

## **The Ethical Application of Technology in Student Decision-Making**

**Kuber Maharjan**  
**Purdue University College of Technology Columbus**  
**4601 Central Avenue**  
**Columbus, IN 47203**  
**(812) 348-7326**  
[maharjan@purdue.edu](mailto:maharjan@purdue.edu)

**Joanne De Falla**  
**Communication, Arts and Philosophy Department**  
**Miami Dade College**  
**InterAmerican Campus**  
**627 S.W. 27<sup>th</sup> Avenue**  
**Miami, FL 33135**  
**(305) 237-6106**  
[mdefalla@mdc.edu](mailto:mdefalla@mdc.edu)

### **Abstract**

The authors review studies of academic dishonesty at the undergraduate and graduate levels. They discuss the applicability of the studies' results and conclusions in order to promote strategies to reduce cheating throughout the higher education curricula. In particular, they suggest interventions to increase ethical decision-making in and outside the classroom in technology and composition classes.

### **Review of Literature**

Studies indicate that academic dishonesty has increased among high school, undergraduate, and graduate students during the last forty years. A meta-analysis of educational research shows "a mean prevalence at 70% among college students" (Lambert *et al.* 3). The Carnegie Council on Policy Studies in Higher Education reports an increase in cheating from 4.5% to 9.8% at research universities from 1969 to 1976 (Kibler 255). The dishonesty also extends to post graduate study. Research published in the *Journal for Medical Education* in 1980 correlates cheating in medical schools with cheating in patient clinical care by young doctors (Kibler 256). The trend toward dishonesty has been exacerbated by competition for scholarships, financial aid, and acceptance at elite institutions, particularly medical and law schools. Moreover, the ubiquity of Internet use unquestionably facilitates plagiarism, often of entire assignments, the incorrect documentation of sources, and the indiscriminate use of suspect websites. Educational research must continue to investigate the incidence of cheating, its causes, and possible strategies to detect and discourage it. Equally important, research must define the roles university administrators and faculty play in devising and enforcing policies that promote ethical decision making among students at all educational levels.

Studies have not defined the term "academic honesty" in consistent, cross-referential ways so that results and conclusions can be more definitive and easier to compare among institutions studied (Wotring 2; Gardener 545; Lambert 12). "Cheating" may be defined as plagiarism or span a list of twenty-two specific behaviors that range from text messaging during a test to improper

documentation on a research paper. Lambert states that “academic dishonesty encompasses a wide range of behaviors that clearly cannot be assessed with a single measure” (12). Furthermore, the methodology of educational research is often debated. Studies usually measure “cheating” through anonymous, self-selected, institutional surveys which Generaux argues fails to reflect the complexity or breadth of the problem. These studies are undermined by the inherent bias of using self-selection (701). Also complicating the collation of results are researchers’ choices of bivariate or multivariate analyses. Lambert claims that the results of bivariate analyses do not always support the results of multivariate analyses (12). These diverse research modalities limit the conclusions educators can draw from the results.

Demographic differences between two and four year institutions, private and public, affect conclusive data as to the causes and predictability of cheating or the populations most representative of the phenomenon. Wotring asserts that research into cheating at community colleges is insufficient, inconclusive, and based on atypical demographics. She concludes that comparisons with four year schools are not reliable (3). Despite the urgency, she believes that research strategies have failed to adapt to the demographic diversity of the two year college or to concerns about the growing number of adult learners in the country. Researchers also disagree about the rate of cheating among “honors” versus non-honor students in college. Some attribute a “higher level of moral development” to the gifted and, consequently, predict less cheating among these students. Rittman contradicts this claim and insists that the competitiveness among honor students correlates with greater observed and reported cheating (4). The variables in research subjects, methodology, and institutional demographics reveal the absence of an integrated theory of academic dishonesty that can inform a shared, on-going analysis of the problem.

Universities and colleges do not have clear, consistently applied policies on academic honesty. Sanctions may not be enforced evenly by administrators. Some professors may be indifferent to imposing sanctions (Gehring, 1986, as reported by Kibler, 255). Lambert reports significant differences in faculty and administrative discipline of offenders regardless of official policy (13). When students sense institutional apathy and a lack of vigilance in implementation, Genereux concludes they engage in dishonest behaviors more frequently (688).

A new pedagogical paradigm also challenges perceptions of cheating among students. Faculty has traditionally graded students on the basis of individual effort and merit. The “millennial” generation of students, however, especially at the graduate level, is often graded on the basis of collaborative learning and teamwork. Wotring suggests that this contemporary cohort perceives honesty differently. Her study points to significant behavioral changes in male students who collaborated on assignments, when individual work was required (2). The practices of collaborative learning and shared evaluations may confuse students. ‘Millennial students are predicted to have difficulty recognizing traditional operational definitions of academic honesty’ (Wotring 5). Finally, as McCabe insists, the academic “culture of integrity” is suspect as a motivational factor in the work of students at most institutions surveyed (43). Even in schools with honor codes and counseling services for offenders, an increase in the admission of cheating did not reduce the rate of cheating (Gardner 543). High rate cheaters did not bother to attend scheduled counseling sessions, an indication that indifference to honesty is normal in a “success-oriented society which exalts individualism and dissent” (Gardner 554). The student culture of the twenty-first century deviates from previous decades. The 1960’s and 70’s saw a consensus among educators and administrators that the college experience should necessarily develop a student’s integrity (Kib-

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ler 254). The dishonesty in the business and commercial worlds today helps create the belief that ethics play a minor or irrelevant role in attaining academic and professional success.

Educators, therefore, have to confront inconclusive, inconsistent data, faculty and institutional indifference, and student cynicism about academic honesty. Their concerns are aggravated by studies that reveal that taking a course in ethics does not affect the frequency of cheating. Some professors ignore cheating altogether. Tabachnik estimates some 20% of faculty fails to take any action (507). Other research reports that cheating remains high despite punishment for cheating, non-punishment, or incentives not to cheat. Students at non-honor code schools feel no more obligated to report cheating among peers than a school with no honor code. McCabe stresses that students feel it is the responsibility of the faculty and administrators to catch and punish offenders (40). This data, combined with ineffectual honor codes, the opportunistic nature of cheating behaviors, and research that fails to define predictable factors that induce cheating, can easily discourage faculty from pursuing policies in their classroom that promote ethical decision making.

Many educators, however, believe that cheating threatens the foundations of academic discourse and the development of future professionals. Some feel rampant dishonesty threatens the role of universities in society. In 1999, the Center for Academic Integrity at Duke University announced that “raising student integrity should become of academia’s highest priorities.” Some studies point to the role of the professor in the classroom as the “firewall” against the further erosion of integrity. Indeed, as Gardner confirms, the professor’s “treatment contingencies altered the rate of admission of cheating” (547). Thus, a professor should ideally allow opportunities for a discussion of ethics in the classroom and provide incentives for moral decision making.

### **Strategies for Reducing Cheating**

In general, faculty can adopt measures to monitor cheating in their classrooms. They can use multiple versions of tests, assign seats during examinations, control the use of electronic devices, and rely on turnitin.com to discourage plagiarism. They can enlist students in the development of a class honor code and advocate peer reporting of offenders. While peer reporting of offenders has had limited success, many educators believe that empowering students to be accountable to their peers has a far greater effect than the vigilance of faculty scanning the test room for cheating (McCabe 40). Certainly, faculty should try to act in concert with administrators and institutional policy. Kibler urges classroom procedures that provide discussion, dialogue, and role play of ethical dilemmas in advance of testing and evaluation (263). At the very least, faculty can introduce the student handbook to a class and review policies and sanctions for cheating. However, a more important goal should be to develop an appreciation for ethical decision-making, rather than a focus on punitive or threatening measures to control cheating behaviors.

Students have mastered many forms of technology; they sometimes use these technologies dishonestly. There may also be ignorance as to how to use technology honestly. In this light, students may benefit from a discussion of ethics in technology courses themselves. At Purdue University College of Technology Columbus, the authors reviewed the ethical issues germane to intellectual property, software licensing, software piracy, trademarks, patents, and copyrights as well as privacy issues, compliance with standardized codes, plagiarism, security, computer abuse, identity theft, spamming, chain letters, and netiquette. The authors chose two computer and information technology courses, CNIT 107, Computer Software, and CNIT 136, Introduc-

tion to Computer Technology and Applications. In both classes, more than one hour of class time was devoted to a discussion of information technology and intellectual property issues. Students were encouraged to use a variety of online technologies, such as Wheel of Terms, Practice Test, Quiz Yourself, Track and Field, Crossword Puzzle, Computer Genius, and Case Studies to enhance understanding of ethical issues. Using these technologies, students were able to learn more about ethics in an entertaining way by playing a computer game called “Wheel of Terms.” This CNIT 107 class was also presented with a detailed demonstration of how turnitin.com works.

The students in both classes later took a test on ethical decision making, and were asked to write an article review on the topic of “Nanotechnology.” The results were studied and the authors found that students in both classes did very well in article review compared to the article review of similar topics in other classes.

Turnitin.com helps faculty control plagiarism. However, it also allows students to comprehend the concept of originality and intellectual property rights. From an English professor’s point of view, it helps students develop one of the most important skills in their academic lives: paraphrasing. Turnitin.com promotes Stage III of the writing process: revision and editing. It allows students to self-correct and acknowledge the proper role and use of sources in their writing. It often leads to real understanding of the definition of writing: thinking. At Miami Dade College, the authors display a sample page with student “writing” and undocumented sources. Students are frequently shocked to be presented with evidence that copying is not only unethical, but that it endangers the students’ preparation for a career. When they copy, no learning has taken place.

Most educators acknowledge that students have trouble managing their time in and out of class. Moreover, since so many classrooms are now fully computerized, students often use computers inappropriately in class by surfing the Internet, checking email, instant messaging, and playing computer games. This tendency further compromises the learning process and time management of students. At Purdue University College of Technology at Columbus, the authors use NetSupport School to limit the misuse of time in the classroom and in the laboratory. NetSupport School allows instructors to take control of students’ computers by transmitting instructors’ screens to all the computers in the classroom. If in the lab, instructors can individually select student monitors and transfer the screen to the instructor’s. Instructors can view a large number of student screens simultaneously and, if necessary, fix a mouse pointer over a specific student’s thumbnail in order to enlarge the view of that computer automatically. While NetSchool Support may seem intrusive, it is a useful tool for non-traditional students and older learners. Faculty has the ability to interact continuously with a student and intervene not only in the case of inappropriate behaviors, but also to give academic support and encouragement.

Finally, the authors believe ethical decision making is contingent upon having the appropriate knowledge base. Students today use Internet sources indiscriminately. They must be taught to distinguish between scholarly web sites and websites that convey information that is biased, prejudiced, incendiary, inaccurate, and baseless. The authors have found it useful to introduce technologies such as Wiki, blogs, and web sites of special interest groups to help students weigh the usefulness and appropriateness of the information.

“A wiki is a collection of Web pages designed to enable anyone who accesses it to contribute or modify content, using a simplified markup language. Wikis are often used to create collaborative

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websites and to power community websites.” (Wiki). At Purdue University College of Technology at Columbus the authors encourage students to use this technology to learn more about ethics. This allowed students to interact and discuss with Internet users about ethics.

The authors concluded that a discussion of ethical decision making should be introduced in technology and composition classes and continue throughout the undergraduate experience. Such a discussion enhances student learning and protects society. It also helps students understand ethics from a cross-cultural and global perspective. Ultimately, such a dialogue within the classroom might extend to greater collaboration between faculty and administrators to promote consistent policies to monitor and reduce the incidence of student cheating.

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