

# Teaching Gender Inclusive Computer Ethics

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## INTRODUCTION

Computer ethics as a subject area is finally being debated in wider computer science and information technology academic circles. In most computer science departments the syllabus is based on publications often written specifically to deliver courses. These texts select and prioritize those computer ethics topics seen by the professional bodies as the most important for a computer professional. Much rarer are courses which analyse questions of access and social exclusion, disability, global and green issues.

What has not yet been included in any systematic or conscientious way in the computer ethics syllabi are the questions of gender and associated ethical issues. Most students and staff are still not aware that all computing and ICT related areas are innately gendered and that a cohesive body of research material is available in the form of feminist or gender research in conference papers, proceedings and book publications.

This article analyses the progress of inclusion of gender in computer ethics and argues that the inclusion of gender issues in computer science curriculum must be accommodated. The article outlines how gender issues can be applied to individual computing disciplines in appropriate forms relevant across the spectrum of students.

## BACKGROUND

### Computer Ethics

Computer ethics is a field that is now widely recognized as a field of philosophical, political, and social enquiry in the use and construction of computing technology. There are now conferences devoted entirely to this field (e.g., ETHICOMP, CEPE) and in Britain there is The Centre for Computing and Social Responsibility at DeMontford University. The

first PhD students graduated in this discipline in 1998.

The computing professional organizations embraced computer ethics quite early in the computer's history. In particular, the Association of Computing Machinery (ACM) and Institute of Electrical and Electronics Engineers (IEEE) began debating ethical issues concerning mainly computer hardware and its construction in the 1960s. In 1993 a task force combining members of the ACM and IEEE created a new computing curriculum, which embraced the social, ethical, professional, and legal issues of computing. The perception of ethical issues in this curriculum was rather simple and issues of gender and equality did not appear; yet it was a very advanced beginning (History of the Joint IEEE Computer Society and ACM Steering Committee for the Establishment of Software Engineering as a Profession, 1999).

The British Computer Society (BCS) published both the *Code of Conduct* and the *Code of Good Practice*. In terms of ethical professional behaviour, both publications now prioritise the user and the public as sites of good practice. The BCS course accreditation criteria concerned with ethical issues have also developed from initially only acknowledging the inclusion of the relevant legislation and the Codes itself in the curriculum, to containing a full appendix called "Legal, Social, Ethical and Professional Issues." While not mentioning equal opportunities explicitly, these make references to the Learning and Teaching Support Network (LTSN) computer ethics resource site where some equal opportunities material appears.

The ACM and the National Science Foundation (NSF) sponsored the first course on how to teach computer ethics to computing students in 1998. This course was aimed at U.S. academics, mainly computer scientists and concentrated mainly on issues of professionalism, codes of conduct, hacking, privacy, legislation and the environment. The course did not deal with equality, gender, race, or disability. Since

1998, there have been two other such courses, results of which were communicated to the NSF and the ACM/IEEE in a form of recommendations. The third course in 2001 accepted a gender scenario and gave space to a debate on gender and computing. The meeting of experts at this get-together contributed to a Special Issue of ACM SIGCSE Bulletin Inroads on Women and Computing (2002).

The British Computer Society, sponsored by the LTSN, have called to date three one-day conferences on delivering computer ethics to computing students. These conferences brought together computing academics, who were already interested in this field and who wanted to exchange their experiences and discuss how best to bring the subject to our students. The first conference (in 2000) resulted in the online LTSN resource.

## **Computer Ethics and Gender**

James More (2001) described the development of computing as having three stages: the introduction stage, the permeation stage and the current power stage, which presents the most serious legal, ethical, and social questions. He describes a “policy vacuum,” which is currently present and has resulted in the ever-increasing use of information and communication technology in its many forms and disguises. He urges that our “conceptual muddles” are cleared first, before any policy can be formulated. While More’s thoughts were on issues such as data protection, the same applies to gender power relations in computing.

To investigate these conceptual muddles in relation to gender in computer ethics a clarification of feminist ethics is necessary. Feminist ethics accepts the experiences of women of any origin, status, sexual orientation, education etc as valid within the context of their social experiences (Porter, 1999). It includes and interrogates the meaning of traditional ethics in relation to these experiences and proposes alternatives to existing perceptions and social behaviours. Feminist ethics criticize the gender-blindness in traditional ethics and gender bias in all walks of life. In computer ethics specifically it examines all three broad areas of computing: the area of design and creation of computing technology, the area of personal and business uses of it and the area of computing education.

As a theory of moral behaviour, ethics draws on the traditional masculine perceptions and experiences, which inform the social systems creating acceptable standards of behaviour, legislation, and perceptions of equality. Feminism investigates the power relations between men and women and exposes their political nature. Feminist ethics attempts to develop social morality, which puts women’s equality and emancipation in the centre of moral prescription (Adam, 2005). This of course calls also for men’s recognition of the issues and ultimately for changes in men’s attitudes. The complex issues of equality and in particular equality in the working environment (Bednar & Bissett, 2001) should be included in the teaching of computer ethics.

The major ethical issue is the under-representation of women in the computing industry and education. Many have documented the decreasing numbers of women in the last 20 years (Camp, 2002; Martin, Liff, Dutton, & Light, 2004; Mortleman, 2004; Turner, 2001) and argued that the lack of women’s participation in the creation of technology is excluding a substantial body of human experience from being used in the process (Crutzen 2005; Schiebinger, 1999; Suchman, 1994). The questions of working conditions (e.g., Adam et al., 2005; Richardson & Richardson, 2001) and the expectations the computer industry has of their employees are almost Victorian. Unionization is non-existent and the workers are often expected to be on call 7 days/week. The lack of opportunities for women to return after career break and gender and race discrimination at the point of entry into the profession (e.g., Camp, 2002; Turner, 2001) have often been blamed for women not choosing to work in the industry.

Women are not equally paid for equal work in many industries and the computing industry is not an exception (Martin et al., 2004). The glass ceiling phenomena in the computing is probably worse than in many other industries. While the number of women managers is increasing in the Western countries, the computer industry’s own statistics still indicate that only 8% of top management positions are occupied by women (Ezine, 2004).

It is necessary to remember, that while the numbers of women in computing education are extremely low, according to Martin et al. (2004) there are some “50,000 women with science, engineering

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