Student Life in Computing: a Variety of Conflicting Moral Requirements

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Abstract

Moral conflicts are inherent in human life and we try to arrange our societies to avoid the most dilemmatic decision-making situations. Few studies on ethical issues in computing education exist, and this one takes a step forward in filling this gap in knowledge. The study concerns moral conflicts in student life as perceived by information systems (IS) students in a Finnish university. Their perceptions were collected from a given discussion task and a phenomenographical approach was taken in the data analysis. Nine categories were found along two dimensions. On the first dimension the moral conflicts related to choosing the study line, carrying out the study tasks and engaging in extra-mural activities, and the pressures associated with student life. The second dimension revealed the intentions behind the conflicts: moral conflicts were reflected through self-concern, maintaining relations, and upholding society. Implications for research and practice are suggested.

Keywords: student life, moral conflicts, phenomenography

1 Introduction

It is recognised in philosophical literature that we humans try to arrange our institutions and society so as to prevent the most severe moral conflicts from emerging. According to Marcus (1987, 188), the recognition of moral dilemmas motivates us to change our lives in order to avoid them. Moral conflicts in teaching have been researched (e.g., Tirri 1999), but there are few studies on ethical issues in computing education in universities. It is important that the faculties in educational institutes know about the moral conflicts confronted by students so that they may be able to change the processes and support the students over the problematic issues. This study concentrates on moral conflicts in student life as perceived by information systems students in a Finnish university. Data on moral conflicts was gathered during a discussion task given to course participants, and a phenomenographical approach was taken in the analysis. Two aspects of moral conflicts were found. They relate, firstly, to the choice of study line, carrying out the study tasks, and the extramural activities and pressures, and secondly to upholding the self, relationships, and society.

The next section briefly describes socio-psychological theories of moral conflicts and dilemmas. The research design is presented in Section 3 and the results in Section 4. Finally, the results are discussed in Section 5.

2 Socio-psychological studies on moral conflicts and dilemmas

Myyry and Helkama (2007) have developed the notion of socio-cognitive conflict. In such a conflict different people express different viewpoints, and this makes it difficult for the individual merely to comply with the opinions put forward. The researchers investigated other researchers' findings and suggested a three-level reclassification:

> 1. Low socio-cognitive conflict: the decision maker is faced with the temptation to fulfil her or his needs or advance her or his interests by behaving dishonestly.
>
> 2. Moderate socio-cognitive conflict: this involves reacting to transgressions and to the needs of others.
>
> 3. High socio-cognitive conflict: the decision maker faces conflicting demands (e.g., two persons make inconsistent demands) and social pressures (e.g., to violate one's values or identity).

What differentiates low and moderate socio-cognitive conflicts is that the latter takes account of the viewpoints of others.

Gillian and Krebs (2000) investigated individuals' interpretations of real-life moral dilemmas in terms of internal moral orientation and the content of the dilemma. They used Gilligan's (1982) findings concerning the notion of an internal moral orientation: women and men considered moral dilemmas from different moral perspectives, the men viewing them in terms of justice or equality and the women in terms of care. According to the results obtained by Gillian and Krebs, Gilligan's findings underestimated the influence of the dilemma content, and accordingly they formed categorisations of issues that provoked dilemmas. Their categorisations were based on the responses of 60 undergraduate students, who were provided with six types of moral dilemmas dealing with themes connected with real-life prosocial, antisocial, and social pressures, and were asked

to assess the main issues involved in their decisions. The researchers classified the answers in four main categories, each of which contained subcategories (in parenthesis):

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

The following section describes the research design adopted in this study for furthering understanding of moral conflicts in student life.

3 Research design

In this interpretive qualitative research I collected descriptions of moral conflicts as perceived by IS students at the Department of Computer Science and Information Systems, University of Jyväskylä, Finland, and I took a phenomenographical approach in analysing the data. The research proceeded as follows. Students on a compulsory computer ethics course were introduced to the notion of moral discussion by means of an exercise involving the discussion of moral conflicts related to a theme that was familiar to everyone, namely moral conflicts in student life. The discussions took place in a closed electronic discussion forum, and the contributions were anonymous. As the teacher I refrained from intervening, but I required everyone to take part in the discussion. In order to guarantee participation I required every student to make one of the following two statements in the final examination: "I actively took part in the discussion in the forum", or "I did not take part in the discussion in the forum". Active participation was a requirement for completing this obligatory ethics course. Thirty students on the course in the autumn of 2005, and 67 on the 2006 course reported that they had taken part in the discussions. The students were given the following task:

"Student life means the phase of your life that you pass through during your studies. What moral conflicts does a student confront at this time? What kind of moral conflicts have you personally confronted, or have others confronted, to your knowledge? How have you resolved them? How have others resolved them? Comment on the contributions of the others."

The analysis of the students' perceptions was phenomenographical, the idea behind the method being to identify and describe qualitative variation in individuals' experiences of their reality (Marton 1986). What is characteristic of the approach is the aim to capture conceptualisations that are faithful to the individuals' experiences of a selected phenomenon. These conceptions, which are typically gathered during interviews, are then categorised and relations between the categories are further explored (Francis 1993). A phenomenographic researcher seeks qualitatively different ways of experiencing phenomena regardless of whether the differences are between or within individuals. He or she tries to achieve a so-called second-order perspective on the investigated aspect of the reality by describing the conceptions of a group of individuals - instead of taking the first-order approach and describing the reality directly, which is the convention in ethnographical studies (Figure 1) (Uljens 1991; Järvinen 2001).

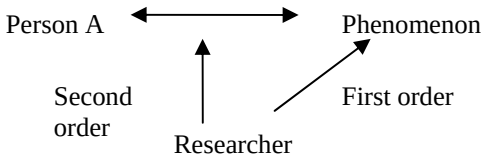

Figure 1: The first- and second-order perspectives (Uljens 1991; Järvinen 2001)

Awareness, like all concepts, has two aspects: the "what" or referential aspect, which corresponds to the object itself, and the "how" or structural aspect, which relates to the act (Marton and Pang 1999). The former refers to what the mental act is directed towards. In phenomenological terms it is known as noema, which stands for what is experienced (Ihde 1979, 44). The "how" denotes the different aspects of the phenomenon that constitute its overall meaning. In the phenomenological context this is called noesis, which stands for the experiential mode (ibid.). In order to understand the whole we must understand both the object and the mode of a person's mental acts (Uljens 1991, 84). The structural aspect relates to how the phenomenon is discerned from its environment, and how the different parts relate to each other (Isomäki 2002, 63). The following sections present the results of my analysis of the data.

4 Results

The referential or the "what" aspect (the rows in Table 1) describes the three upper-level issues the students directed their deliberation towards. As there are no priorities or developmental stages between these issues, this aspect is non-hierarchical in nature. First, choosing the study line appeared to include moral conflicts. The next level concerns studying or carrying out study tasks (writing essays, taking part in group work, etc.), and the third relates to extra-mural activities that accompany studying (dating, for example) or are otherwise visible in

The structural aspect (how) The referential aspect (what)	Upholding oneself	Upholding relations (with oneself and others)	Upholding society (remote stakeholders)
Choosing the study line	1. Choosing the study line to provide for one's future	2. Choosing the study line reflected through relations with people who are close	3. Choosing the study line reflected through progressing in society
Studying (carrying out the tasks)	4. Upholding one's interests or resorting to selfishness in the study tasks	5. Carrying out the study tasks reflected through upholding relations	6. Responsible use of societal resources in studying
Extra-mural pressures and activities	7. Outside pressures on students reflected through a student's objectives	8. Extra-mural activities reflected through upholding relations	9. Social-responsibility issues in student life

Table 1: The classification of moral conflicts in student life

the context of studying (laws, for example).

The structural aspect (the "how" aspect; the columns in Table 1) denotes three targets of concern or care, upholding oneself, one's relations, and society. It represents widening areas of concern involving more developed moral sensitivity, and is therefore hierarchical in nature.

In upholding the self, the student is concerned about his or her future, well-being, financial and mental welfare, and about progress in the chosen career and as a human being. In addition, ego-centric deliberation emerged in these conflicts. Secondly, concern about upholding relations extends to relations with people who are close, such as fellow students and friends: it involves the maintenance of personal relationships. It extends still further, to concern for society. In this case the targets are more remote and relate to taxpayers, economic justice overseas, and to the development of a just society.

The findings regarding each category are presented next, together with a condensed description of the moral conflicts and sample extracts from the students' discussions.

4.1 Choosing the study line

Category 1. Choosing the study line to provide for one's future. In this category students are concerned about themselves and their future. They confront uncertainties in choosing the study line and correspondingly their particular professional field. They may doubt their suitability for their future career. They found the uncertainty morally conflicting. Some students had come to computing somewhat accidentally (they did not get a place in their first choice of subject) and they did not think they fitted in computing. As one student described it: "Of course I'm worried about my career as I don't feel this is my field of study."

Category 2. Choosing the study line reflected through relations with people who are close. This category still concerns the choice of study line, but the deliberation extends to maintaining relations as opposed to the self-directed deliberation in the previous category. Should the student adhere to his or her own viewpoint, or take into account the opinions of his or her close others (parents, friends)? The following extract illustrates this problem:

"…the study line I enrolled in was quite a surprise to most of my family and my friends. It's quite a long time since I started studying but still I face situations in which I'm teased and told that I should be in another field. I don't get annoyed by what they say but sometimes I wonder if it's true [that they're really serious]"

Category 3. Choosing the study line reflected through progressing in society. In this category the prospects of progressing in society are considered in the choice of study line and the related professional field. Some students did not perceive computing as a progressive field in this respect, and felt that they had compromised their principles when they - for one reason or another - chose or even drifted into it. The next two extracts illustrate this dilemma:

"I wanted to advance science and be a significant person. I felt that when I changed my primary study line to computing I gave up my principles."

"For me the selection of the field was problematic and still I suspect that I'm in the wrong one. I feel that it's wrong for me to study issues I find difficult and strange as it won't directly benefit anyone and I'm still using society's resources."

4.2 Studying (carrying out the tasks)

Category 4. Upholding one's interests or resorting to selfishness in the study tasks. Moral conflicts in this category relate to combating selfish impulses in carrying out the study tasks. These impulses include laziness and the possibility to take advantage of the work of others. Laziness as a factor in course selection (an easy vs. a demanding but worthwhile course), selfishness in group

tasks in terms of letting others do the work, decision-making related to piracy, and plagiarism were mentioned. Two examples follow:

"I have confronted the problem of taking a useful course vs. an interesting course. … In one you have to work hard and in the other you get the credits without doing as much work. If the courses are more or less equal in value you usually enrol in the easier one although you'd learn more in the harder one."

"What if I'd seen the examination questions? Would I tell the teacher about it? Surely it would be best in terms of ethics, but if I'd seen the questions I'd be able to ignore the 'unnecessary' issues. I'd save energy and time. Such dishonesty would no doubt bother me, though."

Students may be forced to compete with each other in course enrolment. The following extract shows that they have to fight for a place even if it might prevent another student from getting it:

"I've often had to apply for many courses the same time, and to decide later if I really have time to take them. … In doing this I may be preventing others from getting places. But how can I graduate if I don't do the courses?"

Category 5. Carrying out the study tasks reflected through upholding relations. In this category the study tasks are reflected through upholding relations: tasks involving collaboration with other students (e.g., group work) sometimes involve conflict between maintaining good relations and completing the task. Group working was widely perceived as morally problematic, as the following examples show:

"To complete a course we have to work in a group of four students. In practice, one group member may not do his or her share because he or she doesn't wake up in time to come to the agreed meetings… Is it right to tolerate him or her and to keep him or her in the group or should he or she be booted out?"

"… If you gave the boot to a group member and you later learned of a serious problem in his or her life, would you still think the kicking out was the right solution?"

Category 6. Responsible use of societal resources in studying. Here the acts of studying are reflected through the responsible use of the resources provided by society. In Finland the government or the municipalities generally finance educational institutes. Studying is free as there are no term fees, although there is a compulsory student union fee. In the following example the student perceived it as a duty to taxpayers to attend lectures and to earn good credits:

"In my view, going to lectures and getting the degree with as good grades as possible is morally right because the taxpayers pay for our studying. Our mothers and fathers pay a few cents for the education, so why waste them?"

4.3 Extra-mural pressures and activities

Category 7. Outside pressures on students reflected through their objectives. This category concerns the pressures exerted by societal actors (e.g., the government, social-security officials, the law) on students and how an individual student should react to them. Students facing these moral conflicts are concerned about their objectives and needs: how they should react to the pressure to graduate quickly and enter the workforce. They thought that they should lead a happy life and develop themselves, but the pressure to graduate more quickly prevented this. In addition, certain perceptions revealed egoistical deliberation, such as in the case of not paying the TV licence fee and in taking pirate copies. The following examples reveal these conflicts:

"Nearly all graduates say that studying is one of the most pleasant phases of life. So, why can't we enjoy this phase for a few more years? You have time before joining the rat race in a few years".

"Let's as students just say 'no' to the attempts of government and let's study as long as we feel good about it. At the same time we can have an effect in associations, in charities, politics, working life or whatever feels good."

"As a student I have a continuous moral conflict with the TV licence. I think the fee is far too high. … Do you pay your TV licence fee?"

"… on the other hand piracy is surely more general among poor students than among the well-paid."

Category 8. Extra-mural activities reflected through upholding relations. The conflict here is between student life and other significant aspects of life, all of which require different kinds of resources (time, money). Most of the issues discussed related to making prioritising decisions between studying and extra-mural activities such as working, dating, maintaining relations with friends, and working in various associations. In addition, the combination of high alcohol consumption and student festivities emerged as a moral conflict. The next extract exemplifies prioritisation question:

"We have to remember that we always have something else to do rather than engaging in such activities. It's impossible to fulfil all your 'duties'. We could also deliberate on what really are our duties. Is spending time with one's girl/boyfriend a duty? In my view we often create obligations that we then feel are impossible to fulfil."

Some students criticised the student habit of combining student festivities and the excessive consumption of alcohol, which they felt, in some cases, had a negative effect on studying.

Pressures exerted by governmental organizations were criticised for ignoring the importance of working in various associations. Such work upholds human relations and social activism in society. The following example relates to this issue:

"The lives of many conscientious students and the Jyväskylä cityscape would be very different if hundreds of students did not use huge amounts of time working in associations, in the student union, for example …. In the

eyes of the Ministry of Education these students are bad students. … “

Category 9. Social responsibility in student life. Moral conflicts in this category relate to the perceived duty to progress in society while studying. Contributing to charities and fair-trade activities on a student’s income emerged as morally conflicting. Socially active students may confront questions of prioritisation concerning activism and studying. In addition, the role of alcohol in student life and in student associations was considered morally problematic. Examples follow:

“When I go shopping I’m bothered. Should I invest considerably more in so-called ethically produced products like fair-trade bananas and coffee?”

“… the student’s duty to graduate as fast as possible is in conflict with membership of a civic organization that strengthens democracy. “

“You should make choices concerning which of the following is more important: studying or student-union activism. The choice is not as clear as you might think at first sight. [On the one hand] society puts pressure on you to choose studying… and on the other hand many activists consider that influencing society through the student union (or suchlike) is more important.”

Alcohol consumption and the way university student life is advertised to high school students were raised as moral conflicts. While some criticised the consumption of alcohol, others argued that it was characteristic of Finnish culture and not especially of student life. Two examples follow:

“When I was in high school I wondered why all the educational institutes had similar arguments: ‘Come and study in our [educational institute], we have the best parties.’”

“I think the student associations face an ethical problem regarding students’ night-life. Should alcohol play such a major role in student associations?”

5 Discussion

This collective description of moral conflicts in student life reveals three major issues and three underlying intentions behind the deliberation involved. Two aspects of moral conflicts were identified, and according to the referential (the ‘what’) aspect such conflicts relate to:

- choosing the study line,
- carrying out the study tasks, and
- extra-mural activities and pressures.

The structural (the ‘how’) aspect comprises the following three developmental concerns:

- upholding oneself,
- upholding relations with others, and
- upholding society.

In sum, students first confront moral conflicts when selecting a suitable study line. Their choice is affected by their own desires and ideals and the perceptions of close others. The characteristics and values inherent in the IT field emerged in these conflicts: fields other than computing were perceived to be more virtuous (e.g., medicine), for example. Students confront egocentric impulses in their study tasks (e.g., laziness), and also human-relations problems in group working, for example. The responsible use of societal resources for studying also emerged as a matter of concern. The whole of student life runs in a political and social context: political decision makers try to balance industrial and economic needs with the pressures exerted by the student unions. Balancing student life with other aspects (e.g., dating, working) forces students to prioritise their decisions. They may wish to progress in society through their activities (e.g., in associations, responsible consumption), but may knowingly engage in illegal acts (e.g., not paying the TV licence fee).

This interpretation of the structure of moral conflicts has similarities with and differences from the results of other studies. This study identified three major concerns behind the deliberations involved, which formed a hierarchy (the structural aspect). A hierarchy is also evident in the study conducted by Myyry and Helkama (2007): they found three types of socio-cognitive conflicts, namely those that are low, moderate and high. Low or temptation-related conflicts are related to upholding one’s moral beliefs, and moderate and high conflicts in upholding relations with others. These three major concerns also feature in Kolhberg’s (1981) theory of moral judgment with its pre-conventional, conventional, and post-conventional stages.

It seems to me that the most severe moral conflicts, moral dilemmas, emerge in at least two situations. The first relates to when a student becomes aware that he or she is in the wrong field but does not know what to do, and the second to group working and to the situation in which one member does not do his or her share of the work. How should the others react?

5.1 Implications for practice and research

Support in selecting the line of study. Students need accurate information about different fields of study. For some, the exposed values of the IT field gave them a negative picture of computing. In addition, major dilemmas emerge when they realised they were in the wrong field but did not know what to do about it. In order to avoid these dilemmas students should be better supported in their selection of study line and in developing their self-knowledge.

Resources for studying and time management. The lack of resources forces students to compete with fellow students (e.g., in enrolling on a course). If more resources were provided these kinds of conflicts would diminish in number. Students confronted moral conflicts in dividing their time among a variety of activities, including studying, maintaining relations in private life, working and being active in associations. Time-management skills are therefore needed.

Raising awareness of social responsibility in the student’s position. Students perceive themselves as part

of the surrounding society and the world, which they can affect and which affects them. Some are aware of social-responsibility issues in the form of fair trade, for example, while others perceive of their economic situation as so poor that they knowingly engage in illegal acts (e.g., not paying the TV licence fee or producing unauthorised copies of software). This aspect deserves more in-depth consideration as it represents an acute conflict in student life.

Discussion on student life in ethics education. The data-gathering process of this study showed that students are interested in discussing moral conflicts in student life. Integrating more disciplined exercises promoting moral argumentation might support the development of moral sensitivity and judgment (Rest 1994).

An ethical code for studying? Can studying be considered equal to a profession in that the activity (being a student or a representative of a profession) needs an ethical code? Ethical codes are developed because professions want to prove to outsiders that they are able to regulate themselves and the moral behaviour of their representatives. If such a code is desirable, should the students themselves (rather than the educators) develop it?

Research on student life. The application of James Rest's (1994) Four Component Model (moral sensitivity, judgment, motivation, character) to the moral behaviour of students might increase understanding of such behaviour in a wider context.

5.2 Evaluation of the study

The most significant potential bias in the research process used relates to the fear of being shown up (Fielding 1993). Morality is a sensitive and personal issue, and therefore these fears probably affected how people expressed themselves in the discussions. Given the interpretive nature of the current research it is possible that another researcher would have devised a different categorization from the same data. However, I have translated the subjects' perceptions from Finnish into English and reported them along with the categories in order to guarantee validity. An alternative interpretation emerged during the analysis process. Any task can be divided into two concerns, concern for production and concern for people (Blake and Mouton 1978). I realised that acts of studying and extra-mural activities and pressures might be reflected through task and human dimensions (and in addition to the studying context) in the way that work tasks and study tasks could be held to be parallel. In order to focus on the task of studying I kept the acts separate from dating and working, for example. Although the research process and the resulting structures differ from those reported in other studies, there are similarities in the classifications: in particular, the structural aspect reflects the results of other studies. This strengthens the validity of the findings.

This study is a case study in nature as the subjects represent a limited population - IS students at a medium-sized (in the Finnish context) university in Finland. Nordic welfare-state ideology characterises Finland, meaning that the state has responsibilities covering basic needs, and offers income support, housing allowance and study grants, for example. In other cultures such as in some southern European countries family and relatives have a more important role in this respect.

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