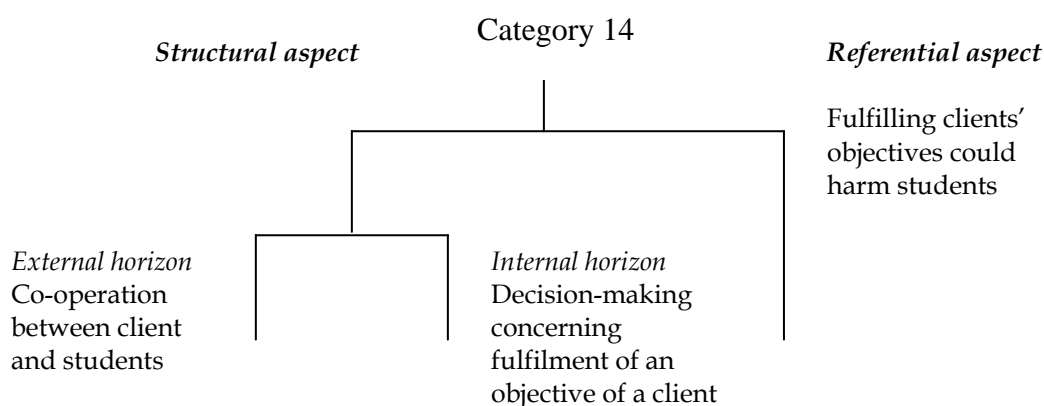
FIGURE 22   The meaning structure of the fourteenth category.

Category 15: Respecting individuals

In this category, respecting individuals by taking care of implementing duties towards them and taking care of their rights is a concern for clients. These issues relate to keeping promises, taking care that students get real-life experience in the project and feedback about their abilities, and learn to respect other individuals and parties.

Not keeping promises may negatively affect the image of the firm. Client C7 thought keeping promises is a moral problem if the promises cannot be fulfilled. If promises are not kept, it might negatively affect the image. Client C7 considered even the promises given for post-project time as binding:

> C7: "I think *it is a moral problem if you are making follow-up plans in the client's side but you do not complete them properly.* [This is] a moral problem related to the client and it may be reflected to the group in an interesting manner … motivation towards certain clients may weaken and, in that way, our popularity [will weaken]. So, it depends on the viewpoint but *it could be a some kind of promise, which perhaps makes it this a kind of [moral problem]."*

Providing students with experience of a real life project. The client may confront a decision-making situation about whether to make demands on students, who have not achieved the expected goals. The idea of providing the students with a real-life experience about project work may affect the decision. Client C6 had a student group who failed to achieve the preliminary goals of the project. The client experienced a moral problem about whether he could make demands on the students concerning the project task as there was not much time left. After deliberating about the problem, he concluded that because he was responsible for the results for the firm and because the students were to practice in a real life project, he could make higher demands. By making demands, the client tried to attain two goals: results for the firm and assurance of students getting real-life experience about the project:

C6: "Well, I do not know if there is any big moral problem at all. There is no big problem in that sense, because, at the beginning, I set the requirements for the group, or we set them at the board, in our internal discussion between the group and the client. And they were not able to produce them. Then, I had to start to make harder demands on them, *and I had this Jacob's struggle whether I would make the demands or not.* Shall I overlook this aspect: this is a student group, which takes part in a course, for them it is just studying. But simultaneously I figured that, okay, we, the firm, have paid for this, or will pay for this, all in all 50 000 marks. Yes, we want to get value for our money. *I am responsible for getting value for the money.* And this kind of internal discussion I had with myself about what should I do. Then I decided that, damn it, although they are students, they have to, it is not that they should get only the credits, *they are to practise this real project, how a real project is implemented in the real life.* And after that I started to make higher demands and I really did it. Also at the board. *I do not know if this was a moral problem regarding the group, but for me it was*, I went through with the deliberation, I pondered for a long time about what I should do."

…

C6: "And then, at that stage, I raised the bar, I know that I raised it high for the group, I squeezed the time what they had in their use, for the content, very tight, so that they did not have much time to produce good results. This issue was, as I was thinking, whether *I could make these kinds of demands about the results in this short period of time.* And this is the moral problem, to which we get after this long explanation."

Responsibilities relating to what students think about themselves and their professional skills. When the clients give feedback and assess the functioning of the student group, they may provide them with misleading beliefs and visions about their abilities. Client C18 considered this as a moral problem. He felt that they were responsible for the honest and open feedback for the students:

C18: "… and then there are other kinds of moral problems. When we are working and we have these challenges, which I have been deliberating relating to the work with the group. Well, if we say that, from our side perhaps, it looks like that responsibilities and producing results are not fairly divided, and regardless of that, [a Finnish expression, which means giving both positive and negative feedback] are divided equally. And surely it is not the client's role but it is a sort of joint, well, I have deliberated, and, well…"
The researcher: "Okay, would you tell me more about it. Is this or could this be a moral problem for a client, for example, for you?"
C18: "Yes, to my mind, it could be, indirectly, and I am not saying that I have experienced this kind of [moral problem] but in general, if, well, lets say that, in any case, *wrong beliefs and visions of the person about himself might be due to him and these could, in a way, be reflected to, well, in general, to what is one's responsibility towards individuals and towards fellow humans*, and, and towards honesty and openness. In that way, they are confronted. It is exactly like giving testimonials to people. How honest we are and how over superlative we are and how it affects one's mind and beliefs."

Respect and duties towards co-operation. Commitment is a key factor in co-operation, and it is considered as a moral problem. Commitment to a project is closely related to the prioritisation of work tasks but this category relates also to the development of employees' attitude within the client organization. This commitment may be threatened by other work tasks and busy schedules. The motive for developing commitment inside an organization is not only the utility of the co-operation but also the duties and respect towards other parties:

The researcher: "Okay, I come back to the matter, which you mentioned at the beginning. You mentioned that: did we do what was the minimum expected from us. Is this a moral problem?"

C7: "It is because it probably affects, from the client's viewpoint, the usefulness of the results because it is, in this kind of case, an essential aspect."

The researcher: "From your viewpoint?"

C7: "Yes, from our viewpoint. And, on the other hand, there are such factors, which can harm the work as a whole if, well, if the client's framework, which should be taken into [work], is defective."

The researcher: "Okay, so you mean the work as a whole. What do you mean with it?"

C7: "The results, which are created from it."

The researcher: "Yes. What makes this a moral problem?"

C7: "What makes *it a moral problem is that you have something made in a work place and there is no genuine need behind it.* I would say that it is, in worst cases, abuse by people without any obligations and responsibilities. *It sort of lacks respect.*"

The researcher: "How could this emerge in this kind of co-operation."

C7: "It emerges when there are these responsibilities, just because of hurry and you not being ready in time and not having given adequate feedback in time."

Cultural differences and respect. Two representatives of a small client (C9) organisation considered cultural differences and individuals' capability to understand each other as morally problematic issues. The project they were guiding included co-operation between a university, another educational institute and business parties. When there is little time available and the co-operating parties are unfamiliar with each other at the beginning of the joint venture, too much time may be spent on introducing parties to each other. That process should be made faster. But if there is no will to make compromises, co-operation will suffer. A moral problem relating to cultural differences in the project co-operation is based on respect or probable lack of respect towards other parties. If the parties do not respect each other and are not open towards each other, co-operation suffers. In this way, this category includes utility aspects (efficient work, objectives of a joint venture), but the main concern in this moral problem is the respect towards other parties in the co-operation:

The researcher: "What makes this, in your mind, a moral question or, well, you spoke about culture related needs."

C9a: "*It is about respect*"

C9b: "It comes back to respecting a human being and to a certain kind of openness, that is to say, *a certain kind of moral conflict or something like it may be born because one may not have enough abilities when confronting other people but one starts strictly from one's own background when participating in the co-operation. It is about making compromises and particularly it is about respecting the other party.*"

The researcher: "Yeah."

C9b: "The moral questions are found in this axis."

The researcher: "You mentioned previously that in the case in which you had not succeeded in this matter there might have emerged moral or ethical problems – if you had been forced to hide or, or just interact with someone, so what other consequences there might have been."

C9b: "Well, one can say simply that if we think about this project work as a whole, satisfactory co-operation would have been prevented or made difficult. The question is about this. But when there is little time and actors are unfamiliar with each other and they even come as groups from different cultures, so one has to find the common ground. And if lots of time is spent on, as people do when watching a native tribe that has come to live at the border of their territory. So, the time is spent in that way,

that is to say, you have to quicken the adaptation and finding each other. This is the focal question here."

Client C14 considered it as a moral problem when a situation develops in which co-operating parties (students and clients) do not understand each other and something should be done for the problem:

> The researcher: "… what else comes to your mind about moral problems as a client."
> C14: "If I say that we have been slightly, perhaps I could use the word disorganized (laughing) from the client's party. I think that sometimes I feel that it has been good that we have tried to summarize, or, well, well I have tried to emphasize that, for example, from our part as a client in relation to the project group so that they really understand each other, and, and about what we are talking and so on. This has perhaps been a certain kind of a moral problem that, well, how we, lets say that it is a moral problem or a wild card in some occasions that…"
> The researcher: "You mean, understanding each other."
> C14: "Yes, lets say that working habits and, and, and timetables and so on are related to it."
> The researcher: "Yes, well, what makes it a moral problem"
> C14: "Perhaps, it is caused, well, there is no sort of clear, perhaps the issue that there is no clear that, for example, a conflict about technical issues or technical implementation or implementing the *content there is something, you notice that there is something in that people just do not understand each other for some reason. Lets say, I do not mean that there would be any quarrels or anything like that but they are on a different wavelength or something like that.*"
> The researcher: "Yes, I see."
> C14: "*This becomes a moral issue at the stage when one becomes aware of that there is this kind of problem and wonders how one should relate to it.*"

Loyalty towards co-operating parties. Client C6 thought that criticising other parties after the project co-operation is a moral problem. According to him by criticising other parties one shows disloyalty towards them:

> The researcher: "It was at the end of March when it was finished. So, when we think about the future from that point forward, well, looking somewhere into the near future, are there any moral problems or issues worth noticing when we think about it from the viewpoint of future, the product, or…"
> …
> C6: "*… no-one should criticize others behind their backs afterwards, so it is a question about loyalty.*"
> The researcher: "So, you said that about all the parties?"
> C6: "Yes, both us and the students and instructors, alike."
> … …
> The researcher: "So, is this a moral problem or an issue worth noticing?"
> C6: "I do think so, it is both. *It is an issue worth noticing which you have to take into account and everyone should take care not to act that way. And if you don't, is has become a problem.*"

In summary, this category is concerned about fulfilling duties towards the students and taking care of their rights. The structural aspect consists of decision relating to fulfilling a duty or preserving a right in co-operation between clients and students (Figure 23). The internal horizon of this category is the decision relating fulfilling one's duty, and the external horizon is the co-operation between clients and students.

Category 15

Structural aspect   *Referential aspect*

Fulfilling duties
towards students
and taking care of
their rights

External horizon   *Internal horizon*
Co-operation   Decision relating
between clients   fulfilling duty or
and students   preserving students'
                                       rights
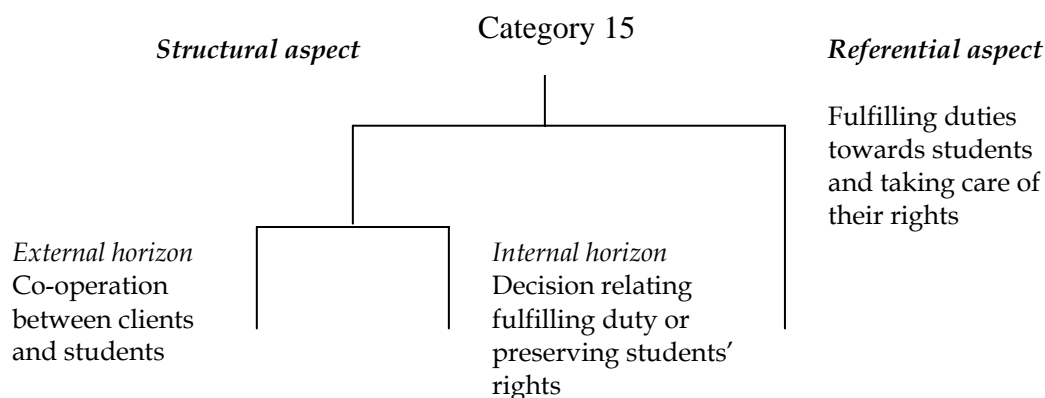
FIGURE 23   The meaning structure of the fifteenth category.

Category 16: Treating students in a just way

In this category, moral problems relate to impartial and equal treatment of individuals in a student group. Representatives of clients consider that there are moral problems relating to fair treatment of students in day-to-day interaction with them, assessing their work and process, and in selecting students for employment.

Impartial treatment of students. The clients consider impartial treatment of the students as a moral problem. Impartial treatment may take place, for example, when communicating with the more extrovert students at the expense of the more introvert students. According to a representative of a client, opportunities should be offered equally to all students; likewise usage of students' knowledge should be equal:

> The researcher: "Well, yeah, other moral problems?"
> C7: "Well, of course, the word comes up everywhere, well, during the work, equal treatment of the group members, or providing them with equal opportunities and equally among all group members and utilizing know-how [of the students] is very important, and surely this is the place of learning for us. When there are, in the group, a couple of more active and extrovert [than the others] members, communication was with them in those events when we had got together. And there was very much young energy, abilities and will to put one's resources to the work in them, that is to say, it would be right that the representatives of the clients would support and encourage all group members. Here we have something to learn about how to encourage the quiet ones in communication and help bringing them out."
> The researcher: "Is this a moral problem?"
> C7: "It could be created here also, that is to say, *organizations' virtues include that all are provided with opportunities and everyone is supported and if you purposefully act against this, then it would be a moral problem.*"

The question about providing equal opportunities to students was raised by client C4. He wondered if a job or opportunity to write a thesis should be offered to every group member or just for the student to whom the client is attracted:

C4: "Well, is it then that, well, for example, *a summer job is offered just to one group member or should it be offered, should we provide equal opportunities in the group?* ...provide all group members an opportunity to do the thesis about the matter or should one grab the one whom the client is attracted to?"

Enough knowledge to give statements in assessments. The clients consider it as a moral problem if they had enough knowledge to give feedback in the middle and final assessments. There is a physical distance between the clients and the students who implement their project work mostly at the university where they have a room for their use. Because the clients do not observe the students in their everyday work, the clients feel uncertainty when writing middle and final assessments. Client C21 described the problem as follows:

The researcher: "Well, how about the middle assessment, which was at Christmas time. Could there be any moral problems, any issues worth noticing?"
C21: "There are, from our viewpoint and, perhaps, perhaps, from the university's viewpoint about how adequate the knowledge we have is about how they really have worked. There is [description relating to a short distance between the client and students] distance here but it means that *we do not see how they really do their work. When we write a middle assessment then it would be right to really know what these people do. Here we are speaking about the fact that one's mug affects it even when one does not really know about these issues.* And it may be morally wrong towards an individual if his delivery in presentations is not the best possible in these meetings or if he has a restless personality or if he is a little bit nervous, then the assessment may not be correct."

The selection of employed students. The criteria for employment and time of decision-making concerning the employment were considered as moral problems. Group members may have quite equal capabilities and selecting one of them and giving arguments for the selection may be difficult tasks. Client C16 considered it hard to explain to other students why a student was employed. Client C8 considered it as a moral problem when a situation arose in which it was revealed that an employed student had given misleading information when employed. Client C5 viewed it as a moral problem if a skilled student is not employed but another student – probably outside the group – is employed, and the reason for not employing the skilled student was the poor performance of the group:

The researcher: "Is this a moral problem or could it become one?"
C5: "Yes, it can be, at least in a situation when, lets say that, *if you have had poor time with the group and this individual has not necessarily been guilty for it and because of that [poor co-operation with the group] you refrain from employing him although he was more skilled than someone other, who is employed.* Then it is a moral problem."

To sum up this category, just and fair treatment of students is considered a moral problem. The structural aspect consists of decision about how to treat students in co-operation between clients and students (Figure 24). The rnternal horizon in this category is the treatment of students, and the external horizon is the co-operation with students. Thus, the referential aspect relates to treating students in a just way.

8 MORAL CONFLICTS PERCEIVED BY STUDENTS

Twenty-four categories relating to moral conflicts perceived by students were identified (Table 14). All these categories are comprised of referential and structural aspects. Thirteen referential aspects (what-aspects) were found from the descriptions of moral problems: societal problems, relationships with other groups, considering parties dependent on the client, usage of university resources, formal issues in project work, assessment, information handling, objectives of clients, commitment and prioritisation, assigning work tasks, intervening in fellow-student's actions, conflicts of interests inside the group, and behaviour towards clients and university instructors. These thirteen aspects can be abstracted to three distinct aspects: moral problems related to outside parties, the project, and interpersonal issues (rows in Table 14). These thirteen aspects are also referred to later in this study as themes of moral conflicts.

Three structural aspects (how aspects) were found from the moral conflicts. The structural aspects formulate a progressive developmental continuum from doing-wrong moral conflicts (doing the wrong) to other-directed moral conflicts (maintaining relationships and justice) (columns in Table 14).

In the following sections, the categories are presented in the following order: outside-parties, project-level and interpersonal moral conflicts.

8.1 Outside parties

In this section, moral conflicts relating to outside parties, namely to society, other groups, parties dependent on clients and on university are considered.

TABLE 14   Categories of moral conflicts perceived by students

		DOING-WRONG	OTHER-DIRECTED	
		Doing-wrong	Maintaining relationships	Justice
OTHER PARTIES	Societal problems	1. Inclination to piracy	2. Taking into account societal problems in project work	
	Relationships with other groups	3. Possibility to stab other group in the back	4. Taking other groups into account	5. Dividing project tasks equally
	Considering parties dependent on the client		6. Taking into account parties dependent on or affected by the client	
PROJECT	Usage of resources	7. Inclination to use university resources for own purposes	8. Fulfilling duties related to university resources	
	Formal issues in project work	9. Dishonesty in formal issues	10. Fulfilling project formalities in accordance with rules	11. Equality in booking of hours
	Assessment		12. Openness about the problems	13. Just grading among group members
	Information handling	14. Carelessness in protecting confidential information	15. Taking care of confidential information	
	Objectives of clients		16. Fulfilling duties relating to objectives of client	
	Commitment and prioritisation	17. Inclination to avoid fulfilling one's duties	18. Allocating time resources	19. Students' equal commitment to the project
INTERPERSONAL	Assigning work tasks		20. Taking into account individuals when assigning work tasks	
	Intervening in fellow-student's actions		21. Intervening in someone's actions	
	Conflicts of interests	22. Possibility to intrigue for one's own interests		23. Equal distribution of gifts
	Behaviour towards clients and university instructors		24. Honesty and ways of interaction with clients and instructors	

8.1.1 Societal problems

In this section, categories relate to taking into account societal problems in project work. The societal problems, which emerged from students' diaries, were preserving natural resources, piracy, and a morally questionable business line of a client. In category 1, there is an inclination to partake in a form of a societal problem, piracy, while in category 2, students deliberate how they should relate to societal problems in project work.

Category 1: Inclination to piracy

Some students confessed that they had conducted unauthorized copying of software during the project. According to students that I interviewed, copying of installation CD-ROMs is usual in these groups. Group G1 wrote in their diary

> From the university we got many software programs, which we liked to use at home, too. *We pondered whether it is wrong to copy these programs to a home computer, if we use them also for the project work.*

The following text consists of notes taken when interviewing two representatives of group G1 (tape recording was not possible):

- Software worth hundreds of thousands marks. We have copied *a part of them*
- *This does not harm anyone. We do not feel guilty about this – we have not lost sleep over this.*
- If the client organization gets to know this, it certainly would not do any good [to us].
- We will keep the software after the project.
- Some groups copy software systematically

As the above notes suggests, copying software is a common activity among students. When I asked group G5 about unauthorized copying of software, they confessed that they had taken installation CD-ROM's home and that it was not an ethical problem for them:

> S1: "No one discussed this … *everyone took them home (laughter) It surely was not a hard ethical problem for us.* You can fuck it - no one is interested about it."
> S2: "Similarly, the question relating to that we produced [the results] with [name of a software program] license, which belonged to the department. We produced for commercial usage. In principle, it is the same issue – if you are allowed to produce it with the license. In the license, it says that it is not for commercial usage."

To sum up, this category is concerned about the inclination to produce illegal copies of software (referential aspect). The structural aspect of this category consists of decision making about producing illegal copies (Figure 25). The internal horizon of this category is the decision making about making illegal copies, and the external horizon is the group work.

Category 1

Structural aspect

Referential aspect
Inclination to
piracy

External horizon
Software
producer,
student group

Internal horizon
Decision making
about making illegal
copies

FIGURE 25   The meaning structure of the first category.

Category 2: Taking into account societal problems in project work

In this category, the students considered societal problems and how they should relate to them as a moral conflict. The societal problems in question were preserving natural resources, questionable business line of a client, and intellectual property rights.

Preserving natural resources. Student S5 was concerned about preserving natural resources in project work. Printing of documents results in huge amount of paper, and his group tried to limit the resulting amount of paper waste as follows:

> In our project, *we have aimed to spare natural resources as well as possible.* We have printed as few documents as possible – despite this, there is a terrible amount of print. Fortunately, the paper is recycled. In addition to this, we have reused the same papers by printing on the reverse sides (whenever the paper was originally printed as single sided).

Questionable line of business of a client. Group G2 considered the business line of their client questionable. In that business line, according to students, weaker people are in danger and employee burn-outs are caused by assigning unreasonable number of work tasks for them. The students were bewildered about the effects of decisions made by an individual:

> The business line of the client of [name of the project group] is questionable. … one is able to destroy and seize firms, which would be capable of surviving…. On the one hand, *for us as a project group, do we want to work in favour of creating a society based on ownership and speculation?* … suffering is caused to the weak … and the rest of the employees are made to burn out by assigning unreasonable number of work tasks for them. … This question has parallels in an industry developing equipment for armed forces. One has to earn one's living from somewhere, and someone will construct the system if I do not do it. How much influence can a private individual exert with his or her choices?
> Issue: Justice
> Parties: [a name of a party], workers, employer

Honouring intellectual property rights. Honouring intellectual property rights was concern for students who confronted a decision-making situation, in which they had to deliberate about the usage of software produced by other party. The group G2 needed to test a software program to decide whether it would be useful for the purposes of their project. Copying software for testing is illegal, but the group members wondered whether piracy, in this case, should be allowed anyway:

> To contribute to the research and work in this project, we need a part of commercial software, which cannot be acquired just for testing purposes. To get this very expensive source code for testing purposes is not possible, but on the one hand, it does not pay to acquire if it is not useful for the project itself. *Would piracy and unauthorized usage of the code be acceptable in this case?* No one should be compelled to buy [software] which one is not able to test. On the other hand, the law protects copyrights, although an unauthorized tester is a strong candidate for buying the code if it clearly appears to be useful.

To sum up, this category is concerned about taking into account societal problems in project work (referential aspect). The structural aspect of this category consists of decision making about a societal problem (Figure 26). The internal horizon of this category is the decision making about making a decision, and the external horizon is the project work in a society.
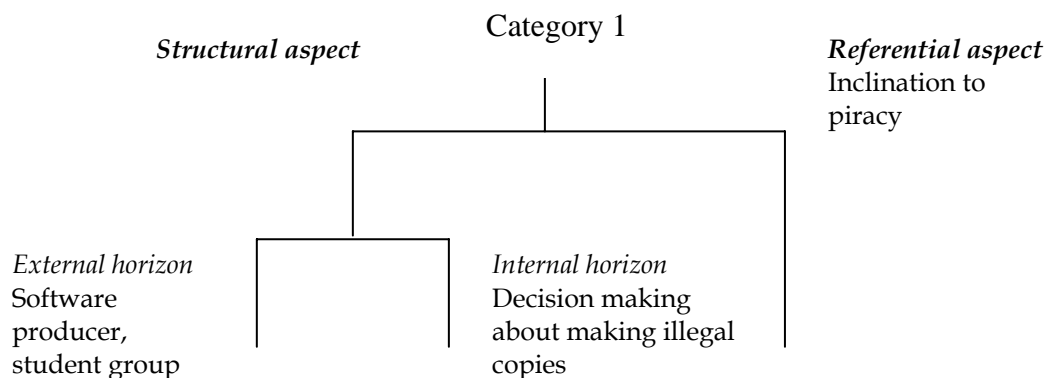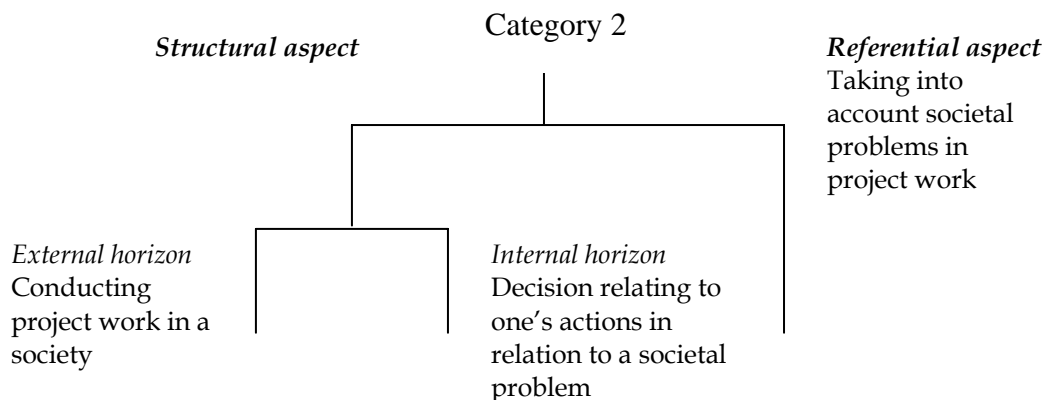

FIGURE 26   The meaning structure of the second category.

8.1.2 Relationships with other groups

In this section, categories relating to relationships between student groups are considered. In category 3, moral conflict relates to possibility to stab other group in the back, in category 4, taking other groups into account, and in category 5, dividing project tasks equally among groups.

Category 3: Possibility to stab other group in the back

In this category, which is based on a student's response in a questionnaire, it is possible for students to stab the other group in the back. The students in a group noticed that every user in the university network was able to read other group's documents – including the contract and the results of their project. A student stated in his response to a questionnaire that they could have stabbed the group in the back (in the following extract Agoranet means the local area network in the Agora building):

> Our group noticed ca. one month before the end of the course that all the parties having an account in Agoranet were able to read the results of a group. The project contract/the project plan and the results were found. We told this to a member of that particular group, who was completely astonished. We were open about the issue. *The other possibility would have been to stab the group in the back. This kind of data protection problem would have been a very serious issue…*

To sum up, this category is concerned about the possibility to stab another group in the back (referential aspect). The structural aspect of this category consists of decision making about stabbing other group in the back at the university environment (Figure 27). The internal horizon of this category is the decision making about the stabbing, and the external horizon is the relationships with other groups at the university.
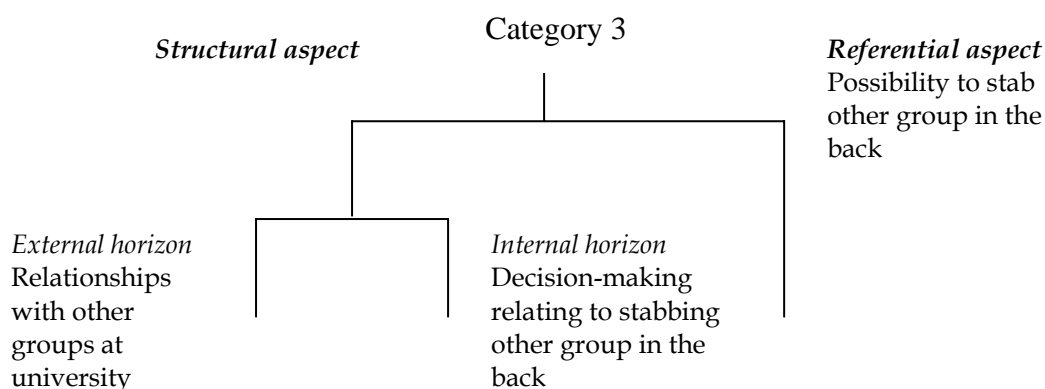
FIGURE 27   The meaning structure of the third category.

Category 4: Taking other groups into account

This category, which is based on a student's statement in his diary, considers a moral conflict in taking into account other groups: how one should relate to them? Student S13 analysed how he should relate to the other groups while his fellow-students considered them as scoundrels or competitors. The student deliberated how he should react to the other groups when observing them to steal staff from the project space, and how to react to his group members who

spoke ill about other groups. The student expressed concern about co-operation in his diary:

> When reading about other [students'] personal expectations some thoughts about ethicality were raised. They wrote that other groups are scoundrels and thieves, on which one should keep a close eye. On the other hand someone wrote that they are competitors - and we have to do better than them. I do not know how to react to these arguments. No reasons for them were given. In addition to this, a competitive attitude is not good for the community spirit.
> …
> Third, *I am not sure what kind of stand I should take when communicating with those other groups* (scoundrel, competitor, co-operator – the category of the third group member or is it my own category). In fact, this web includes very many ethical problems!
> 1. *How to consider other groups* (competitor, friend)
> 2. *How to communicate with other groups* (e.g., correcting if one observes that they steal staff or smiling as if one did not observe it at all)
> 3. *How to communicate about other groups to one's own group* (defending, judging)
> 4. *How to give reasons for one's arguments* (are ethical reasons enough as reasons for one's comments)
> 5. *What reasons one should demand from one's group members in case they presented negative arguments about other groups.*

To sum up, this category is concerned about how to take other groups into account (referential aspect). The structural aspect of this category consists of how to take other groups into account at university (Figure 28). The internal horizon of this category is the decision making about taking other groups into account, and the external horizon is the relationships with other groups at university.
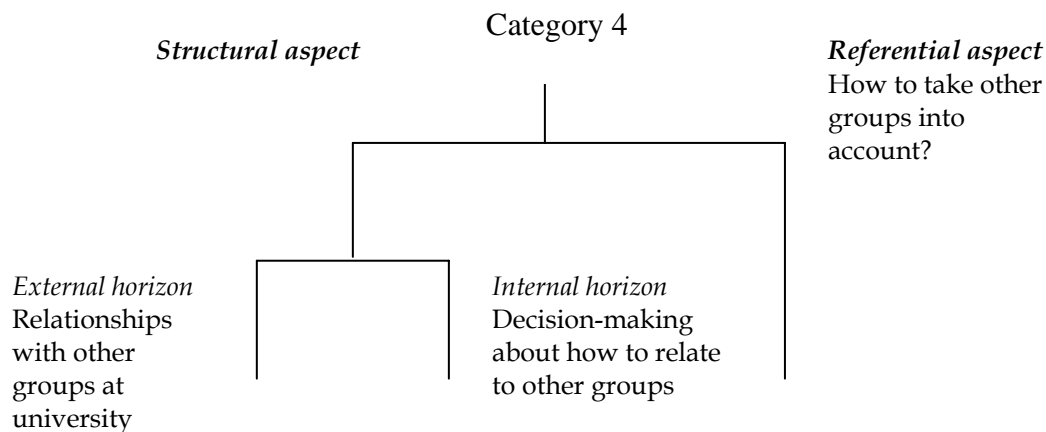

FIGURE 28   The meaning structure of the fourth category.

Category 5: Dividing project tasks equally

In this category, which is based on a student's statement in his diary, the moral conflict of distributing project tasks equally is presented. Clients present their project tasks for students during the task exhibition at the beginning of the DP

course, and after that the students are to divide the project tasks among themselves. The allocation of project tasks in a just way was perceived very difficult, because many groups strove after the same tasks, and it seemed that a satisfying resolution was impossible. According to student S5, it was noticed that some clients had fixed the groups with some students beforehand although it was contrary to the rules of the co-operation. The student documented in detail the actions relating to allocating the project tasks. According to him, the allocation of the project tasks in the way that every one would be satisfied could be possible only in an ideal situation. Before the allocation of tasks began, the S5's group decided to propose a system: each group was to put forward three or four of their favourite alternatives, which would be published to other groups, and then they would together negotiate about the tasks. This way, according to S5, utilitarianism – doing good for every one, as much as it was possible - could be put into practice:

> Our group has deliberated about a proper way to divide the tasks. *It is hard to determine a method in which each group would be treated in a just way and every one would get a satisfying task.* In fact, we concluded that it would be possible only in an ideal situation. Unfortunately, such an ideal situation never exists in the real life. The allocation has to be conducted in a way that a satisfactory outcome is achieved for as many groups as possible, and, hopefully, that there would be no group with a very undesirable end result. We decided to propose a system in which each group would suggest three or four of their favourite alternatives. The results are written for the public view and we would then deliberate on what to do. If all goes well, after the first phase some tasks could be allocated. Our method is based on utilitarianism, in which the goal is to do good for as many as possible. (S5)

During a break, after the first negotiations, the student wrote to his diary about injustice in distributing the project tasks: the injustice was based on the fact that some tasks were pre-allocated to certain groups, although the leading instructor had proclaimed that no pre-allocation had been done. According to student S5, the pre-allocation could be observed from some clients' poorly planned and implemented presentations during the task exhibition:

> I cannot claim that the whole situation would have been nice and just. There were groups who had major advantages related to the project tasks! Who wants to put themselves forward knowing that there are two purpose-made tasks for certain [students]! No one wants to take part in that kind of project because the client surely does not want any other group. We should get rid of these kinds of connections. Although [the leading instructor] said that there are preliminary divisions, it was rubbish! You could observe it from the presentations of the representatives of the clients. They did not seem interested in showing the best sides of their own tasks. They did not talk clearly, in order not to arouse interest and, in a case, there was no-one, who would know about the task, at present! Additionally, hallway discussions did not leave any room for guesswork about this. (S5)

Because of the situation, the student stated that they should strive egoistically for their own favourites.

> It is hard to invent a solution with which everyone could be satisfied. *It is quite clear in any case, that not every one can win.* Therefore ethical deliberation is important, and –simultaneously, though - determining right answers is impossible! *Now, I feel that,*

we, as a group, have to start fighting – [a Finnish phrase meaning that one acts egoistically]. The other group must be made to choose the third option, so that at least some justice emerges. (S5)

The student concluded that usage of Rawls' veil of ignorance[6] could have been useful in the project task allocation. Producing resolutions without any connections to any firms could have made the distribution of the project tasks much easier:

Now, it would have very much helped if we had been behind the veil of ignorance. Without knowledge about the firm – about connections and other things. It would have definitely made the situation easier, likewise during the group formation when there was no information about the tasks. Something has been learned from the previous years but there is very much to develop in this respect! (S5)

To sum up, this category is concerned about dividing project tasks equally among groups (referential aspect). The structural aspect of this category consists of making decisions relating to dividing project tasks with other groups (Figure 29). The internal horizon of this category is the decision making about dividing project tasks, and the external horizon is the co-operation with other groups at university.

Category 5

Structural aspect

Referential aspect
Dividing project
tasks equally

External horizon
Co-operation
with other
groups at
university

Internal horizon
Making decisions
relating to dividing
project tasks equally
among groups
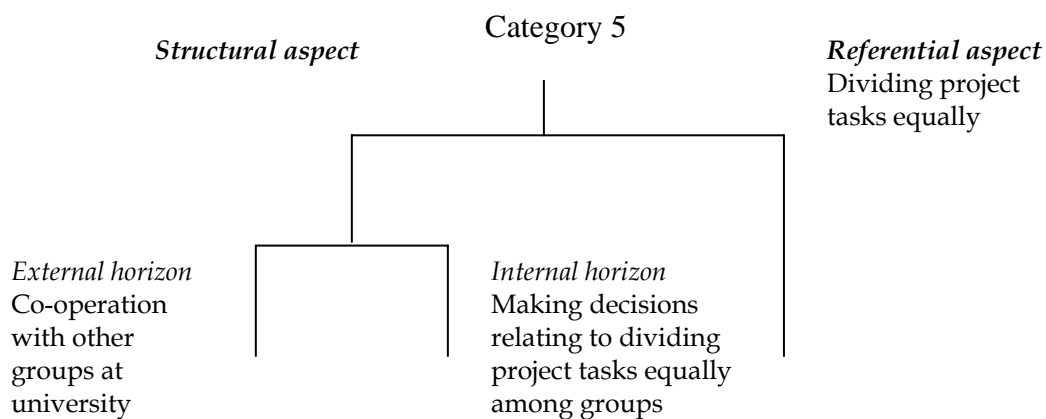
FIGURE 29   The meaning structure of the fifth category.

8.1.3 Considering parties dependent on the client

This section deals with a category relating to parties dependent on the representatives of clients.

---

[6]   Rawls' (1971) veil of ignorance is a method to attain a social contract in society. Participants are gathered to an imagined negotiation, in which they are not aware of who they are in real life and what their personal interests are. Participants negotiate about societal contract and each of them has veto rights to the resolution.

Category 6: Taking into account parties dependent on client

In this category, students take into account parties that are dependent on representatives of clients. The parties, which emerged in the students' diaries, were the employees of the client organizations and a wife of a representative of a client. Students considered, from the moral viewpoint, the possible harmful consequences of their acts towards these parties.

Privacy protection vs. vanishing of information. Group G6 confronted a moral conflict when they analysed and wrote a report about their findings: protecting individuals' privacy would mean loss of information from the final report. Getting useful results of the project was thus in conflict with protecting employees of the organization. The group was forced to formulate the report carefully:

> The group intended to gather information about the current status of the client organization by interviewing [tens of individuals]. The identities of the interviewees and their personal opinions were not to be presented in the analysis produced for the client. This was promised to all the interviewees so that they could openly express themselves. In the analysis and during the writing of the report, *the group considered it difficult to express the content of the interviews in the report in a way that the privacy of the interviewees could be protected and the information expressed during these interviews would not vanish.*
> Phase: Study phase, interviews
> The issue: Confidentiality, privacy protection, vanishing of information
> Parties: The project group, client (G6)

Responsibility towards a wife of a representative of a client. Student S10 considered that they were responsible for the wife of their client during an event in a nightclub at the end of project:

> The evening climaxed with [name of a happening] in the nightclub of the hotel where our client stayed overnight … during that night our actions might have been a little bit immoral; *perhaps we young ones were responsible for the wife of our client for her probable blunders.*

To sum up, this category is concerned about taking into account parties dependent on client (referential aspect). The structural aspect of this category consists of making decisions, which affect the parties dependent on the client, during the project co-operation (Figure 30). The internal horizon of this category is the decision making, which could affect the dependent parties, and the external horizon is the co-operation with clients and parties dependent on the client.

Category 6

Structural aspect

Referential aspect
Taking into
account parties
dependent on
client

External horizon
Co-operation
with clients and
parties
dependent on
the client

Internal horizon
Making decisions,
which affect the
parties dependent
on the client
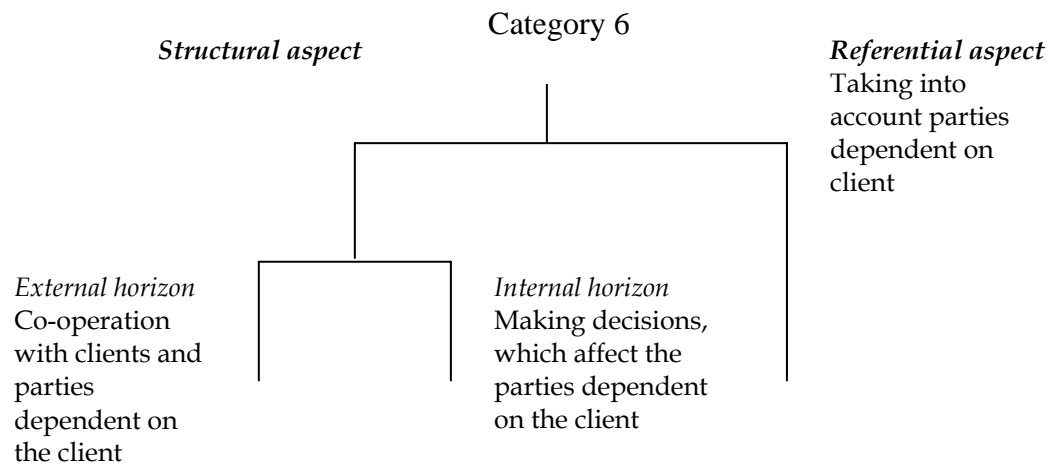
FIGURE 30   The meaning structure of the sixth category.

8.2 Project-level moral conflicts

In this section, project level moral conflicts are presented.

8.2.1 Usage of resources

In this section, categories relate to the usage of university resources in the project space. In category 7, students deliberated about abuse of university resources, and in category 8, they were concerned about responsibilities in handling those resources.

Category 7: Inclination to use university resources for one's own purposes

In this category, students perceive moral conflicts in using university resources for other purposes than what they are meant for, namely for purposes based on self-interest. There is a confrontation between self-interest and responsible use of resources.

Usage of university resources. The students considered that the usage of the university resources, like copy machines, printers, and telephones, include moral conflicts relating to the inclination to use those resources for their own purposes. The resources were available at the project space, as a student described in his response to a questionnaire:

> The group had a copy machine, a telephone and a colour printer in its use. *The free usage of resources brought along the moral questions. (Usage of copy machine and telephone for one's own purposes, etc.)* (A response from a questionnaire form)

Students were tempted to use those resources for their own purposes, like student S3 who described his decision as follows:

… second, *you should not use the printer for other purposes than for the purposes of the project.* (S3)

Student S6 wrote in his diary that each group was given 500 Finnish marks (ca. 85 Euros) "petty cash" to make purchases. The student noticed that they could use the money for other than project purposes:

> 500 marks were allocated for each project group. This was the only time when the project group – with the leadership of the project manager - was able to decide for its own financial matters. The group was allowed to use its own judgment in spending the money. *Of course, this made it possible to use the money for other than project purposes.* (S6)

To sum up, according to this category, students are inclined to use university resources for their own purposes (referential aspect). The structural aspect of this category consists of making decisions about the usage of university resources for one's own purposes (Figure 31). The internal horizon of this category is the decision making about using the resources for the purposes of the project or for one's own purposes, and the external horizon is the existence of the student group in the university environment.

Category 7

Structural aspect

Referential aspect
Inclination to use university resources for one's own purposes

External horizon
Existence of the student group in the university environment

Internal horizon
Deciding about the usage of university resources for purposes of the project or one's own purposes
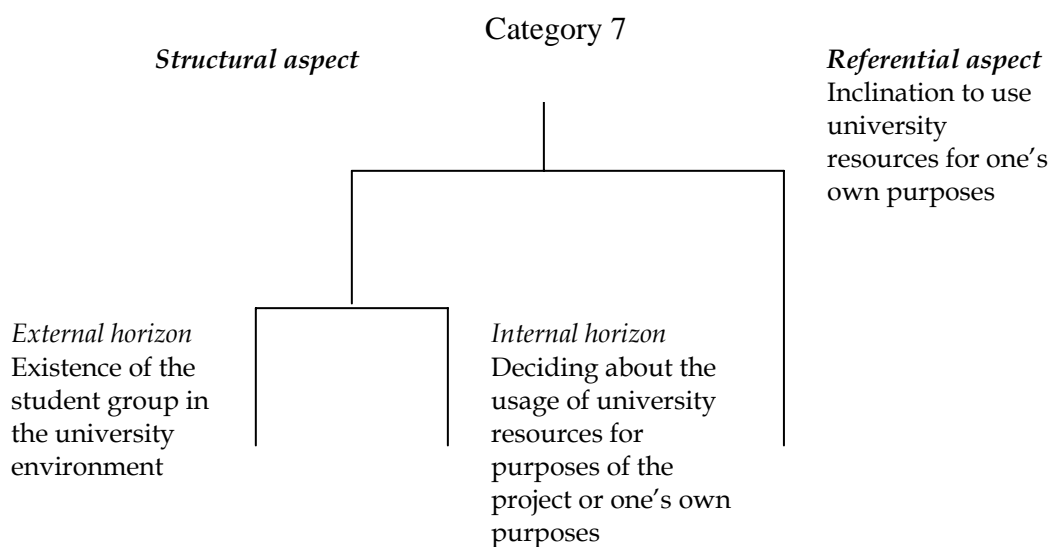
FIGURE 31   The meaning structure of the seventh category.

Category 8: Fulfilling duties related to university resources

In this category, which is based on a statement of student group G5, the moral conflict relates to taking care of the university resources. The group deliberated about whether they had to report viruses to the technical support. They decided not to do so:

> A group member had received an email including a file, which was saved on the hard drive. There was a virus in the file, but it did not have time to cause any harm. *We wondered whether we should have reported the virus to the computing centre.* We did not report it.
> The phase: Analysis phase
> The issue: Security, data recording
> Parties: The project group, a member of the project group, computing central (G5)

To sum up, in this category, students deliberate about their duties relating to university resources (referential aspect). The structural aspect of this category consists of making decisions about the protection of university resources (Figure 32). The internal horizon of this category is the decision making about fulfilling duties relating to the protection of university resources, and the external horizon is the existence of the student group in the university environment.
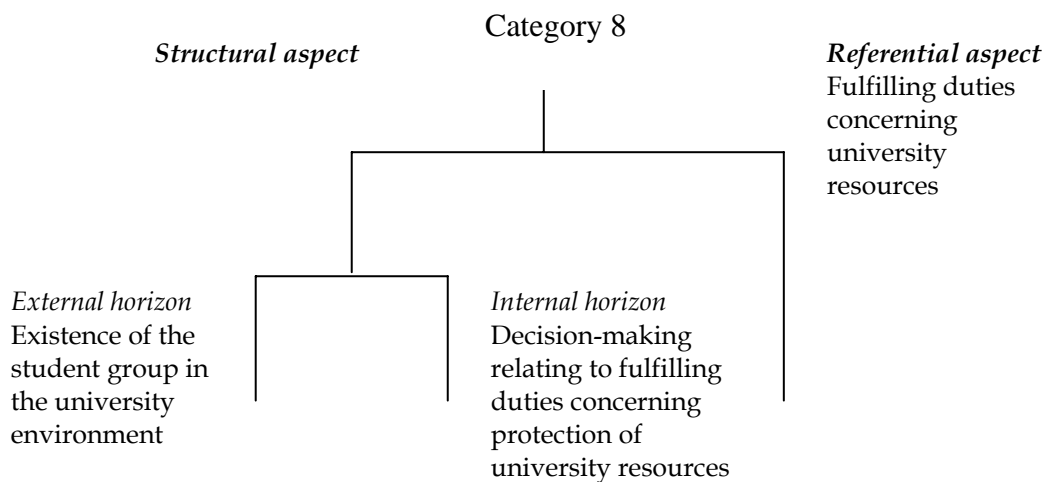
FIGURE 32   The meaning structure of the eighth category.

8.2.2 Project work formalities

In this section, categories relate to project work formalities. Category 9 considers dishonesty in formal issues, category 10 deals with fulfilling project formalities in accordance with rules, and category 11 is about equality issues in bookings of hours.

Category 9: Dishonesty in formal issues

In this category, the students confessed that they had conducted presumably immoral acts or genuinely immoral acts in formal issues. Dishonesty in the booking of hours and plagiarism in project plans were mentioned.

   Plagiarism. Student S12 stated that they perhaps did morally wrong when they copied frameworks of plans of groups from the previous years. They applied the completed frameworks as far as possible:

The rest of the week was spent producing different plans – I was responsible for producing the communications and phase plans. *Perhaps it was morally wrong to use the plans from the previous years* (i.e. to copy them) in the way that we did, but we thought we had no other option. We copied the frameworks and applied them into our project so that they at the end included ideas of our own. Producing these kinds of plans is relatively difficult particularly if one does not have any previous experience. (S12)

False information in booking of hours. Group G1 confessed that they had falsified information in the booking of hours:

> *From time to time the project group added the booking of hours with invented information to make it conform to the university time limits.*
> Phase: All phases
> The problem: Dishonesty
> The parties: The project group (G1)

To sum up, in this category, students deliberate about doing presumably wrong in project work formalities (referential aspect). The structural aspect of this category consists of making decisions about the project formalities (Figure 33). The internal horizon of this category is the decision making about doing wrong in formal issues and the external horizon is the project work at university environment.

Structural aspect

Category 9

Referential aspect
Dishonesty in
formal issues

External horizon
Project work at
university
environment

Internal horizon
Making a decision
about doing wrong
in formal issues
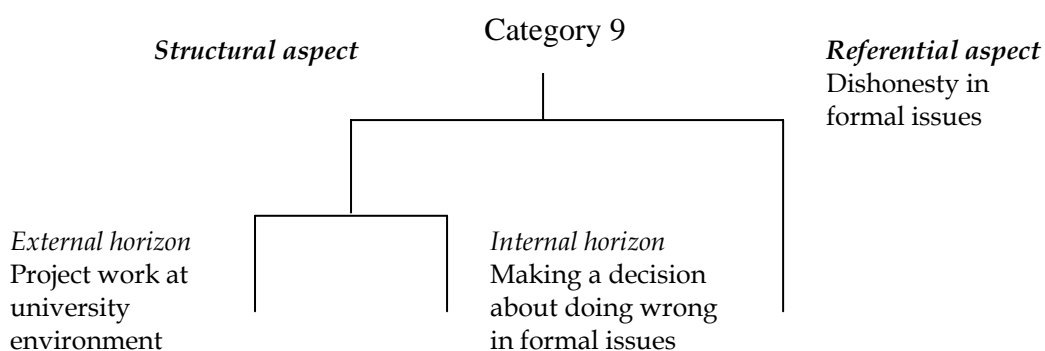
FIGURE 33   The meaning structure of the ninth category.

Category 10: Fulfilling project formalities in accordance with rules

In this category, students were bewildered about fulfilling project formalities in accordance with rules. Should these formalities be fulfilled strictly, or is some kind of laxness accepted? The project formalities in question were the booking of hours and the routines of board meetings.

Booking of hours. Student S8 noticed that the hours reserved for a phase were exceeded, and he thought about whether he should reduce his own hours or tell the truth about having exceeded the hours. He decided to choose the middle course from these two alternatives:

> When I read the records in the booking of hours I noticed that hours reserved for a phase were considerably exceeded. *I keep on thinking whether I should decrease my own hours, for which I have worked very hard to make them stick nicely to the timetable. Or, should I be open about it and face a rebuke? Between these two alternatives I chose the middle way.*
> Phase: Survey phase
> Theme: Honesty
> Parties: Group members, Client, University staff (S8)

Student S3 thought about whether he should book the time he used for learning basic skills. He concluded that all the hours spent in learning new skills couldn't be booked:

> … although it indirectly benefits the project by accumulating skills, not all accumulation of one's own skills can be booked into the project time (S3)

Student S6 deliberated on whether it is acceptable to change the content of the records of a board meeting afterwards:

> Is it right to change the records of a board meeting afterwards, given that all board members agreed to remove certain sections from the records? (S6)

To sum up, in this category, students deliberate about fulfilling project formalities in accordance with rules (referential aspect). The structural aspect of this category consists of making decisions about following rules of project co-operation (Figure 34). The internal horizon of this category is the decision making about doing wrong in formal issues and the external horizon is the project co-operation between students, clients, and university.

Category 10

Structural aspect

Referential aspect
Fulfilling project formalities in accordance with rules

External horizon
Project co-operation between students, clients, and university

Internal horizon
Decision-making about following rules of project formalities
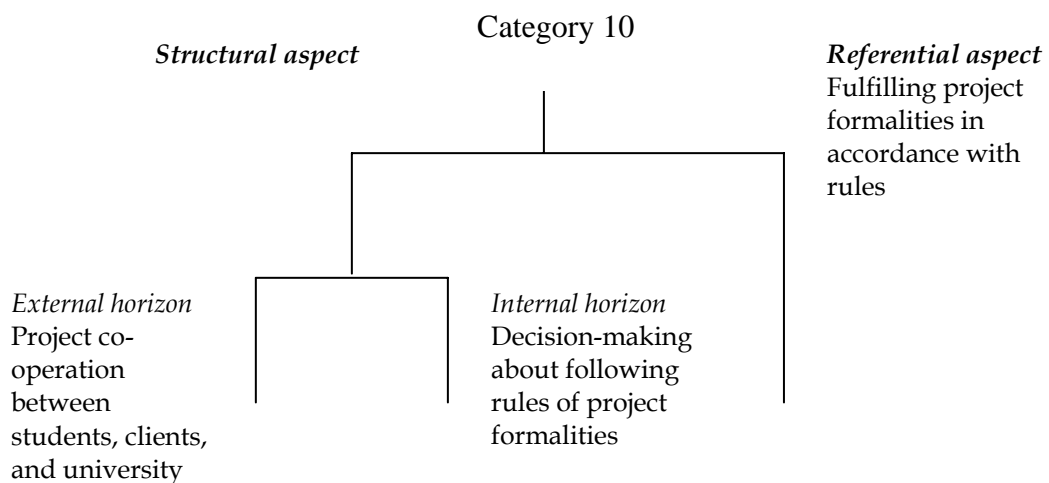
FIGURE 34   The meaning structure of the tenth category.

Category 11: Equality in booking of hours

In this category, equality issues in booking of hours were raised. Implementation of work tasks may demand different amounts of time from students, i.e., there may be a divergence in students' efficiency, but still each student is required to use 400 hours for the project. Student S13 told in his diary about disagreement with his fellow-student about the booking of hours and quality of his work (students could use 300 hours for conducting project work for the client, and 100 hours for reflection and learning):

> *[A name of a student] did the least amount of hours compared to other students, ca. 280 hours. This was a consequence of his holiday and inclination not to do a single hour above the 400 hours. Of course, we others were not happy l to do overtime, but someone had to do it to complete this project. Afterwards this feels unfair.* [The name of the student] gave arguments for sticking to his guns: that he is more efficient than others. I think this was not the case, at least when compared to me, because the time spent bore no relation to the quality. Many times [the name of a student] fulfilled his duties quickly and efficiently, but often the details were found wanting. In addition to this, I think he is not qualified to compare his own performance with our performance. (S13)

To sum up, in this category, students deliberate about equality in booking of hours (referential aspect). The structural aspect of this category consists of making decisions about equal usage of time with fellow-students (Figure 35). The internal horizon of this category is the decision making about the usage of time, and the external horizon is the project work with fellow-students.

Category 11

Structural aspect

Referential aspect
Equality in
booking of hours

External horizon
Project work
with fellow-
students

Internal horizon
Making decisions
about equal usage of
time
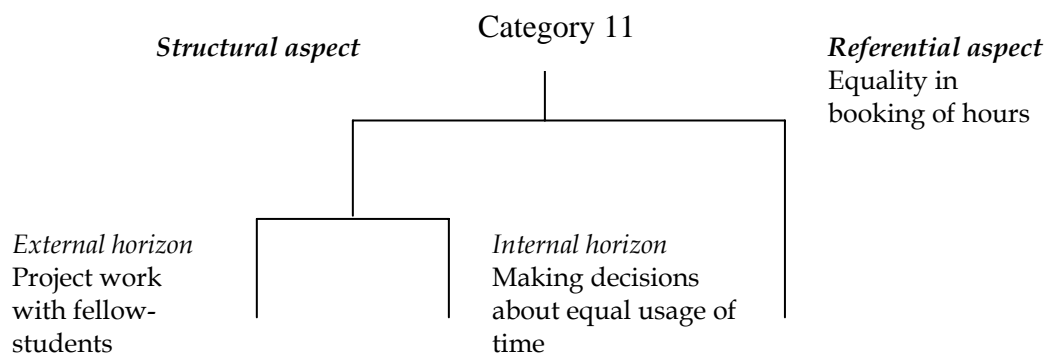
FIGURE 35   The meaning structure of the eleventh category.

8.2.3 Assessment

In this section, students perceived moral conflicts relating to assessing the project work. Category 12 considers honesty and openness about the problems, and category 13 considers equal grading among students.

Category 12: Openness about the problems

Openness in assessment was a moral concern for some students. Bringing up problematic issues with the instructors seemed to be difficult for the students, because of probable undesirable consequences. The problems inside the group may be considered so unimportant that disclosing them is considered unnecessary.

Undesirable consequences from honesty. For example, student S5 thought that the co-operation inside the group was not satisfactory and that to make it better, they should highlight problems in co-operation during the middle-assessment. He feared that he would be stigmatised as a too critical person and that he might be too critical towards his group:

> This week has been very tiring. I am getting tired of the ability of our group to conduct work tasks as a group. The group members get along well with each other, but we do not succeed in conducting work tasks as a group. This week we tried to have a group meeting, but it did not succeed. The goal was to produce a middle assessment together. At the beginning it looked nice, but then our thoughts started wandering and we started to discuss other issues. This was frustrating. I have tried to talk to the group members that it would be important for us to be able to co-operate and do it efficiently. For some reason the other group members do not consider this as important to our development as I do. I will bring up this in the middle assessment, because, I think, this is the most important focus of development in our group. I hope that I get the others to understand this. *Yet, I do not know how I should present this matter so that I would not criticise our group unnecessarily in front of outsiders.* I do not want that the group members consider me as too critical. (S5)

Disclosing the problem is unnecessary. Student S1 confessed that he was not fully honest in the final assessment because he did not reveal the real state of the relationship between him and another student (the other student had done something wrong towards student S1). S1 thought that because he had a problem with only one student and as problems with colleagues are not rare, he ended up not revealing his problem:

> From my part, my feelings are conflicting – no one knows what happened between another group member and me during the winter and how it affected our relationship (frozen). … *On the one hand, it might have been questionable to hide the information, but on the other hand it did not affect the results of the project.* Thus, I can confess that in my own final assessment I was not totally honest when I assessed relationships between group members. On the other hand, I had the problem with just one group member and, surely, in any working place, one cannot get along with every one. (S1)

To sum up, in this category, students deliberate about openness about problems in project work towards instructors (referential aspect). The structural aspect of this category consists of making decisions about telling openly about the problems in project work to instructors (Figure 36). The internal horizon of this category is the decision making about telling about the problems, and the external horizon is the project work at university environment.

Category 12

Structural aspect

Referential aspect
Openness about
problems

External horizon
Project work at
university
environment

Internal horizon
Making decision
about telling openly
about problems

FIGURE 36   The meaning structure of the twelfth category.

Category 13: Just grading among group members

In this category, just grading was considered morally problematic because the assessment considers not only the group as a whole but also the group members. The morality of different grades, when every one's contribution is essential, was raised - likewise the moral problem relating to equal grading in case that all group members were not committed to co-operation.

Student S13 described a discussion with his fellow-student, who considered the outcome of the assessment to be unfair when taking into account the real commitment of group members. The student had wanted quite different grades for his fellow-students:

> *An ethical problem: [a name of a student] had three possibilities to express his disagreement about equality of the grades in the group.* 1. During the final assessment meeting, when [the leading instructor] asked about it. 2. When we produced a separate paper about a matter that all have worked equally in the group. … 3. When the grades were published … He would have wanted that *[a name of a student]* and I would have had the best grades, then he, and then *[two names of students].* (S13)

A student responded in the questionnaire that part of the student group might disagree with group members' grades but they were tired to fight the matter:

> An inner problem in the group could be thought of as group disagreeing about the group members' grades but being tired of fighting the matter. A compromise is the result.

Student S2 deliberated about the problem of different grades assigned to group members: on the one hand each group member was thought to play a significant role in the group, but on the other hand there were differences in their commitments to the project, and those differences affected the group spirit. The following extract from student S2's diary reflects the problem:

> … we started to produce the final assessment as a groupwork. This raised a discussion about grades, because *most of the group members considered that one of the group members did not deserve the same grade as the others.* The issue was discussed and

we made the decision that the issue would not be taken further. However, the instructors had observed the same thing, because the final "judgment" was similar to that we had discussed. *Perhaps it is wrong to put group members to an unequal position after a half-year-work, particularly because everyone's contribution was unique,* but this is the way it is. If we had been wiser, we would have addressed the problem [….] when we observed it, and thus, we would have avoided this kind of discussion. *But it is self-evident that different working habits and schedules dampen the group spirit.* About this matter we achieved some kind of mutual understanding and as we do not hate each other, the issue is perhaps resolved. (S2)

To sum up, in this category, students deliberate about just grading among group members (referential aspect). The structural aspect of this category consists of grading students' project work in a just way (Figure 37). The internal horizon of this category is the decision making about grades, and the external horizon is the project work at university environment.
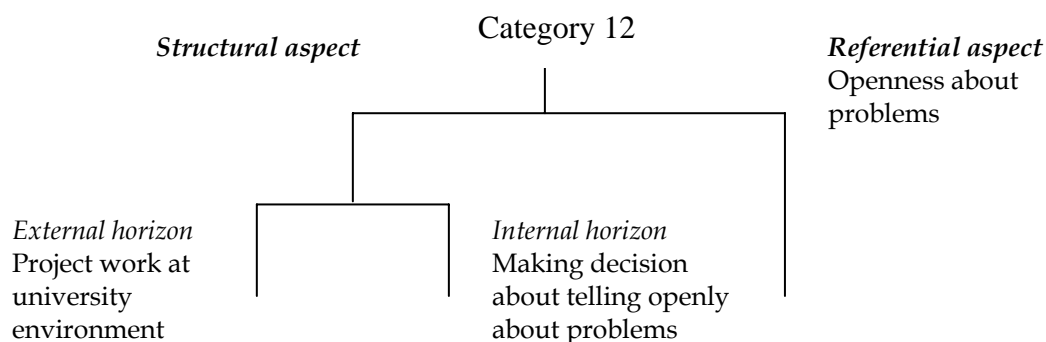

FIGURE 37   The meaning structure of the thirteenth category.

8.2.4 Information handling

In this section, categories relate to handling confidential information. Category 14 considers laziness in protecting confidential information, and category 15 considers fulfilling duties relating to objectives of clients.

Category 14: Carelessness in protecting confidential information

In this category, students show concern for the protection of confidential information but they may be careless in implementing their concern. According to the students' statements confidential information may leak to outside parties if email falls into the wrong hands or if students talk about confidential issues in public places.

   Email cracking. Confidential information sent via email creates uncertainty. Usage of so-called agents in Lotus Notes groupware is an easy way to handle emails, but emails sent outside from Lotus Notes are not protected. Group G5 considered it as a moral conflict somewhere between laziness in creating a solution and protection of confidential information.

Security of Lotus Notes is quite a puzzle for us. Lotus Notes, as such, is secure, in terms of the properties of electronic mail, but the way we use electronic mail creates a security problem. In Notes we have created an agent, which forwards the mail sent to the group to every one's personal addresses. Electronic mail inside Notes is well protected, but if the message is sent by the agent outside Notes, according to our understanding, the situation changes dramatically. *The electronic mail may be confidential, so something should be done.* On the one hand, *the question is whether we bother to seek a solution for the issue.* The easiest way would be to refrain from using the unreliable agent, but on the other hand, it makes the handling of electronic mail easy. (G4)

Disclosing confidential information. According to student S9 adhering to a confidentiality agreement is in practice hard, because, for example, discussions started in the project room tend to continue in the university canteen. During student parties, the issues of clients are discussed more or less publicly:

Many times it has happened that the group has continued client-related discussions, which were started in the room of the group, in a canteen full of people. Sometimes the discussed issues have been very general, but surely someone has occasionally slipped out something confidential. *The group members are obligated by the confidentiality contract, but following it seems to be hard, in practice.* This is not a problem for our group, but, as I have heard, during the Christmas party of the student association, issues of many clients were discussed more or less publicly with the support of beer.

To sum up, in this category, students deliberate about carelessness in protection of confidential information (referential aspect). The structural aspect of this category consists of decision-making about protecting confidential information in co-operation with clients and student groups at university environment (Figure 38). The internal horizon of this category is the decision making about protecting confidential information, and the external horizon is the project work at university environment.
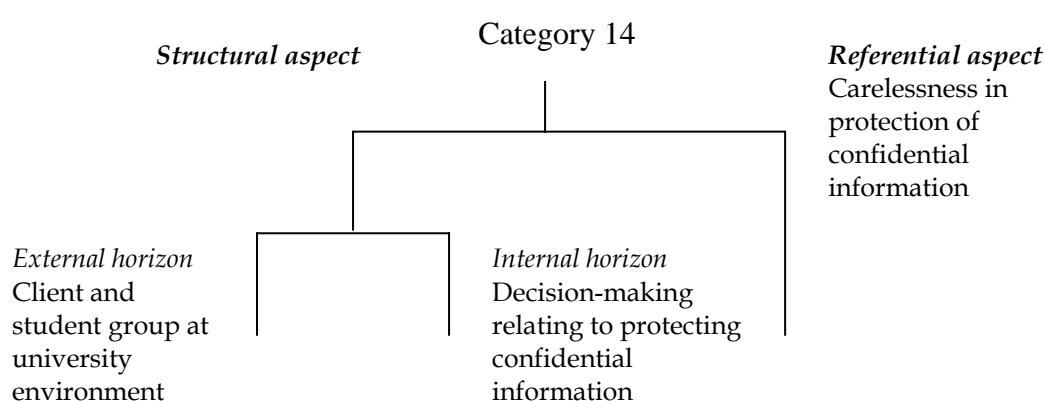

FIGURE 38   The meaning structure of the fourteenth category.

Category 15: Taking care of confidential information

In this category, taking care of secrecy of information is a concern for students. Accountability issues and taking care of duties relating to confidentiality are another concern for students.

Accountability questions. Relating to technical support of the department, the students were concerned about their accountability whenever confidential information stored on computers might have been leaked to outside parties through backups of servers. A student group deliberated about the problem as follows:

> Backups have been produced of the confidential content of the project server – there is no information about the fate of those backups. The project group has signed a confidentiality contract, which obliges them to remove any confidential material. *Can the students be blamed for breaking the contract if the backups get to wrong hands?*
> The issue: Security
> The parties: Students, university, client

In the above it is alleged that the content of the servers was open to outside parties. Project servers were also operated by an outside software house, which maintained the groupware software in the server. The trustworthiness of the software house was raised:

> In the first board meeting the question was raised *concerning trusting laboratory engineers and an outside [name of a software house], which is able to get access to the documents of the project software application while its members have not signed the confidentiality contract relating to this project.* During the same event we discussed this problem from a larger perspective in our field.
> Phase: Planning of service
> Issue: Confidentiality
> Parties: Group, Client and outside actors of the project (S6)

Co-operation between groups and confidentiality. The student groups are encouraged to co-operate with each other, for example, by comparing their working methods and arranging brainstorming sessions. Student S3 confronted a moral conflict when a student from their "synergy group" asked him what kind of education their client offered. The student did not know what he was allowed to talk about with other students, so he ignored the question. He confronted a similar situation with his friends. The non-disclosure agreement forbid him to disclose confidential information, but it was hard for him to understand what were the issues under the ban. The following two extracts from his diary illustrate the problems he confronted:

> Of course, you cannot discuss everything with one's synergy group, because the contract binds us to keep things secret. *Sometimes it is hard to grasp what is confidential and what is not.* Once I was seized up when members of the synergy group asked about the education of our group. I only answered that, yes, we are being educated, and I moved to another subject. Regarding the whole project I took the attitude that I should not discuss project-related issues with any other people than with my own group members and instructors. I know that this is overcautious but because I had no experience about confidentiality in software production, I took the contract literally. (S3)

> My best and trustworthy pals ask about my task and about what I am doing. Contracts have now been signed but, in principle, the system is already clear. Shall I tell or not? I know that the information will not spread out but I do not dare to talk about anything else except about our task. (S3)

As the latter extract points out, the student's closest friends may ask him about the project task, and although he trusts them, he does not disclose anything but the title of the project task.

To sum up, in this category, students deliberate about fulfilling duties related to taking care of secret information (referential aspect). The structural aspect of this category consists of making decisions about taking care of secret information in project co-operation (Figure 39). The internal horizon of this category is the decision making about taking care of secret information, and the external horizon is the project co-operation with clients and parties at university.

Category 15

Structural aspect

Referential aspect
Taking care of client's secret information

External horizon
Project co-operation with clients and parties at university

Internal horizon
Making decisions about taking care of secret information
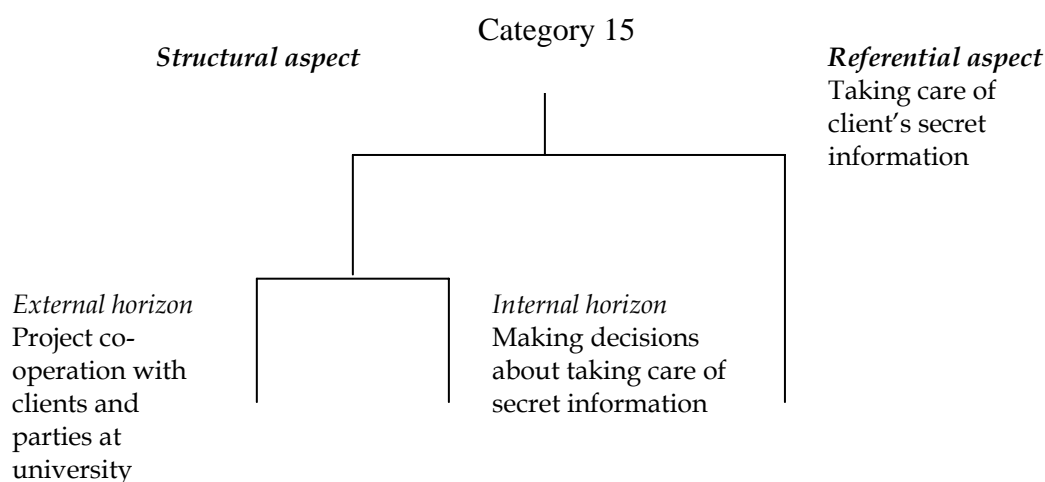
FIGURE 39   The meaning structure of the fifteenth category.

8.2.5 Objectives of clients

In this section, there is a category about fulfilling duties relating to objectives of clients.

Category 16: Fulfilling duties relating to objectives of clients

In this category, moral conflicts relate to students' duties to fulfil objectives of clients. The production of the results may include conflicts of interests between the groups and clients. Some students are bewildered about how they should relate to clients who just aim to benefit from the co-operation.

Conflicts of interests between student groups and their clients. Objectives of the clients and students conflict sometimes. The clients' aim to benefit from the project co-operation, and the students' aim to learn new abilities during the project may clash. Student S6 observed that their aim to learn new technologies

would not be most efficient for the client. To use equipment known to the students would be the most beneficial way for the client. The moral conflict in this case relates to the conflict between learning new abilities and what is best for the client:

> The project group should select the development equipment, with which the application is produced. The existing infrastructure of the client offers two alternatives: a platform of [name of software producer and software] or the software is produced in [name of software]. Of the group members, three quarters have worked with [name of software]. Two students' feel themselves to be at a level in which they would like to learn something else than [name of the software]. The group is obligated to produce a reasoned proposal about the implementation environment. *Could the group members' wishes affect the choice of the development environment – particularly if it would be undoubtedly useful for the client to use the environment about which the group has the best experience?*
> Phase: Planning of the service
> Issue: Conflict of interest
> Parties: The group & Client (S6)

A student group may attain results, which might not be agreeable to the client. For example, the results may be contrary to the client's expectations. The students are forced to think about what to do then:

> The students group has attained results, which will not be agreeable to the client -> what shall we do? (Questionnaire response)

How to relate to a client, who aims to benefit. For some students, relating to clients, who just want to benefit from the co-operation, was troublesome:

> How to relate to clients who only want to benefit from the project or who at the early stages start employing students? (Questionnaire response)

As the extract above illustrates, the students do not know how to relate to a client, who just wants to benefit from the co-operation. Another student held the view that they, as a student group, should have been able to test their abilities during the course, but instead, they were forced to struggle with improper organization of the whole project (e.g., lack of management) and absence of formal ways of working. According to this student, the attitude of the group started to deteriorate when they understood that the cause for their participation in the larger joint venture was based on finance and idealism. The student considered that they had confronted a moral conflict, in which they had to deliberate on how to relate to their client:

> III. The client's questionable attitude towards us vs. our attitude towards them. Analysis: (parties and their duties, utility and general rights). Parties: us, client. Our duty is to work for the client. [Here there is a Finnish expression, which means struggling hard]. We did not get any utility but just a headache. As our general right we should have been able to test our skills that we have learned so far. However, this was not possible, and there were many reasons for it. The whole organization was unfit for its purpose. This dawned upon us little by little. The project had no management and there were no ways of interaction between the network actors. The procedures changed all the time (it was obligatory). Additionally, the client did not understand [member's co-operation] duties towards us. *Our attitude started to*

deteriorate when we understood that we took part in [the project] partly because of finance and partly because of idealism and ignorance. The ethical problem was about how we should consider this. (attitude problem)

To sum up, in this category, students deliberate about fulfilling duties related to objectives of clients (referential aspect). The structural aspect of this category consists of making decisions about fulfilling objectives of clients during the project co-operation (Figure 40). The internal horizon of this category is the decision making about fulfilling duties related to objectives of clients, and the external horizon is the project co-operation with clients and parties at university.

Category 16

Structural aspect

Referential aspect
Fulfilling duties related to objectives of clients

External horizon
Project co-operation with clients and parties at university

Internal horizon
Making decisions about fulfilling duties related to objectives of clients
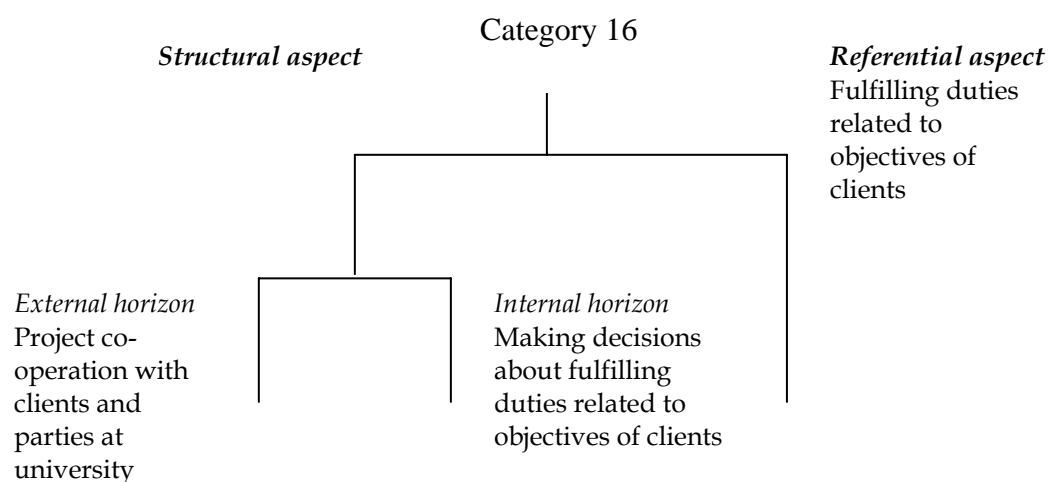
FIGURE 40   The meaning structure of the sixteenth category.

8.2.6 Commitment and prioritisation

In this section, categories relate to commitment to one's work tasks and prioritisation issues between work tasks and other things. Category 17 considers the inclination to avoid fulfilling one's duties, category 18 considers prioritising between work tasks and other goings, and category 19 considers students' equal commitment to project.

Category 17: Inclination to avoid fulfilling one's duties

In this category, students consider that there is an inclination to avoid work tasks and fulfilment of one's duties in project work. In some groups, the students observed other students avoiding tedious work tasks, guidance meetings and project managers' meetings.

Student S7, who considered himself committed to the project, was morally bewildered about his group because his uncommitted fellow-students tried to get him to do certain work tasks:

> To my mind, it is not right that other group members appealed to my commitment to the project and asked me to take part in the meeting because I think that I have been the most committed group member in our group …. *Do these group members still have the right to refrain from carrying out certain responsibilities (for example, guidance meeting and project managers' meeting)?* (S7)

Student S8 stated that some of his fellow-students try to avoid work tasks:

> I have noticed that within our group the level of commitment varies. They do not want to pick up the baton, and many of them seem keen to avoid work tasks. (S8)

To sum up, in this category, students deliberate about inclination to avoid fulfilling one's duties (referential aspect). The structural aspect of this category consists of making decisions about fulfilling one's duties inside the student group (Figure 41). The internal horizon of this category is about making decisions regarding fulfilling one's duties, and the external horizon is the student group.
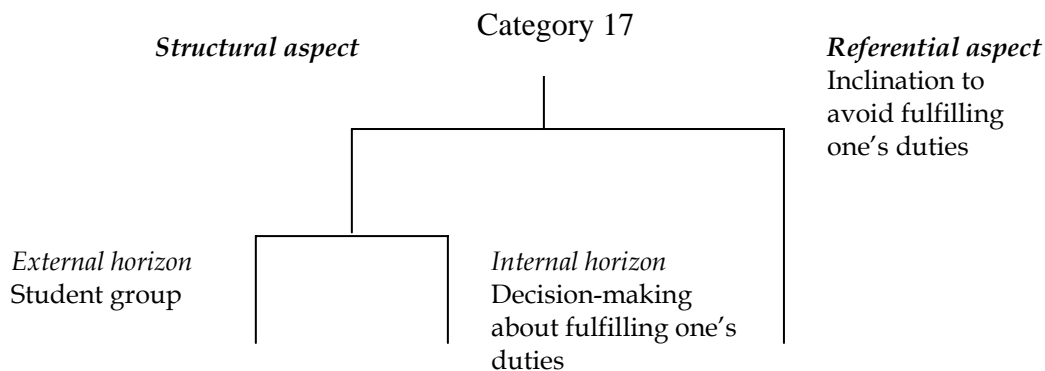
FIGURE 41   The meaning structure of the seventeenth category.

Category 18: Prioritisation between work tasks and other things

In this category, students confronted moral conflicts relating to allocation of time resources required for work tasks with other things like other courses and requirements in private life. Some students talked about growing tired and feeling burnt out.

Work tasks and other things. Student S8 considered his position towards fellow-students' and towards his own time resources morally problematic. The student tried to decide whether he should take care of the work tasks that others were not willing to handle. The student reflected upon the issue twice in his diary:

> We are having some troubles. The project is not getting off the ground. We agree about the project manager's and secretary's turns. In the first round, I will be the secretary. Our project manager leaves for a holiday and I know that we are going to have some trouble if no-one starts taking care of his work. I have plenty to do outside

the project, and *I am not willing to sacrifice all my free time for the project just because there is no agreement. Am I doing the wrong thing?*
Phase: Starting phase
Issue: Justice
Parties: Group members
…
I can see that others are having busy time because of their overloaded activities outside the project. In principle, I would have time to lighten their workload if I used my own free time for it, which I need to keep my head in a consistent state. *I do not offer my help but I suggest that they themselves should lighten their private activities.*
Phase: Perhaps all phases.
Issue: Supporting
Parties: Group members (S8)

Work tasks and growing tired. Implementing work tasks and growing tired were of ethical concern for the students, who perceived that implementing too many work tasks might make one tired. Student S3 talked about his capabilities to implement work tasks when, as shown from the following text, every one in the group had busied themselves with work tasks. The student was worried about whether he was of any use for the group, but after implementing some work tasks he concluded that he was entitled to the membership of his group:

> You do not want to let your group down. Everything proceeds at a great pace– you feel compelled to do something. I feel that some are doing too much. *One must learn to say that one doesn't have time, and to be honest about one's abilities – otherwise one burns out.*
> …
> The project managers are nominated, work seems to become more clear. On Friday we were still completely at sea, but now we have started to get grasp on our work. The brochure is in a good condition – I produced the templates and other things. *I feel that I am entitled to take part in the group – I have racked my brains about whether I am useful.* (S3)

Student S13 experienced tiredness and depression due to the workload in the project and responsibilities about the content of the plans. The student deliberated about the relationship between working and getting tired:

> An ethical question here is about *what is the relationship between working and one's own state [ie., getting tired].* After a board meeting I felt depressed for at least two days, and, consequently, I was absent from work. Partially due to this there was sudden overtime work, which completely tired me out. Plus the fact that no one seemed to appreciate my work at all. In fact, no one else apart from the project manager knew how much responsibility over the plans I had. There must be some kind of a problem here, because I had to get depressed and be absent from work. I do not know if it is a question of ethical problem if the fundamental problem relates to one's state and self-knowledge, to taking care of oneself and to the need to be appreciated or feeling left out of it [appreciation]: there is no positive feedback from any one. The client praised the project plan and our work. In spite of that, I would have wanted that, for example, the project manager had thanked me personally, but, instead, he just asked me to stay for overtime also for the Tuesday evening (S13).

To sum up, in this category, students deliberate about prioritization of work tasks and other matters (referential aspect). The structural aspect of this category consists of making prioritization decisions about project work (Figure

156

42). The internal horizon of this category consists of making prioritization decisions, and the external horizon is the student group.

Category 18

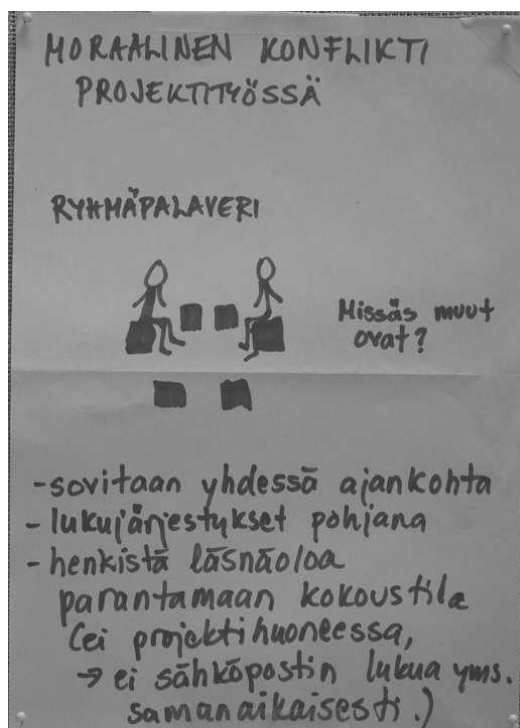**Structural aspect**

Referential aspect
Prioritisation
about work tasks
and other matters

External horizon
Student group

Internal horizon
Making
prioritisation
decisions

FIGURE 42   The meaning structure of the eighteenth category.

Category 19: Equal commitment to the project

In this category, students consider group members' unequal commitment as a moral conflict. Two students stated in their response to a questionnaire that within the group there might be differences in the commitment to the project. Some students are busier than the others, and it affects the management of work tasks and timetables:

> Inside the group: inequality
> - others are more busy
> - others have more time
> - others are more committed (questionnaire response)
>
> The Development Project course is very hard, and it is very tedious to complete other courses/to work simultaneously. *It would be fair if all the group members allocated the same amount of their resources to the project* - instead of gathering other works/courses to make their burden heavier and scheduling more difficult. (questionnaire response)

The preceding problem is seen in a drawing (see Figure 43), which describes a group meeting attended by only two students. The moral conflict relating to commitment can be interpreted from the drawing. Every one should attend the meetings and they should be mentally present during those meetings. The title in the drawing is "Moral conflict in project work". The students deliberate: "Where are the others?" The rest of the text is as follows: "The timing [of the group meeting] is agreed upon together; based on schedules; mental presence to make the meeting more satisfactory; ([the meeting is] not to be arranged in the project room, -> no simultaneous email reading, etc."

Student S5 in his diary thought about the group members' and his own commitment to the project. His view was that others should not suffer because of his private activities but he also thought that others should likewise be committed to the project:

FIGURE 43   Student's drawing about a moral conflict in project work.

> The other group members should not suffer too much because of my activities. The work must be done. I also expect that other group members are ready to agree with this and that they are sufficiently committed to the project. (S5)

To sum up, in this category, students deliberate about equal commitment to project work (referential aspect). The structural aspect of this category consists of making decisions in one's commitment to project work in a student group (Figure 44). The internal horizon of this category is about making decisions of one's commitment, and the external horizon is the student group.

8.3   Interpersonal moral conflicts

In this section, interpersonal moral conflicts are considered and they relate to assigning work tasks, intervening in fellow-students' actions, conflicts of interests, and behaviour towards clients and instructors.

8.3.1 Assigning work tasks

In this section, there is a category related to assigning work tasks. It deals with taking individuals into account when assigning work tasks.
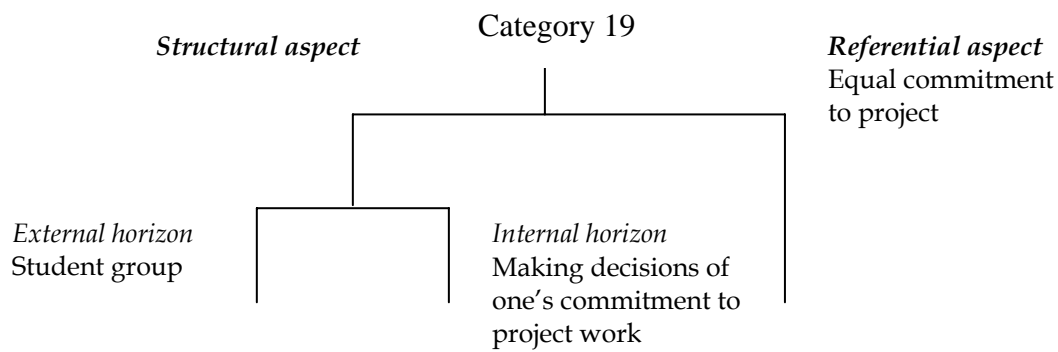
Category 19

Structural aspect

Referential aspect
Equal commitment
to project

External horizon
Student group

Internal horizon
Making decisions of
one's commitment to
project work

FIGURE 44   The meaning structure of the nineteenth category.

Category 20: Taking individuals into account in assigning work tasks

In this category, students with the role of a project manager are concerned about fellow-students to whom they assign work tasks. Fellow-students' capabilities to complete assigned work tasks, their other activities, which may conflict with work tasks, and efficiency questions are the concern for these students.

Fellow-student's capability to complete a work task. The project managers confronted moral conflicts between a fellow-student's capability to complete a work task and the need for getting the job done. Student S2, in the project manager's role, confronted a moral conflict relating to assigning a work task to a fellow-student, whose ability to complete the task was in doubt. On the one hand he thought, for the sake of honesty, he probably should tell the student about his concern, although telling the truth might wound him. On the other hand, if he assigned the work task to him without taking any precautions, he might endanger the project:

> If inside the group there is a person, whom one does not believe to be competent for a task, to what theory one can lean on? *If one is honest and tells the particular person about it - as a consequence, he either understands the concern or gets hurt. If one does not reveal one's preoccupations but allocates the task to a person* (for example, in a situation, in which he is the only available person)**,** *it may go wrong, or then again, it may succeed.*
> One is not duty bound to blindly trust the other group member. The duty (if we are thinking about the project manager) is to have a good look at the project, putting it in motion with the given resources. If the person described in the previous paragraph is not suitable for the task, one just has to calmly assess the risk one takes in allocating the task to him.
> Thinking this way, the project is prioritised upon available human resources. Of course, only persons, who are best fit to proceed with these work tasks, are taken into a project. (S2)

The problem described above was also experienced by student S11, who considered himself as incapable of taking the responsibility for programming because it could lead to a situation, in which other group members would feel

compelled to advice him and fix the errors later. The student had confronted a decision-making situation, in which his duty to take part in all work tasks was in conflict with probably undesirable consequences of undertaking certain work tasks:

> I could have declined from programming, because our group members asked me whether I wanted to program or not. However, I did not dare to transfer my part of the work to someone else, although, in that way, some time savings could have been made. I know that others will be forced to advice me and fix the bugs in my code later. *Evidently it would have been my moral duty to refuse from programming, but on the other hand, the duty-based ethics cause conflict because I understand that I am obligated to take part in every phase of the project like all the other group members.* (S11)

Student S6, when in the project manager's role, deliberated about assigning work tasks to busy fellow-students. Without assigning many hours to an already busy student, the results of the project might not have been completed in time:

> For example, can I plan 20 hours per week for the group members, if I am well aware that a particular group member has other activities at that time, and the results will not be there and the time runs out? (S6)

Managing fellow-students who are equal with each other. How to exercise a project manager's role in a student group whose members are equal with each other? This is a difficult moral question, which emerged from the diaries. Some students, like S1, think that a project manager should be left alone with his responsibilities, although the power of the project manager is minimal. He considered that it was sometimes hard to trust others:

> Sometimes I might have had a feeling that I had to "babysit" others and make sure that they accomplish their tasks. I did not implement this kind of watching over but I realized that sometimes *it was hard for me to trust others*. Particularly, I felt myself responsible for the work of the group. So, during my project manager phase it was difficult for me to relate power and responsibility. *Power was quite marginal, but my own sense of responsibility was high.* Many times I felt that others do not consider issues seriously and that I was alone with my responsibility worries. (S1)

Final result vs. group spirit. A student produced two drawings (Figure 45), in the first of which a project manager is ordering project workers about (with a whip in his hand), and a moral conflict between getting the job done and the group spirit emerges. In the second drawing, the moral conflict is solved so that the project workers have fun and the same time they are able to complete the final results. In the left picture the project manager says: "Make it snappy, bastards! The deadline is drawing closer!!" His fellow students complain: "Outch! We are tired but we have to work, Your Fagness of a project manager." The text at the bottom of the figure is as follows: "The final result vs. the group spirit (general well-being)" In the right picture (representing the conflict as resolved) the project workers say: "Yeah! This is fun & the work is completed in time!" It can be concluded from the drawings that to attain the final results, a project

manager can assign work tasks either in a repressive or constructive way from the group spirit viewpoint.

To sum up, in this category, students deliberate about taking individuals into account in assigning work tasks (referential aspect). The structural aspect of this category consists of making decisions about fulfilling objectives of clients during the project co-operation (Figure 46). The internal horizon of this category is of making individual-related decisions in assigning work tasks, and the external horizon is the student group.
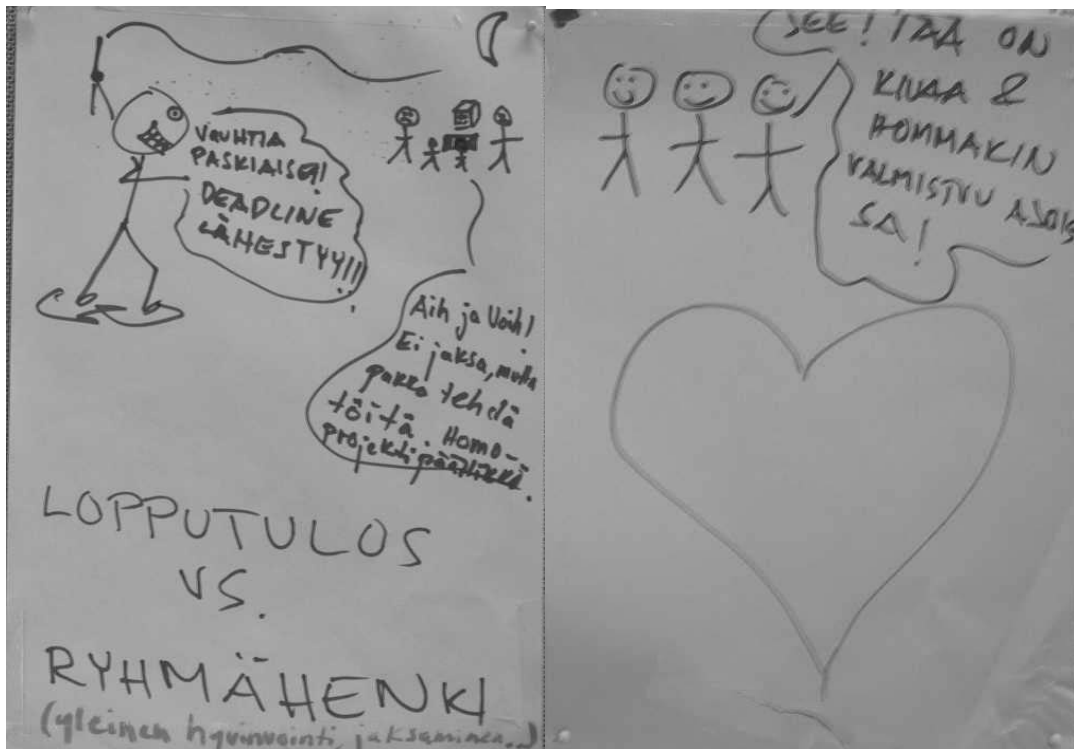

FIGURE 45   Student's drawing about a moral conflict in project work
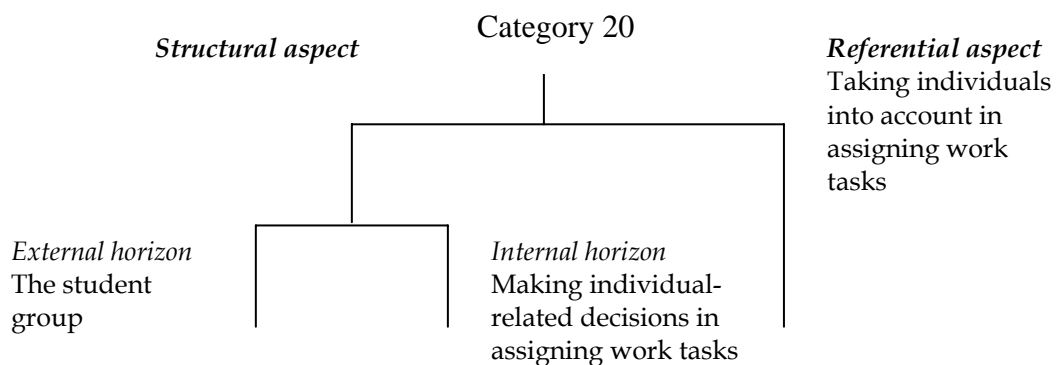

FIGURE 46   The meaning structure of the twentieth category

8.3.2 Intervening in fellow-students' actions

In this section, there is a category, which relates to intervening in someone's actions within the group.

Category 21: Intervening in someone's actions

In this category, students confronted moral conflicts, in which they had to think about whether they should intervene in other student's activities. The reasons for the possible interventions were the other student's irresponsible, ineffective, harmful, or evil behaviour.

Irresponsible or ineffective behaviour. Some students were forced to deliberate on whether they should intervene with someone's irresponsible actions. Student S11, when acting as a project manager, did not accept his fellow-student's not taking part in fixing the defects found in a document during inspection. He pondered whether he should have intervened with his fellow-student's behaviour:

> Our group had a repeat walk-through, which related to the document of the current phase. In the document, errors, which needed to be fixed, were found. We had contracted with our client that we fix the defects right away before going for the Christmas holiday. However, *one group member did not want to bear his responsibility, instead he left for the holiday immediately after the walkthrough without any explanation.* What if we all had done the same? Who would have taken the responsibility over the issue? *Should I have, as the project manager, intervened to the matter somehow?* I was very angry and I am sure that the issue harmed other group members. (S11)

Group G2 stated, in their diary, the problem of intervening with other worker's actions when the work does not go well and when the intervention has the effect of hindering the workers themselves. There is a threshold in intervening to actions of an unmotivated worker, because, in practice, no one has real leadership in an equal organization:

> How to intervene with other worker's work when it does not progress well and when one's own work suffers? *In an equal organization there is a high threshold to intervening in an unmotivated worker's work because no one is in the actual leading position.* Authority in this case can be generated only by one's own know-how.
> The issue: Carelessness, power
> Parties: Students, workers (G2)

When I interviewed group G2 during the preliminary phase, the students became silent when I asked for more specific information about the above problem. Because the situation seemed to be annoying, I proceeded to the next paragraph in their group diary.

Avoidance of burn out. A student considered it as a moral problem if he needed to intervene with his fellow-student's work and suggest him to lessen the pace of work because otherwise that student could suffer a burn-out. The student hesitated to intervene because he considered his fellow-student as a grown-up who makes his own decisions:

If an individual is committed to one's studies, and the project, [description of work] simultaneously, how could he deal with his duties without burning out? … … I am very concerned about his future. *I have to figure it out whether I should somehow intervene in the matter and seriously suggest him to loosen up.* On the other hand, he is a grown-up, who decides about his own matters and I would prefer not to advice him (S1)

Disclosing mental cruelty. During an exercise concerning moral conflicts in project work, students raised the following moral conflict: Should one disclose observed mental cruelty to someone? After the DP courses of the academic years 2000-2001 and 2001-2002, the instructors had been told about bullying and harassment within student groups. It is possible that a student observes mental cruelty or is mistreated by a student or students. In such situations, other students have to make hard decisions relating to whether they should disclose those malpractices.

Considering a different fellow-student. How to handle a student who is very different from the other group members? Student S9 thought it very troublesome to have a fellow-student who was very different compared to other group members (the type of difference is not disclosed to preserve anonymity). The student feared that the problem with their fellow-student might negatively affect the team spirit. The student deliberated about the problem faced by the group and him, in the diary: it seemed that nothing could be done. To discuss the problem with all the group members would have been impossible. He concluded that:

It is very difficult to discuss the matter, because the fifth group member might have felt to be cornered if all the other four 'attacked him' (S9)

Giving advice to a project manager. Student S5 confronted a moral conflict relating to whether he should proactively give advice to a helpless project manager. Giving advice to the project manager might embarrass him, but refraining from giving advice might lead to poor functioning of the group:

I have had problems with inefficiency in my group. Our project manager is not capable of leading or delegating work. The group does not accomplish anything and, in the end, the project manager does everything by himself. I admit that I have been too busy and that I have not offered enough help voluntarily. … *I have thought about to what extent I have the right/duty to intervene with the situation.* Of course, it is up to the project manager how he wants to accomplish his tasks. Surely it is not the aim that he does nearly everything by himself. However, you cannot tell anyone to 'Try to pull yourself up and give work tasks to others, too.' Or can you? I have decided not to comment aloud on the matter in the project room, although I have the habit of commenting on everything. Even without having been asked to do so. (S5)

Considering cliques. Cliques inside the student group were troublesome for other students. One of them told:

Inside the group, there is a strong clique of two group members. For example, during discussions they stepped back into their bilateral discussion without taking note of the others. … *Perhaps the group members should have intervened in this. On the one hand, it* [intervening] *might have caused conflicts.* (S4)

Disclosing problems of the group to the instructor. Some instructors arrange private discussions with the students. During such a discussion, a student disclosed the problems of his group to her instructor. She thought about the appropriateness of his action, because she had described, in detail, the problems they had faced. The student's aim had been to get support for the resolution of those problems. In any case, she assessed the appropriateness of his actions and concluded that because all other group members can do what she did they could express their views just the same way:

> *I was in a very talkative mood and I explained at length what development needs, in my mind, there are in our group. Afterwards I was wondering whether I had been too negative.* Perhaps I should have concentrated on positive matters. On the other hand, by deliberating about issues which need development, progress can take place. In the same way, when the instructor hears about them, he can give good hints about what to do. … *Because all the group members have a talk with the instructor, they have a chance to tell about their own opinions* and be as positive as they want. *Because of this, I do not feel that I acted in an inappropriate way.* If others had not had the possibility to express their viewpoints, I would have selected my words more carefully.

To sum up, in this category, students deliberate on whether one should intervene with someone's actions (referential aspect). The structural aspect of this category consists of making decisions relating to intervening with someone's actions in group work (Figure 47). The internal horizon of this category is about making decisions relating to intervening with someone's actions, and the external horizon is the group work.
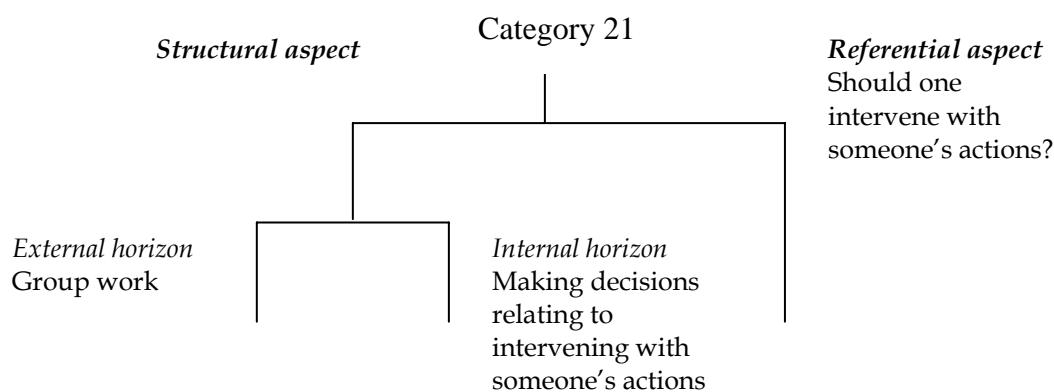

FIGURE 47   The meaning structure of the twenty-first category.

8.3.3 Conflicts of interests inside the group

In this section, categories relate to conflicts of interests inside the group. Category 22 considers intriguing for one's own interests, and category 23 considers equal allocation of project tasks among groups.

Category 22: Possibility to intrigue for one's interests

In this category, students perceived, as a moral conflict, the possibility of intriguing for one's own interest, disregarding the group. Students can intrigue for their own interests, for example, by affecting the possibility to get employment from the client.

Getting a job. Group G1 stated in their diary that at the end of the project some of them intrigued for their own interests, disregarding the project. The possibility of securing a job from the client led the students to advertise themselves to the representatives of the clients. The following extract and a note from the interview illustrate the problem:

> During the final phase of the project *the possibility of getting a job from the client led the group members to intrigue for their own interests, regardless of the project.* As a consequence, some of the group members could continue in the service of the client and some could not…
> Phase: The final phase
> Problem: Intriguing for one's own benefit
> Parties: The project group, the client (G1)
>
> *Many advertised themselves in the hope of getting a job as the result of the discussions with the client.* Three of the five [students] could continue at the service of the [client]. (Note from interviewing G1)

One's own interests vs. interests of the group. Student S7 claimed that she had to put the interests of the group above his personal interests. She admitted that she had a selfish motive for that:

> However, I am such a good-hearted person that I cannot say "no", and *many times I refrain from intriguing for my own interests* and, in this development project, I put the interests of the group above my own interests. [A phrase, which means intriguing for one's own interests but which cannot be translated to English] – I need the credits, I cannot afford to stay in Jyväskylä for ever. (S7)

Student S13 described disagreements relating to working hours: all group members did not want to commit themselves to doing equal amounts of overtime. The students saw conflicts between their own interests and other goals:

> It was about arbitrariness and quarrels. *Togetherness, learning goals, and commitment started to suffer when the conflicts between one's own interests and other goals were perceived.* … comments emerged that all [group members] will not commit themselves to do overtime hours equally. (S13)

To sum up, in this category, students deliberate about a possibility to intrigue for one's interests (referential aspect). The structural aspect of this category consists of making decisions about intriguing for one's interests in a group work (Figure 48). The internal horizon of this category is of making decisions about intriguing for one's interests, and the external horizon is the student group.
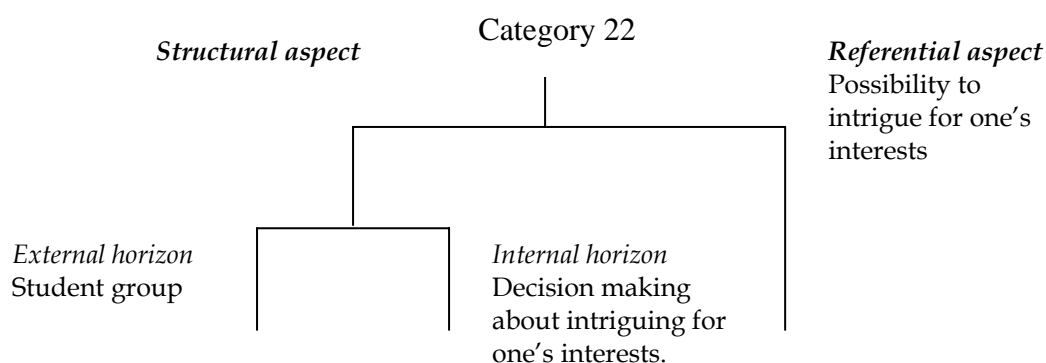
Category 22

Structural aspect

Referential aspect
Possibility to
intrigue for one's
interests

External horizon
Student group

Internal horizon
Decision making
about intriguing for
one's interests.

FIGURE 48   The meaning structure of the twenty-second category.

Category 23: Equal distribution of gifts

In this category, students considered that distributing gifts in an equal way
within the group created a moral conflict. Some clients donate gifts to students -
these gifts may cause confusion inside the student group: how to equally share
the gifts.

Sharing gifts. In a student group there was a moral conflict relating to how
to equally share the gifts donated by their client. Students deliberated about
whether the client wanted to test the student group somehow. Student group S7
described their deliberation as follows:

> … *two group members got personal "utility" compared to other group members.* I was one
> of these [two group members]. We deliberated together about what we should do –
> we got gifts from the representative of the client, but the gifts were for us and not for
> other group members. We were thanked: "It was very nice that you took the trouble
> to come to [a town far away from Jyväskylä]." We felt uncomfortable and we
> considered it wrong. *The compliments and the gifts, likewise, should have belonged to the
> whole group.*

Group G6 stated in their diary that their client had donated eight gifts (the
nature of gifts was not disclosed), which caused wondering inside the group
because it was troublesome to divide the gifts equally. The group suspected
that the gifts were some kind of group spirit test:

> … *a group of five members got eight [gifts] to divide.* … We wondered a lot, why the
> client donated us such a number of [gifts]. It occurred to us that *this might have been a
> kind of test of group spirit.* In this confusion, the group could not feel pleasure in
> getting something.
> The phase: Survey phase
> The issue: Equality, dissatisfaction
> The parties: The group, the client

To sum up, in this category, students deliberate about equal distribution of gifts
(referential aspect). The structural aspect of this category consists of making
decisions about distribution of gifts inside a student group (Figure 49). The

internal horizon of this category is about making decisions about distribution of gifts, and the external horizon is the student group.
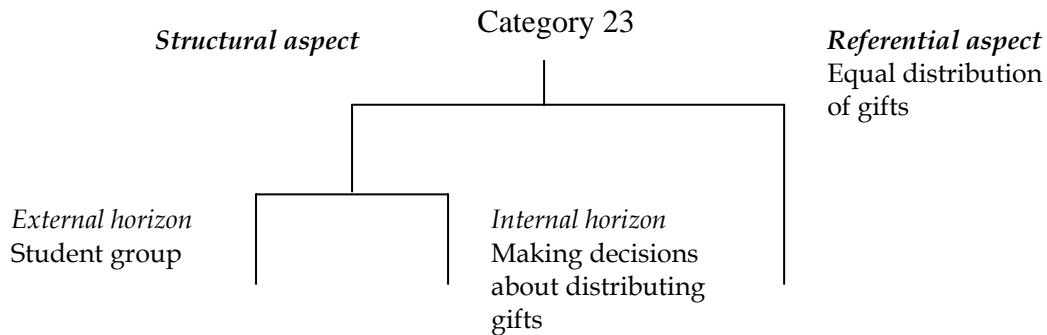

FIGURE 49   The meaning structure of the twenty-third category.

8.3.4 Behaviour towards university instructors and representatives of clients

In this section, there is a category relating to moral conflicts in relationships with representatives of clients and university instructors.

Category 24: Honesty and way of interaction with clients and instructors

In this category, students perceive moral conflicts in co-operation with representatives of clients and university instructors. Regarding instructors and clients, honesty and openness issues raise moral concerns, and regarding clients the way to communicate with them raise moral concerns.

Honesty and openness towards representatives of clients. Many students and groups confronted moral conflicts relating to being honest or open towards the representatives of their clients. There was an inclination to hide the poor state of project (for example, poor quality of preliminary results, problems in producing the results) from the representatives of clients. Although disclosing problems of incomplete results is considered unnecessary, the hiding of the state of the project is considered morally problematic. This caused the students to mull over, in their diaries, about the difference between lying, white lies, refraining from truth telling, and honesty in their interaction with the representatives of the clients. As an example, student S2 speculated over whether refraining to tell is the same as telling a lie. When his group presented a prototype of a future system, they did not disclose all the problems they were struggling with. Student S2 considered it as a white lie, which did not cause any harm for the project, and in the end they fixed the problems:

> *Is refraining from telling the same as lying?* If it harms the others or if defects in the quality of the program are purposefully covered. For example, when presenting the prototype of our group, we perhaps did not consciously express the program's problems, which were being fixed. *Sometimes we consciously refrained from telling about all the issues, for example, about the functioning of the prototype.* However, at the end, all the contracted add-ons and functionalities were implemented. *This was a so-called*

white lie and it did not produce any problems in this kind of small project. Actually, the work was done flexibly by concentrating on the focal issues and functionalities first, and then, at the end, adjusting the small issues. (S2)

Student S3 considered that honesty is a virtue but it is not worth revealing all the setbacks to the client. The problems relating to the results and usage of resources are so critical that they should be disclosed to the client:

> *Honesty is surely a virtue, but it is not worth to tell the client directly about all the adversities that the group may confront.* Perhaps we should have agreed about what kinds of issues are such that they should be made known to the client. Perhaps we could agree that issues relating directly to the results of the group or, for example, to the usage of resources are such critical issues. One should not trust that, as time goes by, the problem will be solved. It is in the interests of the group that the issues are explained to the client, because in such cases the group can defend itself. One problem, which we confronted, was related to a promised feature of the result, and by disclosing the problem we got the client to accept that the feature would not be implemented. (S2)

Group G1 confronted a tricky situation with their prototype. The problems confronted during the implementation phase would have affected the timetables of the project. The group thought that they had two options: bringing out the issue and redefining the objectives of the project, or just implementing the tasks as well as possible in the given time. The group concluded that they should honestly disclose the status of the project to redefine the project task:

> The group came across unexpected problems during the implementation phase of the prototype and it turned out that we were not able to accomplish the project properly in accordance with timetables. *The question arose whether we should bring this up with the representatives of the client in order to agree about redefinition of objectives or whether we should do the work as well as possible, in which case the results, although accomplished, would have been worth nothing anyway.* We ended up with a solution, in which honesty is seen as the best policy and we contacted the representatives of the clients to agree about negotiation, during which the redefinitions would be agreed.
> Phase: Implementation of prototype
> Problem: Honesty, quality issues
> Parties: The group, client (G1)

Honesty and openness towards instructors. Honesty and openness towards university instructors was considered as a moral conflict. A student faces a difficult situation when he considers the state of his group disordered in some way or if something wrong has happened inside the group. In such cases, the student may consider the situation morally troublesome, because searching for help from his instructor might force him to reveal the less than immaculate inner-life of his group. On the one hand, there is an inclination not to disclose negative issues about the group, thus not being fully open or even being dishonest towards instructors. On the other hand, students perceive that they should seek for help in troubled situations. This moral conflict relating to honesty and openness is confronted in private discussions between the students and instructors, during guidance meetings and during assessment meetings. As an example, student S1 reported about moral conflict relating to disclosing

information about the group to instructors. Another student had mistreated him (the type of mistreatment is not disclosed to preserve anonymity), and because the mistreatment would inevitable affect the functioning of the group and his (S1) motivation, he pondered whether he should disclose the mistreatment to other group members or to the instructor:

> I felt it most unpleasant that I had trusted him and openly told him about my life and my private matters. I felt having been betrayed. *I wondered whether I should tell the other group members about this, or whether I should ask guidance from the instructor or just be silent about the matter.* In a way, other group members have the right to know about the situation, because most probably the "ice" between two of us would affect the group activities. My motivation towards the whole project is negatively affected. But on the other hand, disclosing the matter would be quite embarrassing, especially for [the group member]. … Well, I guess that I'll think it over for a few days and think about how to act and confront that disgusting person in the project room. (S1)

Student S2 analysed a problem relating to a blunder in the contract. The consequences for disclosing the blunder and for not disclosing it would have been the same. However, disclosing it seemed messier than the alternative:

> There is a blunder in the contract. When I ask about the matter at the instructor level I am told that in real life the matter would not be simple to fix. It is hard to ask advice from one's own instructor, because, clearly, it is a mistake produced by the group. But I ended up asking advice. First, the instructor says that "We shall not tell anyone." I tell him that we have already told. In the end, in the next board meeting, when we discuss the matter [the leading instructor] says that we shall not do anything about the matter. Under these circumstances the end results would have been the same, as I had not told about the matter to anyone and no one had noticed the matter. *Here, telling the truth would have caused more problems than keeping one's mouth shut about the matter.*

Proactive actions towards clients. Some project groups find themselves in trouble because their clients do not give feedback or responds to their queries in a reasonable period of time. These situations are difficult for students because they feel that they should more actively or more aggressively make demands to their client.

> Our client commented on a memo of joint ideas meeting. We had expected the comments very much earlier but they had not sent any comments so we assumed that the document was in a good condition. The comments came after we had written down the project plan based on information in the memo. We got a bit excited, arguing whether to criticise the client's actions in any way. In our opinion, the comments came too late and there were no reason for them. *We mentioned the issue discreetly in a subordinate clause in an email, but we refrained from criticising the matter and we did not bring up the issue later.*
> Phase: Survey phase
> Issue: Communications
> Parties: Project group, client (G6)

To sum up, in this category, students deliberate about honesty and way of interaction with representatives of clients and university instructors (referential aspect). The structural aspect of this category consists of making decisions relating to honesty and way of interaction with representatives of clients and

university instructors during the project co-operation (Figure 50). The internal horizon of this category is about making decisions about the interaction, and the external horizon is the project co-operation.

Category 24

Structural aspect

Referential aspect
Honesty and way
of interaction with
representatives of
clients and
university
instructors

External horizon
Project co-
operation with
clients and
university

Internal horizon
Making decisions
about honesty and
way of interaction
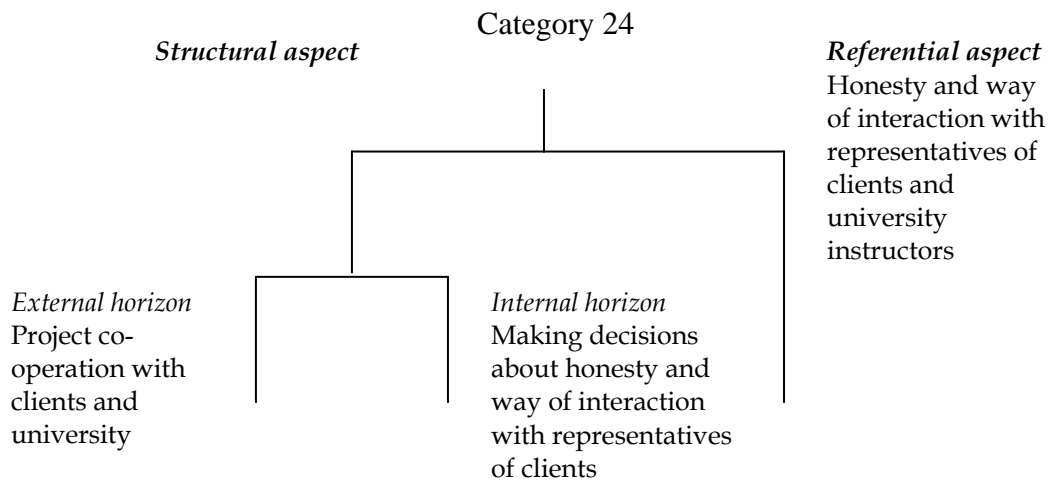with representatives
of clients

FIGURE 50   The meaning structure of the twenty-fourth category.

9   MORAL CONFLICTS PERCEIVED BY INSTRUCTORS

Ten categories of moral conflicts perceived by instructors were identified (Table 15). Seven referential aspects (what-aspects) were found: effects on IT-firms, objectives of the parties, assessment, commitment and prioritisation, information handling, treatment of individuals, and ego-strength related moral conflicts. These moral conflicts are divided into conflicts relating to interpersonal, project-level, and outside parties (see rows in the Table 15). Three structural aspects (how aspects) were found from the moral conflicts. The structural aspects formulate a progressive developmental continuum from doing-wrong moral conflicts (doing the wrong) to other-directed moral conflicts (maintaining relationships and justice) (columns in Table 15).

In the following sections, the categories are presented in the following order: outside-parties, project-level and interpersonal moral conflicts.

Next, the categories are presented. Each category description starts with a summary of the category, and follows with a description of the underlying source of the category (e.g., interview, my own experience), and a detailed description of moral conflicts pertaining to the category.

9.1   Outside parties

This section considers moral conflicts relating to outside parties of the project co-operation.

9.1.1 Effects on IT-firms

In this section, a category relating to the effects of the DP course on local IT-firms is considered.

TABLE 15   Categories of moral conflicts perceived by instructors.

| | | DOING-WRONG | OTHER-DIRECTED | |
		Doing-wrong	Maintaining relationships	Justice
OUTSIDE PARTIES	Effects on IT-firms			1. Just treatment of local IT-firms
PROJECT	Objectives of parties		2. Maintaining balance between conflicting objectives	3. Taking parties' objectives into account in selecting them to the course
PROJECT	Assessment			4. Students' just assessment and grading
PROJECT	Commitment and prioritisation	5. Possibility to avoid fulfilling one's duties	6. Prioritizing between instructors' roles	
PROJECT	Information handling		7. Disclosing students' information in collegial discussions	
INTER-PERSONAL	Treatment of individuals	8. Possibility to harass one's colleague	9. Intervening into instructors' and students' actions	
INTER-PERSONAL	Ego strength		10. Conquering one when implementing one's duties towards students	

Category 1: Just treatment of local IT-firms

In this category, moral conflicts concerning just treatment of local IT-firms emerge. The DP course is able to co-operate with numerous local IT-firms, and the co-operation may cause instability in the markets at least in two ways: First, constant co-operation between particular IT-firms and the DP course may make the managing of the DP course easier, but it may not be considered fair by other IT-firms, because, that being case, the university would be seen as favouring the particular IT-firms by offering them cheap work force. Second, student groups are able to implement projects, which could be bought from local IT-firms, thus the course may invade the territory of some IT-firms.

Moral conflicts in this category were interpreted from discussions with the leading instructor. Those interviews are considered next.

Lasting relationships with clients vs. turnover of clients. Discussions with the leading instructor revealed that client organizations may continue from year to year with their co-operation with the DP course, but there may also be turnover of clients. Lasting relationships with clients have several advantages: presumably there are fewer conflicts with the clients who have many years of experience in the DP course and contracting and negotiating with such clients

requires less time compared to a new-comer client. However, according to the leading instructor, the relationship between the client and the university should not become an institution, because, in that way, the university might become a software house for the client – thus producing an unequal situation among software firms. Turnover of clients and "business-line-spotting" keeps the DP course dynamic and up-to-date, and prevents institutionalisation of the relationships between clients and the university, thus preserving just treatment of IT-firms. From the discussion with the leading instructor, I interpreted this being *a moral conflict between lasting relationships with clients vs. turnover of clients.* It is a moral conflict, because favouring the same clients makes it easier to manage the course, but by doing it, the university may become a subcontractor for particular clients and it denies the possibility for other IT-firms to benefit from the course.

Role of university and possible instability in markets. The discussions with the leading instructor revealed that the DP course might produce instability in local markets. The fact that student projects produce valuable results is, according to the leading instructor, problematic from the moral viewpoint. Student projects may produce results, which could be bought from other firms, and some software firms have complained that the DP course competes with the firms:

> The leading instructor: "It is not in accordance with the university policy or morality if we invade someone's territory, but we should teach people … we should not compete with firms about the [project] tasks. This is quite a big question which one is forced to deliberate. That is why I want to put forward the idea in which learning is put first. I do not want any cost-benefit thinking here."

From the leading instructor's thoughts, I interpreted that there is a moral conflict between the university's role as an educational institute and the effects the DP course has on the firms and their relationships. This conflict is a moral conflict in nature because the university's role is to promote learning and teach individuals. According to the leading instructor, the university should not compete with other firms – particularly by offering cheap workforce. The DP course, however, have effects on markets, and although those effects are probably marginal in nature, it goes against the role of the university to interfere in markets. This conflict is related to the above mentioned conflict concerning the learning and clients' beneficiary goals concerning the DP course. The more the clients' beneficiary goals are emphasised along the course (e.g. by paying students to get a better product) the more the DP course will look like a software house, which sells its work force (students) to firms.

9.2   Project-level moral conflicts

This section considers project-level moral conflicts, which relate to objectives of parties, assessment issues, fulfilling one's work tasks, and handling students' individual information.

9.2.1 Objectives of the parties

Categories in this section relate to objectives of parties of the DP course. Category 2 concerns the balance between conflicting objectives, and category 3 concerns taking cognisance of parties' objectives when selecting them to the course.

Category 2: Maintaining balance between conflicting objectives

In this category, objectives of clients, students, and university conflict with each other and instructors are compelled to take stands towards these conflicts. The controversy is between the learning aspects, which are promoted by the university, and the results of the project, which are in clients' interests and which the students are inclined to emphasize. Other beneficial goals of the project co-operation, namely employment and maintaining a good image, are in the clients' interests.

This category is based on interviewing the leading instructor, on my own experiences, and on discussions with the leading instructor during the first and second year.

Learning and beneficial goals of the firms. There is a dichotomy between the objectives of the university and the clients: the role of an university as an educational institute is to support learning and the clients' beneficial goals relating to the co-operation. The dichotomy is interpreted from the views of the leading instructor, who considers his utmost duty to guarantee the learning aspects of the DP course. As I interpreted his visions, learning is a fundamental value for him, and it is not always easy to keep up the learning aspects because the goals of each party do not always go hand in hand with the learning. However, according to the leading instructor, there is and there should be an emphasis in learning aspects:

> The leading instructor: "… this is not about producing something, but it is about learning. It is a major question which one is forced to think all the time… when it comes to firms, students and instructors. All the time."

In the above extract, I interpreted the phrase "*producing something*" representing doing one's work with the same manner over and over again – and the "*learning*" meaning developing one's abilities to do one's work better. The learning aspects are sometimes in conflict with the beneficial goals of the clients, and even among instructors there has been disagreements about the fundamental goals of the course. However, during the recent years, emphasis on the beneficial goals of the clients have emerged more and more:

> The leading instructor: "…production goals of the firms are, perhaps, emerging more and more. … A firm comes along not as a patron but to gain profit."

IT-firms expect to benefit from the DP course and one way to benefit is to get new employees. The leading instructor thought that clients' employment goals relating to project co-operation emerged too strongly during a DP course:

> The leading instructor: "… last year it became inclined to another direction ... too much towards employing"

The clients' desire to benefit from the co-operation is, partly, based on their usage of resources, usage of time of the representatives of the clients, which the clients consider more expensive than the actual project payment. As the project is in motion, the university side aims to guarantee the learning aspects. The leading instructor perceives as his duty to defend the learning aspects, because without the learning aspects, student projects in a university setting would become similar to regular jobs. He considers this as a negative phenomenon because at this environment experiments should be allowed, because they support the students' learning:

> The leading instructor: "Perhaps we have come closer to real work. But is it right? Is it worth achieving? Shall this become a job among other jobs? This is a unique environment to learn and allow experimental thinking for the students. … Here it is possible that a student group, if they wish, may produce a product … with two kinds of equipment to observe which was better. … We should be able to do these kinds of experiments. It should not be too serious. … This is not a nice hobby any more ... this is a serious bustle nowadays ... it is not about the project payment, it is about the working time which one need to spend. It is far more expensive for the firm."

As it can be interpreted from the leading instructor's statements and the history of the DP course, the co-operation seems to be more serious than during previous years when the project tasks were acquired from within the university and from non-profit organizations.

According to the leading instructor, an instructor should guarantee that learning aspects are present in the actions of student groups. The leading instructor gave an example of a group, which consisted of very bright and talented programmers. One student especially was so talented that he was allowed to make decisions on behalf of his fellow-students. According to the leading instructor, the instructors let him get away with too much, and let him make decisions, which affected negatively the learning aspects. It seemed that the student did not take part in administrative work tasks, although, according to the leading instructor, experience from those tasks would have been valuable even if the student would never do such things:

> The leading instructor: "What are we learning here? How valuable would it have been for a person to learn administrative working tasks, if he had no use for such things? But one should understand that that there is someone who is doing them for him instead. Producing plans, observing different issues, resources and results. Keeping up with the communication etc. It is the instructor's task to correct the group behaviour in this matter."

From discussions with the leading instructor, I interpreted that there is a moral conflict between the objectives of the parties: *the objective of the university to guarantee learning and beneficiary goals of the client firms.* On the one hand, the learning aspect includes the university's institutional role as an educator and the instructors' duties to provide the students with long term knowledge concerning project work. On the other hand, beneficial goals of the clients

include the goal of the firms to benefit from the co-operation. It is possible to stress these two aspects to different extents, which has moral significance, because stressing one aspect may negatively affect the other aspect. Moral conflicts between these two aspects are confronted along the project. As an example, a group (and its instructor) may confront a conflict between efficiency and learning: if a talented programmer concentrates on programming, in an extreme case, he does not learn anything about managing the group and others do not learn anything about programming. This may lead to very good result and a very satisfied client, but the goal of providing all students with experiences from a variety of tasks is not achieved. In another example, the moral conflict may be confronted when determining working hours. When the deadline of a project is coming closer the client may demand that the student group should get the final result finished by using extra working hours. If this kind of decision were accepted in the board meeting, the students would have less time for learning (e.g. assessing and developing their working methods). As a third example, a student group may put stress on developing its working methods but fail to concentrate on producing a quality result for the client. In such a situation, the learning aspect is emphasised.

Endangerment of the project results. The following conflict, which I confronted during my first year, is related to the client's perceived right to know any issue that might endanger the realization of the final results. Previously, we had discussed about a student's usage of time during the course: the student did not have much time during the autumn period for the project, but he had guaranteed that he would have more time for the project during the spring. The leading instructor and me were sceptical and worried about the student's possibilities to put in the required hours during the springtime and his real capabilities to complete the course. These doubts became into my mind during a board meeting, where the student was the project manager in charge, presenting the reports and plans. I realized that a risk relating to a student's ability to complete the course should be made known to all board members – including the client, who had, as I perceived, the right to know any relevant issue, which might endanger the results of the project. As a consequence, I was forced to embarrass the student in the front of the board because I brought up the problem during the meeting. I considered this a moral conflict, because the board, and especially the client party, was entitled to know any issue that might affect the realization of the final results of the project, and bringing up the issue would mean embarrassing the particular student in front of the board. To sum up, during the meeting I confronted *a moral conflict between the right of board members to know any relevant issue endangering the results and embarrassing a student in front of the board.*

Category 3: Taking parties' objectives into account in selecting them to the course

In this category, equal treatment of representatives of each party may be under threat. There is a threat to equality when a representative of a party is treated in a way, which could not be universalised for all the representatives of a

particular party. Similarly, if a representative of a party is treated badly compared to other representatives, questions relating to inequality emerge.

Moral conflicts relating to students' just treatment in their selection to the course emerge when a student applies to the course and has completed nearly all the required courses except some important ones that are still missing. A student must have enough background knowledge to participate in the course – otherwise he could be a burden for his fellow-students and could even hinder learning in the group. Giving arguments for or against accepting these borderline-cases creates a moral conflict, because choosing in borderline cases is intuitive work and there are no strict guidelines for that.

A moral conflict relating to just treatment of clients is met when some clients present conditions, which cannot be extended to all clients, for co-operation. This may happen when there is a shortage of prospective clients and project tasks and the university is compelled to make exceptions.

A moral conflict relating to just treatment of university teachers is met when there is a lack of willing and suitable university teachers, although someone has to be nominated to do the instructor's work. Pressures for nomination exist because the DP course is compulsory for the students and there are many groups to guide.

Moral conflicts in this category are based on interviews and discussions with the leading instructor, and on my own experiences during the first and second years.

Students' just treatment. Nearly all students are required to have cum laude approbatur level studies completed when entering the DP course. Students, who have completed the required courses, are accepted for the course, but there are so-called borderline cases with enough background studies but with some required courses missing. Here, I perceived *a moral conflict relating to student selection to the DP course: equal treatment of students in so-called borderline cases.* On the one hand, an IS student has the right to attend the DP course because it is a compulsory course in the examination. On the other hand, instructors have the duty to guarantee that students with adequate background and capabilities enter the course. A student without adequate background knowledge might not be able to implement the project task and, according to the leading instructor, she might even prevent other group members from learning. Similarly, if a student does not have time for the course, group work during the course could suffer. Giving arguments for rejection and acceptance of so-called borderline cases creates a moral conflict, because the rejection and selection is based on intuitive thinking – there are no clear guidelines for selection and rejection. Personally, I confronted this problem during the first and second years.

Clients' just treatment. There are justice-based moral conflicts in the treatment of clients, with which the co-operation is about to start. Some clients may put forward conditions, which would mean special treatment of them or their future student group. The leading instructor had told me that a representative of a client had said that they did not want a certain instructor to guide their group. The aversion towards the instructor was, according to the

leading instructor, based on conflicting personal chemistries. Same kinds of pressures were confronted at the beginning of the academic year 2002-2003 when a client wanted a certain instructor - who was considered to be a skilled project leader - to be nominated as an instructor of their group. These pressures from the clients, force the instructors to confront *a moral conflict of equal treatment of client organizations in nominating instructors to groups*. The conflict is a moral conflict in nature, because it is in each client's interests to get the most skilled instructor nominated for their group, but adhering to a client's wish puts clients in an unequal position.

University teachers' just treatment. A moral conflict relating to just treatment of university teachers is confronted when allocating university teachers to DP instructor's work. Not all university teachers are suitable for this kind of work, and it is possible that an unwilling and unsuitable instructor is nominated. During an academic year, I and the leading instructor confronted most troublesome and painful moral conflicts relating to colleague relationships: we were forced to deliberate about work morale of a number of colleagues and their suitability to this kind of work. Lack of instructors' presence in instructors' meetings, and rumours among the students about ineffective guidance forced us to do this. Although some of these doubts proved to be unnecessary and some of them were based on lack of information or misunderstandings, we confronted a moral conflict, which seemed to be unsolvable. To my mind, the roots of these problems lie in the dilemma in distributing work tasks among the university teachers. At the beginning of the course, we had confronted a practical problem relating to the lack of instructors: because of a multitude of students and because someone had to be responsible for the student groups, some instructors were forced to do this work. This resulted in ordering some teachers to this work, although they opposed the assignment, and, in my opinion, by forcing university teachers to this kind of work, which is mentally demanding in its own particular way, we transgressed against them. As I perceive it there is *a moral conflict due to pressures to order unsuitable and unwilling university teachers to do instructor's work.* Because someone has to guide the groups, instructors have to be nominated – but as the result of a shortage of willing instructors, unwilling and unsuitable teachers may be ordered to this work.

Many times during the second academic year, the leading instructor and me discussed about suitable characteristics of a DP instructor. I think that the instructor's work requires mental strength because the instructor confronts the students face-to-face and his task is to give feedback and guidance and make demands. Some students resist (e.g., by refusal, whining) the demands made by the instructors, which makes the work mentally stressful (at least for the first-year-instructors). The instructor should be able to take the weak ones into account when guiding groups. It is possible that the strong ones within a student group throw their weight about, and the instructor should be able to intervene in such situations. Additionally, the instructor should be able to mentally support his students, have the ability to look at things from the

students' perspective, and be able to make demands on students and provide them with open and honest feedback. When assessing the qualities of a proper instructor we are not discussing about extrovert or introvert personalities, but the emphasis is on the mental strength and ability to support other individuals. In an ideal situation, an instructor should have strong experience from projects in IT-firms and he should be able to teach and make demands on students. Both of these qualities seem to be fulfilled in rare cases. Additionally, low university wages (when comparing them to wages in private sector) discourage movement from IT-firms to the university.

9.2.2 Assessment

In this section, a category relates to assessment of groups. Category 4 considers assessment from the viewpoint of justice.

Category 4: Students' just assessment and grading

Moral conflicts in this category relate to students' just assessment. Student groups are considered incommensurable in the way that they differ in terms of individual personalities, project tasks, clients (their commitment and guidance), and instructors (their commitment and guidance). However, in grading, processes of student groups are assessed from the viewpoints of development of individual groups and by comparing groups with each other to determine the levels the groups have attained. Providing arguments when grading student groups and when providing different grades inside student groups requires knowledge about their actions, but the instructor's role as an outsider for the group creates uncertainty in the grading process. Consequently, extracting arguments for a particular group's and individual's grades is difficult because all the information about comparative discussions cannot be disclosed. Additionally, assessment and grading is considered very intuitive work for which there are no objective criteria. An instructor may have positive and negative emotions towards his groups, and those emotions may affect the assessment of particular groups, thus producing unjust assessments. Even careless usage of technology during the assessment process may produce unjust assessments.

Moral conflicts in this category are based on instructor interviews during the preliminary study, my experiences during the first and the second year, and on interviews and discussions with the leading instructor.

Just assessment. Assessment was considered a troublesome activity from the viewpoint of the instructors. From their perceptions, I interpreted that there is *a moral conflict relating to just assessment of student groups when there are no objective scales for the assessment*. The lack of objective criteria in an assessment makes the assessment intuitive and subjective in nature and it leads to considering the assessment as mentally demanding. One reason for this is that functioning of groups is perceived incommensurable from the assessment viewpoint. Additionally, there is a danger to get the groups mixed in one's head. Next, the instructors' descriptions relating to assessment are presented.

The instructors deliberated about assessment problems in a discussion of four instructors as follows (instructor codes are not used in the extract to guarantee anonymity):

> Instructor X: "At the end when we implement the assessments – well, one feels to be lost in a way – because assessing one's own groups is difficult."
> Instructor Y: "In principle, you are not able to compare the projects."
> Instructor X: "They are not commensurable with each other."
> Instructor Y: "Yeah."
> Instructor X: "And it makes it so difficult."

The above extract shows that according to the instructors the groups are incommensurable with each other and that makes assessing hard. Instructor I3 specified reasons why an assessment is felt hard. According to him there are many factors that have influence on the assessment: project tasks, instructors, and clients are all different. There does not exist any absolute scale for assessment, but the instructor is to put the groups in a sort of order:

> I3: "Assessment is difficult. It is impossible to produce an absolute assessment between groups. You put the groups in a sort of order … the best group and so on … it is totally impossible. Because there are so many affecting factors … the tasks are different, the instructors are different, the clients are different."

In addition to differences pertaining to all the parties of the DP project and project tasks, assessment is hard because projects consist of discussions – unlike grading examinations, which consists of text on the paper. Because instructors are compelled to grade and because there is no definitive scale for just grading, the instructor considered grading as a moral problem:

> I3: "Instructors have different backgrounds, different experiences, different visions – it is not an easy task to guarantee that all assessments relating to twelve groups would be just. Producing examination results is an easier task because all issues to check are in the examination paper – you assess relating to it. The project consists of discussions … you are compelled to provide a grade and the range accepted - not-accepted does not apply. I think that this is the hardest issue … To grade is a kind of a moral problem. To some extent it perhaps is. What is just and what is not just."

Furthermore, providing different grades inside a student group is even more difficult. For instructor I3, providing group members with different grades makes the instructor hesitate about his conclusions. A moral problem emerges in fair treatment of students, and providing grounds for the grades is difficult:

> I3: "Why, for example, would there be different grades within a group. That is also a difficult situation. Middle assessments before Christmas … we understand where we are going. Some have motivation and attitude problems, or their know-how is weaker than that of the others in a way that it is seen by the instructor. … … We have had personal discussions with the students. During those discussions we have been able to make it known to them the way it looks to the instructor. Two students from a group of five students got the same grade. It was quite a difficult situation. Did you treat the one in the middle the right way? Two poorer ones and two better ones and one in the middle. Should she be promoted among the two? These are very difficult questions."

Because instructors guide up four groups at the most, there is a danger that an instructor gets some groups mixed in his head. Instructor I2 considered this and according to him instructors' interaction should be more profound for the sake of the assessment. Comparing groups with each other is difficult because they are incommensurable (extract from a discussion among four instructors):

> I2: "… I have proposed that the interaction between instructors should be much more profound … from the assessment viewpoint … when we have the final assessments, it feels one is in trouble with one's own groups … mutual comparison is very difficult to get."
> My colleague: "In principle, one cannot compare the projects."
> I2: "They are not commensurable, of course."

Freeloaders. There are student groups, which hide the fact that there are freeloaders inside the group. According to instructor I3, a group may consider an assessment or the instructor as a threat if they are too open towards the instructor. It seems that everything cannot be disclosed to the instructor, because disclosing problems could affect the future grade of the group. Especially, in the case of a freeloader, the group may protect the student:

> The researcher: "Would you describe the discussion which you had with the student."
> I3: "We have discussed this with the groups, also. The group took the initiative to discuss it. It does not go well with the group. There are groups, which try to hide it. To protect the particular member. Outside everything goes well … in the same scale … and all they do just the same amount of work … however, one of them does the wrong thing. The group protects the person. The group functions as a group. Againts outside threats. The assessment is a kind of threat to the group. The group is its own unity. For some groups the instructor may become a threat … if one discloses too much to one's instructor it may affect the mark."
> The researcher: "Do the students think that they could openly tell about everything?"
> I3: "It depends on the group and the students. There are groups, which try to hide the problem consciously … fortunately such groups are rare but they exists, however. Then the personal discussions … I did not have them with all groups … with the project managers … in some occasion I was so busy that I categorically did not have time … the instructor is busy and the group is busier…"

As the extract illustrates, busy schedules hinder the arrangement of private discussions between the instructors and the students.

First-year instructors' worries. During my first year, my colleague and me were concerned about the assessment procedure: how could we assess students when we instructors were outsiders in our relation to our groups? My colleague was a former year student from the DP course, and although he was familiar with the assessment procedure, he considered that the distance between him and the reality inside the project created a problem:

> My colleague: "How should I relate when I feel that I am one kilometre away from the reality? In practice, how can I really say what I think and how those issues really are? Because, during the last year, I could not do it, and at that time I was a member of a project team."

In fact, I experienced similar doubts during assessments – especially before the middle-assessments. As I have interpreted this problem, we experienced *a moral conflict, in which we had to produce qualitative assessment although we perceived that we did not have sufficient information for the assessment.* I think that it was a question about just assessments: providing grounds for assessment is essential in teaching work whilst lack of sufficient information makes the assessment defective. Also, *a moral conflict relating to just assessment of different groups* emerged when we understood that we were to assess the development of very different groups. For example, there was a group, whose performance improved during the spring, and another, whose performance remained good throughout the course. In the latter group the development was not as steep as in the group, which had started lower:

> My colleague: "In implementing the plans there is … but then on the one hand when I think about that, okay, they had produced a plan although it flopped. Should we measure how well they were able to produce the plan or should we measure how well they have learnt from it, from the viewpoint of producing the next plan, for example."
> The researcher: "I think it is the latter one because…"
> My colleague: "Yes, but how can you consider this issue in the same way with all the groups?"
> The researcher: "Yes, yes."
> My colleague: "Well, let's think about [a name of a group] who have done well from the beginning. Their development has not emerged through mistakes. Is it an issue, which should be quantified or should we measure each group in different ways? Can we compare the groups with each other?"
> The researcher: "Well, if there has been development in [a name of a group], it is very valuable. So, should we even forgive them or forget some issues from the autumn period? Because, then, they did not understand, but there has been an upward trend in the group. If [a name of a group] has had an upward trend and [a name of a group] has been at the high level but in a steady way, they get the same grade. So, is it then right or wrong?"

Like the above extract illustrates, during our first year as instructors, we were bewildered about assessing different groups with the same scales: how the grades of different groups should relate to each other? What kinds of grades should be given to a group, which started from low but developed its working methods in a satisfactory way, and to a group, which started from high but did not develop its working methods very much?

Emotions and grading. The grading is subjective in nature and dependent on knowledge about other groups and even emotions towards them. In grading, I observed *a moral conflict relating to an inclination to let emotions override justice in grading.* This means that a group may be assessed differently compared to other groups because of the instructor's negative or positive emotions towards it. I observed this kind of conflict when my colleague assessed the attitude of his group to be worth 4.5 points without discussing it with the secondary instructor, namely me. Because the learning aspects of the group were not sufficient during the autumn period, I protested and demanded to lower the grade to 4. What I suspected was that because the instructor had very good and close relations with the group members, he was inclined to grade their attitude too high. Similarly, I observed a potential moral conflict

relating to consideration of a group, towards which an instructor has negative emotions. There might be an inclination to mark such group unjustifiably down in the scale. During an academic year, there was a group, some members of which used bad language during guidance meetings. Concerning this particular group, we – as I have interpreted it – were aware of that possibility, and produced the grades by a rational discussion.

Just assessment threatened by careless usage of equipment. At the beginning of the grading meeting during the second year, we discussed about the way to illustrate the grades during the meeting. Some instructors expressed the idea that grades should be written into a spreadsheet program and with the help of a projector show them on the wall. The leading instructor opposed the idea, because, according to him, by using a black board instead would make it possible to observe all the grades simultaneously. However, the usage of spreadsheet was chosen. During the discussion, the grades of each group were written into a sheet and projected to the wall. Individual students' grades were put on rows, which were occasionally hidden because there was no space to show all the rows simultaneously. At some point, some of those individuals were forgotten, and after the meeting when other instructors had left, the leading instructor had to reconsider some individuals' grades. I realized that careless usage of technology created a threat to just grading, and that there is *a moral conflict relating to the choice of equipment and its effects to just grading.* When new equipment is used, its possible harmful effects should be analysed. In this case, the nature of the spreadsheet program (possibility to hide data) and its careless usage negatively affected just grading at an individual level.

Providing grounds for assessment. Providing the students with grounds for assessment is difficult. When the instructors discuss about their groups and grade them, during the discussions they produce so-called inter-subjective consideration about the actions of their groups. The inter-subjective consideration is formed by comparing groups with each other with the help of an assessment framework and by comparing actions of groups with each assessment issue. Providing students with the underlying reasons for their grades is difficult because extracting a group's assessment from the inter-subjective assessment cannot be done without disclosing comparative information about actions and assessments of all groups. Disclosing such information is generally avoided because the focus should be, at least ideally, on the development of each group – not on comparing groups with each other.

Regarding a student, I was forced to think about his actions from the viewpoint of the group work in general, and even about what kinds of messages we wanted to transfer to our future students by "bush-radio". His participation during the autumn time was not sufficient and during our comparative discussions the leading instructor pointed out the importance of group work and attendance. I decided to give this student a lower grade, in group work, lower than for other students, because of his poor attendance during the autumn time. Afterwards, the student complained that he considered his treatment unjust, although we tried to explain our reasons to

him. His actions could not be universalised in project work: balanced group work requires continual attendance in groups' actions. The lowering of the grade, as I understood it, was based on equal treatment of students in grading, but it also had another function. By pointing out this issue about the grade, we wanted to transfer information to "bush-radio" about how important we consider the group work. This way we wanted to influence future students so that they would invest more time, in a balanced way, to the course. In a similar case of another student, a student in my colleague's group accepted the grade but he complained that he did not understand the underlying reasons for the smaller grade. It seemed that although we instructors were satisfied about the fairness of the assessment and grading, communicating about the grounds with the students was very difficult. To sum up, as I have interpreted our experiences, we confronted *a moral conflict between providing grounds for the grade vs. not disclosing comparative information about other groups.* To provide the students with the reasons for their grades is difficult because instructors' comparative discussions about all groups cannot be disclosed to students.

9.2.3 Commitment and prioritisation

In this section, categories relate to commitment to instructor's work and fulfilling work tasks. Category 5 relates to the possibility to avoid fulfilling one's duties. Category 6 concerns prioritisation in instructor's roles.

Category 5: Possibility to avoid fulfilling one's duties

Moral conflicts in this category represent possibility for instructors to avoid fulfilling their duties. It is possible that uncommitted instructors are tempted to neglect their duties in guidance work. This category is based on discussions with the leading instructor.

During the preliminary phase, the leading instructor described experiences from the previous years, when there had been instructors with low motivation to invest in teaching. For example, some instructors had met their groups rarely. Similar doubts about instructors' motivation emerged during the second year of my participation. This happened when the leading instructor and I were forced to deliberate about possible negligence of fulfilling one's duties among instructors. Because the instructors have free hands in their jobs, for example, each instructor arranges guidance meetings by himself with his groups and decides what issues to handle during those discussions, instructors are able to choose how much they invest in the teaching. Consequently, it is possible that an instructor knowingly uses his time for other purposes than teaching in the DP course (other teaching, leisure).

The discussions with the leading instructor and my experiences revealed that an instructor could confront *a moral conflict in knowingly choosing whether to neglect or not to neglect his duties as an instructor.*

Category 6: Prioritising between instructors' roles

In this category, prioritising between instructors' roles is considered. Instructors may possess roles, duties and expectations, which conflict with each other, and the instructor is compelled to make choices between them. First, in the instructor's work there is an inherent moral conflict: guiding student's actions and assessing them conflict with each other in the way that an instructor is forced to choose his actions and words carefully because he needs accurate information about his groups while he is obliged to assess and grade his students. In addition to this, an inherent moral conflict may emerge if an instructor adopts the role of a confessor by promising the students total confidentiality of discussions between an individual student and the instructor, thus providing the students with mental support but refraining from using the given information in the assessment. Second, the instructor's personal qualities may produce a role conflict: A role conflict may emerge if the instructor resembles (e.g., former year DP-student) his students. Third, instructor's connections in business produce role conflicts. An instructor with business connections may confront conflicts of interests, if the client of his group is a competitor or a co-operator with his business. Fourth, an instructor is a university teacher, who has also other duties apart from being a DP instructor: e.g., other courses they are responsible for, student counselling, work groups, and one's own research. Conflicts between work tasks may produce prioritisation situations, in which a duty may be left unfulfilled.

This category is based on interviewing instructors during the preliminary study, interviewing the leading instructor and my colleague during the second year, and my experiences during the first and second years.

The inherent role conflicts of an instructor. The inherent role conflict relates to the instructor's double role as a counsellor and an assessor. There are four notes in my diary from the first year about this conflict. During the preliminary study, I had discussed, with the leading instructor, the inherent role conflicts of an instructor, and I started to reflect on the conflict during the participant observation phase of my study. In the next extract from my diary, I describe my thoughts from the first guidance meeting. At the end of the meeting the students expressed thankfulness and respect in a way that I was not accustomed to hear. Additionally, a student's behaviour at a doorway made me reassess my status as an instructor and researcher (an extract from my diary):

> I noticed that when I was leaving their room, many of the first group said quite simultaneously "Thank you!" In addition to this, when I was walking along a corridor side-by-side with a student from this group, I noticed that it was hard for him to step through a doorway when I held the door open for him. These two observations awakened me to think about my state of authority, openness and honesty: I) how can I, as a researcher, get reliable information from these individuals, and ii) how can I get reliable and real information about the state of the group so that I can warn them and assess them in a just way.

As the extract above suggests, I suspected that the double-role of the instructor would be conflicting in nature: on the one hand, I was to help these students,

and on the other hand, I should assess them. To be able to help the functioning of a student group I should be aware of its state, but because I was to grade their actions they might not be totally open and honest towards me about the inner life of the group. I had previously talked about this conflict with the leading instructor, but my understanding of this issue started to grow when the interaction with the students started. Additionally, the above extract illustrates my doubts as a researcher: how could I get reliable information about the groups if my authoritarian role modifies my students' behavior towards me?

The next incident, which made me think about this conflict, was a discussion between a student and me. He told about an inner conflict inside the group: there was a student who did not complete the work tasks assigned to him. This information amazed me, because I had not anticipated this kind of problem. Additionally, I started to think about my working habits: seeking of the balance in practical guidance work in building trustful relations with students and in getting the real information seemed to be troublesome for me. During guidance meetings I sometimes asked individual students in turn to describe what they had done previously. However, because I sensed that students are grown-ups and that that kind of questioning would make them think that I did not trust them, I mostly refrained from questioning the students in turns. Regarding this particular group, this approach was not successful. In the next extract, which I wrote after I was told about the problem, I deliberated about the conflict between showing lack of confidence towards group by questioning them profoundly and finding balance in my relations to the group (an extract from my diary):

> In principle, I should have asked them about the work tasks in an individual level. On the one hand I have not considered necessary to ask questions about the work tasks in a specific way because that way I would express lack of confidence towards the group. One should find a properly balanced relationship between the group and the instructor: the group should openly express the issues to its instructor. This is not accomplished if in the group there are inner conflicts and the group does not have the nerve to disclose them during guidance meetings. In private discussions it may happen – like this case showed. The instructor should have the capability to sniff and anticipate problems, which are not observable from the outside– on the other hand, here we may become too neurotic: the group is responsible for its own acts.

The above extract illustrates that as an instructor I could arrange private discussions with students, during which a student could disclose a problem relating to his group. The existence of problems within the group may negatively affect the transference of real information about the group to its instructor. However, like the extract points out, I considered that the group had also responsibilities in the issue.

The third event, that made be deliberate about the instructor's role conflict, took place during a guidance meeting, when the project manager complained that my emails were quite imperative in tone. This made me think about how to communicate with my students. I had sent the same emails to all my groups using imperative phrases like "*remember to do this-and-this*." This manner of communicating with students carries within *a moral conflict relating*

making demands on students and at the same time upholding trustful relationships with them. This conflict is inherent in the instructor's role: as an instructor I have to make demands on students but at the same time do my share to keep the relationship between the group and me pleasant.

The fourth event, which made me think about the instructor's role conflict, was during a private discussion with a project manager. He described the group spirit of his group and, according to him, students in his group were not enthusiastic about the project. He said: "*it is enough if we get the credits.*" My own observations about the group were consistent with what he said, and, in what he said, he included himself in his observations. This student had wilfully provided me with information about the poor state of his group, and I felt confused in my deliberation about instructor's work and being a fellow man towards another individual. In a way, I was to break the trustful relationship with my student because, as an instructor and an assessor, I was to use the information to strengthen my assessment and grading process: the information would have a negative impact on this student and his group. I experienced *a moral conflict between carrying out my duties as an instructor (to provide just grading) and keeping up a trustful relationship with a student* (an extract from my diary):

> The fact that the instructor creates a trustful relationship with an individual student … it is right from the viewpoint of guidance, but is it right to take advantage of this information when it has undesirable consequences from the students' viewpoint? On the one hand, we are providing them with qualitative feedback, which should include deliberation from diverse viewpoints … Would the ideal situation be that all parties were open and honest towards each other so that the instructor could assess the group as realistically as possible? This would mean that the group would disclose any shameful issues openly.

During the private discussion a student had confessed the state of the real spirit of the group to me, and using this information in assessment would have meant, from the grading viewpoint, that I would have used the information, so to speak, against them.

Confessor's problem. During the second year, the leading instructor delivered instructions for the instructors about the private instructor-student discussions. The instructions included a phrase, in which it was declared that the discussion between the instructor and the student would be confidential and that the content of the discussion would not affect the assessment. I opposed the usage of the instructions, because it might produce a conflicting situation, in which the instructor knows about a problem which should be brought out in the group and which should be taken into consideration during the assessment and grading. The problematic is similar to problems faced by confessors: during a confession they may learn about wrongdoings but their duty is to refrain from telling anyone about them. Later, a colleague applied the principles in his discussions with students. Some weeks later he told me about a problem, which was quite similar to those I warned about our instructors. *A moral conflict of the role of a confessor* emerged: the instructors have the duty to assess students - in these private discussions at least one instructor committed himself to a duty of professional secrecy.

Conflict of duties as a researcher and an instructor. During the first year, after discussions with the students about ending their project manager's roles, I interviewed my students with an interview protocol, which was based on an indirect interviewing method (Appendix 3). Although the idea was to discuss potential moral conflicts in a given setting, often the students started to describe moral conflicts based on their actual experiences. A student told about a problem relating to a group member: he had not implemented the work tasks assigned to him. The other student had assigned the same tasks to the student but he had not completed them. The student told that he could not bring out the issue because he was afraid of confronting whatever reaction the other student might have. He also told that he has a bad conscience when talking about this problem with his group members. When he talked about the problem with his closest friend, he said, he did not feel any bad conscience. At the end of the discussion, he mentioned that it is good that the group members are not friends.

This discussion made me confront *a moral conflict between duties of a researcher and an instructor.* As a researcher I was told about a problem, which I could not use in my instructor's work. I perceived that to maintain the promised confidentiality was a higher duty than the instructor's duty to intervene in the situation. Thus, I was compelled to refrain from bringing out this issue during the final assessment. When I later thought about some occasions during the year, I remembered that another student had discussed this issue with me during a guidance meeting. Had I remembered that, I could have brought the problem out.

Personal qualities. During the first year, my colleague, who was a DP student from the previous year, confronted a conflicting situation, which I interpreted to be a role conflict: When he talked with his students as a comrade they told him about issues which, most probably, would not have been talked about with an instructor. In such a case, could he as an instructor use the information, which he got in his fellow-student's role? For example, in an assessment, he might feel it as his duty to use the information, which he got when talking with students as their fellow-student. He deliberated on this conflict as the following extracts illustrates:

> Colleague: "… well, I have had some freeform discussions with these students, and the borderline between when talking as a fellow-student and talking as their instructor is vacillating. … as a fellow-student I cannot use the information against the group, for example, if I have heard that he [a student in a group] have been home five days and done nothing."

I interpreted that he had confronted *a moral conflict relating to being both a colleague (fellow-student) and an instructor towards the students.*

Business connections. An instructor with business connections may confront role conflicts, which are similar to the fundamental conflict between learning aspects and beneficial goals of clients. If an instructor guides a student group whose client is a direct competitor or co-operator with the firm with which the instructor has business contacts, the instructor may confront situation in which he can choose between emphasizing learning aspects or beneficial aspects of the

client. In the case that an instructor has connections to the client of his group, his interests may coincide with those of the client.

During the preliminary phase of this study, instructor I3 described conflicts, which were based on his double role as a beneficiary of the results of the project and as an instructor. On the one hand, his firm was in joint venture with the client of the group, which he was guiding, and thus he could benefit from the results. On the other hand, his task was to support learning. The instructor was aware that by giving direct guidelines and completed ideas he could get more benefit from the project, but as an instructor, he should refrain from providing the students with completed ideas:

> I3: "… on the one hand, because I am an instructor, and on the other hand, potential beneficiary … that makes it different … as an instructor my task is to support the learning of project work … on the other hand, if I want plenty of results, and fast, for the benefit of our firm, there exist a sort of conflict … the other issue is that I was familiar with the project task … refraining from putting forward my own opinions, completed ideas, and letting the group to invent them … as they succeeded … balancing between the instructor's and beneficiary's roles caused certain kinds of problems at least at the beginning."
> The researcher: "Did you take the client's side?"
> I3: "Indirectly … [the name of a client] was the client but the idea was that the results would be brought to our firm to be refined … we have a sort of joint venture with [the name of the client]."

According to the above extract, the instructor was aware of the conflicting role and that conflict caused problems for him at the beginning of the course. From the instructor's description about his role conflict, I interpreted that there was *a moral conflict between the conflicting roles of an instructor as a beneficiary of the results and as a supporter of learning.* Duties of the instructor demanded him to emphasize learning aspects, but there was the possibility of emphasizing the results aspect.

It is possible that clients can pressure the university side to allocate a particular instructor to guide the group with which the client is involved. It was in the interests of the client, as the following extract suggests, that the instructor with connections to the client would guide the group. The leading instructor told about a client organization which was ready to offer a project task only if a certain instructor were to guide the project group:

> The leading instructor: "There will be a project task if [name of an instructor] guides it. If I had been here I would have not accepted … afterwards I could not interfere in the matter. We discussed with the instructors if it was right and to what this may lead? The question is about a certain kind moral issue …this was the second time [name of an instructor] started to guide a project task which was linked to his or her own business."

There have been opposite pressures from a client's side relating to instructor allocation. Clients do not accept an instructor who is in business and who is a direct competitor against the client. The following extract illustrates this problem:

> The leading instructor: "For some project tasks he [a name of an instructor] may not become an instructor because they [client firms of the project tasks] are direct competitors for [the name of a firm the instructor is involved with]."

For the university side, it is easier to comply with the latter types of pressures from the client's side, namely prohibitions in the case that an instructor represent a competitor for the client, than with the former kinds of pressures, in which the learning aspects may become endangered because of the instructor's and client's beneficiary goals.

University teacher's conflicting duties. A university teacher may be involved with teaching in many courses, attending work groups of the department, doing research, etc. A university teacher, who is nominated to do instructor's work, may confront prioritization conflicts between his work tasks. I confronted prioritising problem in its fullest sense when the leading instructor assigned me to lecture five minutes about student project courses at both of the teaching-oriented departments of our faculty. In reality, preparing for the 5-minute-presentation took at least one day because the information for the presentation had to be gathered from various sources. I had planned to use the time for reflection about my own work and about my four groups, and I was compelled to neglect my most important duties - as I felt it during those days - as an instructor towards my students. Thus, I experienced *a moral conflict of conflicting duties as a university teacher*.

During the second year, we confronted problems with managing a group of eight instructors. Most of the instructors were to guide one or two groups, which in practice meant that they had other teaching duties as well. As a consequence, we never got all the instructors attending our instructor meetings at the same time and important information for the groups was left undelivered. This led to rumours and discussions among the students about inefficient guidance. As I interpreted what happened, these instructors most probably had confronted *moral conflicts relating to conflicting work tasks as a university teacher.*

9.2.4 Information handling

In this section, there is a category concerning the usage of students' information in instructors' collegial discussions. Category 7 considers disclosing students' information in collegial discussions.

Category 7: Disclosing students' information in collegial discussions

In this category, moral conflicts relate to handling students' intimate and confidential information. Instructors get to know information about their students, and for collegial support the instructors discuss the problems of student groups and talk about individual students. Defining the borderline about what can be disclosed to other instructors about the students creates a moral conflict, because the instructors need collegial support in their work, but there is uncertainty about what can be disclosed to one's colleague.

This category is based on my experiences from the first and second years.

Borderline between confidential and non-confidential information. In a social occasion, I met a student project instructor from an educational institute, in which a teaching model similar to the DP course is in use. During the discussion he described the relationship between his groups and himself. He told that the students tell him about issues that they would not normally talk about, and in this way he had been able to tell the other instructors about issues that they would not otherwise get to know. His story and the fact that my colleague and me had constantly discussed about our groups in this respect raised the moral conflict of confidentiality: *What is the borderline between confidential and non-confidential information in terms of disclosing the information to other instructors to get collegial guidance?*

9.3   Interpersonal moral conflicts

This section considers interpersonal moral conflicts, which relate to activities towards individuals, and ego-strength in interaction with individuals.

9.3.1 Treatment of individuals

In this section, categories concern instructor's activities, which are targeted towards other individuals, students or instructors. Category 8 concerns the possibility to harass one's colleague, and category 9 is about intervening in students and other instructor's activities.

Category 8: Possibility to harass one's colleague

In this category, moral conflict relates to the possibility to choose to harass one's colleague. Instructors meet frequently to discuss about guidance work and problems relating to guiding student groups. During these discussions, it is possible that an instructor is tempted to express himself in a harassing way towards another instructor.

This category is based on my experiences from the second year.

Harassing colleagues. During the second year, bullying, whether it was intentional or unintentional, took place in some occasions. Small group guidance created stress and need for emotional relief among instructors, and this made our meetings occasionally be very emotional in nature. During these discussions, some instructors behaved in a harassing way towards their colleagues. For example, gender-based jokes and remarks based on other instructor's personality, were bandied about, and I guess, at least two instructors were offended. It is possible that instructors wilfully express themselves in a harassing way towards their colleagues. I interpreted that there is *a moral conflict relating to a possibility to wilfully harass one's colleagues.*

Category 9: Intervening in instructors' and students' actions

In this category, moral conflicts relate to intervening with other individuals' actions, namely with students' and instructors' actions. Intervening with other individuals' actions is considered difficult because the intervention itself might make the situation worse, by, for example, offending the object of intervention. The intervention in this category is considered to include giving feedback to individuals, making demands on students and the possibility to raise discussions about a group's ineffective functioning.

This category is based on interviewing the instructors during the preliminary phase, interviewing the leading instructor and my colleague during the first year, and my experiences during the first and second years.

Intervening with students' actions. In guidance work, an instructor may confront a situation in which he is forced to deliberate about whether to intervene with an individual's or a group's actions, and if so, in what way he should intervene.

During the first year, my colleague confronted a decision-making situation, in which he was vacillating between whether to intervene or not. The reason for this deliberation was the observed partial non-functionality of the group. He considered that it was the responsibility of the group to heal the situation but he also pondered whether he should intervene:

> Colleague: "I have been thinking whether to intervene or not … and perhaps I have concluded that I will not intervene … I have discussed with the group members about the issue now and then, and I have said that it is your responsibility to [description of what students should do]. … I have done it in this way, although I have heard something else from the group. But when we think about these groups, a group is a unit, which functions in unity."

A student group's actions, at least from its instructor's viewpoint, may not be in balance. An instructor may be compelled to deliberate about how an individual student manages inside a group. During the preliminary study, instructor I3 told about a past group, which included a student deviant in a certain way. The instructor was worried about how this student could manage the course. However, as the instructor assessed, the student got support from the group and from outside the group. For the instructor it was impossible to bring out the issue with the student because it would have had negative consequences – in fact, he thought that bringing out the issue with the student would have deepened the problem (the nature of deviance is not disclosed to protect the student's anonymity). It seemed impossible to do anything (extract from interviewing the instructor): *"you just cannot ... all in all, you do not know what to do."* The instructor was convinced that in the case that the student were not able to do his share, the issue would be brought out by a member of the group. Finally, *"…in spite of these differences they were able to act quite consistently towards the client"*, and the whole group completed the course. I interpreted it as this instructor confronting *a moral conflict of intervening with an individual student's actions when the intervention could possibly make the situation worse*. The moral

conflict relates to respect for a different individual and his emotions, which could be violated by intervening in his actions. In fact, during my first and second year, we confronted similar problems with two students, whose performance seemed to be inadequate, but handling the issue would also have been very difficult.

Giving feedback to students. Giving feedback is problematic in the sense that giving feedback should improve students' and groups' actions and the same time the instructor should maintain good relations with his groups. During the middle-assessment, I identified *a moral conflict relating to honesty and openness in assessment vs. successful future co-operation with the group.* I felt it as my duty to express criticism towards a group because of lack of motivation of its members, but the same time I wanted to keep up my relations with the group.

Giving feedback to an individual student may be problematic because as an instructor I did not want to harm the students. When conducting instructor's work, I confronted a feedback-giving situation, in which I had to deliberate carefully about how to express my feedback. A student had produced a good plan for his group, but the plan needed very much redefining because of ambiguousness and illogicalities in the plan. I gave him feedback, first about the good aspects of the plan and then I considered the aspects, which needed development. A colleague of mine and me had considered this student being very sensitive in nature and this made giving feedback hard for me. While giving feedback, I sensed that the student took very seriously all the words I expressed, and I even feared that the student would burst out crying because I had to point out the points to develop from the plan. During this meeting, I confronted *a moral conflict between giving honest and open feedback vs. harming a student.* Finding the balance between potentially deleterious effects of giving feedback and expressing the feedback in a right way became a moral challenge for me.

Emphasis on the learning aspects. During the first year, when I learned instructor's work, I noticed that, as a consequence of the leading instructor's promulgation, I had accepted as part of the instructor's role the need to emphasize development of process (e.g., planning, communications) instead of emphasizing the final results. I accepted the idea that it is more important for me as an instructor to concentrate on focusing on the development of lasting skills than guaranteeing high product quality, because the client nearly as a matter of fact maintains the students' focus on the final results of the project. I was concerned about my students' motivation towards the learning aspects and the implementation of them. When I observed that my students were under strain in producing the results, I felt annoyed when making demands about the learning aspects (e.g., pressing students to arrange development seminars). This produced *a moral conflict between my duty as an instructor to make demands on learning aspects and taking into account students' stress.* As an instructor I had to put pressure on students, so that they would not forget to develop project work skills.

Intervening with colleagues' work. During the second year, the leading instructor and me became suspicious about our colleagues' working habits(see also sub-section 8.2.1 about just treatment of instructors). The instructors have the freedom to conduct their duties as they see. We had a reason to suspect that an instructor made hardly any demands on his students because certain basic work methods were still at an immature stage in the group. Also, all the instructors did not take part in instructors' meetings and as a consequence some groups were left without important information. The leading instructor and me confronted *a moral conflict between bringing out the problem with the instructors vs. showing respect towards our colleagues. O*n the one hand, bringing out the problem would have possibly healed the situation – on the other hand, it might have offended them deeply in case we had misunderstood the whole thing.

During the preliminary phase, the instructors described problems based on the poor administration of the course: Paradoxically, it seemed to be impossible for the leading instructor to plan the course and produce timetables of the course in advance. An instructor described the need for better planning and production of timetables for the course and he considered that it was not his job to do someone else's job. Among instructors, there were differences in how to conduct work tasks:

> I2: "[A name of an instructor] is a systematic and specific person, and [the leading instructor] is not able to produce the schedules. In principle, I do not bother to do them because they do not belong to my job. During all the previous years … it has got a little bit better, but it is nowhere near. [The leading instructor] is more free … opposes the philosophy of the project."

During my first and second year, many students and some of my colleagues complained about late announcements of lectures and project managers' meetings. I interpreted it to mean that my colleagues and me confronted *a moral conflict relating to whether to intervene with a colleague's work.* On the one hand, work tasks are divided among the instructors and it is one's duty to do one's share. On the other, one is able to influence the work of one's colleague by pressing him. During the second year, I pressed the leading instructor about more systematic planning of the course, but refrained from doing his jobs because I had big enough workload of my own.

9.3.2 Ego strength

In this section, a category relating to ego strength is presented. Category 10 concerns about conquering oneself when implementing one's duties.

Category 10: Conquering oneself when implementing one's duties

In this category, moral conflicts relate to an instructor's ego strength to implement one's duties. Weakness of will may hinder one when one is somehow tempted to neglect one's duties. This may emerge whenever an instructor should give honest and open feedback, or when he may not be mentally capable to conduct his duty because of uncertainty. An instructor may

be compelled to deliberate about conducting one's duty as a university teacher regardless of the consequences of implementing that particular duty. This may happen, for example, when an instructor begins to deliberate about the consequences of sticking to his assessment about a student.

This category is based on my experiences from the first year.

Conquering oneself in giving feedback. I attended a board meeting of my group about how students managed to handle their share. The meeting was a poor one, and during the meeting I felt constant shame – first, because I had forgotten to check some details in students' plans (some plans included illogicalities), and second, because the students' performance was poor. When it was the project manager's turn to present the main points of the contract and the project plan, he mumbled from the paper, and, as I interpreted his actions, he did not show any inspiration about the project. After the meeting, the leading instructor said that it showed from the project manager's and the secretary's performance that the group process had not started in their group. In the guidance meeting, after the board meeting, I had to give feedback to the students about their performance. During the discussion, when it was the turn of negative feedback, I felt a growing uncertainty in me, but I pushed through and expressed criticism about their performance. In a certain point, when I was still thinking about continuing my negative feedback, I quitted and said that the walk-through of the project plan was well done. In fact, it was not well done, but I could not continue to give negative feedback. The reason for this was that the feedback was targeted to the same students all the time and my growing uncertainty during the meeting prevented me from conducting my duties. I felt that the students just sat and listened in a phlegmatic way. When I analyzed this experience in my diary, I thought about the problem of giving negative feedback to students:

> Here we are in the core of being an instructor: it is the instructor's task to guide and give hints to his group and to individuals in the group. The instructor should conquer himself and give negative (constructive) feedback. By negative feedback I understand assessment of an individual's performance and, in particular, one should talk about issues which the individuals have done in an inadequate or defective way. The negative feedback should contain hints on how to do it better. When giving feedback it is not right to give only negative feedback.

During that guidance meeting I confronted *a moral conflict relating to giving honest feedback and ego strength*: if one has to provide students with honest and open feedback, one should conquer oneself if experiencing feelings of uncertainty.

The second time I confronted a moral conflict relating to ego strength and conducting my duties, was at the end of the course, after the assessment meetings. In my assessment report of a group I had to take a stand towards grading individuals within the group. To my mind, the group members had not been equal in their actions and I had written that there might be differences among the group members regarding personal grades. Especially, I had brought out irresponsible actions of a student. After the assessment meetings, I

confronted this particular student at the coffee machine. The confrontation with him made me think about a moral conflict relating to ego strength: The fact that I would, perhaps later, confront these students, to whom I had to apply punitive measurements, could affect the grading process (an extract from my diary):

> I went to the project space to have some coffee. When I was having my coffee, a student, to whom I was going to give a lower grade, came to have some coffee also. The situation was annoying – first, I did not say anything. Then I joked about the slowness of the coffee machine … How should I relate to this individual as a human being when I am applying punitive measurements on him because of his actions? He joked also and the situation ended when I got my coffee. How can I confront these sanctioned individuals? To what extent fears relating to this affect the grades that I provide? At the back of my mind these issues affect my thinking, although I would make decisions objectively and calmly like a state officer who goes about his work. I have to stick to my office and its duties although it builds a wall between my students and me.

Regarding this conflict, it is mainly about ego strength to persist in one's assessments and not to give in to fears/pressures when confronting these individuals later.

10 THE REFERENTIAL ASPECT OF MORAL CONFLICTS

In this chapter, the referential aspect of moral conflicts, the "what" aspect, that is to say, the division into moral conflicts relating to outside parties, project-level, and interpersonal moral conflicts is presented (Table 16). Outside parties do not belong to the particular project co-operation, but the effects of project co-operation towards them and relationships with them include moral conflicts. Project-level moral conflicts relate to the implementation of the project co-operation between the parties. The third group of moral conflicts, interpersonal moral conflicts relate to how individuals treat each other. For example, a student practising for a project manager's role may confront an interpersonal moral conflict on assigning work tasks for his/her fellow-students. The fellow-student may later confront a project-level moral conflict, when she has to deal with the project course and other activities, simultaneously.

These three groupings of moral conflicts are presented in the following three sections. The chapter ends with consideration of common themes across the parties.

TABLE 16   Outside-parties, project level and interpersonal moral conflicts.

Focus	Description
Outside-parties	Moral conflicts relating to outside-parties, who are affected by the project but do not belong to the particular project co-operation.
Project-level	Moral conflicts relating to organizing, implementing and administering the project co-operation.
Interpersonal	Moral conflicts relating to relationships between individuals of the project co-operation.

10.1 Outside-parties

Outside-parties related moral conflicts relate to parties, which do not take part in the project co-operation, but who are affected by the project co-operation. The themes of the outside-parties related moral conflicts are presented in Table 17, and each theme and its underlying moral conflicts are then presented. It is noteworthy that clients, students, and instructors perceive different themes in outside-party-related moral conflicts.

TABLE 17   Outside-party related moral conflicts.

Party	Themes
Clients	Relationship with the society
	Relationships with co-operating and competing organizations
Students	Societal problems
	Relationships with other groups
	Considering parties dependent on the client
Instructors	Effects on IT-firms

Clients. Outside-related moral conflicts perceived by clients are focused on the society, competing IT-firms, and outside parties (usually firms) on which they have effect. The themes and categories are as follows:

- Relationship with the society
    - Implementing social responsibilities.
- Relationships with co-operating and competing organizations
    - Utility based decisions relating to relationships between competitors, and
    - Exercise of power towards outside parties.

Students. Outside-related moral conflicts perceived by students relate to the society, software producers, natural resources, employees in organizations in general, other groups in the project space and employees in client organizations. The themes and categories are as follows:

- Societal problems
    - Inclination to piracy, and
    - Taking into account societal problems in project work.
- Relationships with other groups
    - Possibility to stab other group in the back,
    - Taking other groups into account, and
    - Dividing project tasks equally.
- Considering parties dependent on the client
    - Taking into account parties dependent on or affected by the client.

Instructors. Outside-related moral conflicts perceived by instructors are associated with local IT-firms. The theme and its underlying category are as follows:

- Effects on IT-firms
  - o Just treatment of local IT-firms.

10.2 Project level

Moral conflicts at project level refer to conflicts, which relate to organizing, implementing and administering the project co-operation. There are three common themes in these moral conflicts across the parties: objectives of parties, and commitment and prioritization issues in implementing one's work tasks (Table 18). Assessment and information handling are present in conflicts perceived by the students and the instructors. Each theme and its underlying moral conflicts are presented next.

TABLE 18   Project-level moral conflicts

Party	Themes
Clients	Objectives of parties
	Commitment and prioritising
Students	Usage of resources
	Project work formalities
	Assessment
	Information handling
	Objectives of clients
	Commitment and prioritisation
Instructors	Objectives of parties
	Assessment
	Commitment and prioritising
	Information handling

Clients. Project-level moral conflicts perceived by clients relate to starting the co-operation, objectives of the project, and commitment and prioritisation in implementing the project. The themes and categories are as follows:

- Objectives of parties
  - o Possibility to be dishonest to get a project task accepted for co-operation,
  - o Utility selections concerning objectives of the project,
  - o Inclination to emphasize one's own utility in decisions between objectives of parties, and
  - o Respecting objectives of university and students.
- Commitment and prioritising
  - o Conflict between time resources and utility,
  - o Prioritisation of work tasks may harm individuals, and
  - o Conflict of undertakings relating to work tasks.

Students. Project-level moral conflicts perceived by students relate to the usage of resources, project work formalities, assessment, grading, objectives of clients and commitment and prioritisation issues in implementing the project. The themes and their underlying conflicts are as follows:

- Usage of resources
  - o Inclination to use university resources for one's own purposes, and
  - o Fulfilling duties related to university resources.
- Project work formalities
  - o Dishonesty in formal issues,
  - o Fulfilling project formalities in accordance with rules, and
  - o Equality in booking of hours.
- Assessment
  - o Openness about the problems, and
  - o Just grading among group members.
- Information handling
  - o Carelessness in protecting confidential information, and
  - o Taking care of confidential information.
- Objectives of clients
  - o Fulfilling duties relating to objectives of a client   .
- Commitment and prioritisation
  - o Inclination to avoid fulfilling one's duties,
  - o Allocating time resources, and
  - o Students' equal commitment to the project.

Instructors. Project-level moral conflicts perceived by instructors relate to objectives of parties, assessment, commitment and prioritisation and handling individuals' information. The themes and their underlying conflicts are as follows:

- Objectives of parties
  - o Maintaining balance between conflicting objectives, and
  - o Taking parties' objectives into account in selecting them for the course.
- Assessment
  - o Students' just assessment and grading.
- Commitment and prioritising
  - o Possibility to avoid fulfilling one's duties, and
  - o Prioritizing between instructors' roles.
- Information handling
  - o Disclosing students' information in collegial discussions

10.3 Interpersonal

Interpersonal moral conflicts consist of moral conflicts, in which subjects are directly associated with other individuals - although they may not show any caring towards them (like in the case of doing-wrong moral conflicts). Treatment of other individuals was for concern for all parties (Table 19). Treatment of individuals is seen more specific in the case of students: assigning work tasks, intervening to fellow-student's actions and behaviour towards clients and instructors are of concern for students. Conflicts of interests were perceived by clients and students, and ego strength related moral conflicts were encountered by an instructor. The themes and their underlying moral conflicts are presented next.

TABLE 19   Interpersonal moral conflicts.

Party	Themes
Clients	Conflicts of interest
	Treatment of students
Students	Assigning work tasks
	Intervening in fellow-student's actions
	Conflicts of interests
	Behaviour towards clients and university instructors.
Instructors	Treatment of individuals
	Ego strength

Clients. Interpersonal moral conflicts perceived by clients relate to conflicts of interests and treatment of students. The themes and their underlying conflicts are as follows:

- Conflicts of interest
    o Conflicts of interests between parties.
- Treatment of students
    o Possibility to safeguard utility by dishonesty towards students,
    o Making student related decisions to take care of the results of the project,
    o Fulfilling clients' objectives could harm students,
    o Respecting individuals, and
    o Treating students in a just way.

Students. Interpersonal moral conflicts perceived by students relate to assigning work tasks (as project managers), intervening in fellow-students' actions, conflicts of interests and behaviour towards clients and instructors. The themes and their underlying conflicts are as follows:

- Assigning work tasks
    o Taking into account individuals when assigning work tasks.
- Intervening in fellow-student's actions
    o Intervening in someone's actions, and
    o Justice in giving feedback to the project manager.
- Conflicts of interests
    o Possibility to intrigue for one's own interests, and
    o Equal distribution of gifts.
- Behaviour towards clients and university instructors
    o Honesty and ways of interaction with clients and instructors.

Instructors. Interpersonal moral conflicts perceived by instructors relate to treatment of individuals (instructors, students), and to ego strength. The themes and their underlying conflicts are as follows:

- Treatment of individuals
    o Possibility to harass one's colleague, and
    o Intervening into instructors' and students' actions.
- Ego strength
    o Surpassing oneself when implementing one's duties towards the students.

10.4 Common themes across the parties

In this section, the themes of moral conflicts perceived by the parties are summarised (Table 20). Themes considering similar issues are grouped within the same rows in the table. The table shows that there are three common themes across all parties of the project co-operation:

- objectives of parties,
- commitment and prioritisation, and
- treatment of individuals.

TABLE 20   Summary of the themes of moral conflicts.

	Clients	Students	Instructors
Outside parties	Relationship with the society	Societal problems	
	Relationship with other organizations	Relationships with other groups	Effects on IT-firms
		Considering parties dependent on the client	
Project level	Objectives of parties	Objectives of clients	Objectives of parties
	Commitment and prioritisation	Commitment and prioritisation	Commitment and prioritisation
		Assessment	Assessment
		Information handling	Information handling
		Usage of resources	
		Project work formalities	
Inter-personal	Treatment of students	Assigning work tasks Intervening in fellow-student's actions Behaviour towards clients and university instructors	Treatment of individuals
	Conflicts of interest	Conflicts of interests	
			Ego strength

Themes, which are present in moral conflicts of two parties (among clients and students, students and instructors, or clients and instructors), are as follows:

- relationships with other organizations (clients and instructors),
- conflicts of interests (clients and students),
- assessment (students and instructors), and
- information handling (students and instructors).

11   A FRAMEWORK FOR A MORALLY SUCCESSFUL PROJECT COURSE

A framework of a morally successful project course utilizes a theory of moral psychology and it adopts content from the upper categories of the referential aspect of moral conflicts identified in this study. The framework aims to help in preventing and solving moral conflicts in a project course. The framework aims to achieve that goal by emphasizing morally significant processes and orientations for moral success in project course. The framework contributes to the discussion of project success. For example, Shenhar and Levy (1997) determined four dimensions of project success: project efficiency, impact on the customer, business and direct success, and preparing for the future. The framework defined here offers a new lense for a successful project: morally successful project. Because the foundations of the framework are based on a special case of a project, the DP course, the framework is tentative in nature and it should be validated in practice in the environment of the DP course and others. The framework takes the viewpoint of morality instead of adherence to social conventions or personal preferences (Turiel 1983). This means, in Turiel's terms, that conventions of a particular society do not determine what is right or wrong. Social conventions co-ordinate social interaction within a social system but they do not prescribe what is morally right or wrong. Instead, moral domain, which is not dependent on any governing social rules and which is based on universals binding in all societies, determine what is right or wrong. For example, 'one should not harm the other' is an example of a universal, and a law is an example of a convention. Accordingly, the framework defined here is *prescriptive* and *universalistic* (Hare 1981) in nature. Moral judgements prescribe, that is to say, the deliberation of "Ought I to do X?" is to help to decide "Shall I do X?" There would not be any point to ask "Ought I?" if the purpose of asking was not to determine "Shall I?" (Hare 1981). Universalibility means that if one says "I ought to do X" then anyone else in the same circumstances ought to do X. It would be logically inconsistent to say about two similar persons in an exactly similar situation that the first ought to do X and the second ought not to do X (Hare 1981). In terms of Turiel (1983), universals

bind across societies. Thus, moral judgements – produced in the context of this framework – should be *universalizable prescriptions* as Kohlberg *et al.* (1983, 77) state. The framework is also about *growing and learning*, that is to say, moral success relates to developing one and the others. In short, the framework points out issues to take care of and provides means to produce moral judgements about those issues. It also points out the importance of developing one's character. The framework is meant for applying in contexts of project courses in computing. However, the following conditions should be fulfilled:

1. A project course is arranged by the initiative of an educational institute, and there are three parties of co-operation:
    a. A client, which defines the project task and for which a student project is realized and who guides the students.
    b. A student, who implements a project task with other students in a group and who learn project work skills, and
    c. An instructor, who guides the students. Instructors are expected to provide students with sufficient knowledge and infrastructure for learning project skills.
2. The co-operation is implemented as a project with a start and an end. The co-operation consists of sub-projects, i.e., student projects. The students' objectives are to implement a project task for a client and to learn project work skills.
3. Project organization includes the parties who plan, administer, and implement a project, which has objectives. Parties not part of project organization form the context of the project.
4. From the instructors' viewpoint a project organization (project course organization) consists of representatives of all clients, students and instructors.
5. From the viewpoints of clients and students a project organization consist of representatives of a client, who guide a student group, members of the student group, who implement the project, and instructors, who guide a student group.

The project course defined above is next approached from the moral success viewpoint. But what does moral success mean? The conception of moral success is adopted from Rest's (1994a) view concerning reasons why people fail to behave morally and, vice versa, what it takes to morally succeed in an act. Rest (1994a) formulated Four Component Model (the model is presented in detail in Chapter 2), which describes four processes - moral sensitivity, judgement, motivation, and character – according to which an individual may morally fail or morally succeed in her actions. As Rest (1994a, 23) states, the processes aim to answer the question: "What must we suppose happens psychologically in order for moral behavior to take place?" However, Rest did not demonstrate how one succeeds in these processes but he showed that it is possible that a moral agent may conceive that she failed morally in her acts if she realizes that her deliberation was deficient – for example, she may learn that she had given simplistic arguments for her decisions (failure in moral judgment). An interpretation used in the formulation of this framework is similar to that of Rest in terms of failure. Additionally, regression, whether conscious or unconscious, in a component is interpreted as a failure. Regression means, for example, that a moral agent is aware of morally significant effects of her acts but wilfully and knowingly ignores that knowledge. If a moral agent learned better and more mature ways of deliberation it would be a sign of moral success. For example, if she learned that her acts affected parties she was not

aware of, that would have meant that her actions would have been deficient but from the learning viewpoint the process of discovering those parties would have been a success. It is also possible that she might not be aware of having learnt more mature ways of thinking. However, we cannot expect that people keep on maturing constantly, that is to say, if a moral agent does not consciously learn from the experiences of solving a particular moral conflict, it does not mean failure. Instead the framework aims to present means for a long-term moral success and development with the help of four processes. These four processes are approached in the following ways in the context of a project course:

1. Moral sensitivity: developing awareness,
2. Moral judgement: facilitating stage transition,
3. Moral motivation: value awareness, analysis, criticism, and
4. Moral character: becoming a responsible agent

The framework is oriented for project courses in educational institutes and thus the development of students' skills and the basics of learning professional ethics are in focus, albeit that moral development can take place in every person - in clients and instructors alike. Therefore, the framework is targeted to all parties - clients, students, and instructors. Although literature utilized in this framework concerns moral education of students and pupils, it is postulated that moral development can take place in every individual. Development is fostered with the help of complexity, as McNeel (1994, 28) states on writing about the aim of the liberal arts education:

> …the purpose of bringing students into contact with a highly diverse range of facts and views about world. Many of these … address the complexities and dilemmas that arise as different people seek to live cooperatively in the world.

Consequently, the inherent complexity of a project course makes it possible for all the parties to develop themselves from all the viewpoints of the Four Component Model. The framework defined here might be referred to as moral education program targeted to all participants of a project course. Next, we take a closer look at each process of moral success in the context of a project course.

11.1 Moral sensitivity – developing awareness of orientations

Moral sensitivity is the first step in producing real-life moral decision-making (Clarkeburn 2002, 439). If one does not recognize moral aspects of a situation it is impossible for one to produce moral decisions. The main themes of moral aspect in the context of a project course, the DP course, function as guiding lights in sensitizing moral agents to moral aspects of a project course. The upper categories of the themes, interpersonal, project-level, and outside parties related moral conflicts, are abstracted to three orientations: human, task, and context,

respectively. In the case of a project course a success in moral sensitivity means awareness of the orientations, human, task, and context, and morally significant and divergent issues within and between each of them (see Figure 51 and Table 21). Awareness of orientations means also capability to invent new alternatives in the cases of conflict. As findings of Myyry and Helkama (2002) show, a moral agent may progress, stay at the same level, or regress in moral sensitivity. The possibility of progressing and regressing in moral sensitivity in the three orientations is illustrated with arrows in Figure 51. As the most mature state "A (9,9,9)" a moral agent has developed sensitivity not just within each orientation but also between the orientations. The moral agent may confront a moral conflict, which is associated with only one, or two or three orientations. Next, these orientations are presented in detail.
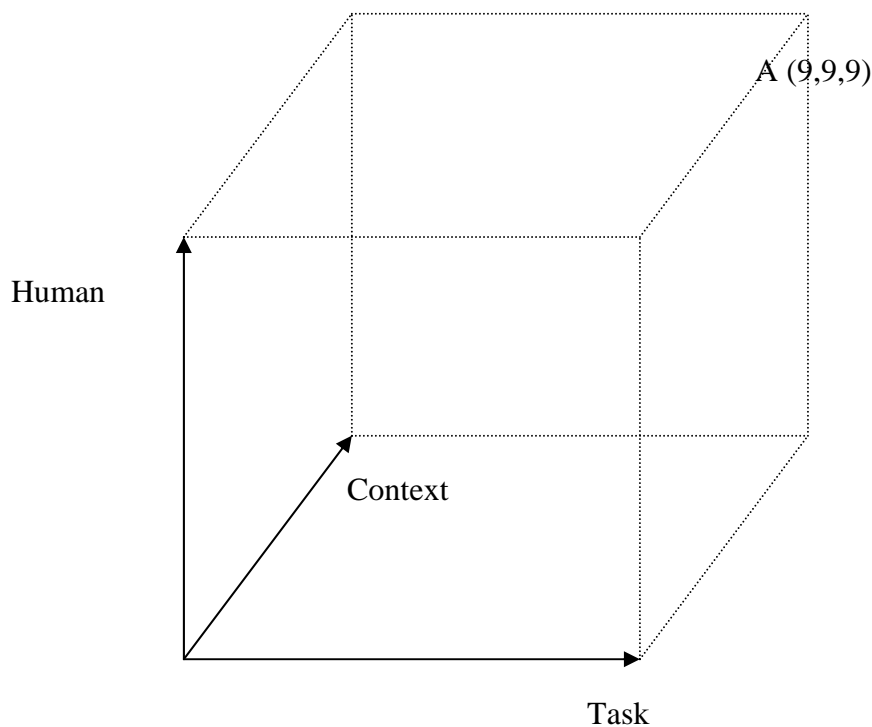

FIGURE 51   A framework for a morally successful project course consists of human, task, and context orientations.

TABLE 21   Summary of objects of orientations.

Orientations	Task (project level)	Human (interpersonal)	Context (outside parties)
Object of concern	Concern for production	Concern for people	Concern for context
Concerns in project course	Concern for the results of a project (results of student projects and learning results)	Concern for individuals of project organization	Concern for parties outside the project organization.
Exemplary themes inferred from the results of this study	Objectives of parties Commitment and prioritization Usage of resources Project work formalities Information handling Assessment	Treatment of individuals Assigning work tasks Intervening with someone's actions Conflicts of interests Ego strength	Relationships with society Relationships with co-operating and competing organizations Considering parties dependent on the client

Task orientation

The existence of a project is based on a task, which is to be completed. In the task orientation the concern is on managing the project, that is to say, in achieving the objectives of the project. Morally successful management aims to fulfil the objectives of the project - as long as they are moral. The project ought not to be started if its objectives are immoral.

In the case of a project course each sub-project, i.e., student project, is targeted to produce two results, that is to say, two fundamental transformation processes simultaneously:

1. results for the client, and
2. learning results for the students.

Management of student projects requires managing the actual projects and managing project skills learning. Although learning is a human-centred phenomenon it is interpreted in this orientation as a transformation process, a task, which has to be done and which is targeted to "change people", i.e., students. A morally successful management aims to fulfil both of these objectives. As the results of this study show, production and learning objectives may conflict. Therefore the participants of the project have to have an agreement on the objectives of project co-operation. The contractual nature of the co-operation requires negotiation about the rules of co-operation. Each party offers other parties with something that the other wants - cf. Jonhson's (1995, 566) description of relationship between a computer professional and a client. In the case of a project course, the students offer their workforce to the clients and they learn project work skills simultaneously. The instructors maintain the learning environment and offer guidance to the students on the basis of their service in an educational institute. Some exemplary themes to sensitize oneself in this orientation are inferred from the results of this study:

- Objectives of parties,
- Commitment and prioritization,
- Usage of resources,
- Project work formalities,
- Information handling, and
- Assessment.

Human orientation

In human orientation the concern is on taking people into account. Concern for people has philosophical underpinnings proclaimed by Immanuel Kant in the second version of his categorical imperative (Kant 1993, 95):

> For rational beings all stand under the *law* that each of them should treat himself and all others, *never merely as a means*, but always *at the same time as an end in himself*.

The Kantian idea of respect for human is taken as the fundamental idea in human orientation of a project course: participants of a project should be taken into account as ends themselves in achieving the objectives of the project (task orientation). The individuals in this case are those who belong to the project organization. The main embodiments of these individuals are:

- Students,
- Representatives of clients, and
- Instructors.

Exemplary themes to sensitize oneself in this orientation are inferred from the results of this study and they are:

- Treatment of individuals,
- Assigning work tasks,
- Intervening with someone's actions,
- Conflicts of interests, and
- Ego strength.

Context orientation

Context, which includes the contemporary setting *within* and *beyond* the organization (Boddy 2002, 31), is a concern in this orientation. In the case of a project course, the context consists of all parties (e.g., organizations, departments, individuals) outside the project organization, which is – as the definition above showed – different for each party. The context refers to all parties outside the boundaries of the project organization, which is different for each party. For the instructors, the context consists of:

- Parties in society (firms, individuals),
- Individuals and department of the educational institute, and
- Parties affected by processes and end results of all student projects.

For the clients the context consists of:

- Parties in society (firms, individuals),
- Other clients participating the course, and
- Other instructors of the course.

For the students the context consists of:

- Parties affected by the process and the results of the project,
- Other instructors of the course, and
- Other student groups and their members.

Exemplary themes to sensitize oneself in this orientation are inferred from the results of this study and they consist of:

- Relationships with society,
- Relationships with co-operating and competing organizations (including student groups), and
- Considering parties dependent on the client.

11.2 Moral judgment – facilitating stage transition

Being aware of morally significant issues is not enough: when confronting decision-making situations one has to make decisions and the decision-making is dependent on one's problem solving strategies, that is to say, on moral judgment in Kohlberg's (1981) terms. In the context of a project course, success in moral judgment means development in decision-making capabilities and abilities to construct solutions in moral conflict situations. This may be achieved by providing individuals with ethical analysis skills and by exposing them to situations, in which they are to solve moral conflicts in interaction with other parties. These situations may be confrontations with real-life moral conflicts or imaginary exercises. Ethical analysis skills include teaching of ethics theories and producing defendable solutions with the help of theories (see the summary in sub-section 2.2.4). Development of moral problem strategies means one's development to a higher stage of CMD till the attainment of the highest stage in Kohlberg's terms, that is to say, postconventional level, stage 6[7]. At that stage, moral judgements are made with universalization principles, regardless of conventions of the particular society the moral agent belongs to. Development in problem-solving strategies happens as people take part in social life and grow. People at higher stages understand the principles used at lower stages but they do not prefer them (Kohlberg 1981; Rest 1994a). It has been shown that moral sensitivity and judgement develop when people start to understand others' opinions and viewpoints (Rest 1994a; Rest and Narvaez 1991; McNeel 1994). However, because people reside at different stages and stage transition appears during a long period of time, the success in terms of moral judgment cannot be measured in a short time. Accordingly the framework defined here adopts the aim to help the participants to develop themselves in moral judgement, that is to say, produce as just moral judgements as possible. As the findings of Rest (1994a) show, when people comprehend two stages (e.g., stages 3 and 4) they prefer the higher stage and reject the lower stage. The lower stage

---

[7]   See also discussion on the seventh stage (Kohlberg, 1981, 311).

is considered as too simplistic – the lower stage is understood but it is not preferred any more.

Making stage transition possible

From the viewpoint of moral judgement and its development the learning environment should make a stage transition (in terms of Kohlberg) possible. This process can be supported by dilemma discussions. As a means for stage transition, dilemma discussions or moral argumentations have been suggested. Berkowitz (1985a, 1) defines moral argumentation as follows:

> Moral argumentation I take to be moral discourse or discussion in which discussants confront and attempt to resolve differences in their respective positions on the moral focus of the verbal interaction.

According to the growth facilitative perspective, the goal of moral argumentation is to stimulate an individual to grow to a more mature level of moral understanding. According to Berkowitz (1985b) the experience has shown that teachers are more like facilitators rather than direct instruments of peer discussion. Nucci (1987, 90) expressed the three characteristics of effective moral discussion:

1. Conflict. Stage transition is likely to occur if in a discussion there are students who disagree about the solution for a given dilemma. Problems teachers select for discussion should be the kinds that are likely to generate disagreement.
2. Stage disparity. One-half stage has been observed as the optimal distance in developmental levels between students. Normal heterogeneity among students is sufficient for effective moral discussion.
3. Transactive discussion. Moral development occurs if a listener in a discussion integrates the speaker's statements into her own framework before generating a response. Transact means that one aims to extend the logic, refute assumptions, or provide commonality or resolution to the speaker's positions.

The environment of a project course should provide opportunities for the participants to discuss and solve moral conflicts in small groups consisting of participants at different stages. Traditionally a teacher and students participate in group discussions, but in case of project co-operation clients' participation in the discussion would – at least in principle - create more difference regarding moral judgement and sensitivity and thus speed up development. However, this requires free and open atmosphere so that the students may express themselves and question issues in the presence of the clients. As Nucci (1987) stated, a good candidate case for discussion is a case, with which there is disagreement among the participants of a discussion. To identify such cases for computer ethics education, Vartiainen (2003a) arranged an attitude survey. He found, for example, that in the case of a programmer using computers of her employer for her own commercial purposes 22% of students considered her act as acceptable, 45% questionable, and 32% as unacceptable. Such surveys could be arranged relating to moral conflicts in IT-projects and cases with divergent attitudes could be used in discussions. Loo (2002) has studied usage of vignettes in teaching ethics of project management. However, Penn and William (1990)

argue that moral dilemma discussion itself is not effective enough to help students achieve principled moral reasoning capabilities (Kohlberg's highest stage). To be effective in this sense, according to them, ethics teaching should include direct interventions relating to logic, role-taking, and intellectual construction of concepts of justice. To develop students towards the highest stage the learning environment should provide students with thinking tools relating to universalizability theories. Candidates for this are, among others, Mackie's (1981) third stage of universalizability, Rawls' (1971) veil of ignorance and Kant's (1993) categorical imperative. For example, Collins and Miller (1992) apply Rawls' veil of ignorance in computer ethics teaching.

11.3 Moral motivation – values awareness, analysis and criticism

Moral motivation, like the following component, moral character, connects knowledge to action. Moral motivation relates to prioritizing moral values above non-moral values. It is possible that a moral agent is aware of an ethical issue (moral sensitivity) and knows what should be done (moral judgment) but is not fully motivated to do what she considers the right thing to do. But what are moral values and non-moral values? A value is defined as follows (Rokeach 1973, 5):

> A *value* is an enduring belief that a specific mode of conduct or end-state of existence is personally or socially preferable to an opposite or converse mode of conduct or end-state of existence.

There are instrumental values like honesty, logicality, courageousness, broadmindedness, and terminal values like a comfortable life, salvation, family security, inner harmony, and self-respect, to name a few of them. According to Rokeach (1973, 8) the concept of moral values is narrower than the general concept of values. Moral values refer mostly to modes of behaviour and do not necessarily include end states of existence values. Moral values relate to interpersonal relations and they are instrumental values (e.g., honesty) whereas other instrumental values (e.g., competence and self-actualization) have a personal (not interpersonal) focus. Violation of moral values leads to feelings of guilt but violation of other instrumental values to feelings of personal inadequacy. There may be conflicts between two moral values or between a moral and a non-moral value. Bebeau (2002, 285) states that in the context of professional practice career pressures, established relationships, idiosyncratic personal concerns, self-actualization, protecting one's self or organization may compete with what is morally right to do. As the findings of this study show, individuals confront situations in which they are able to prioritize non-moral or even immoral values above moral ones (doing-wrong moral conflicts). The key question here is how to bridge the gap between knowing and doing morally

right? Bebeau (2002, 285) states that understanding responsibility of one's acts is the key question:

> Understanding that one is responsible provides the bridge between knowing the right thing to do and doing it.

This understanding has to grow from inside a moral agent, and if in the context of an educational institute where future professionals are educated, without indoctrination. Research on professional identity is concerned about instilling desired values, internalized standards and codes on entry-level pre-professionals (Bebeau 2002). However, the aim of socialization of students to pre-defined professional values raises serious questions about indoctrination. Before proceeding to how to link knowing and doing we introduce the concept of indoctrination. Indoctrination means that we as ethics teachers impose our doctrines upon students who may receive them uncritically or on the basis of unquestioned authority (Warnock 1975; Lisman 1998; Macklin 1980). According to the belief of liberal neutrality we should respect a student's right to make up his or her mind about ethical issues (Lisman 1998). We respect students' rights by avoiding indoctrination, and it is done by teaching our students theoretical virtues like criticality, and rationality, and by letting the students formulate their own decisions (Airaksinen 1995). Ethics teachers may, however, ask questions and point out irrelevancies and arguments which are illogical or based on uncritical thinking. To advance towards indoctrination-free ethics education several means has been suggested. One of them is values analysis, consciousness, and criticism (Morrill 1980), which aim to make moral agents aware of values and change them, if needed, and implement them. Values analysis is about examination of values in a human situation (Morrill 1980, 76):

> Values analysis is a form of inquiry by which one seeks to understand the meaning of a human situation through discovering in it the values that orient human choice and decision. … Values analysis is an effort to discern what is at stake for human well-being amidst all the richness and complexity of life. To study values is by no means to abandon knowledge and factual analysis, but to illuminate the human purposes and meanings among the facts.

In practice values analysis may be, according to Morrill, questioning any situation about its characteristics like relations between matters of facts and questions of value, and which factors are given weight in the situation. The aim of values analysis is not to end up with certain values, like justice and truth, but because values exist in relation to each other, in harmony and in conflict, it is these relations that have to be assessed. Values analysis and consciousness go hand in hand, and according to Morrill (1980, 87) awareness of values may be developed through a process of comparison and contrast. Contrasting our experiences with those of others makes us aware of our values. According to Morrill, by asking students to state what they believe and why and by making them to defend their positions their consciousness of values is heightened. The aim of values criticism (Morrill 1980, 91) is to develop capacity for constructive self-criticism, and choice and implementation of values without prescribing

specific answers. In this way knowledge and action may be linked. Values criticism avoids indoctrination because it does not prescribe specific content of an individual's value system. Morrill defines the following criteria for values criticism: consistency (consistency between one's values and one's actions), reciprocity (looking the situation from the viewpoint of other person), coherence (integration of values to a system), comprehensiveness (one's value system in relation to a wider circle of reality), adequacy (values have to reflect presupposition of all valuing, respect of self and others), duration (time tests values), authenticity (avoidance of conformity to others' values), and openness (test values with those of others and ability to respond to a change).

Regarding the framework defined here, all the participants of a project course should be exposed to values analysis, clarification and criticism. With respect to professional values and their adoption, the critical analysis should focus on identification of moral values, in relation to IT-projects, and other competing values. Here, in the case that instructors and/or clients of a project course represent experienced IT-professionals, the preferred values in the IT-field could be exposed to clarification, analysis and criticism.

11.4 Moral character – becoming a responsible moral agent

Moral character refers to the psychological strength to carry out a line of action. It takes more to be morally good person than just being able to recognize the right thing to do. Nucci (1997) uses the term "character" to describe the tendency to act in accordance with what one understands to be morally right. However, character building cannot rely only on development of moral reasoning but it means also habituating oneself to morally good virtues. Usage of role models and heroes has been suggested for building virtues (e.g., Grodzinsky 1999; Apostolou and Apostolou 1997; Somners 1993). However, as Power and Makogon (1996) state, justice and care have to be learnt in practice instead of through the introduction of heroes in literature. Following the ideas of Aristotle (1994, 27) one becomes virtuous by practising a virtue:

> … by doing acts that we do in our transactions with other men we become just or unjust, and by doing the acts that we do in the presence of danger, and by being habituated to feel fear or confidence, we become brave or cowardly.

Singer (1994, 169) referred to two studies, which suggest that Aristotle may be right. In those studies blood donors and their motives for donating blood were investigated and, according to the results, incentives of external forces (e.g., a friend was donating) were substituted by internal motivations (sense of personal responsibility towards ones community) as the donators continued donating. The studies suggest that practising a virtue may make us internally virtuous. And with this internal strength we may struggle against pressures from outside to avoid acts we perceive immoral. A way to habituate individuals

to morally desirable virtues is to be found in the just community approach put forward by Kohlberg (1985, 71). Research on just community programs supports the view that a communal environment, which supports virtues of trust, care, participation, and responsibility are the best approaches in character development (Power 1997). Just community programs emphasize self-governance, democratic process of decision-making and abiding by the norms of the community (Morrill, 1980, 31). Teachers in just community schools have to demonstrate their students how to participate in decision-making in a democratic way and how to build a community. The students are habituated in a controlled situation to take part in a democratic community. In this way, their sense of responsibility and abilities to generalize their behaviour are affected. The problem of indoctrination in the case of the just community approach is discussed by Kohlberg (1985, 80). According to Kohlberg, although ethics teachers aim to avoid indoctrination, which is possible in the case of hypothetical moral conflicts, when teaching in real life one has to take a stance on real life moral conflicts. In the case of the just community approach, indoctrination is avoided by establishing participatory democracy, in which teachers participate in terms of rationality and not in terms of authority and power. Students are to form rules and discipline the process, and they are to take the responsibility to implement them.

The context of a project course is suitable for application of just community approach. This approach could be applied in various ways. The approach could be utilized among all the parties of the co-operation: clients, students, and instructors could be made to participate in the decision-making about rules of co-operation. The approach could be realized in the context of an educational institute (without clients) in the way that the students would reflect on rules, norms and duties concerning relationships between the students, instructors and clients. This would require that there were many student groups in contact and in co-operation with each other.

To sum up, moral success in a project course means development of moral sensitivity, that is to say, awareness of human, task, and context orientations, development of moral judgement, motivation and character (Table 22). To achieve moral success (or to avoid failure) one attempts to develop oneself and others in these orientations and components.

TABLE 22   Processes of moral failure/success applied to project course.

	Sensitivity	Judgement	Motivation	Character
Scope in project course	Awareness of morally significant issues in human, task, and contextual orientations. Capability to invent new alternatives in decision-making	Decision-making strategies	Motivation to prioritize moral values above non - moral values	Character to persist in decisions
Means to develop in project course	Expose individuals to problem-solving situations with other people; Bring out morally important themes	Ethical analysis skills; Expose individuals to X+1 deliberation and problem-solving situations	Value awareness, analysis, and criticism	Just community approach

Next, moral conflicts identified in this study are reflected on the framework.

11.5 Moral conflicts in the light of the framework

In this section, examples of moral conflicts identified in this study are considered in the light of the framework.

Clients. A client expressed a moral conflict relating to implementation of social responsibilities (see Section 7.1.1 for details): a client deliberated whether to take part in project co-operation unselfishly (social responsibilities) or from the viewpoint of finance (profitability). The client expressed a moral conflict between the task and context orientations: the goal is to get profit from the co-operation but perceived existence of social responsibilities for a firm may affect decision-making. Looking at a solution, which upholds both orientations – for example, benefiting and the same time implementing social responsibilities, we might argue that the client succeeded in both orientations in moral sensitivity. From the moral motivation viewpoint this conflict raises the following question: are these two competing values (social responsibilities and profitability) moral ones? Taken the view of the stockholder theory (see Section 2.4 for details) only profitability counts, but if the stakeholder and social contract theories were uphold social responsibilities would have moral meaning.

Students. A moral conflict perceived by a student practising in a project manager's role is considered next. In this conflict assigning work tasks to a group member (see Section 8.3.1 for details) is looked at: The project manager suspects that the group member is not capable of implementing the task and she wonders whether she should be frank with him and tell him about her suspicions. The description of the moral conflict shows that the moral agent deliberating upon the conflict is aware of a possible risk relating to assigning

the task to the group member and of a risk relating to being honest with her. The description shows that the project manager's capabilities in terms of moral sensitivity revealed her that she had confronted a conflict between the task and human orientations. She understood that work tasks have to be assigned to achieve results but the group members should not be made depressed. The description does not reveal the decision made by the project manager. The project manager might have invented a course of action, in which the task would have been completed and respect for person uphold. If the project manager had ended up with a solution, in which she decided that she had to discuss more or less openly about her suspicions with the group member, the project manager's moral character, that is to say, mental strength, might have been challenged. If the project manager had made a decision in the conflict applying self-chosen universalization principles she might have shown moral success in moral judgement.

Instructors. Here we reflect on moral conflicts perceived by the instructors with the framework. The instructors have to take stand on conflicting objectives of the parties of the co-operation. Considering the viewpoint of the three orientations, human, task, and context, conflicting objectives relate closely to task-orientation: it is a task of an educational institute to support learning while student projects are implemented for clients. It requires sensitivity to observe the interaction between implementing the project and learning project work skills – especially in the cases where one harms the other. Selection of clients for co-operation includes conflicts between the task and context orientations: there are educational needs for having co-operation with clients (task) but selecting clients from many candidates (context) is not matter-of-course.

Referential aspect of moral conflicts. The referential aspect of moral conflicts consists of doing-wrong, self-centred, and other-directed moral conflicts. Doing-wrong moral conflicts represent the possibility of failure in moral motivation. On the one hand, a client deliberating about being honest towards the university and a student confessing dishonesty in booking of hours imply that they knew that these acts have moral significance (moral sensitivity) but what they did represent was wilful rejection of moral values (moral motivation or character). On the other hand, regarding other-directed moral conflicts, subjects represent developed moral sensitivity.

PART III: DISCUSSION AND CONCLUSIONS

In this Part of the thesis, the findings are discussed in the light of existing literature. The research process is evaluated and conclusions are presented.

12 DISCUSSION

The objective of this study was to increase understanding about moral conflicts perceived by parties of a project course. In attaining the objective, moral conflicts perceived by the clients, instructors, and students of the Development Project course were investigated and a framework for a morally successful project course was formulated. In this chapter, the results are discussed in the light of existing literature; first, the referential aspect of moral conflicts is reflected in the light of research on student project courses in computing, and on project management literature (Section 12.1), second, the structural aspect is reflected in the light of literature on business ethics, social science, and philosophy (Section 12.2). Finally, the research is evaluated and limitations are presented (Section 12.3).

12.1 Referential aspect in the light of existing literature

The referential aspect of moral conflicts identified in this study reveals three distinct areas of moral conflicts in a project course: interpersonal, project level and outside parties related moral conflicts. These results are next compared to existing theories relating to studies on project courses in computing, then, to projects and project management. Finally, the question whether there were genuine moral dilemmas found in this study is considered.

12.1.1 Student project courses in computing

The results of this study increase knowledge of moral conflicts in student projects in computing. The results revealed that clients, students, and instructors perceive moral conflicts relating to outside-parties, project-level and interpersonal issues in project co-operation. There are similarities among moral conflicts perceived by all the parties: First, moral conflicts perceived by clients, students, and instructors concern outside-related parties (parties, which are not

part of any particular project co-operation but which are affected by it), project-level issues (administering and implementing the project), and interpersonal issues (relationships with individuals taking part in the project). Second, there are three common themes of moral conflicts across all parties: objectives of parties, commitment and prioritisation, and treatment of individuals. In the case of objectives of parties, all parties were to take stand on conflicting objectives between learning and a client's beneficial goals. Regarding commitment and prioritisation, all parties confronted moral conflicts in which duties relating to work tasks and other activities/work tasks conflicted, and regarding treatment of individuals all parties confronted moral conflicts in which they were to contemplate about how to behave towards other individuals when, for example, an individual's work was inefficient.

To sum up, 16, 24, and 10 categories relating to moral conflicts perceived by clients, students, and instructors (respectively) were identified. Next, the findings are compared to the existing literature.

Comparison with existing studies on student project courses

As the following comparison with existing literature shows, the results of this study increase knowledge about moral conflicts in student project courses. The results agree with a few exceptions with existing literature – albeit in this study there are moral conflicts reported, which were not reported in other studies as moral conflicts (Table 23). Moses *et al.* (2000) identified the following problem areas in student project courses: allocation of students and supervisors, supervision, assessment, motivation, reflection, teamwork, and expensiveness, complexity, demands of a project (see Chapter 2 for details). All these problem areas, which were not assessed by Moses *et al.* (2000) as moral problem areas, emerged in this study. Regarding allocation, in this study, moral conflicts relating to dividing project tasks among student groups and instructor allocation (from the viewpoint of instructors' business connections) emerged. Moral conflicts relating to supervision emerged in instructors' role conflicts between roles of assessor and counsellor, in building trustful relations with students, and regarding instructors' business connections. Assessment emerged as a moral conflict from the viewpoint of just assessment among students and in providing students with arguments for the grade. Moral conflicts relating motivational issues emerged when students practising project manager's role were to lead their group members, who were not motivated in project work. Similarly, motivating students was a concern for the instructors. Reflection emerged as a fundamental moral question, namely in terms of learning, which is considered by the leading instructor as the fundamental virtue of this project co-operation. Learning is sometimes in conflict with a client's beneficial objectives relating to the course. Teamwork as such did not emerge as a moral conflict in this study, albeit moral conflicts relating to teamwork and guiding student groups emerged. The three characteristics brought up by Moses *et al.* (2000) relating to projects, expensiveness, complexity, and demands, characterize the DP course also. Organizing the DP course is expensive. First,

TABLE 23   Themes recognized in existing literature and findings of this study.

	FINDINGS OF THIS STUDY			FINDINGS OF OTHER STUDIES		
	Clients	Students	Instructors	Moses et al. (2000)	Scott et al.(1994)	Fielden (1999)
Outside parties	Relationship with the society	Societal problems				
	Relationship with other organizations	Relationships with other groups	Effects on IT-firms			
		Considering parties dependent on the client				
Project level	Objectives of parties	Objectives of clients	Objectives of parties	Allocation of students and supervisors; Reflection		Different commitment levels
	Commitment and prioritisation	Commitment and prioritisation	Commitment and prioritisation	Motivation; Supervision; Demanding of project		
		Assessment	Assessment	Assessment		
		Information handling	Information handling			
		Usage of resources				
		Project work formalities				
Inter-personal	Treatment of students	Assigning work tasks Intervening in fellow-student's actions Behaviour towards clients and university instructors	Treatment of individuals	Teamwork; Motivation	Loner's situation in groups; Problematic of whistle-blowing; Uneven distribution of work tasks	Users' unrealistic expectations; Students' defective abilities;
	Conflicts of interest	Conflicts of interest	Ego strength			
				Expensiveness, complexity		Clients' work practices

maintaining infrastructure (e.g., project space, hardware, software) requires financial resources as do the instructors' salaries. In fact, if compared to regular courses, which consist of lectures and exercises, the teaching activities of the DP course produce less credits per monetary unit than regular teaching. The

complexity of administering the DP course was observed in the interplay of clients, students, and instructors starting from the management of timetables to discussions of objectives of each party. The DP course is demanding for all parties, in fact, all parties confronted moral conflicts relating to commitment and prioritisation: for the clients it is demanding in the way that guiding a student group along one's other work tasks may produce conflicting situations, for the students learning new issues and especially project work demands dedication and time, and they have also other studies and activities, with which they have to compromise, and for the instructors the course is demanding because they have other teaching duties as well, and the project tasks are from a variety of fields, and the guidance work with students requires mental strength.

According to Fielden (1999) ethical issues relate to users' unrealistic expectations concerning what students can produce, students' defective abilities to fulfil client's expectations and different commitment levels inside student groups, and clients' dubious work practices. It was found in this study that some clients were disappointed at their student group's performance, although during the preliminary negotiations they were informed about the students' abilities and risks about co-operation with the students. Problems relating to clients' dubious work practices, which was considered by Fielden (1999), did not emerge in this study as a moral conflict but the clients' beneficial aims of the co-operation made some students bewildered.

Scott *et al.* (1994) considered loners' situation in groups, problems relating to whistle-blowing, and uneven distribution of work tasks in groups as ethically troublesome. In this study, all these three issues emerged. For students and instructors alike, considering a different student was troublesome because bringing out problems relating such a student and showing respect simultaneously were difficult. Similarly, for the students, it was problematic to bring out problems to their instructors (e.g., someone's negligent work ethics) about their group. Uneven distribution of work tasks was also a concern for the students.

Next, the findings of this study are compared with project management literature.

12.1.2 Project management literature

First, a comparison between a project model and the DP course is presented, then, a more close-grained approach is taken to project management along with the comparison with the DP course.

Although the process of the DP course is repetitive in nature (from the viewpoint of university), it can be viewed from the viewpoint of managing a project from viewpoints of each party. Maylor (2003) interprets a project as a conversion process including input, output, constraints, and mechanisms (see ICOM-model in Figure 52). Inputs consist of original needs (explicitly stated needs) and emergent needs (customer's changing needs or perceptions). These inputs are transformed to outputs, which consist, for example, of converted information (set of specifications for a new product) and changed people, who

are part of the transformation process. The main constraints are time, cost, and quality but, for example, legal constraints may affect the final product. Constraints are typically from outside the project. Mechanisms, with which inputs are transformed to outputs, constitute, for example, of people who are directly or indirectly involved with the project, and of knowledge and expertise of participants and of outside parties like consultants. To give a closer look at the project management knowledge areas and processes of Project Management Body of Knowledge (PMBOK) (PMI 1996), these are collected in Table 24. The ICOM-model and the DP course are next compared. Then, the main themes of project management and findings of this study are compared.

The DP course and the ICOM-model

The DP course can be interpreted as a project in the ICOM-model from the viewpoints of each party. For the clients the project means a conversion process, in which the wants and needs of the organization are satisfied with the help of a student project. The conversion may happen as an organizational change, as it is called in the case of an information systems development project (Davis and

Constraints:
- financial
- legal
- ethical
- environment
- logic
- activation
- time
- quality
- indirect effects

Input:
want/need → Project → Output:
satisfied need

Mechanisms:
- people
- knowledge and expertise
- capital
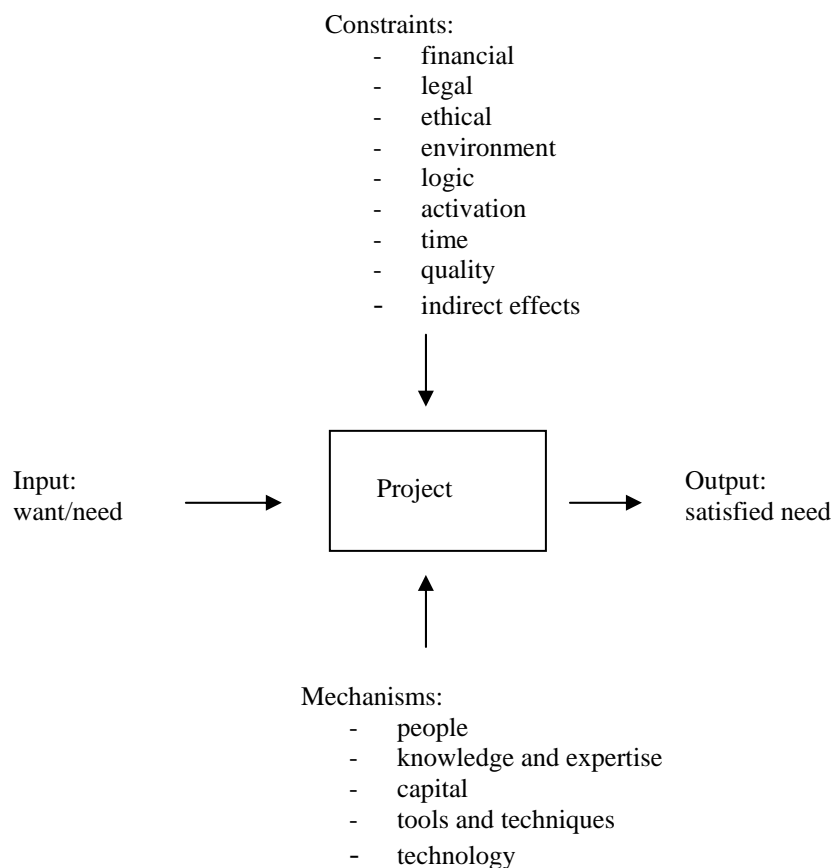- tools and techniques
- technology

FIGURE 52   ICOM-model (Maylor 2003, 26)

TABLE 24   The project management framework and processes (PMI 1996).

The Project Management Framework	Processes	Description
Project Management Context	Project Phases and the Project Life Cycle Project Stakeholders Organizational Influences Key General Management Skills Socioeconomic Influences	Project operates in an environment broader than that of the project itself.
Project Integration Management	Project Plan Development Project Plan Execution Overall Change Control	Processes, which ensure that the elements of the project are properly co-ordinated.
Project Scope Management	Initiation Scope Planning Scope Definition Scope Verification Scope Change Control	Processes, which ensure that the project includes all the work required.
Project Time Management	Activity Definition Activity Sequencing Activity Duration Estimating Schedule Development Schedule Control	Processes, which ensure that the project is completed in time.
Project Cost Management	Resource Planning Cost Estimating Cost Budgeting Cost Control	Processes, which ensure that the project is completed within the approved budget.
Project Quality Management	Quality Planning Quality Assurance Quality Control	Processes, which ensure that the project satisfies the needs for which it was undertaken.
Project Human Resource Management	Organizational Planning Staff Acquisition Team Development	Processes, which ensure the most effective use of people involved with the project.
Project Communications Management	Communication Planning Information Distribution Performance Reporting Administrative Closure	Processes, which ensure timely and appropriate generation, collection, dissemination, storage, and disposition of project information.
Project Risk Management	Risk Identification Risk Quantification Risk Response Development	Processes, which are concerned with identifying, analyzing, and responding to project risk.
Project Procurement Management	Procurement Planning Solicitation Planning Source Selection Contract Administration Contract Close-out	Processes, which are concerned about goods and services from outside the performing organization.

Olson 1984, 592) but it may also consist of educating employees in the client organisation. The co-operation starts with negotiations with university, and workshops with students and ends at the last board meeting providing the students and the instructors with an assessment paper about the performance of

the student group. For the clients there is a need for a developmental project but some of them also aim to employ students. For the students the project means a conversion process, during which they fulfil the client's wants and needs and simultaneously learn project work skills. From the students' viewpoint the project starts with introductory lectures and group formation and selection of a project task and a client. The implementation of the project task ends with the last board meeting. Assessment discussions, grading and feedback discussions together with registration of the course credits end the project. From the instructors viewpoint the DP course is more complex than from the viewpoints of the clients and the students. The course can be viewed from the project's viewpoint although this "project" is repetitive in nature. For the instructors the project means coordinating co-operation between the clients, students, and instructors. Viewing the project as a conversion process the instructors co-ordinate multiple small projects, in which the client's wants and needs are converted to results. Simultaneously, the students' abilities in project work are developed together with the development of the whole course. The project starts with the preparation phase, during which the parties of the course are selected, and ends with the consequential phase, during which possible complaints are handled and developmental seminars are arranged.

In the Table 25 the moral conflicts identified in this study are viewed in the light of the ICOM model and PMBOK. The comparison shows that outside parties' moral conflicts relate to the constraints in the ICOM model and to the project management context in PMBOK. Project level moral conflicts relate to input, output and mechanisms, and interpersonal conflicts relate to mechanisms. Next, we consider interpersonal and project level moral conflicts in the light of the ICOM model and PMBOK, then, outside parties' moral conflicts are discussed.

Interpersonal and project level moral conflicts

In terms of the ICOM model, interpersonal moral conflicts relate to mechanisms because these individuals are means to implement the project. In terms of PMBOK these themes relate to a project's human resource management. For all the parties treatment of individuals is of concern. In the case of students, assigning work tasks, intervening in fellow-student's actions, and their behaviour towards clients and instructors were of concern. Conflicts of interests between individuals are also of concern for clients and students, and ego strength issues emerged in the case of an instructor interacting with students. Themes at the project level are interpreted to relate to input, output, and mechanism issues in the ICOM model, and to project integration, scope, time, human, quality, communications and cost management issues in PMBOK. Moral conflicts at the project level relate to the objectives and implementation of the project. As inputs/outputs of the project at the project level, it is considered that the objectives of each party and the results of the transformation process together with assessment belong to these. Regarding outputs, that is to say, results of the project, there is an inherent conflict between the parties. This conflict relates to differing wants and needs of the co-operation: clients'

TABLE 25   Findings of this study reflected to the ICOM model (Maylor 2003, 26) and PMBOK (PMI 1996).

	FINDINGS OF THIS STUDY			ICOM MODEL	PMBOK
	Clients	Students	Instructors		
Outside Parties	Relationship with the	Societal problems		Constraints	Project Management Context
	Relationship with other organizations	Relationships with other groups	Effects on IT-firms	Constraints	Project Management Context
		Considering parties dependent on the client		Constraints	Project Management Context
Project level	Objectives of parties	Objectives of clients	Objectives of parties	Input; Output; Constraints	Project Integration Management / Project Scope Management
	Commitment and prioritisation	Commitment and prioritisation	Commitment and prioritisation	Mechanisms	Project Time Management / Project Human Resource Management
		Assessment	Assessment	Mechanisms; Output	Project Quality Management
		Information handling	Information handling	Mechanisms	Project Communications Management
		Usage of resources		Mechanisms	Project Cost Management
		Project work formalities		Mechanisms	Project Time Management
Inter-Personal	Treatment of students	Assigning work tasks / Intervening in fellow-student's actions / Behaviour towards clients and university instructors	Treatment of individuals	Mechanisms	Project Human Resource Management
	Conflicts of interest	Conflicts of interest		Mechanisms	Project Human Resource Management
			Ego strength	Mechanisms	Project Human Resource Management

beneficial goals are not always in accordance with the goal of university to educate students. This can be interpreted as a constraint from the university side towards the client side: a client, which does not accept the learning aspect of co-operation, is not able to enter the co-operation. When starting and participating, the co-operation subjects confront interpersonal and project level moral conflicts, which relate, respectively, closely to leadership and management issues, which have been researched from the management viewpoint in management literature. Blake and Mouton (1978; referenced in Kast and Rosenzweig 1985, 352), defined managerial grid, a framework for organizational improvement programs, which includes management and leadership orientations (Figure 53). Leadership is of concern for people, and management is of concern for production. In leadership, people are taken into account and in management they are used merely as means (Maylor 2003, 264):

> Leadership is categorised by the hopefully positive influence of the individual on people, whereas management is centred on people being treated as one of a number of resources.

In the case of "C (1,9)" (Figure 53), which is called Country Club Management, attention is brought to the needs of people for satisfying relationships. In the case of "B (9,1)", Authority-Obedience, operations are developed to be as efficient as possible, and in the case of "D (9,9)", Team Management, committed people accomplish work tasks in a trustful and respectful atmosphere.
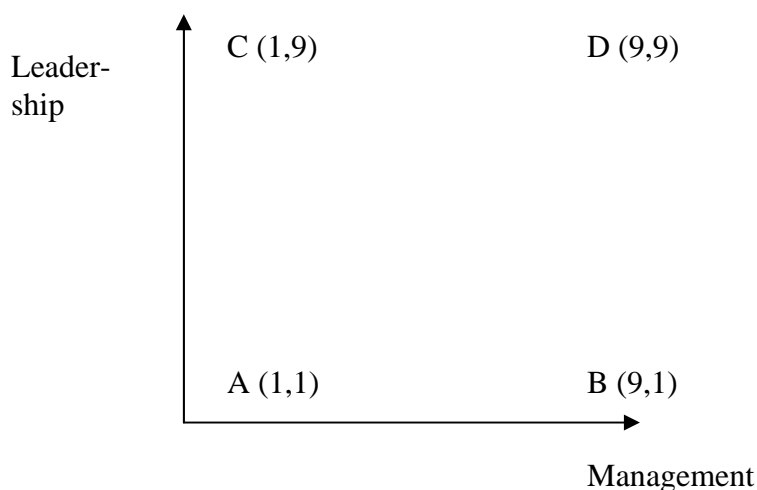

FIGURE 53   Managerial grid (Blake and Mouton 1978).

Whereas management (task orientation in the framework of morally successful project co-operation) is concerned about the production viewpoint, leadership (human orientation) emphasizes concern for people. Leadership is about

motivation and persuasion (Keith 1977; referenced in Kast and Rosenzweig 1985, 363):

> … the ability to persuade others to seek defined objectives enthusiastically. It is the human factor that binds to a group together and motivates it toward goals.

Similarly, Davis and Olson (1984, 352) define leadership as follows:

> Interpersonal influence, which persuades or motivates a group toward the attainment of a specified goal or goals.

As the above extracts show, leadership takes individuals into account when implementing the project task. From the viewpoint of management, production is the end and people are treated as means to achieve the end (Maylor 2003, 264), but in the case of leadership, when achieving the end people are not just means but they also are treated as ends themselves. It is noteworthy that, in leadership, people are still means for the end - the project is created to achieve the end and people are used for it. To achieve the production goal and to take care of people management, literature offers guidelines for leadership effectiveness. Bowers and Seashore (1966) investigated the effectiveness of leadership and concluded that support, interaction facilitation, goal emphasis, and work facilitation represent the four basic dimensions of effectiveness. Support and interaction facilitation relate closely to "people" concerns. By support they mean behaviour that makes individuals feel their worth and importance, and by interaction facilitation they mean behaviour that encourages group-members to develop mutually satisfying relationships. By goal emphasis they mean behaviour that stimulates enthusiasm for achieving the goals, and by work facilitation they mean behaviour that helps achieve the goals like scheduling and planning.

As mechanisms to attain the objectives, it is considered that commitment and prioritisation issues, usage of resources, information handling and project formalities belong to these. Commitment and prioritisation relate to individuals and how they implement the project task. These moral conflicts are about individuals and their possibilities to conduct tasks in project work together with their attitudes towards the project. Although these conflicts relate closely to relationships between individuals and there are signs of interpersonal influence, the interpretation is that these conflicts represent project level conflicts, that is to say, conflicts and decision-makings are targeted at the management (e.g., prioritization) of one's own work tasks. Responsibilities relating to information handling and project work formalities relate to methods to implement project work. Assessment can be interpreted belonging to two components of the ICOM model. First, it is output of project co-operation: development of self-assessment skills is an objective of the course and writing assessment statements is required from all the parties in the middle and at the end of the course. Second, it is a mechanism because in the middle assessment (or developmental discussion) the purpose of the assessment is to make the co-operation better.

Outside parties

All the themes in outside parties' moral conflicts are interpreted to relate to constraints in the ICOM model and project management context in PMBOK. A project is created to reshape its context (e.g., development of an information system in an organization). The context includes contemporary setting *within* and *beyond* the organization (Boddy 2002, 31). Regarding context within the organization there are seven elements, which make up the context of a project in an organization (Boddy 2002, 33):

- business processes – the way the companies have designed the processes for moving materials and information;
- technology – the type and location of physical facilities, machinery, and information systems;
- resources – mainly the financial resources available to the organisation;
- structure – the way tasks required to deliver goods and services are divided and coordinated;
- people – their knowledge, skills, attitudes and goals;
- culture – the prevailing norms, beliefs and underlying values that characterise the organisation;
- power – the amount and distribution of identifiable sources of power.

Regarding context beyond the organization, the environment can be divided to two elements (Kast and Rosenzweig 1985, 136): The societal (general) environment, and the task (specific) environment. Societal environment means everything that is external to the boundaries of the organization. There are characteristics, which affect organizations: cultural, technological, educational, political, legal, natural resource, demographic, sociological, and economical. For example, in the case of legal characteristics, taxation laws affect the organizations. Task environment means specific forces, which are relevant to the decision-making of an organization. Components of a typical business organization are the customer, supplier, competitor, socio-political, and technological components. While the general environment is the same for all organizations, task environments are different for each organization. For example, according to the socio-political component the public attitude towards the industry and its particular product affects decision-making in the organization.

Outside parties related moral conflicts are related to local IT-firms, educational institutes, and parties who are affected by the project. Also environmental questions and societal problems were raised.

The three orientations and studies in IS and management

The three abstractions of morally significant themes in project course, human, task, and contextual orientations identified in this study have been reported – not as morally significant issues – but as significant problem areas in literature on information systems and management. However, the orientations and problem areas are not exactly the same and they are labelled with different names, but the similarities between them strengthen the significance of these three orientations (Table 26). The similarities can be observed in Semprevivo

(1980), who considered that results of team interaction – in the context of information systems development - have three primary levels (Semprevivo 1980, 29):

- results specific to the individual team member
- those specific to team operation and behavior
- results affecting the team's relationship to the rest of the organization

Consequently, Semprevivo states that in the selection of project managers the following skills should be taken into consideration (Semprevivo 1980, 114):

- task/project management skills
- external (organizational) influence
- considerate leadership

Task/project management skills refer to task orientation, external influence to context, and considerate leadership to human orientation. A similar structure can be found in Brittain and Leifer (1986), who investigated project team members' perceptions of systems development success. They used three classes of variables in their study: 1) environmental variables, 2) task or technology variables, and 3) the personal characteristics of team members. However, Brittain and Leifner (1986) did not offer detailed explanation about how they derived the variables.

Boyd (2001) defined five maxims for satisfaction in software development projects:

1. Deliver the product that the customer desires or needs
2. Deliver quality consistent with the price
3. Deliver the project in a timeframe the customer desires or needs
4. Deliver the desired degree of feedback that the customer desires
5. Have a system of conflict resolution that is fair to both the customer and the development team

The above maxims can be interpreted to mean that first four of them relate to the task orientation, and the last one for human orientation. Context orientation is not present in the maxims.

Barki and Hartwick (2001) investigated interpersonal conflict in information systems development. They adapted, from literature, a general framework for interpersonal conflict in development teams. The framework includes a definition of antecedents of interpersonal conflict, which are individual (e.g., needs, interests and goals), team (e.g., leadership, size), project (e.g., resources, success criteria), and organizational characteristics (e.g., culture).

TABLE 26   Triplicity identified in this study compared divisions found in IS research.

IS and related literature		Triplicity identified in this study and themes expressed in related literature			Not identified in this study
Author	Theory	Human	Task	Context	
Vartiainen; this study	Moral conflicts perceived by parties of the DP course	Treatment of individuals Assigning work tasks Intervening to someones actions Conflicts of interests Ego strength	Objectives of parties Commitment and prioritization Usage of resources Project work formalities Information handling Assessment	Relationships with society Relationships with co-operating and competing organizations Considering parties dependent on the client	-
Boyd (2001)	Maxims for satisfaction in software development projects	Conflict resolution	Desired product Quality consisted with price Timeframe desired; Feedback	-	-
Blake and Mouton (1978)	Managerial grid	Leadership	Management	-	-
Semprevivo (1980, 114)	Project manager skills	Considerate leadership	Task/project management skills	External (organization-nal) influence	-
Brittain and Leifer (1986)	Perceptions on system development success	Personal characteris-tics of team members	Task or technology variables	Environmental variables	-
Barki and Hartwick (2001)	Antecedents of inter-personal conflicts in development teams	Individual characteris-tics, Team characteris-tics	Project characteristic	Organizational characteristics	-
Culnan (1987)	Clusters of research in MIS	Individual (micro) approaches to MIS design and use	MIS management	Organizational (macro) approaches to MIS design and use	Foun-dations; MIS curricu-lum
Carroll (1999, 142)	Four responsibi-lities of business	Philanthropy	Profitability	Legal obedience Engaging in ethical practices	-

Culnan (1987) produced a mapping of intellectual structure of management information systems (MIS) discipline relating to years 1980-1985. She found five clusters of research activity: foundations, individual (micro) approaches to MIS design and use, MIS management, organizational (macro) approaches to MIS design and use, and curriculum. Individual approaches to MIS relate closely to human orientation, MIS management to task and organizational approaches to context orientation.

Regarding management ethics Carroll (1999, 142) asserts four social responsibilities of business:

1. profitability,
2. legal obedience,
3. engaging in ethical practices, and
4. philanthropy.

The first, second, and fourth responsibilities can be thought analogous with the three-levelled view of moral conflicts and skills of project managers. Profitability has an analogy with task orientation, legal obedience with context, and philanthropy with human orientation. The third responsibility means that business is expected to do more than the expected minimum. This occurred in the case of clients, who considered their social responsibilities in their co-operations with educational institutes.

The similarity of problem areas in information systems and management literature compared to triplicity identified in this study strengthens the importance of considering these three orientations in attempts to brace oneself to confront moral conflicts in a project course.

12.2 Structural aspect in the light of existing literature

The structural aspect of moral conflicts identified in this study reveal three distinct areas of moral conflicts in a project course: doing-wrong, self-centred, and other-directed moral conflicts. These results are next compared to theories of business ethics (in the case of clients), social science, and philosophy.

12.2.1 Clients and normative theories of business ethics

The interpretation taken in this study regarding the structural aspect of moral conflicts reveals that only clients perceived self-centred moral conflicts. The results show that the clients take part in the co-operation only because they get benefit from it and it can be interpreted that it is their duty, in terms of Lemmon (1987), as managers or employees of the client organization, to get benefit from the co-operation. These kinds of pressures did not emerge in moral conflicts perceived by students and instructors. Profitability as a fundamental aim and basis for existence in business explain the existence of self-centred moral conflicts in the case of clients. The self-centred moral conflicts can be reflected

with the three major normative theories of business ethics, the stockholder theory, stakeholder theory and social contract theory (Smith 2002; see Chapter 2 for details). These theories represent widening perspective in considering positions of firms in relation to their stockholders, stakeholders, and the society around them – a similar structure can be observed from moral conflicts perceived by clients, from doing-wrong, and self-centred moral conflicts to other-directed moral conflicts (Table 27). These similarities are considered next.

Stockholder theory and clients. Great majority of the client organizations represent IT-corporations with variations in sizes from small commercial IT-firms, consisting of just two owners, to large multinational IT-corporations. Only a few clients represent public organizations. The idea of the stockholder theory, an obligation to maximise profits, is observed as a driving force at the doing-wrong and self-centred levels of moral conflicts. At those levels, moral conflicts relate to the clients' own utility. The representatives of these clients are responsible for their managers for the success of project co-operation with university, and they consider as their duties to guarantee that they benefit, for example, by quality results or employed students. These pressures may affect the negotiations with university (e.g., dishonesty observed in doing-wrong moral conflicts), and treatment of students (suppressing negative feedback). Moreover, the representatives of the clients are forced to deliberate about making changes to project task when, for example, information technology rapidly changes during the project co-operation. The clients take part in co-operation only if they get benefit from it, and any threats to benefits are taken seriously. If the project is about to fail and the clients' resources may be wasted, they may start to deliberate about quitting the project. Low motivation in guiding students may be result of a client's observation that they do not get as much benefit as they expected. Worries about benefits may show up also in transferring confidential information to students. Beneficial aims may be threatened if the information delivered to the students slips to the competitors of the client. The relationship between an IT-firm and its competitors in project co-operation is problematic for the clients in the way that the students, who participate in a project, are not fastened to their client. Although at the beginning of the project, the students sign confidentiality contract with their client, after the course, the students are free to choose their future employers, and this creates a possible risk for the clients in the sense that confidential information revealed to the students may be used in competitor enterprises. The same applies to know-how, which a student acquires during the project, and education, which the clients buy for the students during the project co-operation. However, because the students do not bear economical responsibility about the participation or the results and because they are at the first steps in their IT careers, the clients do not usually offer economically critical project tasks for the project co-operation, but some clients may start a new project based on the students' results. In many cases the project tasks consider a new emerging issue in the IT sector, and awareness of a competitor about a project

task might provide competitors with information relating to the aims of the client. To sum up, in the case of the DP course, failures in projects have been rare and in the majority of cases of successful co-operations the clients benefit from the results of the project.

TABLE 27   The structural aspect of moral conflicts in relation to normative theories of business ethics and results of a study in moral psychology.

Results of this study: The structural aspect of moral conflicts		Normative theories of business ethics (concerns clients)	Categories determined in Gillian and Krebs (2000) (concerns all parties)
Stages	Levels		
Doing-wrong	Level 1. Doing-wrong moral conflicts	-	-
Self-centred	Level 2. Utility selections	Stockholder theory	Upholding self (self-autonomy, consequences to self, consequences to self-respect, consequences to self-reputation, other's respect for and trust in self).
	Level 3. Utility and objectives of co-operating parties		
Other directed	Level 4. Not harming anyone	Stakeholder theory	Upholding other (caring for others, respect for others and theft rights and autonomy, listening to, considering, and understanding perspectives, adapting self's response to anticipated reactions of others, positive social influence, putting self in other's shoes).

Upholding relationships (maintaining relationships, quality of relationships, trust and honesty in relationships). |
| | Level 5. Maintaining relationships | | |
| | Level 6. Justice | Social contract theory | Upholding justice (procedural justice, combating immorality, positive reciprocity, normative order, general utilitarian considerations). |

Stakeholder theory and clients. The moral issues in the stakeholder theory are seen in the co-operation between clients and students at the other-directed levels. Representatives of clients are concerned about harmful consequences towards the students, their own employees and outside organizations like suppliers. They also observe the conflicts of objectives between participating parties and are ready to negotiate about them. The representatives of the clients understand

the conflict between employing students and the consequences of that act, namely, prolonging their studies. Like a representative of a client considered, employing students may also have good effect by giving work experience but also negative effects like narrowing these students' competence.

Social contract theory and clients. There are slight traces about social contract thinking in moral conflicts perceived by the clients. The concept of justice and its practical application in relationships with students emerged. Concern for just behaviour towards students is seen when the clients deliberate about offering chances to the students, like employing them, and producing assessments of student groups. In addition to this, regarding the relationship between private and public institutions the representatives of the clients confront moral conflicts relating to the existence of social responsibilities and their implementation. Aiding an educational institute and effects of project co-operation to local community emerged as moral conflicts. Perceptions of the clients illustrate that they may be concerned about the utility of the project co-operation, and the same time they may be concerned about the affected parties and even about the societal issues.

12.2.2 Philosophy and social science theories

The interpretation here of the resulted categorizations of moral conflicts has similarities with moral conflict theories in social psychology but differ with philosophers' definitions of moral conflicts. In philosophical literature on moral conflicts they are considered as situations in which two morally binding alternatives conflict with each other. From the philosophers' viewpoint, decision-making situations including egoistic impulses cannot be irresolvable moral conflicts, that is to say, genuine moral dilemmas, or even solvable moral conflicts because one's self-interest cannot be a moral requirement (except, perhaps, in the case of preserving one's life). In this study, the subjects confronted decision-making situations, in which the other alternative was not morally required but was based, in extreme cases on evilness, and on self-interest (doing-wrong and self-centred moral conflicts, respectively). When analysing data gathered for this study and my own experiences and observations, I concluded that decision-making situations, in which there were a non-moral and moral value in conflict (e.g., being dishonest because of utility objectives) or inclinations to conduct immoral acts, are an essential part of life-worlds of the subjects and these decision-making situations belong to the sphere of moral conflicts. If this is the view taken, we perhaps should not call these decision-making situations as "moral conflicts" as philosopher do but "morally relevant choices" or, briefly, "moral choices" to differentiate them from philosophers' concepts. Moral choice means - in my interpretation - that there is a decision-making situation, in which morality is somehow present. The existence of only one, e.g., moral value, duty, or obligation in a decision-making situation makes the decision-making a moral one. A moral agent deliberating if she is to commit an immoral act is facing a moral choice. Likewise, if she deliberates about two conflicting duties she is facing a moral choice. Of course,

it is possible that in the case of failure in moral sensitivity the moral agent is not aware of a moral choice she faces. My interpretation about moral conflicts or choices is in conformance with the theories of moral conflicts in social psychology, like Hoffman (1982) and Packer (1985), who recognize that egoistic impulses/inclinations belong to processes of handling moral conflicts. Audi (1995, 508) described several definitions for a moral dilemma, the first of which was that a moral dilemma is any problem where morality is relevant. In the case that "problem" includes choosing from courses of action the interpretation taken in this study is in conformance with that definition.

Genuine moral dilemmas

If we accept the definition of moral dilemmas being irresolvable moral conflicts and moral agents confronting them feeling distress and helplessness, the subjects of this study confronted – in my interpretation - a few of them. Moral conflicts, which are the nearest to what we understand to be moral dilemmas, are found in interpersonal other-directed moral conflicts. Such conflicts are, in the case of clients, treatment of individuals (section 7.3.2; categories 15 and 16), which represents the hardest choices the clients have to make. In the case of the students, intervening in someone's actions produced the toughest decision-making situations (section 8.3.2; categories 20, 21, and 24). Similarly, in the case of the instructors, intervening into the instructors' and the students' actions (section 9.3.1; categories 9 and 10) was problematic. These results suggest that genuine moral dilemmas - in the context of a project course - are confronted in interpersonal other-directed moral conflicts, and described more specifically, when one has to decide how to treat other individuals and especially in the case that one has to intervene to someone's actions and the intervention itself might worsen the situation. Although this does not rule out the possibility for genuine moral dilemmas in any other issue, it is suggested that in attempts to prepare the parties of co-operation to confront and solve moral conflicts interpersonal other-directed related themes or cases should be used.

Results of Gillian and Krebs

The study of Gillian and Krebs (2000) differs from this study in the sense that in their study students were presented scenarios of moral conflicts and they were asked to describe themes in the conflicts - whereas in this study individuals were asked to describe moral conflicts in their life-worlds. However, there are similarities between the results of these two studies: The characteristics, which are present in upholding justice, self, other and relationships categories, which were determined in the study of Gillian and Krebs (2000), are found in classifications of moral conflicts in this study (Table 27). The highest level at the maturity continuum of this study, justice, is similar to upholding justice category. For example, instructors and representatives of clients consider equal treatment of students as a moral conflict. Two other other-directed levels, maintaining relationships and harmful consequences, are similar to upholding other and upholding relationships categories. Moral conflicts relating to maintaining relationships include, for example, deliberations of respect and

fulfilment of duties towards other parties, and maintaining balance when objectives of parties conflict. The self-centred levels are presented in the upholding self category. For example, utility based moral conflicts perceived by clients include deliberations about "consequences to self" found in the upholding self category. In the study of Gillian and Krebs there is no counterpart for doing-wrong moral conflicts observed in this study. The different research objectives of these studies provide an explanation for it. However, the similarities of themes identified in both of these studies point out that the subjects of these two studies, 60 students in USA and representatives of clients, instructors and students here, interpret similar issues in moral conflicts/dilemmas.

12.3 Evaluation of the study

In this section, this study is evaluated with seven principles put forward by Klein and Myers (1999). As they state, it is up to researchers to exercise their judgement on how and which of the principles are applied in a research. Next, regarding each principle the underlying idea of the principle is summarized and then it is reflected to this study.

The fundamental principle of hermeneutic circle

The principle of hermeneutic circle is the basis for hermeneutics, and it lays the foundation for the other six principles. This principle suggests that human understanding is achieved by iterating between the parts and the whole. In other words, we come to understand a complex whole from the meanings of its parts and their interrelationships and by iterating back and forth with interpretations until unresolved contradictions or gaps are filled.

The principle of hermeneutic circle is actualised in this interpretive study by determining categories, in the cases of clients and students, with referential and structural aspects. The parts express what the clients and the students consider as moral problems and conflicts in project co-operation (referential aspect), and the interrelations express how the subjects perceive the moral conflicts (structural aspect). These referential and structural aspects form the whole meaning structure of moral conflicts in the cases of the clients and students. These results are from the second-order perspective. Regarding the instructors' moral conflicts, which represent a first-order relation, the iteration followed the same pattern, but because of low number of subjects among instructors, categorization is first-order in nature.

The principle of contextualization

This principle requires critical reflection of the social and historical background of the research setting. The aim is to show how the current situation under investigation emerged, and how the research itself affects the research setting.

The history of the DP course is briefly presented in the chapter presenting the process of the DP course. It is noteworthy that although there have been many individuals affecting the development of the DP course, there is a single person, the leading instructor, who has continuously – with some research breaks - dominated the development and teaching of the DP course since 1977. Emphasis on learning aspects, in contrast to beneficial aims of clients, has been the dominating idea powered by the leading instructor.

Although the effect of my study on subjects' life-world is hard to assess, it can be presumed that conducting the study on moral conflicts relating to the DP course raise ethical issues in the subjects' awareness. Discussions with the leading instructor revealed that my immersion into the course affected the development of the course in the way that so-called soft-issues were emphasized in the teaching. For example, issues relating to mental violence and stress in work places were taken into the program of the DP course. Additionally, ethical issues had been latently present in the teaching until my research raised these issues to more conscious level than previously.

The principle of interaction between the researchers and subjects, and the principle of suspicion

These two principles are considered simultaneously because they are heavily interrelated in this study. The principle of interaction between researchers and subjects requires that the researcher places himself and his subjects into a historical perspective. The results of the research are formulated via interaction between the researcher and the subjects, thus the effect of the researcher must be evaluated. The principle of suspicion requires sensitivity to possible biases in data gathering. The data gathering was dependent on the interaction between the subjects and myself and thus this interaction was prone to biases.

Interaction between the subjects and myself. The interaction between the subjects and myself was based on my initiative to make them think about moral conflicts/problems in their life-worlds. As Klein and Myers (1999, 74) state: "…the participants, just as much as the researcher, can be seen as interpreters and analysts", and accordingly in this study, the subjects were to produce interpretations about moral conflicts in their role in the project co-operation. Some interview subjects told that the interview itself made them think about moral issues, and presumably, the students writing ethics diaries wouldn't have done so profound work if I had not arranged the Ethics of Project Work course. Next, data gathering techniques used in this study are considered.

The strength of interviewing is that it focuses directly on the case study topic and that it provides perceived causal inferences (Yin 1994). Weaknesses of interviewing are biases, which are due to poorly constructed questions, response bias, inaccuracies due to poor recall and reflexivity which means that the interviewee says what the interviewer wants to hear (Yin 1994). According to Fielding (1993) there are problems regarding interviewing like the interviewee's attempts at *rationalisation*. The interviewees may offer only logical reasons for their actions without telling about evaluative or emotional issues. There may be a *lack of awareness* concerning the issues interviewed. The

interviewees may fear *being shown up*. This means that people tend to avoid describing aspects of behaviour or attitude, which are inconsistent with the preferred self-image. Mattson (1998) argues that studying of individuals' morality must take place in various situations because if we approach criminals or any one else, one may just get the picture of his/her moral ideology formed for the interview situation.

In this study the dangers concerning rationalisation, lack of awareness, and fears concerning being shown up are significant. Interviewees might even consider interview situations stressful or shameful because they are to disclose thoughts that may not be creditable or honourable. In this study, there was an interviewee, who did not disclose problematic issues, which were raised by another interviewee and which dealt with problems regarding their relationships. As another example, during the students' group interviews, at the preliminary phase, they told openly that they had been producing illegal copies of software. However, I noticed a change in the atmosphere when they told about it. I think that these kinds of issues (copying of illegal software[8]), which are quite common and even an accepted practice among students, are easy to discuss, but issues concerning, for example, extreme malevolence may not be easy to discuss.

Data was gathered differently from each party. The clients were interviewed, the students wrote ethics diaries, answered to questionnaires, and draw pictures, and the instructors were interviewed, and I made observations as a DP instructor. When it comes to memorizing events, diaries are more efficient than interviews or questionnaires – especially if one writes regularly in his diary. However, writing diary presupposes motivation and time for the writing. During interviews the researcher is able to present prompting questions, which is not possible in the case of a diary unless an interview follows diary writing. From the viewpoint of gathering data concerning moral issues in individuals' lives, diary gives a possibility for the writer to stop, think and discuss the issues in his privacy. It is possible to add, delete or alter the text in the diary. The strength of the questionnaires is that it makes anonymous response possible. With participant observation the researcher is able to get closer to the events and even experience the events on the stage. If the researcher is also an active participant, he may be able to concentrate on fulfilling his duties as a participant so that the issues, which he should observe, go by, unnoticed. It is possible that the participant observer suppresses findings, which are not honourable or otherwise shameful for him or herself.

The most influential source for biases was my presence and activities at the stage as a researcher, an instructor, and an ethics teacher. It is impossible to assess what the subjects left untold, changed or even invented in their expressions because of my triple role. When conducting the preliminary phase, a student told me that "*if you were an instructor, there might not be moral conflicts at all*" suggesting that moral conflicts would not be revealed to an instructor of

---

[8]   Siponen and Vartiainen (2002) found that 72.5% of students of a Finnish university implement unauthorized copying of software.

the DP course. Although the student's statement is noteworthy, it turned out that the students described moral conflicts in detail in their diaries and that in some diaries they expressed criticism and frustration towards the university, instructors, clients, and their fellow students alike. Similarly, it is noteworthy that some clients openly talked about moral conflicts, which were not that honourable from their viewpoint (doing-wrong moral conflicts). Regarding the relationship between the representatives of the clients and myself, it is noteworthy that the communication and interaction between the instructors and the representatives of the clients was limited to the meetings in the beginning of the course (introductory meetings, workshop), board meetings, evening meeting for the clients and the cruise. But on the other hand, regarding the instructors, I was both one of them and a colleague (results relating to additional instructor interviews will be published later). Deliberating my role from the clients' and the students' viewpoints, presumably I was stigmatized by my role as a university teacher whose task is to educate students.

Regarding the motives of the parties of the DP course, I had, for long time, the assumption that the clients were participating in this co-operation because of beneficial goals. That appeared to be a right assumption, but what I was not expecting was that the representatives of the clients would bring up moral conflicts relating to wellbeing of the students, and to equal treatment of them. Are these concerns real or are they based on researcher bias, is unknown. My assumption, after the interviews, is that although beneficial objectives are the focus of the co-operation, many of the representatives of the clients are genuinely worried about the possible negative effects of the co-operation towards the students.

How does becoming a total insider or "becoming the phenomenon" (Jorgensen 1989, 62) affect the research? In the case of participation in the DP course and observation of moral conflicts, becoming a total insider and even an active player develop the researcher's abilities to observe complex relationships between all parties. By solving the problems encountered daily and having discussions with one's groups, colleagues and clients develop their sensitivity to moral issues in relationships with the concerned parties. However, a total insider may become blind to his/her actions at the stage, and an outsider may be needed to notice any biases. Regarding the DP course, it would have been possible to refrain from participating as an instructor to observe the events.

Looking back. When looking back to these couple of years as being an instructor of the course, I notice that the fundamental virtues of learning and development illuminated the two years. The next extract, which was written at the beginning of April, a couple of weeks after the end of the DP course of the first year, shows that my relation to the DP course had changed during the participant intervention phase. My attitudes and abilities as an instructor had grown from narrow ways of taking stands to the larger viewpoints. At the beginning of the course I considered as my duty to warn students about possible dangers that they might encounter. Later, after numerous discussions with the leading instructor, my colleague and students, I considered the

relationship between the group and the instructor as a symbiotic relationship, in which both parties "feed" each other: the students should express openly the state of their project so that the instructor would be capable of guiding them. At the end of this period, I felt responsible for the wholeness and continuity of the course: I had to make decisions, which were to affect the future of this course (an extract from my diary):

> What I meant, when I earlier told about the change of moral outlook, is related to my awakening to the continuity of the course. I have been compelled to take a stand to what the "bush-radio" will tell in the future. The course is not kept and as a whole if the students work and use their mental resources simultaneously for other things - they do not develop as much as they could do otherwise. I felt it as my duty, in a way, to take part on guaranteeing the principle that students should not attend the course with wrong attitudes or from wrong starting points. This means taking a stand in regards irresponsible actions, individual student's resources and students' acts and working habits, which are not universalised. One is forced to take a stand towards these issues although they are not fully explainable issues or when it is hard for the students to understand them. An instructor is compelled to harden one's shield but at the same time she has to be resourceful enough in explaining these things to the students. I think I have been forced to harden my shield during this year – particularly relating to the assessments. I do not only assess students' performance but I have the responsibility over the whole course and its development to more than just a course. My understanding of the educational institute has in a way risen to a new level.

At the time of writing this thesis, I consider that my view of the course at the end of the first year is still quite limited: my conformity with the rules of the course needs to be questioned. In fact, as I assess it, the questioning was not possible until after the first year.

This immersion into the stage where I conducted participant observation illustrates my continued acceptance of the working habits in the DP course. I was aware of this acceptance and it bothered me because I was confused about defining my own identity as a DP instructor. The confusion was a consequence of my receiving multitude of ideas relating to the instructor's role during my research. However, the perception of my identity as a university teacher was based on the ways of teaching computer ethics: an ethics teacher should not indoctrinate his students but instead provide them with questions to widen their thinking. I acquired this basic ideology from teaching ethics to CS/IS students. What was different between the roles of an ethics teacher and a DP instructor was that, in certain cases in the latter role, I was compelled to give feedback to students' actions, which I considered as irresponsible or even immoral, that is to say, I regarded it as my duty to teach them to be more responsible for their own work.

Socialization and internalization of knowledge. During the first year, the relationship of my colleague and me towards the leading instructor was similar to a master-apprentice relationship. As I assess it, the process of socialization in terms of Swap *et al.* (2001) took place between the leading instructors and my colleague and me. The learning instructor's job was based on discussions, which concerned, for example, the role of the instructor towards his/her group, the difficulties arising in these groups and how to handle them, and even some

difficulties regarding the instructors, their relations, and motivations. The discussions took place in regular instructor meetings but also during coffee breaks and lunches. Although the atmosphere of free and open discussion among the instructors existed, the leading instructor dominated these discussions. His dominance was based on over twenty years of experience in small group guidance and co-ordination of the course.

The immersion in the stage of the DP course should be considered as a limitation of this study: although struggling with problems of the DP course provided me with a profound understanding of the course, inside the studied phenomena, especially if one develops his professional abilities the same time, one is forced to focus on everyday problems, that is to say, forced to participate at the expense of observing.

The principle of abstraction and generalization

Although, in interpretive studies, very unique circumstances are investigated, these unique instances may be related to ideas and concepts, which apply to other situations. According to the principle of abstraction and generalization the researcher has to show how the abstractions and generalizations relate to the field study details as they were experienced and collected by the researcher.

In this study, I have to show how the interviewees' statements were abstracted into categories and then to the collective meaning structure. This I have done in the results chapters, in which the categories are presented and the subjects' statements have been cited in verbatim.

I also have to show how I have generalized the results of this study. Because the study is an in-depth case study by nature, the results are not directly generalizable to other project courses. However, the results point out some problem areas, which could be deliberated in other student projects courses – especially in the courses where the parties are similar to those of this study (real-life clients in the IT field, third-year students, instructors) and the course is accomplished in the similar way. I have compared the results to research on ethical issues in project courses.

The principle of dialogical reasoning

According to the principle of dialogical reasoning, the researcher should confront his preconceptions and prejudices (the original lenses), which guided the original research design. He should also identify what type of interpretivism he prefers, identify its philosophical roots, and relate the strengths and weaknesses of the philosophical direction to the purpose of the research.

The interpretive research approach applied in this study is described in chapter 3. The "lenses" during investigation about moral conflicts were based on philosophical views on moral conflicts and dilemmas (see Chapter 2 for details). Moral agents confront variety of moral conflicts and dilemmas, and like Gowans (1987) expressed, moral conflicts are inescapable in human life. We have, however, different capabilities to observe moral issues and, as social science research points out, observation of moral conflicts is dependent on

moral sensitivity (Rest 1994a). With these "lenses" I approached the stage of the DP course to start the investigation. There was no dramatic change in these "lenses", but perceptions about the research setting and its participants were to be changed along the research. During the preliminary phase when starting this research and having discussions with the leading instructor, I acquired preconceptions and prejudices relating to all parties of the course. I expected that each party would consider moral conflicts from their unique viewpoints: the representatives of the clients from the private sector viewpoint, the instructors from the university setting, and the students from within the group they worked in. From the leading instructor, I heard criticism about ill-treatment and lack of respect towards individuals in IT-firms in Jyväskylä area and other places. Additionally, regarding the IT-firms participating in the project co-operation, clients' beneficial goals relating to project co-operation were dominant in my mind when starting the client interviews. Similarly, regarding the students, who I considered being in their first steps in developing their professional identities in the IT-field I thought that they would confront moral issues relating to group work (for example, responsibility issues). Regarding the instructors, questions relating to the role of an instructor to guarantee learning aspects in contrast to client's beneficial goals emerged as opposing views. In this light, although I tried to approach the setting open-minded, it was eye-opening that, for example, the clients described other-directed moral conflicts – at least some of them were genuinely concerned about how they would treat the students and what effects the course would have on them. Additionally, I perceived that I developed in perspective taking during the research: interviewing the clients and instructors, reading the students' diaries, observing all the parties of the course made me deliberate about their positions from their viewpoints. For example, it is in accordance with professional ethics for the clients to set beneficial goals regarding the project co-operation, and in the case of the students, taking first steps in a project manager's role is mentally demanding. Regarding my own work as an instructor, the most difficult moral conflicts were those in which I had to deliberate about my colleague's work and certain students' positions in their groups.

The principle of multiple interpretations

According to the principle of multiple interpretations, research subjects' different interpretations should be taken into account.

This principle is inherent in phenomenography, which aims for collective understanding concerning the research question. Regarding client interviews, themes of moral conflicts started to repeat after 12 or 13 interviews. Regarding students and instructors, repetition of themes was not observed. Comparison of parties' different views on the same themes of moral conflicts was left out from the scope of this study.

13 CONCLUSIONS

The aim of this in-depth case study was to increase understanding about moral conflicts in a project course in information systems education. To attain this aim, moral conflicts perceived by the clients, students, and instructors of the Development Project course (Department of Computer Science and Information Systems, University of Jyväskylä, Finland) were identified with interpretive qualitative research approach. Perceptions on moral conflicts in the project co-operation were gathered with interviews, diaries, questionnaires and drawings. As results, categorizations pertaining to clients, students, and instructors were formulated. The results show that these parties perceive moral conflicts relating to outside-parties, project-level and interpersonal issues in project co-operation. Additionally, it was found that these conflicts are divided into doing-wrong, self-centred (in the case of the clients), and other-directed moral conflicts. There were similar themes among moral conflicts across the parties: each party confronted moral conflicts relating to objectives of the parties, commitment and prioritisation, and treatment of individuals. To prevent and solve these moral conflicts a framework for a morally successful project course was derived. The framework points out four processes - moral sensitivity, judgement, motivation, and character – which illustrate moral success and failure. Relating to moral sensitivity there are three orientations - human, task, and context - which point out themes of moral conflicts in the project course. Additionally, IT-professionals' perceptions of ethics and morals, moral problems, and feelings relating to moral problems were formulated. The investigation was evaluated with principles derived for evaluation of interpretive studies.

Implications for practice. Project courses are complex to manage – especially if the clients are from the business as it is in the case of the DP course. The knowledge acquired in this study concerning moral conflicts of each party supports the understanding of problems faced by each party. The knowledge provides the organizing party, an educational institute, with viewpoints to the inner lives of each party and strengthens the abilities to educate parties and to confront problems. In instructor education, especially in the case of instructors starting their job, the results achieved in this study introduce them with problems relating to, for example, small group guidance and confronting

students with problems in their groups (see discussion about counselling in moral dilemmas in Deurzen 1999). But also the knowledge of the whole process of managing the course is valuable for the first-year-instructors.

There are several problems relating to the application of the framework of morally successful project course, and I shall briefly state some of them next. First, the challenge of practical implementation of the framework is considered. The organization and management of the whole project course rest on the shoulders of representatives of the educational institute. Integrating ethics into curriculum (Winrich 1994; Weltz 1998; Frances and Alison 2004) is not a problem-free area. Adopting even a part of the framework for a morally successful project course requires instructor education in ethics and even ethics of ethics education. To get experience of the framework it should first be implemented in parts, for example, starting first with dilemma discussions, which affect moral sensitivity and judgement, and later proceeding to more demanding interventions relating to moral motivation and character. Additionally, the framework could be further developed to a full-scale computer ethics education program including all the aspects of moral behaviour and issues in computer ethics (e.g., copyrights, privacy). The organization of this kind of moral education program is left for future planning and research. Additionally, the current formulation of the framework does not exemplify how all the processes are taken into consideration during a single student project course but instead it makes suggestions about how developmental interventions could be accomplished. Second, the framework is oriented to developing all parties of the co-operation. In the case of the DP course, in which the clients are real life clients, the willingness of the clients to take part in educational interventions is likely to be diverse. Third, how should one react if a participant of a project course acts immorally (failure in moral motivation or character)? The framework points out orientations to consider and means to tackle with but it does not provide help in cases of purposeful moral wrongdoing. Fourth, when applying the framework, is the aim that the moral agent's every act is as morally good as possible a proper or even a healthy aim? This problem about moral saints is considered in Wolf (1994, 345).

Future research. The results of this study show that the relationship between university and business in the IT-field is not a problem-free area – future research should consider ethical aspects of relationships between educational institutes and the private sector. With respect to moral success/failure this study aimed to show how moral success could be achieved in the context of a project course. Future research should continue to investigate moral success in IS projects. As this study concentrated on determining moral conflicts the emphasis was on moral sensitivity, the capability to observe morally relevant issues. Although the emphasis in data gathering was on reporting moral conflics, i.e., "knowledge", some subjects expressed how they solved the situations, i.e., "action". To attain holistic knowledge of the subjects' moral behaviour, the future studies should investigate moral conflicts in IS

projects in addition to moral sensitivity from the viewpoints of moral judgment, motivation, and character alike.

Additionally, IT-professionals' perceptions of morals and moral problems should be further analysed.

Appendix 1   Interview protocols of preliminary study

Interview protocol of the leading instructor during the preliminary phase

What kinds of issues have you been deliberating upon/wondering about/planning for a long time or otherwise been forced to deliberate?

- General issues,
- In relation to clients,
- In relation to students,
- In relation to instructors,
- In interaction between clients and students,
- In interaction between clients and instructors (incl. clients vs. university),
- In interaction among clients (inside organizations),
- In interaction between instructors and students,
- In interaction among instructors, and
- In interaction among students.

How does it feel that an outsider collects information about Development Project course? How could this affect the instructors' actions?
What kinds of moral questions and/or problems have you noticed in the project groups you have been guiding?

- Regarding students' actions?
- Regarding students' interaction/action towards clients?
- Regarding students' interaction/action towards instructors?

Interview protocols of instructors during the preliminary phase

What kinds of issues did you discuss with the leading instructor at the start of the project?
What kinds of issues did you discuss with the clients at the start of the project?
What issues took plenty of time?
Would you describe your experiences with the students from the beginning to the end of the course?
How did the students consider the project and the task?
What kinds of issues have you been deliberating upon /wondering about/planning for long time or otherwise been forced to deliberate?

- General issues,
- In relation to clients,
- In relation to students,
- In relations to instructors,
- In interaction between clients and students,
- In interaction between clients and instructors (incl. clients vs. university),
- In interaction among clients (inside organizations),
- In interaction between instructors and students,
- In interactions among instructors, and
- In interactions among students.

How does it feel that an outsider collects information about Development Project course? How could this affect the instructors' actions?
What kinds of moral questions and/or problems have you noticed in the project groups you have been guiding?

- Regarding students' actions?
- Regarding students' interaction/action towards clients?
- Regarding students' interaction/action towards instructors?

Would you describe issues from the previous years about your group.

- What kinds of discussions do you remember?
- What were the issues discussed at length?
- How did they manage as project managers?

Interview protocol for clients during the preliminary phase

How do you feel about me having come to interview you about the Development project?
Describe the process of taking part in the Development project.
What kinds of issues have demanded specific discussions?
How did the students develop as computer professionals?
Describe the students' set of values.
Describe how you and others here have considered the students.
Describe the events that have taken place with students.
What have the students have learnt?

Appendix 2   A tentative model of moral conflicts

The tentative model was formed at the end of the preliminary study during the period of 1999-2000, and it is based on my interpretations of the subjects' expressions.

Moral conflicts perceived by students

Group work issues. During the group work equality and equity issues are considered, for example, concerning working hours and receiving gifts from the client.

Quality issues. When the project is behind the schedule, questions concerning quality and timetables emerge. The students also wonder how open and honest they should be towards the client concerning quality and timetables issues.

Truthfulness issues. In certain situations the students do not tell the exact truth to their client, other group member or instructor, or they do not book the working hours exactly.

Security issues. Security issues as regards the servers and workstations and the students' openness (considering confidential information) among other students emerge.

Other issues. Ethical questions concerning goals of the client, privacy, piracy and ownership of software have emerged.

Moral conflicts perceived by clients

Resource issues and assessment. The clients may be forced to prioritize between the guidance of the student group and their ordinary work tasks. During an assessment of a student group, the client may feel that he should have been more involved with the group to be able to assess it in a more just way.

Guidance and role model issues. Some clients considered the students as equal colleagues in need of guidance during the work and with manners and attitudes not suitable for group work in software construction.

Moral conflicts perceived by instructors

Goals of the course. The clients, students and even some instructors may perceive the product to be more important than the students' learning process. This disagreement concerning the goals of the project is observed in many instances, for example, during the preliminary discussions with the clients and during discussions with the students and other instructors.

Group and task formation issues. The project task should not include just programming the predefined specifications, but the task should include some kind of search for new ideas. Some clients propose pre-formed groups (students already working for them), and some students cannot implement projects whose client competes with the student's employer.

Guidance and role model issues. Guidance of a student group includes moral questions regarding equality and equity, giving proper feedback with encouragement, observing the group in order to avoid pitfalls, etc. The

instructors' role model is a concern for some instructors: some of them wanted to point out easygoing and empathic ways of living and the notion that there is much more to life than working.

Resource issues. The instructors see it as their duty to guarantee that the clients and the students have enough resources to participate in the project. Problems regarding resources may appear, for example, when there are major changes in the client organization, if the client party does not have enough time to prepare for the project task, or if the student group promises too much to their client.

Assessment issues. The instructors may have different styles to assess, and the students and project tasks may differ. They see the discussion about the assessment vital. Because instructors assess students, the students may perceive that they cannot be totally open about their problems during the project.

Appendix 3   Questionnaire presented to students

Ethical and moral problems in Development Project

In this survey your perceptions about ethical and moral problems are surveyed. You may also bring up your own experiences relating to the Development Project course. Answer all the questions freely with your own words. Give answers without identifying yourself. Return this form in a closed envelope during the final assessment 27th or 28th March 2001. Thank you!

Tero Vartiainen
tvarti@cs.jyu.fi

<div align="center">*   *   *</div>

Let us imagine that there are ca. 40 students in the Development Project course and that they form groups of five members. A student group XYZ produces to a real client (Acme Oy) a prototype of an information system, which is considered by the client very important and significant. From the client's side, the group is guided by a contact person (Minna Mäkinen) and by some other individuals in a support group. From the university's side the group is guided by an instructor, (Matti Meikäläinen), who weekly contacts the group, and by the leading instructor (Jussi Virtanen), who administers and co-ordinates the whole course. University offers working space and hardware to support the functioning of the group. In the student group, each group member acts in his turn as project manager.

Fill in the following sentences:
In the Development project there are at least the above underlined parties.
What other parties are there, in your opinion, in the Development Project? The other parties are…
To me, morals and ethics means…
To me, a moral problem means…

Describe what moral problems or issues worth noticing from the morals viewpoint there could be between different parties:
1) between the student group and other parties (also within the student group)
2) between the client and other parties (also within the client organization)
3) between instructors and other parties (also among instructors)
4) what other moral problems or issues worth noticing from the morals viewpoint relating to Development Project come to your mind?

Appendix 4   Interview protocols for clients

The first interview protocol for clients (in-depth phase)
I investigate moral problems and questions relating to the Development Project course with a phenomenographical research method. The aim of Phenomenography is to find out how people understand and perceive a phenomenon under investigation.
You may freely and with your own words answer the following questions. Confidentiality.
How do you feel about me having come to interview you about moral questions relating to the Development project?
Would you describe your background and work history? What is your age?
Describe what morals and ethics mean.
Describe what a moral problem means.
Describe how it feels to be in a moral problem.
Describe what moral problems and issues worth noticing from the moral viewpoint there are related to the fact that you are a client in the Development Project
Would you describe more? What does it mean? Would tell me more about that?
Is it a moral problem? What makes it a moral problem?
Thinking about the parties of DP, what moral problems or issues worth noticing come to your mind? (Clients, students, instructors.)
When thinking about DP from the start to the end, what comes to your mind? (September, October, November, December, etc.)
The beginnings of the project, task exhibition, middle-assessment, final assessment, etc.

Interview protocol for clients (the follow-up interview)

Considering the interview conducted earlier.
The last time I asked you about what a moral problem means. Describe what an issue worth noticing from the moral viewpoint means.
Describe what moral problems and issues worth noticing from the moral viewpoint come to your mind about the events during the spring time. (January, February, March; meetings with the students; workshops; final assessment)
When thinking about the future, what moral problems or issues worth noticing from the moral viewpoint are connected to the consequences of this development project?

Appendix 5   Contract on study project cooperation

CONTRACT ON STUDY PROJECT COOPERATION

Contracting Parties

This Project Contract (hereinafter ″Contract″) has been concluded between XYZ Ltd. (hereinafter ″Company″), the Department of Computer Science and Information Systems of the University of Jyväskylä (hereinafter "Department"), and ABC Project Group (hereinafter ″Group″). Each Contracting Party shall be liable for fulfilling its obligations as defined in the Contract.

Subject of the Contract

The subject of the Contract is a development project (hereinafter ″Project″), also called ABC Project. The objective of the Project is …   The description of the Project is given in the Project Plan (Appendix 2).

Obligations of the Parties to the Project

Company

The Company shall work with the Group to develop the details of the Project Plan. The Company shall further provide the Group with the special equipment – software and other equipment and supplies that are needed to implement the project but are not included in the equipment provided by Department. The Company shall also put the necessary documentation at the Group's disposal and provide it with guidance and training required to achieve the objectives of the Project.

The company shall keep record of the resources it has put at the disposal of the Project and report on them to Department at the end of the Project, using the model defined by ESR. The Company shall also pay the fees as per Clause 7.

Department

Department shall provide the Project with the necessary premises, hardware, software and other equipment and supplies needed in the Project. Department shall further provide 125 hours of guidance and training per student to support the implementation of the Project. The training shall mainly take place as group training.

As the Project is part of the Department curriculum and has educational aims for it, Department shall not be held responsible for the objectives of the Project regarding its contents, or for reaching the objectives.

Group

The Group shall be responsible for implementing the Project as per the Project Plan (Appendix 1) and the possible further specification made to it by the Steering Group, or changes mutually agreed upon. Each member of the Group shall contribute 275 working hours to the Project. In addition, each member of the Group shall participate in 125 hours of training organised by Department to support the Project.

Rights of the Contracting Parties

Company

The company shall have full rights to the results of the Project as defined in the Project Plan (Appendix 1) including the right to modify and distribute the results.

Department

Department shall receive the fees for the Project as defined in Clause 7 by way of remuneration for implementing the Project. Department shall have the right to make decisions on using the fees to support the project studies that it organises. TKTL shall further have a limited right to use the results of the Project for educational purposes. The Company shall, however, have the right to check the material left with TKTL and to define the extent to which the material can be used for such purposes. Department shall have the right to use the Project as a reference.

Group

A student member in the Project Group shall have right to use the Project as a reference.

Intangible Rights

Any inventions, works protected by copyrights, or other intellectual property rights that possibly result from the Project shall belong to the Company solely, except for the exceptions listed in Clause 4. In case any inventions are made during the Project that are connected to it, the Company shall pay the members of the Group a reasonable remuneration for them.

Right to Materials

The proprietary rights, copyrights, and other rights to the materials of the Project shall be transferred to the Company in the manner described in Clause 4, when the Project has been completed, and the Company has paid all the payments and fees as per the conditions of this Contract.

The equipment, software and other supplies purchased for this Project shall remain in the possession of the Party that has made the purchases.

Payments and Payment Schedule

The payments and payment schedules are defined in Appendix 2.

Changes to the Project

Changes to the Project, except Appendix 1, can only be made by a mutual written agreement, signed by all the Contracting Parties.

Reporting

The Group shall report on the progress of the Project to the Steering Group as per the Project Plan (Appendix 1).

Steering Group and Its Duties

The composition of the Steering Group is defined in Appendix 3.

Appendix 1 can be amended by a unanimous decision of the Steering Group, if the amendments do not affect the actual Contract (without appendices) or the contents of the other two appendices. The amendments shall be recorded in the exact form in the minutes of the Steering Group Meeting or in its Appendix, which can be the amended version of the Project Plan (Appendix 1).

The Group shall report on its work to the Steering Group, which supervises, accepts and decides on any essential alternatives to be chosen regarding the contents of the Project, the resources available to the Group, and invoicing within the framework of Appendix 2. The proposals shall be well prepared and presented in a written form.

Guarantee and Maintenance

Due to the educational nature of the Project and terms of the licences for educational purposes of the software provided by Department for the Project, the results of the Project cannot be used for operative or commercial purposes

as such. Neither the Group nor Department guarantees the results of the Project or commits to maintaining the results in any way. Any errors in the results of the Project shall, however, be corrected if the resources assigned to the Project allow this.

Claims for Damages and Limitations of Responsibility

The use of the results of the Project shall be on the sole responsibility of the Company. The Contracting Parties shall in no way be held responsible to each other for any indirect damages. The maximum amount for any claims for damages shall be the total amount payable for the Project (Appendix 2). The Contracting Parties shall each be responsible for any damages caused to any third parties.

Confidentiality and Concealment of Confidential Information

The Contracting Parties shall agree to conceal any confidential information as defined in a separate confidentiality contract to be drawn up. The Contracting Parties shall make sure their employees and possible sub-contractors and partners will conceal the confidential information connected with this Contract.

Issuing Statements

As the Project is a thesis, neither the Company nor the personnel of Department shall have the right to issue statements during or after the Project, regarding the work performed by the Group or an individual Group member, unless given a separate permission to do so by the Group or the student concerned. An exception to this shall be the grade for the Department course that is recorded in the transcript of an individual student.

Hiring and Rewarding of the Group Members

The Group members shall agree not to work for a competitor of the Company during the Project. The Company shall agree not to hire any members of the Group during the validity period of the Contract. The Company shall further agree not to pay any member of the Group salary of any other form of remuneration. Normal hospitality is, however, acceptable. In case a member of the Group works for the Company when the Project starts, his/her duties shall not in any way be connected with the tasks offered to the Project by the Company.

Transfer of the Contract

No contracting Party shall have the right to transfer the Contract a third party without a prior written authorization of the other two Contracting Parties.

Termination of the Contract

The Contract shall be terminated when the Project as described in Appendix 1 is considered completed by a decision of the Steering Group, or on 31 March, 2003 at the latest. The Contract may be terminated before the above dates by a written mutual agreement, in case the continuation of the Project proves impractical to the Contracting Parties. When the Contract is terminated, the contracting parties shall not be held liable for any damages or for reimbursement of costs incurred.

Appendices of the Contract and their Order of Priority

The following Appendices shall be regarded as included in the Contract:
Appendix 1: Project Plan
Appendix 2: Payments and Payment Schedule
Appendix 3: Steering Group

In case there is a discrepancy between the Contract and the Appendices, the primary document to be applied shall be the Contract, and thereafter the Appendices in numerical order. In case the Contracting Parties do not reach agreement on the application of the Contract, the dispute shall be submitted to the Jyväskylä District Court.

Signatures and the Date

This Contract shall enter into force, when all the Contracting Parties have signed it. The Contract has been drawn up in three identical copies, one for each Party.

XYZ Ltd.   University of Jyväskylä /
                                  Department of Computer Science and
                                  Information Systems

<signatures>   <signatures>

ABC Project

The second and third appendixes to the contract

The second appendix to the contract

Development Project   **Appendix 2**
Department of Computer Science and Information Systems
University of Jyväskylä

Payments and Payment Schedule
Company Ltd. shall pay the Department of Computer Science and Information Systems of the University of Jyväskylä eight thousand five hundred Euros (EUR 8,500.00) + VAT at 22% for the implementation of *ABC* Project.

Invoicing shall take place in two equal instalments of EUR 4,250.00 + VAT each. The first instalment shall be paid by 31 December, 2002, and the second instalment on completion of the project.

By a decision of the Steering Group, the above invoicing schedule may be changed, however, in such a way that the whole amount shall be due for payment on 31 March, 2003 at the latest.

The third appendix to the contract

Development Project   **Appendix 3**
Department of Computer Science and Information Systems
University of Jyväskylä

Composition and Duties of the Steering Group

The Project shall report on its work to the Steering Group, which supervises, accepts and decides on any essential alternatives to be chosen regarding the contents of the Project, the resources available to the Group, and invoicing within the framework of Appendix 2. The proposals shall be well prepared and presented in a written form. The Steering Group shall consist of the following voting members:

- *Niilo Nimetön*	Chairman	*Company Ltd.*
- *Neiti Näppärä*		*Company Ltd.*
- (The leading instructor)	University of Jyväskylä	
- *Olli Ohjaaja*	University of Jyväskylä	
- *Toini Tomera*	Presenting Officer	*ABC Project*
- *Seppo Sihteeri*	Secretary	*ABC Project*

The Steering Group shall have a Quorum, when a minimum of one representative of each of the Contracting Parties, i.e. Company Ltd,, University of Jyväskylä, and ABC Project, is present. The Contracting Parties shall have the right to call experts to be heard at the meetings.

Appendix 6   Description of the course

In this Appendix the process of the DP course is presented phase by phase. The description starts with preparation phase and continues with start-up phase, guidance phase, and developmental phase.

Preparation phase (April to September)

The leading instructor's perceptions about client selection

Discussions with the leading instructor revealed that the client selection is dependent on the leading instructor's personal relations with the clients' representatives, and according to him, there is no objective criterion for the client selection (notes from my diary):

> I asked [the leading instructor] if it is about a sort of power play here, which [the leading instructor] admitted. He added that there is no objective criterion for client selection. The selection is based on personal relations. Many former students, who have gone through Development Project, are now at levels, where they are able to make decisions about participating in the Development Project. Many current clients are former students of the Development project course.

The fact that many of the client representatives are former DP-students makes their contracting and co-operation easier. However, the leading instructor complained that with some clients he felt that their expressed attitudes were not genuine: a client may actually conceive that students are obliged to participate in "playing the game" with the university (for example, by producing unnecessary reports). But for the sake of successful co-operation with the university, the clients feel that they are compelled to take part in this "game".

Negotiations between the university and the client. Before the beginning of the DP course, during the negotiations, the parties of the university and the client have discussions about what a good project task should be like and about the conditions for co-operation. According to the leading instructor, the aim is to determine a good project task from everyone's viewpoint, but there are conditions laid down by the university:

> The leading instructor: "We discuss what a good project task should be like from our viewpoint and from everyone's viewpoint including the viewpoint of the firm. What kind of conditions should we lay down?"

As the main condition, the firm must be committed to the project task, otherwise it is not accepted for the co-operation. Assessing the client's commitment is intuitive work for the leading instructor. The client's commitment to the possible future co-operation may be assessed from the degree of organisation and from how much they are ready to allocate their resources to the co-operation:

> The leading instructor: "Commitment is the condition ... it starts from it ... the firm must be genuinely interested in the task... how do you know that they are interested…genuinely about the project task or employing students? ... or what is the reason? ... last year we had one firm which emphasized the employing of students too much."
> The researcher: "How do you observe that?"
> The leading instructor: "From the discussion about how much they want to organize. Who from the firm would participate in this [project]? What are the goals being set? How much time are they ready to put on this ... it is the wholeness ... intuition ... I can not say where it comes from ... some kind of proximity…"

There are client firms, in which education and development are seen as self-evident. Some client representatives claim that development and learning are important aspects of co-operation, but, according to the leading instructor, this aspect has not always been genuine. Having discerned some profitable goals in the co-operation, the clients have become ready to "play the game" with the university:

> The leading instructor: "… and then there are situations which sound similar [education and development are considered important], but somehow an image about fawning upon us has been created … to get the project task for us … it is quite difficult to say when it is genuine and when not. For instance, concerning [name of a client organization] I am not convinced … that the outcome is so profitable for the business that it pays to play, so to speak."

The goals seen beneficiary to the client in the context of co-operation may lead to a desire to pay the students for the work they do:

> The leading instructor: "I remember when [name of a representative of a client] asked me if they were allowed to pay the students [for the project]."

The leading instructor had replied that it was not acceptable. He told about another client whose representatives afterwards told him that they had paid the students. As a result, according to the leading instructor, the students had become uninterested in the learning aspect, that is to say, producing plans. Additionally, the students' booking of hours could not be trusted:

> The leading instructor: "… they had an agreement that if certain parts were finished by Christmas they would pay the students a sum of money then and another amount of money during the spring. The group turned out to be quite good, and it worked well. The emphasis was on working, and we could not trust the relationship between the real and booked hours any longer."
> The researcher: "Would you tell me an example concerning the group? How came that doing was seen as something better than learning?"
> The leading instructor: "They were not interested in producing plans … they produced the obligatory materials for board meetings."

As the result of making money with the project, the students' inclinations turned towards finalizing the results instead of reflecting on plans and their importance in the project work. During the following year, paying students for the project task was prohibited in the contract.

In the next sub-section, negotiations between the university and the firms are considered from the viewpoints of a new and a familiar client.

Negotiations with clients

As regards the co-operation two types of clients need be distinguished:

1. A new client. During negotiations with a new client, the basic principles of the co-operation must be described along with practical advice regarding, for example, the usage of resources and co-operation with students.
2. A familiar client. In negotiations with a familiar client the discussion may proceed directly to the project task and its suitability to project course. In familiar client organisations there may be former DP students in technical assistance or managerial positions.

In this sub-section, exemplary negotiations with a new and a familiar client are described. The sub-section ends with a summary of the main themes in the negotiations between the leading instructor and the prospective clients.

A new client

The venue for negotiation with a new client was situated at the Jyväskylä Polytechnic Institute, and there were representatives from the university, the polytechnic and the client present. Because the client wanted to get acquainted with project co-operation with both of the institutes, representatives of both institutes were present. In the polytechnic, the teaching model of the DP course had been implemented – although the students and the content of teaching differ there. The aim of the negotiations was to present both of the project teaching environments to the client. The client organization had had co-operation with educational institutes in the past, but not with the DP course at the university, nor with the IT-projects course at the polytechnic. During the discussion, it became clear that the client's starting point for the co-operation was to derive some benefits from the co-operation, and that they were worried about the resources needed for the co-operation with the student group. Next, I present some details of the discussion.

At the beginning of the negotiations the representative of the client made it known that he was not familiar with the whole DP course, seeking clarification upon several issues, and described their goals concerning co-operation. He asked whether these students were close to finishing their studies and whether they would become engineers. Then he asked how many project tasks had already been agreed. He told that he considered that employing students was more important than the final product, which would be produced by the students during the project. In addition, he expressed the wish that the students participating in their project would be close to finishing their studies quite soon. He also inquired: "*how much guidance is needed from our side?*" and he was worried about whether the students would get any guidance during the project months. When an instructor talked about document writing in projects, the client retorted saying that they would not be able to spend effort on reading long documents in his organization. When the discussion considered the possible project task, the client explained that they would not let the students participate in security projects, but the students' project task could deal with

personnel tasks. The client was not sure how many tasks he should produce for the project. He was told that one task would be enough.

After the client's questions and the instructors' answers to them, the leading instructor started his presentation about the DP course at the university. He told that they had been organizing the project work since 1977 at the computer science department of the university. University projects and the polytechnic project differ in the sense that university projects have larger scope while polytechnic projects are more technically oriented ("from the microprocessor to the display-unit"). So-called ill-defined tasks are suitable in the case of the DP course, because the content of the tasks is specified in board meetings along the project. After the finalization of the results, the client may start planning what to do with the results. The leading instructor told about a client who had invested half a million Finnish marks, the investment being based on a report of a student group. He also said that the more the client organization uses its resources in the project the more they are likely to get from the project. He also emphasised that the client should prepare himself to the task presentation to the students as it is important that at least one group should become interested. The leading instructor told about some very sad examples of presentations: not a single student had been interested in the task. During the negotiation, the parties had not made any decisions about any future co-operation.

A familiar client

Two representatives of the client organisation, the leading instructor and me took part in the second meeting. The manager had himself attended the DP course in the past and he was aware of the learning aspects of the course. He expressed his trust to the "university culture" – I interpreted this meaning that the client trusts that the instructors and students would be committed to the project. The client told that they are committed to the project and that they need the product – they have a real need for it, and one of their aims was to employ students. If the student should fail, it would not matter because the task was not deemed critical: "*The task is such that if it fails it does not stop anything.*" He continued that he was aware that they should not expect too much from the students and that the learning plays a crucial role in the DP course. He added: "*Extra payments to the students lead to the suppression of learning aspects.*"

Main themes during negotiations

The main themes during the negotiations were the clients' objectives, resources and commitment, the project task and the conditions laid down by the university. These themes are considered next.

The project task and the clients' other objectives. During the negotiations the leading instructor and the client discussed about the project task. Many times the leading instructor used a blackboard to visualize the clients' ideas. During these discussions the leading instructor pointed out that the client should prepare for the task presentation well to make the task attractive to the students. He also told that there would be two official meetings with the

students before the first board meeting: an introductory meeting and a workshop. During the introductory meeting, the student group, the representatives of the client, the instructor of the group and the leading instructor would meet to introduce themselves and to agree on ways to communicate. In the workshop they would discuss and refine the task so that it would be possible for the students to produce the first version of the project plan.

Two of the clients noted that their goals included employing students. One client admitted that "*yes, this is recruiting … we hope to get 2-3* [students]" and during another negotiation that client said that employing students was more important than the product, which they would produce during the project (an extract from my diary):

> The representative of the client: "they see the utility in recruiting students. It is about 'running-in' of students. The result of the project is not necessarily as important as recruiting students. The representative of the client expressed the wish that the students would be near graduating."

Clients' resources and commitment. During the negotiations the issue of the clients' commitment was discussed. A representative of a client claimed that "*We are committed, we need the product, and there is a real need for it.*" By saying that, he wanted, as I interpreted his words, to assure the university party about the real need for the product and to make it clear that they were committed to the project co-operation. During the negotiation the client indicated that they had support for the project co-operation in the organization (an extract from my diary):

> The representative of the client told that their commitment is good, and that they are backed by a large crowd.

During another negotiation, which was very positive in nature, I felt that the representatives of the clients wanted to assure us that they were committed to the project. One of them assured us that there would be persons committed to the project and that the contact person in the organization would also be committed, so that no situation, in which students' inquires would be transferred to another person, would arise. Another representative made it clear that during the current year they would put their resources to this project. After this particular negotiation, when the leading instructor and me were walking back to university, he told me that the previous year one of the representatives of the client had written inappropriate feedback to students. The leading instructor thought that the contact person had received bad feedback from his organization and had wanted to pass the negative feeling to the students. I got the feeling that perhaps the positive atmosphere during the current negotiations was based on the aim to rehabilitate from these past mistakes.

The conditions laid down by the university. During each negotiation, the leading instructor described the importance of learning aspects of the DP course, the payment (50 000 Finnish marks; ca. 8500 Euros from the client to the

university), and the requirement of commitment to the project. He stressed that the university would not give any warranty for the product of any student group.

Student selection

This section deals with student selection. Student selection consists of providing students with information about the course, students' application to the course, and selection of students to the course. After the previous DP course is finished at the end of March, the preliminary information event is arranged for the prospective students. During the occasion, the students are lectured about the DP course and what it will mean to the students in practice and what are the requirements for applying for the course. The students should apply for the course in August, and those students, who fulfil the requirements, are selected to the course. At the beginning of the first year, the leading instructor and me selected the students who were to participate in the DP course. The leading instructor had pre-selected ca. 30 students whose previous studies were adequate for entering the DP course and rejected a few students whose studies had not proceeded far enough (for example, they might not have completed their basic approbatur-stage courses). There were some borderline cases whose participation or rejection to the course was not self-evident. Either they had an examination of a compulsory course scheduled for a near future or such a course had not yet been completed but they had plenty of credits from other disciplines (for example, one student had not completed the compulsory courses but had over 100 credits). Likewise, students who intended to work simultaneously with the DP course were considered as borderline cases. The reason for the rejection of some of the students or considering some of them as borderline cases was that we wanted to prevent some very likely problems and dilemmas from occurring: for instance, if a student planned to work full time along the DP project, she would not have been able to contribute to the group the same way as the other students. The same would apply in a case of a student lacking adequate background and abilities, i.e., compulsory courses. The leading instructor had discussions with some of the borderline cases, and after these discussions we made our decisions concerning them.

Instructor selection

In this section, the selection of instructors to the course is considered. In an ideal situation, instructors of the DP course would be professionals both in the IT-projects and in teaching, and they would take part in the DP course out of their own free will. In addition, they would possess suitable personal characteristic for small group guidance.

The selection of instructors was difficult at the beginning of the first and the second year. The instructor's job was not considered interesting among the department staff. For the first year, the leading instructor, a former year DP course student, and me were selected. We were both new to this job and our aim was to learn the instructor's job during the year. During the first year, we would both have four groups while the leading instructor would have one

group. For the second year, the decision of ordering a DP instructor from each study line was done, and it led to a group of eight instructors, which also meant that many instructors had only one or two groups to guide. As the year was assessed afterwards, this way of choosing instructors and group allocation was later considered a mistake. First, too many instructors make the managing of the course complex. Second, guidance of four groups is considered a full-time workload for an instructor, and if the instructor has only one or two groups, she is allocated other teaching activities. Because instructors' meetings and collegial discussions take much time, guiding one or two groups, in addition to other teaching responsibilities, takes more time than guiding four groups. It was observed that the instructors with one or two groups confronted prioritising conflicts with teaching activities. During the second year, I had two groups to guide all in all, and I took part of the administration of the whole course.

Start-up phase (September)

Lectures and exercises

The course lectures relate to the project process and its phases, planning, risks, and quality. Additionally, there may be lectures about creativity, stress, and workplace violence, for which specialist lecturers are hired.

Lectures. During the first lectures, the project process and its dependence on the content, quality, schedule, and resources (Figure 54) are dealt with. In the case of the DP course, the project work schedule and resources are fixed beforehand: The first board meetings are typically in August and the last meetings in March. Students are to use 400 hours (10 university credits = 40 hours) for the course, and the number of hours is divided between the implementation of the project task for the client and learning. During the first year, 300 hours per student was used for implementing the project task and 100 hours for learning. During the following year, the numbers were 275 and 125, respectively. Because the project tasks are purposely ill-defined, during the project each student group is expected to redefine the objectives (the content) of the project with their client. Decisions about these redefinitions are made in board meetings.

Exercises. After the first introductory lectures exercises, which introduce the participants to the projects of previous year, are co-ordinated. To make the students to understand the project process, which they are about to start, they are expected to read documents (plans, memos) from the CD-ROM's from the previous years.
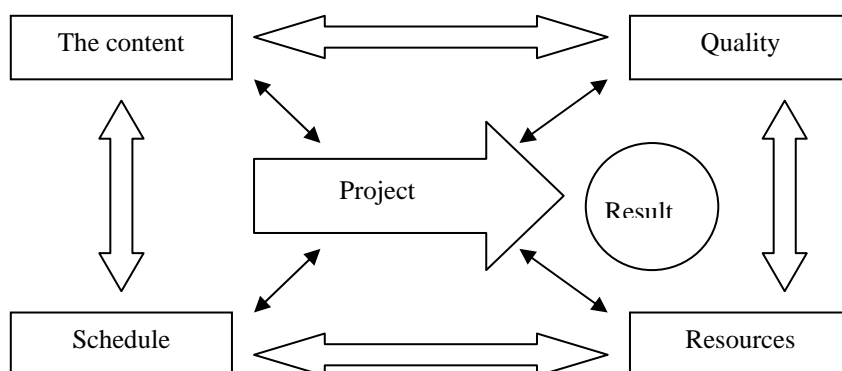
FIGURE 54   A project is dependent on the content, quality, schedule, and resources.

Task exhibition

During a task exhibition, representatives of the clients present their project tasks. After all the presentations, the clients are put to separate rooms in the project space so that the students are able to question each client about the project tasks. Figure 55 presents two pictures. In the upper picture a client gives a presentation of a project task. In the lower picture, a client representative answers students' questions.

Group formation

Three ways to implement the group formation emerged during this study, and the differences are based on: a) the students' awareness of the clients and the content of the project tasks during group formation, and b) the availability of guidance during the group formation. The three ways are:

1. *Pope's election*. The students are left in a lecture room, in which they are expected to form groups for the project tasks independently. The instructors do not intervene in the process of group formation. This method requires that the task exhibition be arranged before the group's formation.
2. *Groups based on personal chemistry and interest towards a project task.* After the task exhibition, the students are asked to introduce themselves to each other. The groups they then form are based on the knowledge of each other and project tasks.
3. *Groups based on personal chemistry*. In this method, the students are to form groups without the knowledge of the clients and project tasks. In this method, the importance of group spirit in the group is emphasized, and the pressures relating to the student-business connections can be avoided. The clients and their project tasks are revealed to the students after the group formation.

FIGURE 55   Task exhibition.

During the preliminary year and many years before it, Pope's election was used as the group formation method. At the beginning of the first year, the leading instructor, a psychologist, and me discussed that group formation event and planned a new way to implement it. The discussion dealt with experiences from the past years about Pope's elections. One thing that was brought up was that during a Pope's election two students had started to co-ordinate group formation. According to the psychologist, who had been allowed to observe the event, some students defended others who were in "weak positions". In my interpretation of his speech I came to a conclusion that the students in "weak positions" had been those, who had not been familiar with the other students or who had been deemed weak in other ways. During the discussion, possible consequences of Pope's election were considered: according to the leading instructor, in Pope's election, it is possible that the ties between the individuals might have an effect extending beyond the project tasks: rumours about good or bad relations with clients might become apparent, and this could sow

discord among the students. In this case, the choices would be based on ideas and images instead of rational deliberation. The psychologist concluded: "*social process could go out of control.*" For the first year of my participation in the course, it was decided to use the second method in the above list (the third method was applied during my second year). The group formation was to be co-ordinated by the psychologist, and it will be described next.

Group formation during the first year

Group formation during my first year took place at Noukanniemi, a boat service hub by the Lake Päijänne (Figure 56). We travelled from the Agora building (where the IT faculty is located) by a boat, Hilja, to Noukanniemi. After our arrival in Noukanniemi, we proceeded to the restaurant hall and were seated. The psychologist started to lead the group formation. First, he had discussions with the students about the mission of the day and about the guidelines and rules for the day. The students proposed the following rules: I) everyone were to be allowed to talk about one's experiences, II) starting-point: one could be open to different alternatives. III) one should seek ways and means to bring the quiet students into the discussions. IV) one should help his or her fellows to achieve his or her goals. V) one should not be assigned to a group by chance. The psychologist concluded that we all would be responsible for the day.

The psychologist lectured about the skills needed in project work, including professional skills, problem solving skills and group skills. After lecturing he began to familiarize the students with each other by the following means: first, he made the students move the stools to the sides of the floor and walk at the central space of the hall. Whenever the psychologist signalled, the students were to stop to start discussing with another student (see Figure 56). Later, the students produced personal posters, in which they introduced their personalities, learning goals and explained what they would become in five years time. The posters were hanged onto the walls and windows of the hall, and the students circled from poster to poster to get information about each other. After that, the students were to take his or her poster and, again, walk around in the central space of the hall to find a pair. After forming pairs, those pairs sought another pair to form preliminary groups. After that, the group formation started. First, posters presenting each client were created and these were hanged around the hall. The students were to choose a client and a project task, which they were interested in and to go to a poster representing the client. This lead to asymmetric groupings: some clients had just a couple of students and some over twenty. In the next round, the students were asked to choose the next project task according to their wishes. The situation did not change, some clients had a multitude of interested students compared to the other clients. Trying to solve the problem, the psychologist asked the students to form the pairs of pairs again and to make a choice together in groups of four students. Likewise, this method ended up in accumulation of students by the same posters. Now, the psychologist asked the students to start negotiations, which appeared to be very hard, because the students were clinging to the project

FIGURE 56   Group formation.

tasks they were interested in. A multitude of negotiations and attempts to solve the situation were implemented but a consensus seemed far away. Only a few students agreed to move to another group. Finally, there were groups consisting of six students and a couple of groups consisting of two or three students. I remember the leading instructor, the psychologist, and me discussing about the situation: the current choices seemed quite satisfactory to most of the students and we did not want to spoil it by starting the group formation over again. Because negotiations did not solve the problem, the groups of six students started to draw lots on students who should move to groups lacking members. According to my notes, the drawing lots was implemented at least in one group. The group formation ended when a student agreed to move from a group of six students to a group of four students. This was applauded by other students.

When travelling back to Agora with the boat, my colleague told that many students were dissatisfied with the psychologist. I remember that the leading instructor said that this kind of drawing lots was not a big deal compared to how the group formation had been conducted in the past. It seemed that many students were satisfied with the project task they got, but that there were some students who most probably experienced the group formation as infringing in their rights. Afterwards, the students expressed dissatisfaction about the work of the psychologist.

Pressures to group formation expressed by clients

For the group formation, some clients expressed wishes and demands, which were not accepted by the university party. A client might demand that the students who were already working for them should be in the same group and that they were the ones that should decide the project task for that group. In general, the students did not accept the existence of these reserved tasks. These kinds of pressures create a conflict between the idea of open group formation, in the sense that each student should participate in the group formation without being affected by any pre-existing connections or yielding to pressures from some students or clients to form groups beforehand. Before the beginning of the DP course, there were students, who perceived as self-evident that they would form a group for a particular client:

> The leading instructor: "There are four people working there in [name of a client organization] … summer jobs … the firm suggested that they could form a good project group for the next year … other students do not like it … that is… there should not be so-called reserved tasks. … a couple of years ago they hold it as self-evident .. there were two students who had formed a group with other students .. in the way that it was self-evident [that they would do the project for their employer]. I said that it is not self-evident. I do not accept this kind of hogging. I want that the project task is presented business-like, with a normal delivery and in an open way. I remember when there was the Pope's election … last autumn … when I left the occasion … one student asked about the project task of [name of a client organization] if it was reserved. I said that we had not signed any contract. The task is open for every one … it is your mutual contract. But of course there is some kind of solidarity … someone's use of power … students' feedback has been that there should not be any reserved tasks. Every one should be on the same line at the beginning."

Pressures expressed by the clients may be focused on the student and his possible employment in the client's organization. The leading instructor told about a client, who declared to a student that she would not get a summer job if she were not allocated to a student group which would implement the project for that particular client.

Restrictions to group formation and instructor allocation

Although it is perceived that group formation and instructor allocation should ideally be open, there are accepted restrictions in these processes. The students' and the instructors' business connections restrict the group formation and instructors' allocation to groups. A student working for a firm may not belong to the group whose client is a competitor of the firm, because the client usually prohibits this. The same prohibition applies to instructors who have connections to firms. They cannot guide groups whose clients are competitors of those firms. According to the leading instructor, during the past years, students have started to have jobs, which could affect the group formation in the future:

> The researcher: "An instructor may have connections to the firm. Also a student may have … to what extend this may … if there are reserved tasks … what kind of

difficulties there might be … if there are connections? What are the disadvantages and utilities of the connections?"
The leading instructor: "The utility is that … in the student connection and instructor connection, that special knowledge concerning the project task and the line of business are needed … a new issue concerning the connections are the lines of businesses the prohibitions should apply to. Individuals working for [name of a client organization] are not allowed to participate in a number of our projects, because they are employed by [name of a client organization]. The students are starting to have some kinds of employment somewhere. … they are not allowed to participate … and they do not want to endanger their future and they do not have any reason to endanger their future, in a way that a student is on the one hand in an enemy firm and on the other hand in her own firm. … We will have problems in the task selection and Pope's elections in the future. … we must have alternatives for the students."

The extract above illustrates the clients' concern for transference of confidential corporate information to a competitor. The more students are employed when they start the DP course, the more restricted the group formation and task allocation will be. In principle, the group formation is meant to be open and without restrictions. In practice, there are "minuses" and "plusses", which affect the group formation but they have to be handled somehow:

The researcher: "In an ideal situation the Pope's election would be without restrictions."
The leading instructor: "Yes. Open. There would not be these plus marked reservations neither minus marked reservations. There have been both of them. … with the instructors it is the same .. but we are not able to break free from these. They must be administered somehow."

Group formation and learning

According to the leading instructor, group formation affects learning aspects. First, a student who has been working for the client of the group may be in a position, which affects other students' learning. Second, selections between familiar and unfamiliar business-lines and fellow students affect learning.

Mediator students and learning. In a student group, which include a student or students who have been working for the client, there may emerge an unequal situation from the learning viewpoint. These so-called mediator students may deepen their knowledge on issues, in which they have been working beforehand for the client. Consequently, other students' knowledge may not develop as much as the mediator students' knowledge:

The researcher: "What else comes to your mind concerning these plusses and minuses?"
The leading instructor: "Knowledge of lines of business is an acceptable plus … if one has been working somewhere, one may know how the paper-making machine works or how books are printed. Or how a banking company functions. It is an advantage in a certain way. It is not a problem. Why it is a minus in some occasions? It may produce an unequal situation inside the group. … in the case of [name of a group] … somehow it made the group unequal… one of the students had been working there a long time … other group members did not get the information because they felt awkward asking her … because she knows … others' knowledge does not grow and her knowledge and experience grows … … specialization is accepted and it must be allowed concerning certain sub-areas. But it may not be total …"

Familiarity vs. learning. The leading instructor considers group formation from the learning viewpoint: by becoming familiar with something unfamiliar one learns more. Students are able to affect the learning by selecting group mates they are unfamiliar with and by selecting a project task which is from an unfamiliar line of business. This way, they learn more from other individuals and about new business lines. This emerged from the leading instructor's interview:

> The leading instructor: "… It is quite the same with relationships between individuals. The issue about gangs of friends. [The name of a student who talked to next year project students in a preliminary information session] talked very well. If you want to learn new issues, do not do it with your friends. If you want to learn new issues, do not do it about the issue which is …… this is a possibility to broaden one's views. … Say one has been working three summers for a firm … it really pays to consider if one should do the project for that client … or would it pay to broaden one's visions by being introduced to new people, new clients, new lines of business. Then the minus might turn to a plus."

Instructor allocation to groups

During both years, we instructors had divided the project tasks according to our interests. The negotiation during the first year was quite easy: my interest in getting different types of project tasks was accepted by the leading instructor and my colleague. I also preferred to have one long-distance client. During the meeting of the second year, project tasks and groups were allocated among seven instructors.

In addition to allocating particular instructors for each group, a secondary instructor is also nominated. The role of the secondary instructor is to become familiar with his group so that in the case of, for example, long-time absence of a particular instructor, the secondary instructor is able to substitute that primary instructor. An instructor may, for example, have four groups to guide, standing as a secondary instructor for two other groups.

Guidance phase (from October to March)

The first guidance meetings

During the first guidance meetings instructors and students are to get familiar with each other, and the future co-operation is discussed. Students are given instructions to formulate the Expectations and Goals document, in which they describe what kind of expectations they have from the parties of the course and what kind of learning related goals they have to become IT-professionals. Additionally, the agenda of the first meetings considers the future introductory and workshop meetings with the clients.

My experiences from the first guidance meetings. My first meetings with my student groups were arranged after the task and instructor allocation, and the

feelings about the task allocation were usually discussed in those meetings. The groups had different feelings about the allocation. In one of my groups, the students were satisfied with the project task. In fact, they had considered the task as the priority one task and succeeded gaining it. The other group was very uncommunicative and, perhaps, even depressed, as I interpreted from the atmosphere during the meeting. The group formation had not been successful from the viewpoints of these individual students. When I asked how they had experienced the group formation they said that in the working life one does not get the projects that one wishes. The group members thought that it is not worth discussing about the group formation. One group member said that she was not satisfied about the situation but she had resigned herself to her fate. During each of these first meetings I pointed out that I preferred openness to uncommunicativeness regarding our future co-operation.

Introductory and workshop meetings with the client

During an introductory meeting, the representatives of the client, the student group, the leading instructor and the particular instructor of the group meet each other to agree about communications methods between the parties and to discuss the nature of the course. A workshop, which typically is arranged soon after the introductory meeting, consists of a client's presentation of the project task. The goal of the workshop is to provide the students with information about the project task so that they are able to produce the first version of the project plan for the board.

Introductory meetings. For the introductory meeting the students were to produce an agenda, which was to include the following issues (extract from the guidelines for the students):

1. The purpose of the meeting
2. Representation of parties
3. Presentation of the Project leading course
4. Organization of the project
5. Methods for communications
6. Documentation practices
7. Secrecy practices
8. Introducing to client
9. Discussion about the project task
10. Education provided by the client
11. Continuing practices
12. Other issues
13. Closing

As the above extract illustrates, the introductory meeting deals with organizational issues relating to co-operation, rules and implementation of the project task. I attended the introductory meetings, which were quite similar to each other. A student from each group was expected to act as the chair of the meeting, and consequently, there were differences in how the students handled the meetings. There was a group, a member of which acted almost professionally as a chair but there also was a group, from which no one agreed to act as a chair and I had to conduct the chair's role during the meeting.

Workshops. As an example of a workshop, a combined introductory meeting and workshop at a client's place is described. The following description, the events of which took place at the beginning of the first year, is based on my notes in my diary.

At the beginning of the meeting every one introduced oneself, and after that the representative of the client asked how the group formation had gone. At first, there was a dead silence but then every one started to laugh. The leading instructor described the events in the group formation. After that the client started to lead the meeting by starting to describe: "*what we want you to do.*" The client presented a technical report and told that there was a need for an application viewpoint concerning the report. The task was "*very wide and ill-defined*", the client explained. The client continued to discuss the project task with the leading instructor, who, at a certain point, started to talk about the DP course: "*this is a course for learning project work and we have the Puritan model in use. The goal is to learn to go through an information systems project.*" The leading instructor pointed out that the duty of the instructor is to guarantee that the student learns.

When discussing the goals of the project, the client told that the employment of the student is one of the goals although the students should be able to graduate: "*employment is on the background of this project but people should be able to graduate in peace – of course, we want new employees.*" To this the leading instructor commented by describing a horror vision of a client's attitude: "*do whatever you like to do, after the project we'll employ you.*" He told that in the past this had been one client's attitude towards students whose motivation had collapsed when they'd heard it. The representative of the client pointed out the confidentiality of information. He said: "*this work is sensitive in nature – we do not want any leaks*". During this meeting the students and the instructors singed a confidentiality contract. After that, the representative of the client delivered the technical report to the students.

At noon we had a lunch break and then the meeting continued, and we started to discuss the methods of communication between the group and the client. The client wanted to assure that the communications function well between the group and them (statements of client's talk; an extract from my diary):

> From time to time we would like to see you here ... although we might not have very much in our agenda we should have meetings … I reply to phone call inquiries although I recommend the usage of email.

The representative of the client started to describe in detail what they wanted as the result of the project: they wanted a report, which would include information about three current issues in the computing field. The information had to be considered from the viewpoints of two operating systems. After his talk he asked the students' opinion about the project. His question resulted in total silence. The client said: "*very quiet and ominous*", after which every one started to laugh. It seemed that it was very hard for the students to express their opinion

when a lot of new information was delivered to them. The client emphasized the importance of results of the project: "*it is very important that we get something which we can use.*" Later, during the discussion, the client wanted to know whether they could get preliminary information about the results at the middle of the project: "*is it possible that we could know before the end of the year what we are getting?*" Then the client started to talk about learning the hard way: "*in the first versions there are many flaws*". As I understood, he meant that, in any case, there would be flaws in the first versions of the document and that he would not consider those flaws as big mistakes for the group. After the client's talk it was the turn for the students to express their thoughts. It seemed that it was hard for the students to start a discussion with each other in the presence of the clients and instructors, so the leading instructor suggested them to have a private meeting outside the room (an extract from the diary):

> [The leading instructor] suggested the student group go outside for a meeting. [The leading instructor] said: "There is the fear of the Lord." One student said: "We do not have information to delimit the project task." After the break, the students came back into the room and told that they agreed with the project task. After that the client talked about openness between the group and the client: "we should know what we are getting at all times .. be honest when explaining the situation"

Later, the representative of the client provided the students with a corporate guideline book for producing plans, and he wanted to make sure that the students understood the confidentiality of the book. He told the students not to leak the model to outsiders (an extract from my diary about the client's talk):

> … not to give the model to any one else, this is a question of principle

The discussion between the client and students was mainly client-dominated while the students' role was to make specifying questions.

Contract and board

The co-operation between the parties of the DP course is based on a contract, which sets the board and outlines the responsibilities and rights of each party during the co-operation. Next, the contract and board are considered as well as my experiences about them.

Contract. The contract sets the board, the decision-making organ, which is given the right to accept and alter the project plan. The contract between the parties is a contract about educational project co-operation, and the representatives of the clients, the students, and the head of the department sign it (Appendix 5). The contract consists of a definition of the co-operation, the rights and duties of the co-operation, and a definition about the members of the board. Officially, in this model, the board does not exist until all the participants have signed the contract. The students are provided with a preliminary contract text, which includes the main concerns of the co-operation, and they are expected to fill in information relating to their particular project in the contract.

Board. In board meetings, the project manager and the secretary of the student group represent the group. Together with the other board members,

two representatives of the client, and two representatives of the university (the leading instructor, and the instructor of the group) (Figure 57), they produce decisions about the project. In the first board meeting, the first version of the project plan is discussed and accepted together with plans for the first starting phases. Documentation, communications, and risk plans are also considered in the first board meeting. Generally, there are three or four board meetings before the last board meeting, in which the final results of the project are accepted.

Preparing for board meetings. The project managers are expected to prepare for the board meetings by producing all the required material, e.g., an agenda, plans and reports. During the project, the scope of the project task and the phases of the project tend to be specified. The changes are made to project plans and phase plans, and the students are advised to discuss any potential changes beforehand with the chair of the board to make the board meeting fluent. An example of an agenda for a board meeting follows. The exemplary agenda is from the third board meeting of a group and it shows that the project manager is about to present the current state of the project, the results of the evaluating prospect phase, and the following two phases, the integration survey and finalization phases:

1. Opening
2. Legality and quorum
3. Organisation of the meeting
4. Acceptance of the agenda
5. Walkthrough, acceptance and signing of minutes of previous meeting
6. Announcements
7. Presentation of changes to the Project plan and the Risk administration plan and their acceptance
8. Presentation of the current state of the project
9. Walkthrough of the phase report of evaluating prospect, and minutes of walkthroughs, and their acceptance
10. Acceptance of evaluation phase of the prospect
11. Walkthrough of the phase plan of the integration survey phase and its acceptance.
12. Walkthrough of the phase plan of the finalization phase and its acceptance.
13. Timing of the next board meeting
14. Other issues
15. Closure

    Appendixes:
        Project plan
        Risk administration plan
        Report of the Evaluation phase of the prospect
        Plan of integration survey phase

Along the presentation of the project plan the students are advised to present a gantt figure, which illustrates the phases of a project. Figure 58 presents an exemplary gantt figure, which shows that there are five phases, some of which are overlapping. For example, the interviewing phase, "Haastatteluvaihe" in Finnish, which is the second phase of the project, starts the 1st of November and ends the 8th of January. The figure also shows that the board meetings were arranged for the 31st of October, 12th of December, 16th of January, 13th of February, and the last board meeting for the 13th of March.
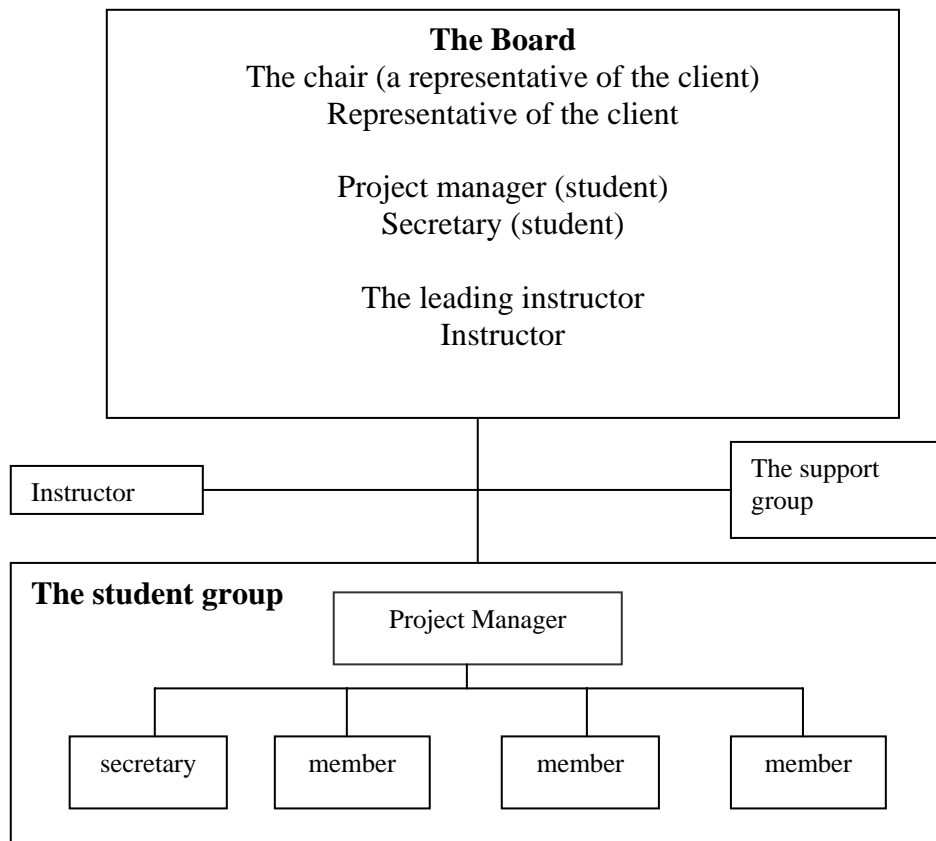
```
┌─────────────────────────────────────────────────────────┐
│                      The Board                          │
│      The chair (a representative of the client)         │
│            Representative of the client                 │
│                                                         │
│              Project manager (student)                  │
│                 Secretary (student)                     │
│                                                         │
│               The leading instructor                    │
│                     Instructor                          │
│                                                         │
└─────────────────────────────────────────────────────────┘
```

```
┌──────────────┐                          ┌──────────────┐
│  Instructor  │                          │ The support  │
│              │                          │ group        │
└──────────────┘                          └──────────────┘
```

```
┌─────────────────────────────────────────────────────────┐
│  The student group                                      │
│                  ┌──────────────────┐                   │
│                  │ Project Manager  │                   │
│                  └──────────────────┘                   │
│                                                         │
│  ┌──────────┐  ┌──────────┐  ┌──────────┐  ┌──────────┐ │
│  │ secretary│  │  member  │  │  member  │  │  member  │ │
│  └──────────┘  └──────────┘  └──────────┘  └──────────┘ │
└─────────────────────────────────────────────────────────┘
```

FIGURE 57   The structure of the board.

Students' and instructors' role in the board meetings. During the preliminary phase, I interviewed the leading instructor about students' role in the board meetings. The students are expected to present the state of the project and possible proposals for the board. They are also expected to plan an agenda for the meeting, prepare reports about the past phases and plans for future phases and to report the hours used. The board meetings are hard and exciting occasions for students – each student is to represent his group once during his project manager phase. The instructor's task is to observe the students' performance and give feedback to them. The instructor may observe defects or mistakes in the documents (reports, plans) beforehand, and according to the leading instructor, the instructor should warn the students about any major defects and mistakes beforehand:

> The leading instructor: "It is correct behaviour from the instructor's side if she observes that they should discuss the matter beforehand. That this looks bad from your viewpoint. Is that this presentation that you are producing … it does not look good. The firm will get its back against … should make you do this better. Not that we let them go there [to board meeting] and smile devilishly … "
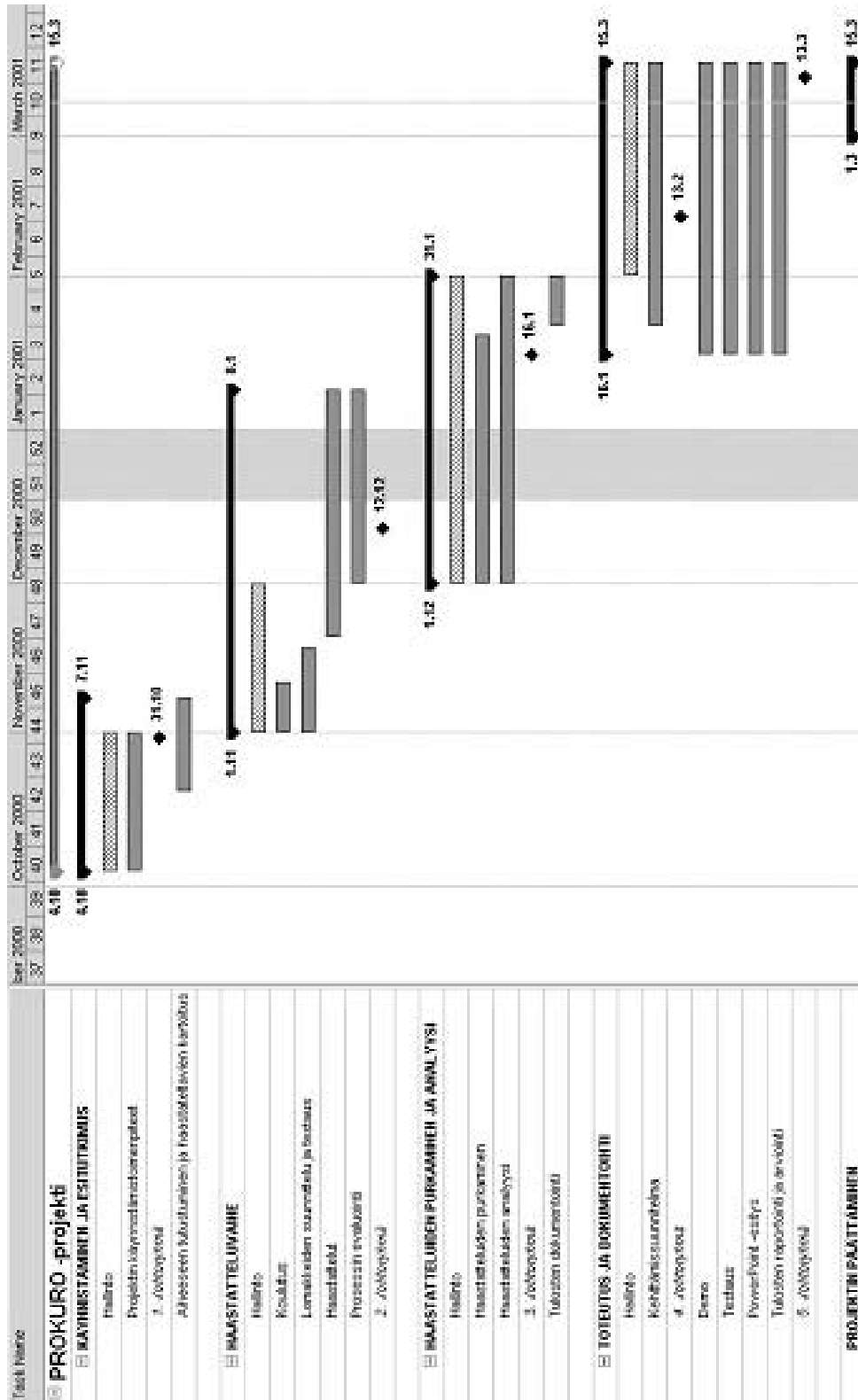
FIGURE 58   An example of a gantt figure.

The project manager represents the group, in principle, alone, although the student in a secretary's role has the right to comment. The project manager is obligated to provide the board with up-to-date information about the group. When discussing any possible changes in the project, it is possible that a project manager may promise something to the board that the group may not accept or is not capable of implementing. The leading instructor told about a project manager who promised too much on behalf of his group, and as the result of distrust that emerged, four other students wanted to expel that student from the group:

> The leading instructor: "I remember from [expression concerning a year] what the project manager promised on behalf of the group. I asked him if he was capable of promising that … that you do not have resources for this … with which resources you are going to do this? He said that they do it with the resources they have. … The board meeting accepted the suggestion. When he went back to the group they threw him out. It was a total lack of trust. After the board meeting four people marched here and said that the student should go or we all would go."

Examples of my observations about the board meetings. I attended numerous board meetings, of which I will first describe a discussion with a project manager before the board and, as a second example, views from a board meeting of a group.

A group did not know how to handle a situation, in which they understood that they had miscalculated the resources used. The project manager asked my help and I advised him to express, with honesty, the situation for the board. As I understood, within the group there existed different opinions about the miscalculated hours: others considered that it did not matter and that they should proceed as nothing had happened and others considered that the numbers in the reports should be calculated again. For the current project manager the situation was confusing and she asked guidance for the preparation of project plans and reports.

The board meeting at the client's place was busy and tight in schedule. The representatives of the clients were stressed and intense in their speeches. They gave severe feedback to the students, but they also noted that the students were learning these issues. During his feedback, one of them hit the table with his hand so that the tables started to move. The representatives of the clients commented on the reports and plans, and they told that the project manager should bring out just the pure facts in the reports and leave out any speculations. In addition to this, she guided the students in producing easy-to-read documents. I thought that because the representatives of the clients were busy, they did not want to spend too much time in reading documents. After the meeting, the representative of a client told me that the students should communicate with them more. During our discussion she added that the way of giving feedback to the students was mild compared to giving feedback in a normal client-relationships.

Guiding students

First, metaphors used by the instructors are presented. These metaphors reflect the instructor's perceptions about their role towards the students. Then, the dichotomy between a learning project and a job-project is considered. Finally, the instructor's perceptions and experiences are presented.

Metaphors used by instructors

Two instructors defined their role by metaphors, which express activeness of the instructor. The mother and the child, and dog-team metaphors are presented here. Activeness determines how much the instructor intervenes to the actions of his group, to what extent the instructor gives clear guidelines and hints and to what extent the instructor presents questions to students. A passive instructor (the mother and the child) just waits until the students ask her to help and an extremely active instructor gives strict instructions about what the students should do (the leading dog in the dog-team) (Figure 59).

The mother and the child	Dog-team	The leading dog in the dog-team

Passive   Active

FIGURE 59   Metaphors concerning the instructor's role

Dog-team. According to the dog team metaphor, which the leading instructor considers as an ideal role for an instructor, an instructor rides at the back in a sleigh with a dog team and shouts hints and advice to the dogs:

> The leading instructor: "The basic idea of guiding is found in the model of riding with a dog team … the instructor is in a sleigh at the back. She shouts hints, which are more or less understood, and which steer the team where they should go."

The rider, the instructor, should avoid taking the leading position, and she should avoid guiding the group with too specific instructions. According to the leading instructor, the instructor may fail by taking the role of the leading dog - starting to plough in the snow at the front of the dogs. This may happen if the instructor is an expert in the field of the group's project task:

> The leading instructor: "To my mind, this plougher's role has been observed … if an instructor knows very much about a certain issue … that is to say about the content and methods … there is the danger that one feeds in too many of one's own solutions directly."

According to the leading instructor, if the group is helpless the instructor should help them forward in their tasks – keeping in mind that the instructor's role is to make questions and to refrain from providing answers:

> The leading instructor: "If there is a very helpless group, well, of course it has to be helped somehow … one should deliberate about what it is … One should be able to ask questions and refrain from providing answers."

When discussing this issue during the first year with the leading instructor and my colleague, she told that one of his groups was so inefficient at the beginning that she had to guide the group with very specific instructions.

The mother and the child. During the preliminary study, an instructor described his relationship with the group with a metaphor of the mother and the child. It is not necessary that the mother always stays beside her child .For example, she could go to the kitchen and sometimes raise her voice by saying "my little darling!" so that her child would know that his mother is present. In the same way, it is good for the group to be aware that their instructor is available, but she does not need to stay beside them:

> I1: The instructor's role in an ideal situation is that of an onlooker with an ungrateful task. Perhaps it is more like … in the same way as they say about children that they do not need that someone is constantly playing with them. But what they need is that someone is present … when a child raises her voice in a room: 'Mother!' it does not mean that she would like the mother to come there but she controls the mother's presence… in the same way the group is independent... It is the question about the need – if there is a need then there is a contact to the department …

According to the leading instructor, the student groups should raise their goals along the project. The most difficult student groups are those, which include students just out of the high school who have not had any summer jobs. In those groups there is a danger that the project turns out to be like work training:

> The leading instructor: "Such a group starts to work on the project … it might resemble work training … it is quite difficult to describe … if the project is like work training… it is a negative concept … it is not enough … it is not the goal, there must be some extra enthusiasm, extra goals. … to learn … to do even better … not just beating one's chest but to raise the goals … the group has to do it … an instructor is not able to do it."

Learning project vs. job-project

The dichotomy between learning and the results of the project is observed in the way the students conduct their project. In guidance, the dichotomy between a learning-project and a job-project ("oppimisprojekti vs. duuniprojekti" in Finnish) has been used. *Learning project* means that the students are to develop their project work abilities and to take a deeper look at things they do, and the instructor's task is to guarantee that accomplishment of the learning aspects is possible and to support the learning process. *Job project* means that the student group implements the project task without reflecting on project work abilities.

Similarly, in the case of a job project, the instructor is considered as the guarantor of the results. The leading instructor described a quarrel between an instructor and himself: the instructor had maintained that the instructor's main task is to guarantee the results for the client. His thinking was contrary to that of the leading instructor. According to the leading instructor, the instructor's role is to guarantee the accomplishment of learning – even if the final results are not fully implemented. The leading instructor considered it morally wrong if the instructor's role is seen as the guarantor of the final results:

> The leading instructor: "I think that it is morally wrong. The thing is that our task is to support learning … even while the project task is not completed from the viewpoint of the firm. It is the task of the firm to guarantee that the project task is carried out as well as possible. …"

According to the above extract, the client party – instead of the instructor – guarantees the accomplishment of the results. The leading instructor perceives, as the fundamental aim of the DP course, the development of the students' project work abilities, and this cannot be done if the students' attitudes are focused only on the implementation of the final results. The students are expected to reflect on their work methods relating to the implementation of the final results and the project work (e.g., planning, communications). One way to emphasize the learning aspect is to refrain from providing the students with ready-made plans or frameworks. Instead, they are expected to produce forms and documents from scratch. According to the leading instructor, in this way the students become aware of what they are doing, which supports learning:

> The leading instructor: "The idea is or should be that when doing it one starts to deliberate upon one's own doing … becoming conscious about it … This is what it means, as I perceive it, to become conscious … if this is not accomplished, our job is in vain … if the students just put their work through a model. "

However, all student groups are not capable of self-reflection but, instead, their learning process may stay at the surface level. Some student groups may be excellent in producing the results, but taking a deeper look at their own work process may be difficult or even impossible for some groups. The leading instructor described his experiences of a group from the past:

> The leading instructor: "They do the things very well, but they do them only at their level– they do not go deeper … there are individuals who are not willing to do it … for example, [a name of a student] is a good person in doing things and he does them very well and in time, but he does not show any interest in taking a deeper look at things"
> The researcher: "Is he then performing well?"
> The leading instructor: "Yes, he is performing and performing well … but I feel pity about the situation because, damn it, they can perform in the working life as well as they will but here it is not enough … I have said that here it is not enough that you perform your tasks well …we exist because it [supporting students' learning] is the first and most important duty of an instructor."

According to the leading instructor the learning aspects should be defended when making decisions concerning the project task. For the students' surprise, the leading instructor was on the side of learning, not on the side of the students or the clients. Sometimes the students' goals were in conflict with the learning aspects, and a conflict might emerge in a board meeting where the leading instructor perceived as his duty to defend the learning aspects:

> The leading instructor: "What is the task of an instructor? This comes up in every group at one occasion or another and each year in the board meeting. The group implicitly assumes that the instructor is on their side when making decisions or in the case of a conflict. The group assumes that the instructor defends them … and I tell them that I do not defend them but I defend the interests of the university … the institutional interest… whose task is to teach … and this may be in conflict with the students' interests … many times groups have told me; why the heck you said that? It goes against us. That is my role that I represent there. I am not your assistant."

Instructors' tasks

A variety of instructor's tasks were brought out when I interviewed the instructors during the preliminary phase and during the first year. For the most part, instructor's tasks concentrate on supporting and observing the process of student groups instead of concentrating on the project task. The instructor was seen as responsible for guaranteeing the working conditions for the students. The instructors analysed their roles as instructors and how a trustful relationship between an instructor and a student group could be developed. They also described and assessed the good and bad qualities of their groups.

According to instructor I1 his tasks concentrate on guiding the group, and in an ideal situation the instructor does not need to intervene at the implementation of the project task at all. The task of an instructor is to facilitate experts' work – not to intervene in the contents of the projects. This may, however, cause uncertainty as regards the instructor's work:

> The researcher: "You mentioned … how much the instructor is aware of the focus area … to what extent it is the instructor's task?"
> I1: "It is not the task of any instructor … particularly … it causes uncertainty when we are in the area in which one does not even know all the abbreviations … it creates a feeling of walking on the thin ice … one should intervene with questions … I do not mean that one should be able to go inside … to my mind the contract is between the group and the firm … in an ideal situation the instructor should not intervene in the content … I know that in some cases the instructor has been fastened to the content … I do not think that it is a particularly good thing … the situation may become paranoic for the group in the way that the group should get information from an outside source or from the firm or via the firm from some outside party … in my opinion, this is the way of working here … the instructor just facilitates experts"

Instructor I1 considered the instructor's role as a person who ensures that the environment is in a satisfactory state:

> I1: "… the instructor is a person whose task is to take care of that the environment provided from our side is in a good condition… when there are crisis in any one of the groups I do not know what to do should they start boxing with each other."

He considered the instructor's role as *"ungrateful observer from far away."* Although the instructor should have distanced him/herself from his/her group, she should know what goes on in the group so that she could intervene with the group's functioning if necessary. According to instructor I1, that kind of knowledge is attained if both parties are able to talk about the issues as they really are and that it is dependent on the quality of the meetings – not on the number of these meetings. It seems that a trustful and open relationship is essential between the instructor and the group as the following extract illustrates:

> The researcher: "How well the instructor should know about the situation of a group?"
> I1: "… the instructor should know the real situation of a group … if there are any problems … be they at a dead-end … having been at a standstill long time …… it is not about the number of meetings but the quality of meetings … I suppose that this was the idea that I had concerning the guidance work … … the essence of the guiding is that … I do not mean that with regular meetings … … it is about the instructor's attitude and the attitude of the group."
> The researcher: "Trust?"
> I1: "Yes …that it is, in particular … openness and trustfulness I might say …an emphatic starting point towards the work of the group … which gives an idea about how they are feeling in particular situations."
> The researcher: "How a trustful and open relationship between a student group and the instructor is created?"
> I1: "It is very difficult to answer that … what are the conditions … … how is it created between two individuals or in this case between the group and an individual who has the instructor's status … it is a very complex and … it is very hard to find means … I am sure that the creation of such a relationship is aided by, perhaps, discussion, which is open and natural in tone … in which the roles are not present … … many times I felt that I was below my group … partly because they knew about the task they were working on … I do not mean just the line of business … about the particular product they were working on … an enormous amount more than me … it is very difficult to tell them that it is wrong … or made badly … an instructor may perhaps rise to the same level … if you understand what I mean … of course one could think that one is older and more experienced concerning many issues … in such a situation … it is the group that does its own work … the instructor is an outsider … the instructor should be an outsider … it is impossible for an instructor to say anything from the outside … she can, with the help of guidance from the group, give answers to certain questions … in so far as the group is able to ask and want to ask … this is the relationship … in principle the group is active and I am passive and in that sense I am below the level of the group … and I am able to do what they want me to do … I cannot force them … I try to be an echo which does not reflect what they say but gives answers when asked."

The instructor considered that his role towards the group should be restricted. According to him, the project takes place between the group and the client, and the group decides of its own working methods. The role of the university should be of a very low profile – active guidance may not help the group at all but, instead, the group should find by themselves the problems, for which they need help. The instructor explained that there was a disagreement between his attitude and other instructors' attitude towards the way one should work as an instructor:

> The researcher: "Shouldn't the instructor give guidelines … just listening to the students?"

I1: "If we are thinking about the process in which they participate, when I looked after these four groups … from outside you can not actively give guidelines to the process … because they have their own methodology there … and they do it in their way … the discussion should take place between the group and the client … and there exists the guidance relationship … and I would say that other instructors disagree with me … active guidance does not necessarily help the group … they should find the problems, to which they want help, by themselves … I am not saying that if I observe them going the wrong way, doing the wrong thing, that I should not intervene… … the status of this department should be low … at the beginning, basic information and education is provided, in the middle, education is provided, making the group work better … any particular project is run between the group and the firm"

According to instructor I3, if a student group hides the problems they have inside the group, and do not solve them, the problems may have disastrous consequences. It is the instructor's task to have discussions with the students and intervene with the functioning of a group when needed:

The researcher: "You mentioned something about a group's inner life. The outside world and us. Is it good or bad or something in between? That such a phenomenon exists."
I3: "It is good that there is a group spirit. Everyone is there for every one else's sake. That you start to withhold some information … it is no good at all. The instructor is not able to intervene with any wrong that is inside. It is the instructor's task to act as a buffer and take the comments from inside the group if something does not work. If the situation gets too bad and the group initially accepts it … at some occasions there will be resistance … this cannot be so. Then it might be too late to intervene. … But if the group protects its member, then the situation may get out of hand at some point and in the worst case the whole project goes off. … the students should remember the principle of openness."

Instructor I2 told an example of a group whose members wanted his support in redefining the project task during the project. The group confronted pressures from their client to do more than they had resources for. By bringing out the available resources and by making decisions with that information about the resources the problem was solved. The instructor explained that he defended students in decision-making situations:

I2: "… but in a way they seek guidance support to determine the proper boundaries … to my mind, in this, there was no problem … we took the issues to the board and I defended our stance by saying that we can not do this and that, so we registered the decisions … what the boundaries are … it seems that [name of a representative of a client] tries to have this and that done … we do not have the resources … I told that bring out the resources and we will decide what we are going to do with them ."
The researcher: "You mentioned that you defended the students. Do you often come up with that kind of a situation in which the instructor defends the students?"
I2: "In my case, it has happened. It is also a question about the university viewpoint … you have to bring out what this is about … remind what this Development Project is about: that it is not only about working but about studying as well, in particular, studying project work … and the object is the task provided by the client … of course, if there are differences in interpreting, well yes it is defending …is it defending students or … I have the attitude that if they are in a weaker position, I try to support them if it feels right."

During the interview I sensed that if the students had to be defended from the clients, it might be worth asking the instructor if the same applies in the

opposite direction. As a result, the instructor told about the students' and clients' different attitudes towards co-operation: for students the project may become "the whole world" but for the representatives of the clients the project may remain a project among other projects. As a consequence, students may be very sensitive to what the representatives of the clients say, and the instructor may have to "defend" the clients for the students and to support the formation of students' interpretations:

> The researcher: "Have you been in a situation – well, just a moment ago you described a loyalty relationship towards the students and the university – in an opposite direction towards the client … some kind of loyalty relationship in which you defend the client for the students … we are not talking about allies but…"
> (the tape was turned over)
> I2: "Yes, there were sometimes these kinds of discussions … what the client meant when she said … the young ones are quite sensitive to some [expressions] – she said this and that, and they [the students] directly interpret it, the language has so many more dimensions and you have to remember the context were that we are in a firm … these kinds of issues … sometimes one is forced to [defend] the client … their attitudes and considerations … these kinds of issues one is forced to defend … students sometimes consider that the project is everything, for the clients it is every-day work … and probably they have not put any resources to this at all … it may be extra work …"
> …
> The researcher: "So, you are like an interpreter towards both directions?"
> I2: "Yes, that kind of role … in the project, the question is that it consists of these experiences, occasions, and well, we start to interpret them and to build meanings… so it is a very important task to support the formation of interpretation … "

In guiding many student groups the instructors may come across problems if mixing some groups with each other or having a wrong idea of a group. This problem is based on the difficulty of memorizing the process of each group, although the instructor might have written down his ideas:

> The leading instructor: "… as instructors we are forced to take a risk … when we discuss with our groups or we bring out the issues to support their learning … we are forced to take a risk about whether our knowledge is adequate or do we have a wrong idea … it is possible that we have a totally wrong idea … … you may mix the groups with each other … you may mix them, although you have written the facts down somewhere … you have emotions based on visions about the group and … I know from my own experience, I have confused the groups with each other."

There have been non-graduate students as instructors, and according to instructor I1, their position towards the other students is different because they are very much alike them:

> The researcher: "You mentioned that there have been instructors representing different ages."
> I1: "… in some occasions some assistant instructors have been near graduating … not always graduated … their point of view is different and their attitude towards the students is different … they are almost their colleagues, fellow-students … I do not have any information about what the results have been like."

Experiences about guiding students

In guidance meetings the instructor's role is to make the group stop in order to reflect on their own functioning by assessing their performance in the past and by planning for the near future. The instructor guides the students by giving feedback on their incomplete versions of project plans, phase plans, weekly plans, and various memos. For a guidance meeting, the project manager is to produce an agenda and to act as chairman during the meeting. One way to handle the agenda of the meeting is to advice the project manager to plan the flow of the meeting in the order of past, present, and future. In the past phase, the previous week (including usage of hours) and other gatherings in the near past (e.g., board meetings) are discussed. In the present and future phases, problems faced by the students, and decisions that the students should make about their project work are discussed. Project managers are expected to assume the chairman's role during the guidance meeting. An example of content of an agenda produced by some students for a guidance meeting follows:

> Before:
> 1. Implemented tasks
> 2. Consideration of phases
> 3. Report from week 5
> Now:
> 1. Work relating to report
> 2. Walk-through
> 3. Used hours
> 4. Other issues
> Future:
> 1. Tasks of week 6
> 2. Other issues

As the above agenda shows the discussions during guidance meetings generally flowed from the past events to the future events. Next, I will describe my observations about the guidance meetings, assess the differences in groups, and describe the client-related problems faced by the students.

Observations of groups

During the first year, I noticed that my understanding about groups' functioning changed along the academic period. As an example, a group of mine seemed to function well at the beginning. During a guidance meeting at the beginning of the project, I sensed that the group was well organized and the work tasks were distributed efficiently. Because of this apparent efficiency, I felt my role to be more like that of a bystander than of an active guidance provider (an extract from my diary):

> The manager who kicked off the meeting led it very well: he listened to the other students and came to the decisions efficiently. The group members talked to each other in a constructive way. I felt that there was a very pertinent and enthusiastic atmosphere in the group. I felt myself quite outside this group: the manager led the discussions and I mostly sat quietly during the meeting. I was asked confirmations to

certain issues but, compared to my previous guidance meetings, I felt more passive towards this group.

The following week, in the guidance meeting of the same group, I sensed the group being in low spirits. They were in the process of producing a project plan, which demanded plenty of their energy. The enthusiasm from the previous week had vanished. The project manager who was the start-up manager and the first project manager, felt very tired after producing a project plan for the first board meeting. The project manager said that he wanted to have a break for a couple of days. I gave him feedback on the previous board meeting: he had performed his tasks well during that meeting.

Intervening to the discussion during guidance meetings. In a guidance meeting of a group I had to defend the project manager, because the group members started to blame the project manager for inefficiencies in the project work, for which – in my opinion – the whole group was responsible. During the discussions with the group the students told that the communications did not function: the group members did not know what to do and when. Group meetings had been arranged ad-hoc. A group member complained that a work task had been assigned to him but he had not understood it and had been left alone to do it. As an instructor, I sensed that the discussion during the meeting had a good effect on the group. I told them to arrange group meetings regularly, and I felt that I had to defend the project manager. I told the students that these issues are the responsibility of the whole group and that they should not blame the project manager but to organize the work tasks better.

In one guidance meeting of a group I experienced a situation, in which I had to prepare myself for a possible intervention in student's discussions. The group had agreed that when the project manager's phase was to end, they would, in the following guidance meeting, arrange a feedback discussion. During the guidance meeting, the project manager directed criticism towards his fellow-students, and as I observed it, it was hard, mentally, for him to give negative feedback to his fellow-students. I had to prepare myself for a possible intervention in case the student in the role of the project manager found it impossible to continue (notes from my diary):

> He told that he had had a lot to answer for and that the group had not supported him. He told, as an counter-example, of an occasion, in which he had been supported. Thus, he was not blaming anyone. … A project manager, who wants to communicate with his group in order that they could do better, is compelled to make an effort when communicating with his group. … While [name of a student] was talking I had to mentally prepare myself for a situation, in which [name of a student] would not able to express what he meant and in which I would have to say something which could make the situation easier. … The group started to discuss the matter and the discussion had a unifying effect.

The above extract shows that an instructor may be forced to confront a mentally hard situation, to which he must be ready to react quickly, for example, in order to encourage the students to discuss talk openly about any problems.

Different groups

The guidance meetings appeared to vary a lot – depending on, e.g., the group spirit, students' motivation, and the relationship between the group and me. There were two extremes in these six groups, for which I was the primary instructor, and in two groups, for which I was the secondary instructor: while I felt it impossible to get the uncommunicative group to discuss with me about any issue, discussions with the extrovert group were so profound and demanding that I was exhausted after these guidance meetings. Next, I will describe my observations about these different groups.

Uncommunicative group. It was hard or even impossible to get the members of the uncommunicative group to discuss about anything. To me, their attitude seemed phlegmatic throughout the whole course. I discussed about this problem many times with the leading instructor and my colleague, but it seemed that an outsider could do nothing. The following extracts from my diary illustrate the difficulty I confronted with this group:

> When I entered the room of [name of the group] group and started to talk with them, I felt being in a difficult situation. I knew that I should somehow stimulate and encourage them. However, I felt that I was not capable to encourage them. When I asked them about the issues in their work I felt that to get any information and experiences out of them a pair of tongs would have been useful.
> When we started to discuss the future group work education, … I told them that the occasion would not be as stressful as the day when the group formation took place. With this the group members looked at each other and smiled - at least some kind of communication!
> During the guidance meeting I was bothered wondering about how I should talk to these people, and how I could encourage them. I tried to give them positive feedback, for instance, by acknowledging the fact that they had divided work tasks. I remember having reminded them about the right way to distribute the work tasks and about openness. At this stage they, again, looked at each other and smiled.

In a guidance meeting with my uncommunicative group I sensed a spirit of defiance and unwillingness. Their attitude affected my work in the way that I had to deliberate carefully about what to say to them (an extract from my diary):

> I told what reports and plans should be produced for the board meeting. The versions, which [name of a student] produced, were incomplete. I gave feedback that there should be "more flesh around the bones." Concerning this group I felt some kind of spirit of defiance and unwillingness (especially from the side of [name of a student]). I had to preside the whole guidance meeting, and no one took initiative in anything. It is a very ungrateful task to guide this kind of group, because one has to beware of one's words to prevent any reaction of defiance or protest occurring. This kind of atmosphere does not help the instructor in his aims to help and guide the group. I provided them with guidance and hints, but because the atmosphere was not conducing, proper discussions were not initiated.

As the above extract shows, guiding a group, which does not engage in discussion, is an ungrateful task. My experience with this group was not unusual for an instructor in his/her work. During the preliminary phase, instructor 3 told about a group, which did not want to expose its inner life to

the instructor. He thought he could hire them, but in that case, he would not put them into the same group:

> The researcher: "How were you able to observe the inner life of the group?"
> Instructor 3: "With some difficulty ... The group was quite peculiar. They did not want to show their inner life to the outside ... most probably the group operated better than it seemed from outside. I tried to note it down somehow in my assessment ... it did not look like ... from outside ... a good project team ... it was a group of individualists ... it was hard to observe what they did together ... decision making did not look clear from outside ... they were still discussing when the decisions already should have been made ... I could not observe the inner life ... they did not want to show it. ... ... yes, I could employ a few [students from the group] but I would not put them into the same group ... not because they had conflicts but because their working habits do not fit together."

Extrovert groups. During the preliminary phase, instructor 3 described an extrovert group, which at first had difficulties in arranging the timetables, but which worked well as a team. They even assessed the project manager in front of the instructor:

> Instructor 3: "... In the first meeting they started to talk about all of the things they had to do ... I felt that they would never agree on time-tables ... [the group] was formed in a way that they functioned very well as a team ... very reflective ones ... they deliberated upon their functioning ... assessed it ... even when I was present they assessed the former project manager – even though I did not ask it ... open and extrovert, almost all of them ... they took seriously those issues."

Instructor 3 described another group, which consisted of students with different backgrounds and which was quality oriented in their work:

> The researcher: "[name of a group], what do you think about the group?"
> Instructor 3: "... a kind of professionalism ... ... they had strong quality awareness and different backgrounds ... different know-how ... they formed different task lines."

Instructor I1 described his four groups as good and independent. He told that there were groups, in which some were not interested in the course:

> I1: "... as background information that four groups were good ones, excellent, modestly speaking ... they were independent and there was no situations in which one was forced to intervene ... there were no problems ... some others had uneven groups ... they demanded different means."
> The researcher: "Uneven groups, what does it mean?"
> I1: "... it was shown that some of them were not interested in this course at times ... towards the spring it got better ... such a big mass ... and there was no one who dropped [the course] ... if we think about probabilities ... from a big mass someone surely thinks that this is not what I want to do this time ... of course there might be group chemistry issues which one cannot predict."

Powerful personalities. The leading instructor described experiences of a group, which partly consisted of friends. There was a powerful personality in the group, and she affected the group spirit in the sense that the fellow-students were not able to bring out problems relating to that person:

> The leading instructor: "These people [students] told that the matter is such that when two or three get together, they talk about it. They never discuss it among the group when every one is present. The question is about the fact that [the name of a student] is such a powerful personality. One does not have the guts to say it. It was partly a group of pals… there were tensions around … you do not tell about your good pal anything bad … … these are the main issues in your area … responsibility of a group and an individual… what they talk in the group and as individuals."

Students confronting problems with clients

In some guidance meetings, we talked about problems relating to the client or the project task. At the beginning of a workshop, the representative of the client had talked ca. one hour. I told the students that the chairman of the meeting must make decisions relating to how long each participant is allowed to speak. To this the students retorted that they are students and they dare not to interrupt the representatives of the client. Later, this group confronted a problem relating to their client. The project manager complained that the client does not know what they want from the project. The representative of the client seemed satisfied with anything that the group produced. This had created uncertainty within the group. I advised them that they might be thus forced to assume more responsibility as individuals and as a group over the project. After the meeting I wrote to my diary:

> During the guidance meeting with [name of the group] group I followed my duty to support and encourage the group in a situation in which they considered that they were alone and uncertain. However, what they actually do inside the group is not visible to me. I hope that the group starts to guide itself. I shall return to this issue in the next guidance meeting.

Afterwards, in another guidance meeting, I asked about their independent state and if they had had problems in their relationship with the client. A student responded that many times she had been the creator of ideas to which others had commented. Another student said that it has not bothered them that the other student had so often created ideas, because the final results were formed by joint discussions.

Protecting employees in a client organization. Discussions with the leading instructor revealed that the students do not necessarily understand that the representatives of the clients are not in neutral positions as regards other employees in these client organizations. This comes up when, for example, students interview employees about critical issues relating to the organization. There is a danger that employees' opinions are reported, with their names, to the representatives of the clients, who may have a direct managerial responsibility over those employees. Thus, these employees' positions may be threatened by information gathered or produced by the students. It is the instructors' duty to take care of that the students introduce themselves to these employees as students who conduct a project for the organization - instead of letting the employees suppose that the students are neutral researchers from a university. During both academic years, there were groups, which were about to disclose confidential information to the managers of the client organizations.

Client's undesirable behaviour. During the second year, members of a student group were offended by some gender-based statements expressed by a representative of their client. The statements underestimated women's position in the group. The problem was discussed from the viewpoint of sustaining client relationships and respecting the parties of the project co-operation.

Difficulties in practising instructor's work

During the first year, I suspected my abilities to do my job as an instructor when I observed that I was not able to memorize the issues relating to each group, because the groups constantly got mixed up in my mind (an extract from my diary):

> I have noticed that, in the beginning, I had plenty of problems in being aware of all my groups. If someone asked what a group of mine was doing, I was not able to remember anything about the group's activities. Guiding four groups confuses me.

In practice, I noticed the confusion in my mind when after reading papers of one group I set out to read papers of another group. Soon I did not remember anything about the papers of the former group. The leading instructor had had similar problems: Once he had totally mixed the groups in his mind and subsequently given misdirected feedback to a group, whose members had been offended by the feedback.

Private discussions with students

In this section, I describe experiences related to private discussions with students from both academic years. My own experiences as well as those of other instructors' are described here.

Way of management. During a private discussion with a student, who acted as a project manager, I was told that the group spirit is good but that it is hard to get the group members to attend the meetings at the same time. The student told me that he does not like to order people about, for example, by sending orders by email, but instead he wants face to face discussions with them. When I asked him to describe his relation with the group he told that he prefers being the co-ordinator - it is hard to be the boss among one's equals.

Commitment issues. A project manager told that in his group commitment to the project varies. In one occasion, he told me, two other group members had been able to leave the project room to take part in a party leaving him alone with the problems.

Another project manager was bewildered about the acts of his group members: according to him, although people at the university are supposed to be grown-ups, the group members did not show initiative in participating at the start of the meetings.

A student in the project manager's role burst into tears when discussing the pressures in the group. She felt that she had pressures over taking responsibilities related to the group. We discussed the relationships between the group members and the responsibility issues.

A discussion with a student from the previous years revealed that among the instructors there are different personalities and ways of dealing with the students. A student described the attitude of his group towards their instructor. Because the students thought that they were not able to discuss personal issues with the instructor, they did not reveal any problems to him (an extract from my diary; the text is my own account about the student's story):

> With the instructor, we were able to discuss only issues relating to [project] task – we were able to deal neither with personal issues nor with issues relating to personalities in the group. Regarding issues relating to group members, we discussed them among the students, and we did not include them in discussions with the instructor. There was a certain kind of wordless contract within the group that the defects/problems should be fixed -> someone had to act to get the situation fixed. Some issues were left hidden, because our instructor would have told us off.

The student confessed that in their group, there was a freeloader, whose inefficient actions were hidden from the instructor and the leading instructor.

Introvert students. An instructor arranged private discussions with each student in his groups. During the instructors' meeting she told about the difficulties when discussing with an introvert student who does not talk much. The leading instructor pointed out that we have to remember respect for persons in such situations.

Absent students. During the first and second years, many groups confronted a problem about an absent group member. Because of work some students were not able to take part in all the lectures and guidance meetings. During some guidance meetings, students wondered about the absences of their fellow students. As an instructor, I had to talk seriously with these individuals about their absences. To these students I made it clear that these absences from the group might create bitterness and conflicts during the course of the project.

An evening meeting for clients

An evening meeting for clients was co-ordinated at the end of the autumn 2000. The objective of the evening was to get the clients know each other and discuss probable co-operation. The program for the evening was planned so that the psychologist would lecture and co-ordinate discussions. The psychologist started with a presentation about the project work, and after that the representatives of the groups presented their project tasks. Later that evening, after a dinner, the instructors and the representatives of the clients were divided into groups for discussing the project co-operation. When the psychologist asked the representatives of the clients what they expected from the evening, they said that their aim was to benefit from the co-operation (new ideas, recruiting, co-operation) and that the presence of competitors affects discussions. Other clients thought that the presence of competitors suppresses the discussions and others were of the opinion that it does not, because firms could contribute to each other. The following extracts are my notes about opinions expressed by the representatives of the clients before the group discussions. The expressions represent clients' expectations from the evening:

> Energy. because of competition, all issues cannot be discussed; there are competitors here
> Co-operation with the university. The competition and confidentiality do not prevent it… it would be good to check how firms can contribute each other
> Co-operation with the university. We want to benefit and get new information. We want to use these projects for our benefit. There is also other kind of co-operation apart from just this project.
> This is a very nice place for new ideas and recruiting.

During small group discussions the representatives of the clients deliberated about how much they should demand from the students:

> How high can we raise the objectives?
> What can we expect? To what level? One is hungry for the result. One should not put the expectations too high … not to get disappointed.
> How much do you extend your resources – it affects the final result

The above notes illustrate that the clients are concerned about the results: about what can be expected from the students' work and about how much the client should use his resources for the project.

A couple of clients expressed concern about the co-operation: the DP project should not concentrate on co-operation only with bigger companies, as there are smaller enterprises which should be taken into account also. In addition to this, the balance in co-operation between the university and private firms should be achieved:

> … not only for big enterprises … also for smaller firms ..
> Firms merge too closely with the university, if Nokia and us showed the way … the relationship should be balanced

The notes from the client evening show that the clients aim to derive benefit from the co-operation but they also understand the importance of the independent status of the university: Letting private firms influence the university too much would be detrimental to the independence of university. Equality issues concerning co-operation between the university and the firms were raised with the viewpoint of favouring big enterprises in the expense of small firms.

Work methods seminars

Twice during the course, the student groups are expected to present their best working methods to other groups in work method seminars (Figures 60 and 61). Each group is expected to present a good working method in their room for other students. A student of each group is to present a poster relating to a good working practice for other students moving from room to room detecting suitable methods for their own usage.

Specified plan. During the second work method seminar, which is arranged in January or February, the student groups are expected to show how they have implemented a so-called specified plan of their project. The specified plan is a tool to administer the project to its conclusion in a controlled way. This can be achieved by planning the project backwards, starting from the end results of the

project and by planning how the (preliminary) results might be implemented. The specified plan is a collection of ready-made weekly plans till the end of the project. If there are changes to the specified plan, as there often are, the project manager is responsible for changing all the following weekly plans.

FIGURE 60   Pictures from the work method seminar.

Middle assessment/Developmental discussions

Middle assessments, or developmental discussions as they were called from the second year on, are arranged in order to stop the process and assess it critically.

Before the assessment meeting, each party is expected to write an assessment report about the performance of the student group. The assessment is based on an assessment framework (see themes of assessment in Table 28). The student groups are expected to ask the representatives of the clients to assess the functioning of the student group using, for example, the assessment framework. All the parties are to write assessment without knowing what the
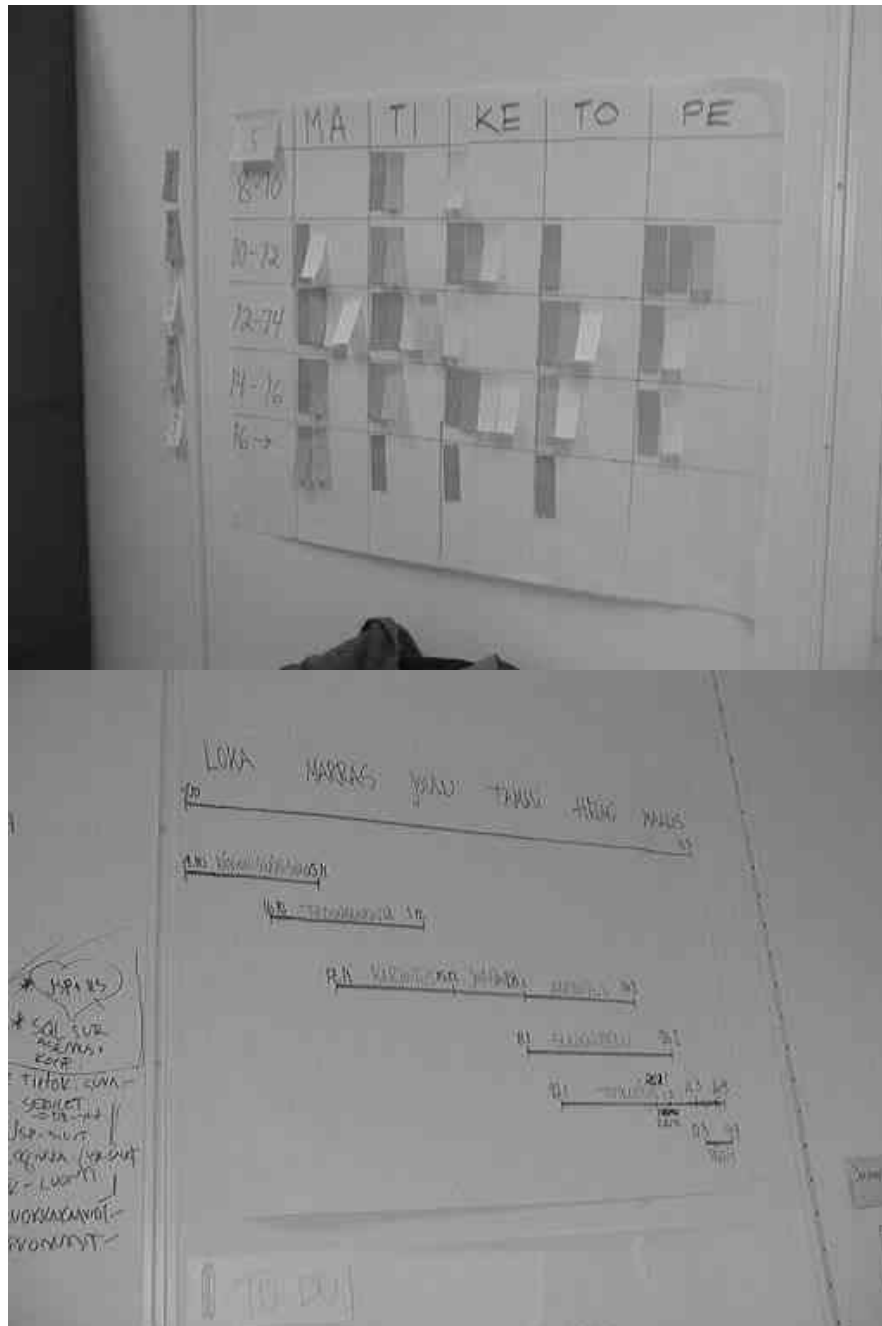
FIGURE 61   Pictures from work method seminar.

other parties have come up with their assessments. The results of Tynjälä and Tourunen's (2000) study suggest that this three-way partnership assessment supports the working and learning process during the course. For the middle and final assessments the students produce self-assessments, which are – according to Tynjälä and Tourunen's (2000) findings – more comprehensive when compared with the assessments of the clients and the instructors. It is thus evident that the students' self-assessments play the main role in the assessment process. In principle, each party has been provided with an assessment weight in each area. For example, the assessment weight for one group in planning and follow-up is 35% in Table 28.

TABLE 28   Assessment areas and assessment weights statements.

	%	Group	Own teacher	Other teachers	Enterprise
Background	(+)	10	45	35	10
Group and project work	20	70	15	5	10
Use and mastery of methods	10	45	40	5	10
Planning and follow-up	20	35	50	10	5
Communication and interaction	20	25	30	15	30
Own contribution and orientation	10	20	40	10	30
The product	20	20	15	5	60
	100				

My experiences from the first year

The period of writing middle-assessment reports and even the couple of days of middle assessment discussions during the first year were quite stressful. I remember starting to write our middle-assessment papers at about the same time with my colleague, and we discussed about the difficulties of knowing what really happens inside the groups. We concluded that we should present questions for the group about the uncertainties that such issues involve. When writing the four reports I deliberated about the effects of the content of the assessment paper to my groups: My aim should be to encourage them asking questions like "Do you really take the responsibility for this group?" As an outsider to his/her group, the instructor should not regard his ideas as the final truth. I felt compelled to use phrases like "I suppose", "perhaps", etc. Next, some experiences from these middle assessment discussions from the first year are presented.

    During the middle assessment of a group, the students expressed lack of trust towards their client. The client had promised to deliver computer hardware for the group, but the delivery had been delayed. Students felt lack of

trust towards their client, but they complained that they did not dare to tell their client that they did not trust them. I asked how recruiting shows from the actions of the representatives of the client. The students answered that sometimes the representatives of the clients may ask: "*Do you want to continue as trainees?*" The students added that sometimes the representatives of the clients ask them to do extra work tasks. The clients might ask, for example, whether something could be done by the next day. The leading instructor commented to this by saying that there seem to be an "*assistant-boy*" attitude among the representatives of the clients, and that the specified planning is a tool against this kind of behaviour. At the end of the meeting, when the leading instructor talked about learning aspects of the course, he said to the students "*this is not done to satisfy the client's needs but for your own sake.*" This statement surprised me, because, in my opinion, the client's goals had to be taken into consideration in this kind of co-operation. However, I understood and accepted the importance of learning long-term skills during the project.

Concerning a group which had certain kinds of difficulties in their group spirit and sense of responsibility I decided to express openly and honestly my thoughts about them because honesty is always best in the long run (an extract from my diary):

> I have decided that I should tell [name of a group] directly about my thoughts about it. Honesty and openness towards students is the best. I express my observations and worries concerning [description of defects of the functioning of the group] in the middle-assessment. To my mind, open criticism, when direct and clearly formulated is best in the long run. It must be done in a constructive manner and you should not depress the group too much in so doing. You should be careful when assessing – the assessment should encourage the group to develop its functioning. The assessment should not dig too deep into any one's personality, but it should give as truthful picture about their performance as possible.

After the assessment meetings, I considered the whole middle assessment being very hard and unpleasant. As an outsider, I felt that it was very difficult to give feedback about some issues of which I did not have any idea (an extract from my diary):

> I felt the middle assessment as something that I didn't really want to do. I felt it hard to assess the group work from an outsider's viewpoint. The easiest part was to determine faults and issues to make it more digestible. For example, trivial issues that threatened the group performance, like absences from the project managers' meetings, an absence of a group member, are easy to bring to light. The hard part was to assess issues, which deal with the inner life of the group and the relationships between the group members.

The above extracts illustrate my struggle in learning the instructor's work: my capability to tolerate uncertainty while assessing the groups' processes that were invisible to me started to develop. To get certainty in my mind, I directed questions about some uncertain issues to my groups (in fact, my colleague did the same) so that those issues could be discussed and solved.

The last board meetings

In the last board meetings, the groups are to hand over the final result of the project to their clients and the project is then closed (Figure 62; the individuals in the pictures are not related to the text above or below). First, the agenda of a last board meeting, and examples from student-written reports are presented. Then, I describe what happened during the last board meeting of a group. The board meeting was different compared to other groups' meetings, because the clients had not had time to check the final results before the meeting.
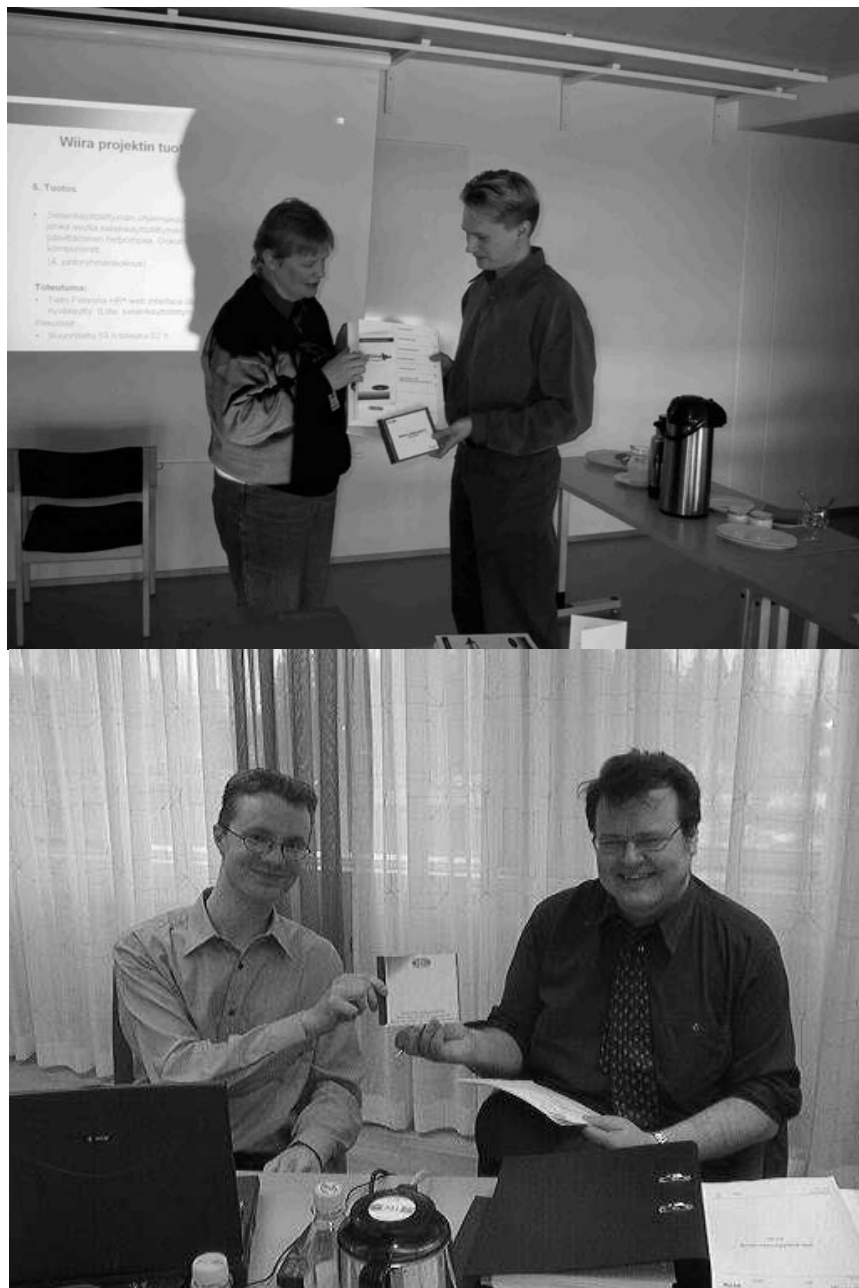
FIGURE 62   The last board meetings.

Agenda for the last board meetings. The agenda for the last board meeting includes issues relating to the reporting of the final phases of the project, the results of the project and transferring the results to the client. The project is ended and assessed (at the co-operation level, not using the assessment framework) at the end of the meeting. The content of a typical last board meeting is as follows:

1. Opening of the meeting
2. Organisation of the meeting
3. Legality and quorum
4. Acceptance of the agenda
5. Announcements
6. Acceptance of the memo of the previous board meeting
7. Reports of the last phases
8. Realization of the whole project
9. Acceptance of the results
10. Transference of the results
11. Invoicing the project
12. Ownership of the results of the project
13. Abdication of the department and the project group
14. Break up of the project organization and ending the project
15. General assessment of the project
16. Other issues

As the above agenda shows, in the last board meeting actions relating to closing the project are handled: the results are transferred to the client, invoicing and ownership of the results are discussed, and the project is broken up and assessed. Assessing project occurs at the project co-operation level – this assessment is not the same as the particular student group's assessment.

Example of contents of reports of the student groups. In the last board meeting, the students are to present the final report of the project, which considers the success of the project and the used resources. In Figure 63 there is a chart about planned and used hours of the group. The chart is an example from a report produced by a student group. The group started working for the client at week 42 and ended the project at week 11. Christmas holiday breaks the working during weeks 51, 52 and 1, which are not shown in the chart. The figure shows, for example, that for the week 49, 76 hours were planned but 67 were actually used.

Possible employment and assessment. During the preliminary phase, I went through many reports relating to past projects. An interesting observation emerged concerning an assessment at the board. According to the students (who wrote the document) during the assessment discussion in the board the client may not express negative assessment at all as the client may employ a student from the group (an extract from a report of a student group):

In the board meeting, the assessment discussion was smooth. In this way, the client aims to assure a status quo, in which a group member remains affiliated with the client.

Example of discussions during a last board meeting. Here I present observations from the last board meeting of a group. During the meeting, the project manager presented the final results, which had been completed the day before the last board meeting.
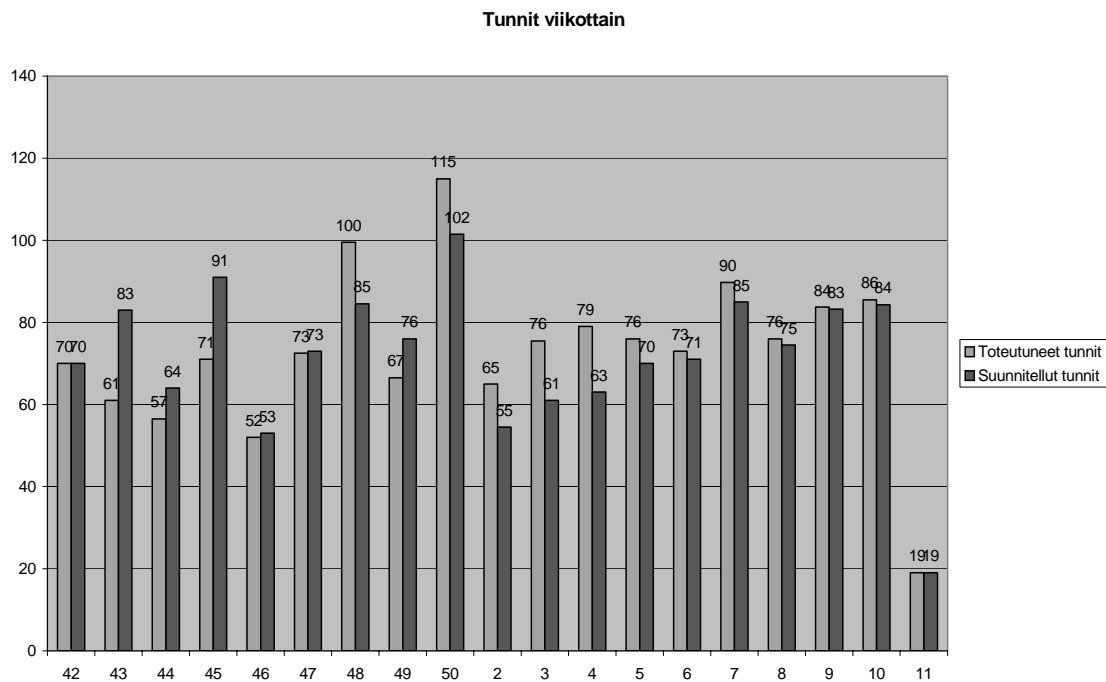
Tunnit viikottain

FIGURE 63   A chart illustrates weekly working hours and planned hours.

Discussion about the possible acceptance of the results followed. The leading instructor asked the client: "*Is this* [report] *such that it can be accepted by the client?*" The client replied: "*First, we have to read this before we can accept this. We got this in the morning … we have not had time to read this.*" To this the leading instructor continued: "*The report can be walked through later*" and the representative of the client replied: "*During this week, we will sign the acceptance paper.*" The preceding extracts illustrate the leading instructor's concerns about the acceptance of the results and about the possibility to formally accept the results after the last board meeting.

When assessing the whole project, the representative of the client asked the students: "*Has this been useful preparation for the working life?*" To this a student replied: "*We would do certain issues differently if we were to start over again.*" The student's answer can be interpreted to mean that they had learned about the project issues, and they would do them better in the future. When talking about learning, the leading instructor said: "*If the students are forced to*

put their resources on the technical aspects, the learning aspects may suffer." When discussing the communications between the group and the client, the impression was that the distance between the client and the group could affect communications. The client commented (an extract from my diary):

> "If the group had been located in our building, the communications would have worked better. Change of project managers hampered … the real projects would have flopped … I understand the educational aims."

The client's comment above illustrates the difference between the DP course and real projects: during the DP course, because of its educational purposes, each student is expected to learn about the project manager's role during his ca. one-month period. To the client's comment the leading instructor replied: "*One should have worked harder when changing managers.*" The representative of the client analysed the board meetings and pointed out, for example, that the students could have shown more initiative in their actions: "*You could have been more courageous in board meetings … you do not need to believe all we suggest.*" The discussion considered also the communications between the group and the client. The students claimed: "*it won't be our baby if we keep asking questions.*" To this, the representative of the client replied: "*the product is our goal … and using help it is equally valuable.*" The way I interpreted this exchange between the client and the group, was that the results would have been better if the group had used more outside help, but the group had wanted to do their own thing. When discussing the reports, the representative of the client commented that if the reports utilise jargon or roundabout expressions it creates suspicions about what the group might be hiding there: "*the reports should be short and you should remove any extra words.*"

Final assessment

Assessment during the course consists of the instructors' observations and discussions with the students along the course (e.g., weekly guidance meetings), and middle- and final assessment reports and meetings. According to the leading instructor, the purpose of the middle-assessment is to strengthen the learning abilities of the student group, not to assess the grade. The purpose of the final assessment is to assess the whole process from autumn to spring and discuss the development of the students' professional identities, and, finally to produce a grade for each student. The idea of the assessment and feedback is to strengthen the student's professional qualities and identity. Thus, to discuss the grade would be useless during the course:

> The leading instructor: "… regarding our program during the spring, during the last week, the question about the grade would emerge. If we got that far with qualitative discussions, and feedback discussions, then it must have gone well, because the learning would have been supported all the time … … how can we support the individual's growing and the formation of identity?"

During the course, students are to develop their self-assessment abilities by producing assessment reports during the middle and final assessments.

However, all of the students are not capable of a profound self-assessment, and there is a danger that the instructor forces his students to pretend of having learnt. According to the leading instructor, this may result in two separate processes, in production of the results and the developing work methods, which do not contribute to each other. However, the instructor should have enough guts to take the risk and not just to praise his group. He also needs to stimulate the students' reflectional abilities:

> The leading instructor: "The instructor has to have the guts to say or do something else than just to backslap and praise his group … so that all the means to develop individuals' and group's learning to make them reflect more are used … there is a reason for their use [means], although there is a risk for that … they might fight back and you would be forced to admit that you were wrong leaving it to that."

Grading and avoidance of miscarriages of justice. The main principle, according to the leading instructor, in guaranteeing justice in grading, is avoidance of miscarriage of justice, which is done by giving better grades than the students deserve. However, the student groups are expected to develop their abilities constantly, and if they fail to do that, their project is deemed an exercise-type project, i.e. a project without a developmental attitude, and not a learning project, in which the work methods are developed:

> The leading instructor: "This year, part of the time it was exercise-like project work in some groups. And it has been so during every year. You cannot consider it worth grade two. If you do not do the project, you do the exercise and that's it. This couldn't be regarded as developing one's own work, which, in my opinion, is the idea first and foremost here."

Exercise-type project has certain resemblance to the idea of job project, which was dealt with in the preceding sections.

Students compare groups with each other. A student group's aim for a good grade may lead the students to emphasize issues, in which they perceive themselves as very good. During the final assessments the students may even start to compare themselves with other groups.

> The leading instructor: "During the spring time … … more and more issues, which have been implemented, according to the students, in a brilliant way, are raised … sometimes, especially during the final assessments, they start to compare groups with each other although their knowledge about the issues is small … we are better than others in that issue
> …
> sometimes they say it publicly and it feels a kind of rough because the knowledge of the groups is small … it is quite small because our knowledge as instructors is sometimes so small"

From the feedback of the students from my first year, we noticed that the students had wanted a more direct way to communicate individually with their instructors regarding the assessment. This being the case, during my second year, we asked the students to produce individual assessments, in which they were able to bring up with the instructors, some difficult problems about the groups.

A fraud during final assessment. The leading instructor described a case of a student group who had business contacts with a client organization. According to the leading instructor, these business connections caused exercise of power and disagreements within the group. During the final assessment discussions the leading instructor told the group about his opinion about the student group: they were not equal in the sense of grading and there was at least one student who should get lesser grade than the others. At that time it was customary that these kinds of decisions were based on consensus, and the leading instructor asked these students to discuss the dissimilarities pertaining to their grades. After the meeting the group announced that every one should get the same grade:

> The leading instructor: "A new paper was asked to be assessed, and it said that according to the group [every one should get the same grade]. And after that it was revealed that two of the students had not seen this second paper at all … It is a clear case of a deception by these three students against other two students … it was partly based on the project task, conflicts ... creating business for someone ... two of them were in the firm and the third one may have been connected with the firm. This is an extreme case of a moral deception, a wrongdoing."

As the preceding extract illustrates, three of the students betrayed the other two who had not seen a paper, and which was produced in the name of the group. According to the leading instructor, pressures emanating from the business connections of these three students with the client and the project task, which was produced for the client, affected their behaviour.

Experiences from assessment meetings

For this section, I have mixed my experiences from the first and the second year. The main reason for this is to guarantee the anonymity of the students involved. When starting to write the first drafts of the final assessment papers I realized that I was able to take extracts from my ethics diary to use in those assessments. In this way, I could describe my observations and feelings along the whole project and I could also function as a mirror for my students: they could see how I observed their performance. In this way, the data-gathering instrument of this research was transformed into equipment for the assessment work. My feelings related to writing final assessment papers turned upside down: the process of writing was very much easier than writing middle assessments. I felt that I had enough knowledge of their actions, and my abilities to assess the actions of my groups developed. Uncertainties of the middle assessment became certainties of the final assessments. However, there were some groups for which the formulation of feedback was still mentally stressful.

In the assessment meeting with my uncommunicative group, one group member asked why my diary extracts considered only the negative issues leaving the positive sides unmentioned. It was true that the assessment paper included negative issues about the functioning of the group, but I had not forgotten the positive feedback. I explained that when writing diary I considered mostly those issues that I felt problematic. The other student

protested against the extract "*in the group the group members do not help each other.*" I remember writing that after observing one student to allocate a task to another student in a way that was not quite polite. As I remember it, this was the first time that these students started a profound discussion in front of me.

During an assessment meeting I asked a student about his participation on the group work. The student asked what made me ask about it, to which I answered that I had some suspicions about his participation. The discussion about his participation in the project that followed was very hard for the instructors and the group members because it dealt with sensitive and intimate issues, which cannot be disclosed here. That particular student's participation in the group work had been discussed within the group between the four students, but in their assessment papers it was not brought up.

Grading

The following description is from a grading event of the second year. The grading event participants were the instructors, and it lasted over eight hours. The grading was conducted in two phases. First, each instructor described his views and the preliminary grades relating to the assessment areas of their groups in a grading scale from 1 to 5. In this grading scale, 1 meant, "taking the easy way out", 3 meant, "actions in accordance with the expectations", and 5 meant, "surpassing the expectations". Grade 2 was an intermediary grade between 1 and 3, and grade 4 between 3 and 5. The instructors were able to comment on other instructor's thoughts and preliminary grades. In practice, a table was filled with grades row by row when an instructor assessed his groups in each assessment area (Table 29). In the table, for example, group 2 has 3.5 for project leading except student AB, who got 2.5. After walking through each group, we started to compare the grades of the groups in each assessment issue, i.e., we compared the grades in the columns. In this phase, it was observed that the instructors' styles in assessment were different but when comparing the groups with each other the differences between them became smaller – the grades became closer to each other. Individual differences were taken into account by providing individual grades. For example, a student who had been absent from the group, got lower grade in the group work, and a student, who had been especially reflective compared to his group members, got higher grade in the attitude assessment area.

TABLE 29 An imaginary example of grading.

	Back-ground	Group work	Project work	Project leading	Attitude	Commu-nications	Product
Group 1		4	3	3.5	3.5 DE 4	4	5
Group 2	+	3	2.5	3.5 AB 2.5	3	3.5	4
Group 3		4	3	3	5	4	4
Etc.							

After assessing all the grading areas of each group in the scale from 1 to 5, we transformed the grading scale to a scale from 1 to 3. This transformation was subjective in nature: we observed that there were three groupings: three groups got ca. 4.5, four groups ca. 4, and two groups ca. 3 in the scale from 1 to 5. The rest of the groups were somewhere between those grades. We decided that the first groupings got the highest grade, 3, and the second, 2.5, and the third, 2. Grading discussion lasted over eight hours, and after that, at late evening, the leading instructor mailed the grades of each sub-area of assessment and the final grade to each student group. The grades were discussed during the following feedback discussions.

Feedback discussions

During the feedback discussions the grades of each assessment issue, the final grade of the group, and possible individual grades are discussed. The leading instructor told about an unmotivated group, whose members had produced a strategy for the feedback discussion to obtain a better grade by raising their voices:

> The leading instructor: "… last year their success was based on raising their voices and on a kind of attack, partly … they had produced a strategy…"

During the first year, these feedback meetings lasted half an hour and some of them produced very much tension and excitement. At the beginning of a meeting, we wrote the sub-grades and the final grade to the board and started a discussion. From these discussions I remember that there were two groups, in which we had to give a lower grade to one of the students because she was working simultaneously with the DP course and the working had affected their participation in the activities of their groups. Both of these students were dissatisfied with the grounds given for the decrease of the grade. One of them announced that he could accept the grade but he should know more about the reasons for the decrease.

During a feedback meeting, a student, who was older than the other students, dominated the discussion from the students' side. When discussing an issue, the leading instructor said to this student that she should give other students also the possibility to express themselves. The student blamed me about insufficient co-ordination of education for them, although I had asked an expert to discuss the matter with the group and the group had not asked for further help. When discussing the lack of development in working methods in the group, a student, who was quiet by nature, complained that we should have told about it during the middle assessment. To my mind, the comment presented by that quiet student was more awakening than the comments presented by the dominating student.

A group member was not satisfied with my assessment because I had forgotten certain positive aspects concerning his performance. The student told me afterwards that she could not raise the positive issues in the meeting because it would have been unethical for her to bring herself to the front. In her

feedback the student was right – I did not remember all the positive issues in his participation.

During a feedback discussion, the leading instructor told the group that if he were to employ students, he could not employ anyone from the group, because the atmosphere in the group was perfectionist: the way they worked would lead individual burn-outs. During both years, there were groups, in which the atmosphere and working morale was such that some students suffered from it. In an extreme case, a student got on a sick leave due to his group's working habits.

One of my colleagues together with me attended, as onlookers, a feedback meeting, which seemed quite disgusting from the moral viewpoint. The relationship between the instructor and three members of a five-student group had tensed so much that the meeting ended in a kind of virtual crucifixion of the instructor. During the year the instructor had had many problems with the group: for example, a group member had at the beginning of the course told her that she did not tolerate any criticism, and the group had not agreed to develop their working methods (plans, management) as we had told all our groups to do. We had brought it up in our discussions during the year that personal chemistry between the group and the instructor did not work at all, and assessing the project a year afterwards, it was found to have been a big mistake not to change the groups between the instructors. When my colleague and I entered the room where the leading instructor, the instructor and the group had their meeting, the group was interrogating their instructor about the grounds for the grades. About the content of the discussion I can not remember much, but the nature of the discussion - especially from the part of the three group members - was aggressive. The discussion culminated in a dispute about the grade for the group work, which was four, the students insisting that it should have been five (the highest). When discussing this, the leading instructor pointed out that in the individual reports a group member had stabbed another member in the back, and that it was a sign of non-mature group work. In a certain stage, the instructor looked very tired and depressed and she wanted my colleague and me, sitting behind her, to help her. In that point, a student shouted to her "*Do not seek help from behind you!*" The same student continued by saying: "*You were a poor instructor*" – to which another student added: "*We should get better instructors!*" Another student smiled when she saw her instructor's mental devastation. At this point the instructor had to leave the room. The leading instructor did not interrupt the heated discussion and allowed the virtual crucifixion to take place. Afterwards, he admitted that he should have interrupted the discussion. When I later talked with the student who smiled at her instructor, she told that she did not mean to smile and that she should learn to control her facial movements. She also told that the group had not been told about the requirements for the project until at the end of the project. Who told the truth, this student or the instructor? Did these students want to revenge their poor grade, or had the guidance really been so inadequate as the students wanted to make out? Whatever the history and truth

behind the curtains were, what I saw in these three students' actions was something bordering a total disrespect for a fellow human being. Later, when a faculty member interviewed me about the meeting, I told that in general when we speak about ethics, it is about the grey area between right and wrong. But what these students did, I think, could be interpreted as a very distasteful act of evilness. The interpretation I gave to the staff member about the feedback event points out the difficulty of doing participant observation: one's immersion in the phenomena one is studying affects the interpretations one makes. Even as a researcher I could not avoid contemplating the event from the viewpoint of two extremes, good and bad, and allocating the students' actions to the latter – although I was aware that I did not know all the factors affecting the relationship between the instructor and her group.

Cruise

In this section, I present my observations about the cruise of both academic years. The DP project had traditionally ended with a one-day-in-Stockholm cruise at the Baltic Sea. The students, two representatives of each client, the instructors, and a few members of the department staff took part in the cruise. At the beginning of the cruise, there was a seminar during which the students made presentations (Figure 64; the individuals in the picture are not related to the text above or below) and group works were conducted. The first evening ended with a la carte dinner at the restaurant of the ship.

The united group. It seemed that my uncommunicative group had somehow united after the assessment phase. I was drinking beer with the leading instructor at a pub of the ship when the group came to chat and drink beer with us. I do not remember what the discussion was about but I remember that a student, who participated in the ethics course at the same time, made a humorous remark saying that there will be plenty of reading in his ethics diary. We all laughed at his comment. To my mind, this group had finally integrated themselves – perhaps the assessment phase had united them.

FIGURE 64   A group starting a presentation.

The dinner. At the beginning of the a la carte dinner, each of the parties (students, clients, and instructors) were to make a speech, I representing the instructors. In my speech I announced the group of the year. We had decided that honesty, openness, and self-criticality were to be the main determinants when deciding about the group of the year. In fact, we instructors were unanimous about the selection. It was quite puzzling to me that after I announced the name of the winning group and asked them to step forward so that my colleague could hand over a prize to the group, the group members came from tables far away from each other.

   The night. In the ship there were many restaurants, pubs and discos. The students, the representatives of the clients, and the instructors celebrated the ending of the project by drinking alcohol and having fun. Heavy usage of alcohol was observed. The students discussed the assessment at length and I remember when walking by some students them wondering about what kind of effect my assessment paper had had in the leading instructor's thoughts. As we had understood, some students thought that the leading instructor assigns the grades for the students, which was not true, although the leading instructor's influence on the first-year instructors' thinking was considerable. I did not attend the cruise of the second year, but I was told that some inner conflicts of a group came on the surface during the night: two students fought with each other, and other students had to separate them. A student reported that during the cruise there were discussions about groups' group spirits and that what it seemed like to the outside was not, in fact, true (an extract from a student's diary):

> During the cruise, I heard a lot of gossip about the groups' real group spirits. Some of the groups had provided outsiders with very flattering image about themselves, but the truth was something else. There had been ugly frictions, plotting, hostile talk, and jealousies. Behind the images of these groups one could sense tiredness related to the project, and see quarrels between the group members at the project and the course levels.

According to the leading instructor, the department staff participating in the cruise has not always behaved well. He told that students have generally behaved better than the staff members. An example of this can be found in a student's observation and criticism expressed in his diary:

> In the same way a staff member of the university tried openly seduce everything that was moving, from his colleagues to project students. What does this tell about this particular person's professional ethics?

Consequential phase (from March to April)

Handling of complaints

In this section, the handling of complaints is considered. After feedback discussions it is possible that the students make an official complaint for the leading instructor about their grading. During the first and second years, there were few students, who complained about the grade. As an example, there was a student, whose group members were, as we intuitively had assessed, weaker in professional skills compared to this particular student. The student complained about his grade, and during the discussion we decided that to get a justification for a better grade, he should produce a new assessment using the assessment framework and get statements from his group members. As we saw it, it was very hard for the student to confront his group members and start the discussion about his complaint. However, as a result, the group members agreed with his objective to get a better grade. After reading the additional assessments, we provided him with a better grade. There was another student, who complained about his grade: he considered himself the key person in the group and took credit of certain achievements of that group. The instructors had not observed this and, in fact, among his group members there were views opposite to his. As a result, the grade was not changed.

Student union. Individual students had complained about some defects in the Project Leading course (the DP course) and Project work course, which was arranged parallel with the DP course. The Project work course was arranged to make it possible for students, who are in working life, to complete the compulsory project studies. The completion of the course required the students to write a diary about the development of one's professional identity and participate in discussions with their mentor at the firm and with the university teachers. The course was arranged for the first time and there were disagreements between the students and the instructors about the length of the

period for reflection and about the number of university credits they would get from the period. These disagreements and disagreements with particular students from the DP course lead to a conflict, during which a representative of the student union sent a threatening letter to the leading instructor. The letter was threatening to make public some assumed malpractices if they were not dealt with satisfactorily. The representative of the student union was invited to a meeting and the discussion revealed that a student had not revealed all the information in question to the representative of the student union. In addition to this, we discussed other problems relating to both courses. As an example, the discussion between the leading instructor, the representative of the union and me revealed that something should be done about the difficulties experienced in providing the students with grounds for their assessment.

Development seminars

During both years, the leading instructor co-ordinated development seminars, which consisted of analysis of our experiences, development of instructor abilities, and planning for the following years. There were also seminars during which the psychologist co-ordinated discussions relating to the instructor's role and work.

REFERENCES

Airaksinen, T. 1995. Logiikka ja mielikuvitus hyveen opetuksessa. In P. Elo, H. Simola (eds.) Arvot, hyveet ja tieto. Helsinki: Painatuskeskus, 19-29. In Finnish.

Anderson, R.E., Johnson, D.G., Gotterbarn, D., Perrolle, J. 1993. Using the New ACM Code of Ethics in Decision-Making. Communications of ACM 36 (2), 98-107.

Apostolou, B., Apostolou, N. 1997. Heroes as a context for teaching ethics. Journal of Education for Business 73 (2), 121-126.

Aquinas, T. 1994. Of the Natural Law. In P. Singer (Ed.) Ethics. Oxford: Oxford University Press. 247-249.

Aristotle, 1994. Moral Virtue, How Produced. In P. Singer (Ed.) Ethics. Oxford: Oxford University Press. 26-27.

Audi, R. (Ed.) 1995. The Cambridge Dictionary of Philosophy. Cambridge: Cambridge University Press.

Barki, H., Hartwick, J. 2001. Interpersonal Conflict and Its Management in Information System Development. MIS Quaterly 25 (2), 195-228.

Baumann, Z. 1997. Moral uncertainty. Speech at Great Philosophy Event (Suuri Filosofiatapahtuma), Tampere.

Bebeau, M.J. 2002. The Defining Issues Test and the Four Component Model: contributions to professional education. Journal of Moral Education 31 (3), 271-295.

Berkowitz, M.W. 1985a. Four Perspectives on Moral Argumentation. In C.G. Harding (Ed.) Moral Dilemmas. Chicago: Precedent Publishing. 1-23.

Berkowitz, M.W. 1985b. The role of discussion in moral education. In M.W. Berkowitz, F. Oser (Eds.) Moral education: Theory and application. Hillsdale, NJ: L. Erlbaum. 197-218.

Blake, R.R., Mouton, J.S. 1978. The New Managerial Grid. Houston: Gulf Publishing Company. Rererenced in F.E. Kast, J.E., Rosenzweig 1985. Organization & Management, A Systems and Contingency Approach. New York: McGraw-Hill.

Blakeney, R.A., Blakeney, C.D. 1992. Growing pains: A theory of stress and moral conflict. Councelling & Values. 36 (3), 162-176.

Boethius, S.B. 1983. Autonomy, Coping and Defense in Small Work Groups. Stockholm: Department of Psychology, University of Stockholm. Dissertation.

Boddy, D. 2002. Managing Projects: Building and Leading the Team. Harlow, Essex: Prentice Hall.

Bowden, J.A. 1994. The nature of phenomenographic research. In J.A. Bowden, E. Walsh (Eds.) Phenomenographic Research: Variations in Method. Melbourne: Royal Melbourne Institute of Technology. 1-16.

Bowers, D.G., Seashore, S.E. 1966. Predicting Organizational Effectiveness with a Four-Factor Theory of Leadership. Administrative Science Quaterly. September. p. 247. Referenced in Kast, F.E., Rosenzweig, J.E. 1985. Organization & Management, A Systems and Contingency Approach. New York: McGraw-Hill.

Boyd, A. 2001. The five maxims of project satisfaction. Aslib Proceedings 53 (10), 423-430.

Brink, D.O. 1996. Moral Conflict and Its Structure. In H.E. Mason (Ed.) Moral Dilemmas and Moral Theory. New York: Oxford University Press. 102-126.

Brittain, K., Leifer, R. 1986. Information Systems Development Success: Perspectives from Project Team Participants. MIS Quarterly 10 (3), 215-223.

312

Brown, C.M., Sheppard, E.M., Vetelino, J.F., Galin, M. 1989. University-Industry Technology Interchange Through a Unique Engineering Projects Course. IEEE Transactions on Education 32 (3), 343-348.

Byrkett, D.L. 1987. Implementing Student Projects in a Simulation Course. In A. Thesen, H. Grant, D. Kelton (Eds.) Proceedings of the 1987 Winter Simulation Conference. New York: ACM Press. 77-81.

Carroll, A.B. 1999. Ethics in Management. In R.E. Frederick (Ed.) A Companion to Business Ethics. Oxford, UK: Blackwell. 141-152.

Carver, D.L. 1985. Comparison of techniques in project-based courses. In J.E. Miller (Ed.) Proceedings of the sixteenth SIGCSE technical symposium on Computer science education, New Orleans, Louisiana. New York: ACM Press. 9-12.

Chang, R. 1997. Incommensurability, Incomparability, and Practical Reason. Cambridge: Harward University Press.

Clarkeburn, H. 2002. A Test for Ethical Sensitivity in Science. Journal of Moral Education 31 (4), 439-453.

Collins, W.R., Miller, K.W. 1992. Paramedic Ethics for Computer Professionals. Journal of Systems Software 17 (1), 23-38.

Computing Curricula 2001. Journal on Educational Resources in Computing 1 (3), 1-236.

Cotterell, M., Hughes, B. 1995. Software Project Management. London: International Thomson Computer Press.

Culnan, M.J. 1987. Mapping the Intellectual Structure of MIS, 1980-1985: A Co-Citation Analysis. MIS Quarterly 11 (3), 341-353.

Davis, G.B., Olson M.H. 1984. Management Information Systems: Conceptual Foundations, Structure and Development. New York: McGraw-Hill.

DeMarco, J.P. 1996. Moral Theory – A Contemporary Overview. Boston: Jones and Bartlett Publishers.

Deurzen, E.V. 1999. Common sense or nonsense: intervening in moral dilemmas. British Journal of Guidance & Counselling 27 (4), 581-587.

Donagan, A. 1996. Moral Dilemmas, Genuine and Spurious. In H.E. Mason (Ed.) Moral Dilemmas and Moral Theory. New York: Oxford University Press, 11-22.

Eteläpelto, A., Tourunen, E. 1999. Työelämälähtöinen projektiopiskelu tietojärjestelmän suunnittelijoiden asiantuntijuuden rakentamisessa. In S. Honkimäki (toim.) Opetus, vuorovaikutus ja yliopisto. Jyväskylä: Koulutuksen tutkimuslaitos, Jyväskylän yliopisto. 73-99. (in Finnish).

Farkas, D. 1988. Choosing Group Projects for Advanced Systems Courses. In H.L. Dershem (Ed.) Proceedings of the nineteenth SIGCSE technical symposium on Computer science education. Atlanta, Georgia, United States. New York: ACM Press. 109-113.

Fetterman, D.M. 1998. Ethnography: Step by Step. Thousand Oaks: Sage.

Fielden, K. 1999. Starting Right: Ethical Education for Information Systems Developers. In C.R. Simpson (Ed.) AICEC99 Conference Proceedings, 14-16 July 1999. Melbourne. Brunswick East, Victoria: Australian Institute of Computer Ethics. 147-156.

Fielding, N. 1993. Qualitative Interviewing. In N. Gilbert (Ed.) Researching Social Life. London: SAGE Publications. 135-153.

Fisher, B.A., Ellis, D. 1990. Small Group Decision Making, Communication and the Group Process. New York: McGraw Hill.

Frances, B., Alison, A. 2004. The problem of integrating ethics into IS practice. In T. Leino, T. Saarinen, S. Klein (Eds.) Proceedings of 12th European Conference of Information Systems. ECIS 2004. Turku. Finland.

Francis, H. 1993. Advancing Phenomenography. Nordisk Pedagogik 13 (2), 68-75.

Fritz, J.M. 1987. A pragmatic approach to systems analysis and design. In A.K. Rigler, D.C. St. Clair (Eds.) Technical Symposium on Computer Science Education. Proceedings of the eighteenth SIGCSE technical symposium on Computer science education, St. Louis, Missouri, United States. New York: ACM Press. 127-131.

Gillian, W.R., Krebs, D.L. 2000. The construction of moral dilemmas in everyday life. Journal of Moral Education 29 (1), 5-22.

Gilligan, C. 1982. In a Different Voice: Psychological theory and women's development. Cambridge, Mass.: Harvard University Press.

Glaser, B.G., Strauss, A.L. 1967. The Discovery of Grounded Theory, Strategies for Qualitative Research. London: Weidenfeld and Nicolson.

Gorgone, J.T., Davis G.B., Valacich, J.S., Topi, H., Feinstein, D.L. Longenecker, H.E.Jr. 2002. IS 2002. Model Curriculum and Guidelines for Undergraduate Degree Programs in Information Systems. Association for Computing Machinery (ACM), Association for Information Systems (AIS), Association of Information Technology Professionals (AITP). Communications of AIS 11, Article 1.

Gowans, C.W. 1987. The Debate on Moral Dilemmas In C.W. Gowans (Ed.) Moral Dilemmas. New York: Oxford University Press. 3-33.

Gowans, C.W. 1996. Moral Theory, Moral Dilemmas, and Moral Responsibility. In H.E. Mason (Ed.) Moral Dilemmas and Moral Theory. New York: Oxford University Press. 199-215.

Grodzinsky, F. 1999. The practitioner from within: revisiting the virtues. Computers and Society 29 (1), 9-15.

Green, L. 2003. Projecting IT education into the real world. Proceeding of the 4th conference on Information technology education. CITC4'03, October 16–18, 2003, Lafayette, Indiana, USA. New York: ACM Press. 111-114.

Hare, R.M. 1963. Freedom and Reason. Oxford, UK: Oxford University Press.

Hare, R.M. 1976. Handbook of small group research. New York: Free Press. Referenced in Hare, A.P., Blumberg, H.H., Davies, M.F., Kent, M.V. 1995. Small Group Research A Handbook. Norwood, New Jersey: Ablex Publishing Corporation.

Hare, R.M. 1981. Moral Thinking, Its Levels, Method and Point. Oxford, UK: Oxford University Press.

Hare, R.M. 1987. Moral Conflicts. In C.W. Gowans (Ed.) Moral Dilemmas. New York: Oxford University Press. 205-238.

Hare, A.P., Blumberg, H.H., Davies, M.F., Kent, M.V. 1995. Small Group Research A Handbook. Norwood, New Jersey: Ablex Publishing Corporation.

Haviv, S., Leman, P.J. 2002. Moral decision-making in real life: factors affecting moral orientation and behaviour justification. Journal of Moral Education 31 (2), 121-140.

Henry, J. 1994. Teaching Through Projects. London: Kogan Page.

Hill, T.E. 1996. Moral Dilemmas, Gaps, and Residues: A Kantian Perspective. In H.E. Mason (Ed.) Moral Dilemmas and Moral Theory. New York: Oxford University Press. 167-198.

Hoffman, M. 1982. Affect and moral development. In H. Cicchetti (Ed.) New directions for child development. San Francisco: Jossey-Bass. Referenced in Packer, M.J. 1985. The Structure of Moral Action: A Hermeneutic Study of Moral Conflict. Basel: Karger.

Hollander, E.P. 1971. Principles and Methods of Social Psychology. New York: Oxford University Press. Referenced in Boethius, S.B. 1983. Autonomy, coping and defense in small work groups. Stockholm: Department of Psychology, University of Stockholm. Dissertation.

Ihde, D. 1979. Experimental Phenomenology. New York: G.P. Putnam's Sons.

Isomäki, H. 2002. The Prevailing Conceptions of the Human Being in Information Systems Development: Systems Designers' Reflections. University of Tampere. Department of Computer Science and Information Sciences. Report A-2002-6. Dissertation.

Joel, W.J. 1987. Realistic student projects. Papers of the 18th SIGCSE technical symposium on Computer science education. St. Louis, Missouri, United States. 244-247. New York: ACM Press. 244-247.

Johnson, D.G. 1995. Professional ethics. In D.G. Johnson, H. Nissenbaum (Eds.) Computers, Ethics, and Social Values. New Jersey: Prentice Hall. 559-572.

Johnson, D.G. 2001. Computer Ethics. Upper Saddle River, New Jersey: Prentice Hall.

Jorgensen, D.L. 1989. Participant Observation, A Methodology for Human Studies. Applied Social Research Methods Series. Newbury Park: Sage.

Järvinen, P. 2001. On Research Methods. Tampere, Finland: Opinpaja Oy.

Kallman, E.A., Grillo, J.P. 1996. Ethical Decision Making and Information Technology, An Introduction with Cases. New York: McGraw-Hill.

Kant, I. 1987. Moral Duties. In C.W. Gowans (Ed.) Moral Dilemmas. New York: Oxford University Press. 34-51.

Kant, I. 1993. The Moral Law, Groundwork of the Metaphysic of Morals. Translated by Paton H.J. London: Routledge.

Kast, F.E., Rosenzweig, J.E. 1985. Organization & Management, A Systems and Contingency Approach. New York: McGraw-Hill.

Keith, D. 1977. Human Behavior at Work. New York: McGraw-Hill. Referenced in Kast, F.E., Rosenzweig, J.E. 1985. Organization & Management, A Systems and Contingency Approach. New York: McGraw-Hill.

Klein, H.K., Myers, M.D. 1999. A Set of Principles for Conducting and Evaluating Interpretive Field Studies in Information Systems. MIS Quaterly 23 (1), 67-94.

Kohlberg, L. 1981. The Philosophy of Moral Development, Moral Stages and the Idea of Justice. San Francisco: Harper & Row.

Kohlberg, L. 1985. Resolving Moral Conflicts Within the Just Community. In C.G. Harding (Ed.) Moral Dilemmas. Chicago: Precedent Publishing. 71-98.

Kohlberg, L., Levine, C., Hewer, A. 1983. Moral Stages: A Current Formulation and a Response to Critics. Basel: Karger.

Lacity, M.C., Janson, M.A., 1994. Understanding Qualitative Data: A Framework of Text Analysis Methods. Journal of Management Information Systems 11 (2), 137-155.

Ladd, J. 1989. Computers and Moral Responsibility: A Framework for an Ethical Analysis. In C.C. Gould (Ed.) The Information Web, Ethical and Social Implications of Computer Networking. Boulder: Westview Press.

Land of Phenomenography. 2002. Web-site. http://www.ped.gu.se/biorn/phgraph/welcome.html. 21th May 2002.

Lemmon, E.J. 1987. Moral Dilemmas. In C.W. Gowans (Ed.) Moral Dilemmas. New York: Oxford University Press. 101-114.

Lisman, C.D. 1998. Ethics Education in Schools. In R. Chadwick (Ed.) Encyclopedia of Applied Ethics, Volume 2. San Diego (Calif.): Academic Press.

Little, D. 1991. Varieties of Social Explanation. An Introduction to the Philosophy of Social Science. Boulder: Westview Press.

Loo, R. 2002. Tackling ethical dilemmas in project management using vignettes. International Journal of Project Management 20 (7), 489-495.

Mackie, J.L. 1981. Ethics. Inventing Right and Wrong. London: Penguin.

Macklin, R. 1980. Problems in the Teaching of Ethics: Pluralism and Indoctrination. In D. Callahan, S. Bok (Eds.) Ethics Teaching in Higher Education. New York: Plenum Press. 81-101.

Manning, F.V. 1981. Managerial Dilemmas and Executive Growth. Reston, Virginia: Reston Publishing.

Marcus, R.B. 1987. Moral Dilemmas and Consistency. In C.W. Gowans (Ed.) Moral Dilemmas. New York: Oxford University Press. 188-204.

Mathiassen, L., Purao, S. 2002. Educating reflective systems developers. Information Systems Journal 12 (2), 81-102.

Marton, F. 1986. Phenomenography – a research approach to investigating different understandings of reality. Journal of Thought. 21 (3), 28-49.

Marton, F. 1992. Phenomenography and "the art of teaching all things to men". Qualitative Studies in Education 3 (3), 253-267.

Marton, F. 1995. Cognosco ergo sum, Reflections on reflections. Nordisk Pedagogik 15 (3), 165-180.

Marton, F., Pang M.F. 1999. Two Faces of Variation. 8th European Conference for Learning and Instruction, August 24-28, Göteborg University, Göteborg, Sweden. 1-12.

Marton, F., Wenestam C.G. (Eds.) 1984. Att Uppfatta Sin Omvärld. Kristianstad: Kristianstads Boktruckeri Ab. (in Swedish).

Mason, H.E. 1996a. Introduction. In H.E. Mason (Ed.) Moral Dilemmas and Moral theory. New York: Oxford University Press. 3-9.

Mason, H.E. 1996b. Responsibilities and Principles: Reflections on the Sources of Moral Dilemmas. In H.E. Mason (Ed.) Moral Dilemmas and Moral theory. New York: Oxford University Press. 216-235.

Mattson, M. 1998. Pahanteon psykologia. Helsinki: Tietosanoma. (In Finnish)

Maylor, H. 2003. Project Management. Harlow, Essex: Prentice Hall.

McConnell, T. 1987. Moral Dilemmas and Consistency in Ethics. In C.W. Gowans (Ed.) Moral Dilemmas. New York: Oxford University Press. 154-173.

McNeel, S.P. 1994. College Teaching and Student Moral Development. In J.R. Rest, D. Narvaez (Eds.) Moral Development in the Professions: Psychology and Applied Ethics. Mahwah: Lawrence Erlbaum Associates. 27-49.

Mehic, N., Al-Soufi, A. 1999. Updating the CS Curriculum: Traditional vs. Market-Driven Approaches. Informing Science 1 (4), 69-73.

Morrill, R.L. 1980. Teaching Values in College. San Francisco: Jossey-Bass Publishers.

Moses, L., Fincher S., Caristi J. 2000. Teams work (panel session). In S. Haller (Ed.) Proceedings of the thirty-first SIGCSE technical symposium on Computer science education. March 7-12, Austin, USA. New York: ACM Press. 421-422.

Muhr, T. 1997. Atlas.ti. A software programme. Berlin: Science Software Development.

Mynatt, B., Leventhal, L. 1987. Profile of undergraduate software engineering courses: results from a survey. ACM SIGCSE Bulletin, Proceedings of the eighteenth SIGCSE technical symposium on Computer science education. New York: ACM Press. 523-528.

Myyry, L., Helkama, K. 2002. The Role of Value Priorities and Professional Ethics Training in Moral Sensitivity. Journal of Moral Education 31 (1), 35-50.

Nagel, T. 1987. The Fragmentation of Value. In C.W. Gowans (Ed.) Moral Dilemmas. New York: Oxford University Press. 174-187.

Nucci, L. 1987. Synthesis of Research on Moral Development. Educational Leadership 44 (5), 86-92.

Nucci, L. 1997. Moral Development and Character Formation. In H.J. Walberg, G.D. Haertel. Psychology and educational practice. Berkeley: MacCarchan. 127-157.

Olesen, H.S., Jensen J.H. (Eds.) 1999. Project Studies – a Late Modern University Reform? Roskilde: Roskilde University Press.

Oliver, S.R., Dalbey, J. 1994. A software development process laboratory for CS1 and CS2. Proceedings of the twenty-fifth SIGCSE symposium on Computer science education. New York: ACM Press. 169-173.

Packer, M.J. 1985. The Structure of Moral Action: A Hermeneutic Study of Moral Conflict. Basel: Karger.

Parker, M. 1998. Moral Development. In R. Chadwick (Ed.) Encyclopedia of Applied Ethics. Volume 3. San Diego: Academic Press. 267-273.

Patton, M.Q. 1990. Qualitative Evaluation and Research Methods. Newbury Park: Sage.

Penn, Jr., William, Y. 1990. Teaching ethics – a direct approach. Journal of Moral Education 19 (2), 124-139.

Piaget, J. 1977. The Moral Judgement of the Child. Harmonsdsworth: Penguin.

Pigford, D.V. 1992. The Documentation and Evaluation of Team-Oriented Database Projects. Proceedings of the twenty-third technical symposium on Computer science education. Kansas City, Missouri, United States. New York: ACM Press. 28-33.

PMI, 1996. A Guide to the Project Management Body of Knowledge. Project Management Institute. Sylva, North Carolina: PMI Publishing Division.

Power, F.C. 1997. Understanding the character in character education. In L. Nucci (Ed.) Symposium of developmental perspectives and approaches to character education. Symposium conducted at the meeting of the American Educational Research Association, Chicago, March 1997.

Power, F.C., Makogon, T.A. 1996. The Just Community Approach to Care. Journal for a Just and Caring Education 2 (1), 9-24.

Rawls, J. 1971. A Theory of Justice. London: Oxford University Press.

Rebelsky, S.A., Flynt, C. 2000. Real-World Program Design in CS2 The Roles of a Large-Scale, Multi-Group Class Project. SIGCSE 2000, Austin, TX, USA. New York: ACM Press. 192-196.

Renström, L. 1988. Conceptions of Matter: a phenomenographic approach. Göteborg: Acta Universitatis Gothoburgensis, Göteborg Studies in Educational Sciences 69. Dissertation.

Rest, J. 1984. The Major Components of Morality. In W.M. Kurtines, J.L. Gewirtz (Eds.) Morality, Moral Behavior, and Moral Development. New York: A Wiley-Interscience Publication. 24-38.

Rest, J., Narvaez, D. 1991. The College Experience and Moral Development. In W.M. Kurtines, J.L. Gewirtz (Eds.) Handbook of Moral Behavior and Development. Volume 2. New Jersey: Lawrence Erlbaum Associates. 229-245.

Rest, J.R. 1994a. Background: Theory and Research. In J.R. Rest, D. Narvaez (Eds.) Moral Development in the Professions: Psychology and Applied Ethics. Mahwah: Lawrence Erlbaum Associates. 1-26.

Rest, J.R. 1994b. Preface. In J.R. Rest, D. Narvaez (Eds.) Moral Development in the Professions: Psychology and Applied Ethics. Mahwah: Lawrence Erlbaum Associates. ix – xii.

Roberts, E. 2000. Computing Education and the Information Technology Workforce. SIGCSE Bulletin 32 (2), 83-90.

Roiko-Jokela, H. 1992. Tietojenkäsittelyopin laitoksen vaiheet 1967-1992. Jyväskylä: Jyväskylän yliopisto, Tietojenkäsittelyopin laitos. (In Finnish).

Rokeach, M. 1973. The Nature of Human Values. New York: The Free Press.

Ross, W.D. 1987. Prima facie duties. In C.W. Gowans (Ed.) Moral Dilemmas. New York: Oxford University Press. 83-100.

Ross, W.D. 1994. The Personal Character of Duty. In P. Singer (Ed.) Ethics. New York: Oxford University Press. 332-337.

Ross, J., Ruhleder K. 1993. Preparing IS Professionals for A Rapidly Changing World: The Challenge for IS education. In M.R. Tanniru (ed.) Proceedings of the 1993 Conference on Computer Personnel Research, St Louis, Missouri, United States. New York: ACM Press. 379 – 384.

Ruggiero, V.R. 1997. Thinking Critically About Ethical Issues. California: Mayfield Publishing Company.

Sandberg, J. 2000. Understanding human competence at work: an interpretive approach. Academy of Management Journal 43 (1), 9-25.

Schlimmer, J.C., Fletcher, J.B., Hermens, L.A. 1994. Team-Oriented Software Practicum. IEEE Transactions on Education 37 (2), 212-220.

Scott, T.J., Tichenor, L.H., Bisland, R.B.Jr., Cross J.H. 1994. Team dynamics in student programing projects. SIGSCE 26 (1), 111-115.

Semprevivo, P.C. 1980. Teams in Information Systems Development. New York: Yourdon Press.

Shenhar, A.J., Levy, O. 1997. Mapping the Dimensions of Project Success. Project Management Journal 28 (2), 5-13.

Singer, P. 1993. Practical Ethics. Cambridge: Cambridge University Press.

Singer, P. 1994. How Are We To Live? Ethics in an age of self-interest. London: Mandarin.

Siponen, M.T. 2001. The relevance of software rights: an anthology of the divergence of sociopolitical doctrines. AI & Society 15 (1&2), 128–148.

Siponen, M.T., Vartiainen, T. 2002. Attitudes and Affecting Factors in Unauthorized Copying of Computer Software. Poster presented in Pacific Asia Conference on Information Systems, PACIS 2002.

Smith, H.J. 2002. Ethics and Information Systems: Resolving the Quandaries. The DATA BASE for Advances in Information Systems 33 (3), 8-22.

Somners, C.H. 1993. Teaching the virtues. Public Interest. Spring-93, Issue 111. 3-14.

Stallman, R. 1995. Why software should be free. In D.G. Johnson, H. Nissenbaum (Eds.) Computers, Ethics and Social Values. Upper Saddle River (NJ): Prentice Hall. 190–200.

Stallman, R. 1997. The GNU manifesto. In M.D. Ermann, M.B. Williams, M.S. Shauf (Eds.) Computers, Ethics and Society. New York: Oxford University Press. 229–239.

Statman, D. 1995. Moral Dilemmas. Amsterdam: Rodobi.

Sumner, M. 1987. The senior information systems design project seminar. Proceedings of the eighteenth SIGCSE technical symposium on Computer science education, ACM SIGCSE Bulletin 19 (1), 2-8.

Svensson, L, Theman, J. 1983. The relation between categories of description and an interview protocol in a case of phenomenographic research. Paper presented at Second Annual Human Science Research Conference, Duquesne University, Pittsburgh, May 18-20. Mölndal: University of Göteborg.

Swap, W., Leonard, D., Shields, M., Abrams, L. 2001. Using Mentoring and Storytelling to Transfer Knowledge in the Workplace. Journal of Management Information Systems 18 (1), 95-114.

Thiroux, J.P. 1986. Ethics Theory and Practice. New York: Macmillan.

Tourunen, E. 1992. Educating reflective system designers by using the experiential learning mode. In B.Z. Barta, A. Goh, L. Lim (Eds.) Professional Development of Information Technology Professionals. Amsterdam: Elsevier Science Publishers. 113-120.

Tourunen, E. 1996. How to support reflection in project-based learning using learning portfolios and information technology? The 5th International Conference on Experiential Learning, Cape Town, South Africa, 1.-6. July, 1996.

Tourunen E., Sundbäck H. 2002. Projektiopinnot – innovatiivisessa yhteistyössä projektiammattilaiseksi. Ehdotus korkealaatuisen opetuksen yksiköksi 2004-2006. 14.10.2002. (In Finnish).

Tourunen, E., Tourunen, I. 1996. PROMENADI - A Method for Supporting Collaboration in Project Groups. A poster at the symposium Learning Technology and Telematics in Education and Training, Koli, Finland, 10.-11.12.1996.

Tourunen, E., Vartiainen, T. 2002. Ethical Issues in Project Learning. The 8th International Conference on Experiential Learning 2002, Ljubljana, Slovenia 1.-5.7.2002

Trauth, E.M. 2001. Qualitative Research in IS: Issues and Trends. Hershey: Idea Group.

Tucker, A.B. 1991. Computing Curricula 1991. Communications of the ACM 34 (6), 68-84.

Tuckman, B.W. 1965. Developmental Sequence in Small Groups. Psychological Bulletin 63 (6), 384-399. Referenced in Semprevivo, P.C. 1980. Teams in Information Systems Development. New York: Yourdon Press. p. 35.

Turiel E. 1983. The Development of Social Knowledge, Morality & Convention. Cambridge: Cambridge University Press.

Tynjälä, P., Tourunen, E. 2000. Three-way partnership assessment in working-life oriented project-based learning. Paper presented at the International Conference on Experiential Learning, 4.-8. December, 2000, Auckland, New Zealand.

Uljens, M. 1991. Phenomenography – A Qualitative Approach in Educational Research In L. Syrjälä, J. Merenheimo (Eds.) Kasvatustutkimuksen laadullisia lähestymistapoja. Kvalitatiivisten tutkimusmenetelmien seminaari Oulussa 11.-13.10.1990. Esitelmiä. Oulun yliopiston kasvatustieteiden tiedekunnan opetusmonisteita ja selosteita 39, 1991.

Vartiainen, T. 2003a. A Study of Computer Science Students' Ethical Attitudes and Its Implications to Small Group Discussions in Computer Ethics Education. Computers & Society 33 (3).

Vartiainen, T. 2003b. Moral Conflicts Perceived by Clients, Students, and Instructors of a Student Project Course in Computing. University of Jyväskylä. Department of Computer Science and Information Systems. Technical Reports TR-29. Licentiate's thesis.

Vartiainen, T. 2004. Collection of Finnish IT-professionals' stories about moral conflicts in working life. Stories were collected via a web-page and questionnaires during 1998-2004. Not published.

Warnock, M. 1975. The Neutral Teacher. In M. Taylor (Ed.) Progress & problems in moral education. Windsor: NFER Publishing Company. 103-112.

Watson, H.J., Huber, M.W. 2000. Innovative ways to connect information systems programs to the business community. Communications of the AIS 3, Article 11.

Weltz, E.Y. 1998. A Staged Progression for Integrating Ethics and Social Impact Across the Computer Science Curriculum. Computers and Society 28 (1), 30-34.

Vihmalo, A., Tourunen, E., Jurvanen, M. 1990. Systems Analysts' Concept Structures and User's Perspective. Paper presented in the Fifth European Conference on Cognitive Ergonomics, Urbino (Italy), 3.-6.9.1990. Golem Press.

Winrich, L.B. 1994. Integrating Ethical Topics in a Traditional Computer Science Course. In J.M. Kizza (Ed.) Ethics in The Computer Age Conference Proceedings, Gatlinburg, Tennessee, November 11-13. New York: ACM Press. 120-126.

Wohlin, C., Regnell, B., 1999. Strategies for industrial relevance in software engineering education. The Journal of Systems and Software 49 (2-3), 125-134.

Wolf, S. 1994. Moral Saints. In P. Singer (Ed.) Ethics. Oxford: Oxford University Press. 345-361.

Yin, K. 1994. Case Study Research, Design and Methods. London: Sage.

Ziegler, W.L. 1983. Computer science education and industry: Preventing educational misalignment. In E.M. Awad (Ed.) The Proceedings of the Twentieth Annual Computer Personnel on Research Conference, Charlottesville, Virginia, USA. November . 108-112.

FINNISH SUMMARY

Projektityö on yleisesti sovellettu työmenetelmä IT-alalla ja se on sisällytetty alan opetussuunnitelmiin. Projektityön suosiosta riippumatta siihen liittyviä eettisiä ja moraalisia kysymyksiä on tutkittu vähän tietojärjestelmätieteissä. Tässä tutkimuksessa selvitettiin erään suomalaisen yliopiston tietojenkäsittelytieteen laitoksen projektikurssin osapuolten – asiakkaiden, opiskelijoiden ja yliopisto-ohjaajien – kurssilla kohtaamia moraalisia konflikteja. Moraaliseksi konfliktiksi käsitetään tilanne, jossa henkilö kokee, että hän on moraalin näkökulmasta merkittävän valintatilanteen edessä. Tutkimuksen kohteena olevalla kurssilla opiskelijaryhmät toteuttavat todellisia IT-alan kehitysprojekteja yrityksille. Lisäksi jokainen opiskelija harjoittelee vuorollaan ryhmän projektipäällikön roolia. Asiakkaiden edustajat ohjaavat projektin sisällöllisen tuotoksen ja yliopisto-ohjaaja ryhmän projektityötaitojen kehittymistä. Tietoja moraalisista konflikteista kerättiin osallistuvan havainnoinnin, haastattelujen, päiväkirjojen, kyselylomakkeiden ja piirustusten avulla. Nämä tiedot analysoitiin fenomenografisella menetelmällä, minkä perusteella koottiin jokaista osapuolta kohden käsityskartta moraalikonflikteista. Moraalikonflikteissa havaittiin kaksiulotteinen rakenne, joista ensimmäisen ulottuvuuden mukaan konfliktit voidaan jakaa ihmistenvälisiin, projektin toteuttamiseen ja ulkopuolisiin osapuoliin liittyviin konflikteihin. Toisen ulottuvuuden mukaan konfliktit voidaan jakaa väärinteon konflikteihin, itsekeskeisiin ja muihin osapuoliin liittyviin konflikteihin. Kaikki kolme osapuolta kohtasivat tavoitteiden ristiriitoihin, työtehtävien priorisointiin ja sitoutumiseen ja yksilöiden kohteluun liittyviä moraalikonflikteja. Erityisesti asiakkaiden tavoite hyötyä opiskelijaprojektista ja yliopiston tavoite taata opiskelijoiden oppiminen ja kehittyminen tuottivat moraalisia konflikteja kaikille osapuolille. Vaikeimmat moraalikonfliktit liittyivät yksilöiden kohteluun ja erityisesti yksilön toimintaan puuttumiseen. Konfliktien kartoittamisen lisäksi tutkimuksessa selvitettiin asiakkaiden käsityksiä moraalista ja etiikasta, moraalisista ongelmista ja siitä miltä moraalinen ongelma tuntuu. Tutkimustulosten perusteella kehitettiin alustava viitekehys moraalisesti onnistuneen projektikurssin toteuttamista varten. Lisäksi tutkimustuloksia vertailtiin tietojärjestelmätieteiden ja moraalipsykologian teorioihin.