

Computing History & Ethics: The Relevance of the Real World for Social Change

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ABSTRACT

We discuss the use of real-world scenarios in a computing history and ethics course to promote social change.

CS-300, “The Computing Professional”, is a course offered by Kettering University’s Department of Computer Science. The course has an equal focus on computing history and computing ethics. Besides completing assigned readings and participating in classroom discussions, students are required to research an important figure or artifact from the history of computing, as well as a contemporary issue in computing ethics. Historical research is informed by considerations of the significance of the idea’s value proposition. Ethics research is informed by a required analysis using the technique of paramedic ethics. Both research projects culminate in an oral presentation and a written research paper.

Teaching computing history and ethics in a single course has been an effective combination. Anecdotally, students appreciate the variety of topics covered each week, as “too much” history or ethics in one sitting can drain interest. Together, students find themselves looking both backwards and forwards in time, seeing how decisions in the past led to the computing world we know today.

Historical discussions are informed by consideration of the “value equation” (essentially, an “elevator pitch”) that a new computational artifact provides. Often, advocates for a new technology focus on the attributes of the technology itself, rather than the need of the customer that the new technology might fulfill. An effective value equation

focuses instead on the customer’s need. Similarly, advocates for social change ought to focus on how the change they want to see addresses the needs of those making the change (for example, recent research showing how diverse research teams produce more valuable patents).

Ethical discussions often begin with classic imaginary case studies (e.g. the trolley problem). In our experience, students tend to react to imaginary case studies as if the case studies were games, seeking to change the parameters of each game, in order to avoid dealing with the ethical dilemma being presented, or to create an obvious “winning” condition for the game. In contrast, students react much more appropriately to real-world ethical scenarios. Students are much less likely to seek to change the conditions of the case study, since the events already occurred. Real scenarios contain a wealth of details that must be evaluated, with irrelevant details discarded. And students have an easier time visualizing themselves in the scenario (especially if the conclusion of the story is omitted).

ACM Categories & Descriptors:

K.4.1 [Computers and Society]: Ethics; K.2 [History of Computing]

Keywords:

Social good, Computing History, Computing Ethics