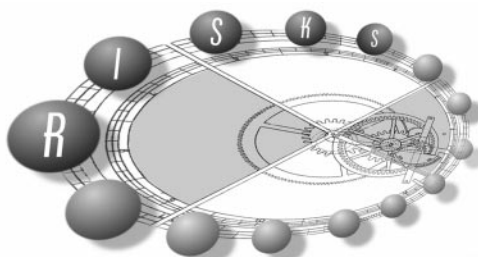




Inside



Rebecca Mercuri

In Search of Academic Integrity

As the use of computers in scholastic disciplines has grown and matured, so have many related issues involving academic integrity. Although the now rather commonplace risks of security breaches (such as falsification of student records, and access to examination or assignment files) are real and still occur, this type of violation has become a small part of an insidious spectrum of creative computer-based student offenses. Academic institutions have responded to this threat by developing integrity policies that typically use punitive methods to discourage cheating, plagiarism, and other forms of misconduct.

For example, in December 1997, the Testing Center staff at New Jersey's Mercer County Community College discovered that eight calculus students had been issued variants of "a multi-version multiple-choice test, but submitted responses that were appropriate for a completely different set of questions. By falsely coding the test version, they triggered computer scoring of their responses as if they had been given a version of the test which they in fact had never been given."¹ The students were suspended, and the Center restructured its system to thwart this sort of deception. This particular incident is noteworthy, because it demonstrates the technological savvy used to circumvent the grading in a course whose tuition was a mere \$300, and whose knowledge was essential for further studies. Tangentially, it also provides an illustration of the vulnerability of multi-version mark-sense tallying, a system used in an ever-increasing number of municipalities for voting, a much higher-stakes application.²

The proliferation of affordable computer systems is both a boon and a headache for educators. The great wealth of information available via Internet and Web is a tremendous asset in course preparation and presentation, but its downside is that teachers need to stay one screen dump ahead of their students in order to issue projects requiring original solutions. Faculty members bemoan the accessibility of term-paper banks, where thousands of boilerplate essays can be downloaded for a small fee. For the more affluent (or desperate) student, there are "writers" who will provide a custom work that conforms to the most stringent of professorial requirements. Although assignment fraud has always existed, it is now easier and more tempting. In-class writing projects can establish some level of control, but with networked lab rooms, individual contributions become

difficult to monitor—as soon as someone solves a problem, it quickly propagates to the rest of the class. The discreetly passed slip of paper under the desk is now a broadcast email message or part of a password-concealed Web site!

Creative solutions lead to relevance in learning. As a computer-science educator, I have begun to phase out the "write a heap sort" and other traditional coding assignments, because so many instances of their solutions exist. Using the Web, these projects have been transformed into "download various heap sort programs and analyze their code," encouraging individual exploration of reusable libraries. Perhaps it will not be so long before the ACM Programming Contest contains a component where contestants "start their search engines" to ferret out adaptable modules instead of just hacking programs from scratch.

The motivation of assignments and exams should be the reinforcement of comprehension of the course material and assessment of student progress. Yet, the best way to know what the students know is to know the students, a task made more complicated as classes grow in size and expand to remote learning sites. Ben Shneiderman's Relate-Create-Donate philosophy urges a move to collaborative and ambitious team projects, solving service-oriented problems, with results subsequently publicized on the Web, in order to enhance enthusiasm and understanding.³ Examination and homework collusion is actually a form of sharing—albeit with erroneous goals. Perhaps it is now time to promote sharing, at least in some components of our coursework, by finding new ways to encourage group efforts, and monitoring such activities to ensure that learning is achieved by all of the students. This is a challenging task, but one whose implementation would be well rewarded. **C**

¹From a publication issued by the vice president of Academic and Student Affairs, Mercer County Community College, Feb. 4, 1998.

²See earlier articles by Rebecca Mercuri in *Communications*, Nov. 1992, and *Communications*, Nov. 1993.

³Shneiderman, B. Symposium Luncheon Lecture (preprint), SIGCSE '98, Atlanta.

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