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# Mouse Click Plagiarism: The Role of Technology in Plagiarism and the Librarian's Role in Combating It

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## ABSTRACT

THE PROLIFERATION OF PAPER MILLS, FULL-TEXT DATABASES, and World Wide Web pages has made plagiarism a rapidly growing problem in academia. Possible factors influencing student behaviors and attitudes toward plagiarism include ignorance, lack of personal investment in their education, situational ethics, and lack of consistent styles among and within various disciplines. Librarians are in a unique position to help prevent and detect plagiarism by forming partnerships with faculty to re-examine assignments and instructional sessions and by informing them of Internet paper mills and useful Internet search strategies.

## INTRODUCTION

In a *Seattle Times* article, Leon Geyer, the faculty advisor for the undergraduate honor system at Virginia Tech, was quoted as saying: "In the olden days, a student had to go to the library, dig up the information and retype it. Now you can sit in your dorm room and just reach out, point and click" (Benning, 1998, paragraph 8). Benning further stated: "Teachers and administrators agree cheating is on the rise—computers have made it so easy" (paragraph 4).

## HISTORICAL PERSPECTIVE

As Wilson Mizner said: "When you steal from one author, it's plagiarism; if you steal from many, it's research" (quoted in Bartlett, 1992, p. 631).

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Plagiarism was probably the second idea. Views on plagiarism have changed over time. Often, imitation in phrasing or style has been seen as complimentary or respecting the learned masters. In some art, using the same motifs or arrangements to reflect on a historical manner of creation is the proper thing to do. Students also learned how to do something by copying a finished piece. Even today, students of art paint imitations of great works in order to learn techniques such as brush strokes, use of color, or depiction of perspective. However, in such cases, the students are not passing off these imitations as an original expression of a creative impulse. Today, many students are stealing material from the Internet and turning it in as their own work, either directly from paper mills or by "cutting and pasting" from web pages. Malcolm MacLachlan (1999) of *TechWeb News* quotes teachers as saying that "cheating, especially in the form of plagiarized term papers, is on the rise because of the easy availability of material on the Internet" (paragraph 2).

### THE PROBLEM

Cases from the Virginia Polytechnic Institute and State University (Virginia Tech) Undergraduate Honor System Web site illustrate what we, as a profession, must prepare ourselves and our faculties to confront. Figure 1 shows the honor court statistics at Virginia Tech for the last three years which clearly illustrate a marked increase in the total number of honor code violations in that short amount of time. Interestingly, half the cases for 1998/1999 were reported during exam week.

Academic Year	1996-97	1997-98	1998-99
Number of Cases	142	282	450*
Guilty by Judicial Panel and affirmed by Review Board	77	175	182
Not Guilty by Judicial Panel	42	100	16
Dismissal by Review Board or Chief Justice	23	7	1
Other-pending, transferred to Graduate Honor System	0	0	252
*230 cases since April 30, 1999			

Figure 1. Judicial Statistics for the Virginia Tech Undergraduate Honor System.

One sample case involved four students who all turned in the same, or nearly the same, paper in the same class. In contrast to traditional methods of plagiarism, the students did not copy off each other or take from a stock of papers available at a local campus fraternity or sorority. Instead, students used computers to search the Internet for the same assigned topic in the same paper mills and happened to select the same paper to propose as their own work. All four were found guilty and given Class II sanctions which, according to the Virginia Tech Honor System Constitution, includes honor system probation and education, recommended double-weighted zero on the assignment or on any grade affected by the offense, and fifty hours of university service (*Trial Abstracts*, n.d., paragraph 8).

### CONTRIBUTING FACTORS

Several theories are proposed to explain the recent increase in plagiarism cases. Contributing to the explosion of plagiarism, particularly involving Internet-based resources, is the historically libertarian nature of the Internet where commentary is free-wheeling and anti-establishment. Gresham (1996) states that library users have trouble realizing that Internet material is intellectual property worthy of proper citation. In fact, Macdonald and Dunkelberger (1998) found that only 7 percent of their sample of students cited information found on CD-ROM or via the Internet as coming from an online source but rather cited the information as coming from a print source.

Compounding this issue is the lack of consistency among citation style guides, particularly regarding online information (Malone & Videon, 1997; Fletcher & Greenhill, 1995). Fletcher and Greenhill (1995) found Xia Li and Nancy Crane's (1993) work *Electronic Style: A Guide to Citing Electronic Information* to be the only style guide with a consistent system for citing online information. Although this work was originally published before the widespread use of HTML, the 1996 revision includes citations for World Wide Web documents. The latest print *Publication Manual of the American Psychological Association* (APA), copyright 1994, does not adequately address online information. There is an update on the APA Web site ("Electronic Reference," 2000), but it still does not cover all types of online information such as listserv postings. Further, there are a number of Web sites providing individual interpretations of the different styles, with no official blessing by the professional associations. More importantly, each of the different citation styles uses such different formats, requiring different bits of information. It is not uncommon for a student to become very confused between APA and Modern Language Association styles. Depending on what the professor prefers or the discipline of study, a student may be required to use four different styles in one semester. It is no wonder that sometimes the student gives up and does not cite information properly.

Further, some students do not know what plagiarism is or, if they know that it is wrong, they do not understand at what point using sources passes into plagiarism. Students' understanding, or misunderstanding, of the concepts of collaboration, fair use, and plagiarism can lead to the act of plagiarism itself (Maramack & Maline, 1993). Indeed, students "often cannot tell the difference between correctly paraphrased versus plagiarized text" (Roig & DeTommaso, 1995, p. 694). Most students, particularly first-year students who often think in concrete terms of black-and-white, require clear-cut examples to demonstrate the fine line between paraphrasing and plagiarizing. Some definitions, including two that are local to our institution, include:

Plagiarism—Plagiarism includes the copying of the language, structure, ideas and/or thoughts of another and passing off same as one's own, original work, or attempts thereof.—Undergraduate Honor System (<http://fbox.vt.edu:10021/studentinfo/ugradhonor/html/definitions.html>)

Cheating—The definition of cheating is to knowingly use unauthorized assistance in submitted work as one's own efforts or to knowingly submit another's works as one's own ideas, thereby intending to gain an unfair advantage, or intending to deceive or mislead. Actions that assist another to do these things also constitute cheating.—VA Corp of Cadets ([http://www.vtcc.vt.edu/cadet\\_life/honor\\_system.htm](http://www.vtcc.vt.edu/cadet_life/honor_system.htm))

Plagiarism. The action or practice of plagiarizing; the wrongful appropriation or purloining, and publication as one's own, of the ideas, or the expression of the ideas (literary, artistic, musical, mechanical, etc.) of another.—*Oxford English Dictionary*, 1989

Cheryl Ruggiero (n.d.-a), professor of English at Virginia Tech, created an online tutorial to help her students identify the many forms of plagiarism (see Figure 2 for examples that she uses to illustrate the differences).

Cutting and pasting from computer-based information using networked computers is easier than retyping material from a book. This is often compounded by the recent trend of university-wide computing requirements, where universities require students to arrive on campus with a computer. Since all students are required to have computers, they are now capable of cut and paste plagiarism. In a recent *New York Times* article, it was pointed out that cheating is now "so effortless" that students may be "inured to the ethical or legal consequences," thinking it no worse than exceeding the speed limit (Zack, 1998, paragraph 5). Students believe that they have as little chance of being caught as when they are speeding down the road. Speed is a factor, with technology eliminating the opportunity to reflect during the writing process. Cutting and pasting from the Internet and word processing in general is much faster than retyping on a typewriter. This leads to carelessness in thought, carelessness in citing

<p><i>The Original Material</i></p>	<p>The association between humans and dogs began as a hunting relationship before organized agriculture had been developed. This Paleolithic cave painting dates back to about ten thousand years ago and shows a Stone Age hunter who has successfully killed an eland with the assistance of his dogs.                  –Plate 2, following Page 150  <i>The Intelligence of Dogs: Canine Consciousness and Capabilities</i> by Stanley Coren. MacMillan, 1994</p>	
<p><i>Plagiarism by Direct Copying</i></p>	<p>Dogs have been “man’s best friend” since long before recorded history. <u>The association between humans and dogs began as a hunting relationship before organized agriculture had been developed. One Paleolithic cave painting dates back to about ten thousand years ago and shows a Stone Age hunter who has successfully killed an eland with the assistance of his dogs.</u></p>	<p><b>Explanation:</b>                  The student has typed in Coren’s words exactly in the first copied sentence and altered only one word in the second.</p>
<p><i>Plagiarism by Paraphrasing</i></p>	<p>Dogs have been “man’s best friend” since long before recorded history. <u>The relationship between dogs and humans started as a hunting relationship before people developed organized agriculture. One cave painting that dates back about ten thousand years shows a Paleolithic hunter who has killed an eland with the help of his dogs.</u></p>	<p>The student has re-arranged a few words and substituted a few of her own words, but the idea and the order of development are Coren’s.</p>
<p><i>Plagiarism by Theft of an Idea</i></p>	<p>Dogs have been “man’s best friend” since long before recorded history. <u>Dogs and humans first got together as hunters. Cave paintings provide some evidence for this early teamwork. One 10,000-year-old painting shows a Paleolithic hunter and his two dogs after they have killed an eland.</u></p>	<p>The student has put the ideas in her own words, but those words imply that SHE discovered the teamwork and the cave painting through her own research, since Coren’s idea and research are not acknowledged.</p>

Figure 2. Examples of plagiarism that illustrate plagiarism by direct copying, by paraphrasing, and by theft of an idea (Used with permission. Source: <http://www.english.vt.edu/%7EIDLE/plagiarism/plagiarism3.html>).

material, and ultimately to plagiarism. This speed can even lead to carelessness in plagiarism, where many students do not even effectively cover up their plagiarism. A colleague at another academic university was told by a professor that he is often able to spot cases where students have plagiarized by cutting and pasting from the Internet because the plagiarists are so careless that they do not change the font of the Web material to match the rest of the document.

The Center for Academic Integrity reports that "cheating is highest in those courses where it is well known that faculty ignore cheating or fail to report it to authorities" (*Research Highlights*, n.d., paragraph 5). Maramark and Maline (1993) report on studies which indicate that "cheating is less likely to occur when there are threats of detection or sanction" (p. 5). It therefore can be seen that a campus environment that is casual in dealing with instances of cheating may itself encourage it. In a study of why students cheat, McCabe and Trevino (1993) found that "the perception of peers' behavior [may provide] a kind of normative support for cheating" (p. 533).

### STUDENT ATTITUDES

Causing students to really care about plagiarism is more important than mere explanations of its illegality. Caring is the important part. There are Web paper mills boasting slogans such as "Download your Workload" and offers papers such as "The Impact of Institutional Investors on the Securities Market." This essay from 1984 is available from the A1 Term Paper site for \$71.60 (<http://www.a1-term-paper.com/bus-stk.shtml>). Definitions or examples alone are not likely to convince a student with access to that site to resist plagiarism and instead stay up until 3 A.M. to get the paper done. Temptation to buy that paper rather than slog through the writing can overcome all fear of being caught. And if a professor has assigned a paper that is more specialized and not available in the general paper mill area, a foresighted student can commission a paper done on any particular topic. Customization means, of course, that the price goes up. For the price of \$20 for the first page, \$10 for each additional page, \$10 for a bibliography, \$10 for footnotes and the wait of three to four days for e-mail delivery, a student can have a paper written to the exact specifications of the professor. As an added benefit, students have all that time off from working on the paper. Roig and DeTommaso (1995) studied the relationship between procrastination and academic dishonesty and found that "students who score high on academic procrastination may be more likely to engage in plagiaristic practices" (p. 694).

Worst of all are the students who are not gradually seduced into the convenience of a paper mill, but who know from the start that it is wrong but do not care—defiantly do not care. A student told one of the authors to her face that she could not prove that he would not cheat on the home-

work she had assigned him. Ironically, a few minutes later, he was signing up for another section of the class, an ethics challenge. He did not understand when her reaction was to sarcastically wish him luck on the ethics challenge. The Center for Academic Integrity reports that results from surveys conducted in 1990, 1992, and 1995 indicate that 75 percent of students self-report some cheating while “almost 80% of undergraduate student respondents reported one or more incidents of cheating” (*Research Highlights*, n.d., paragraph 2).

An English professor at a well respected university, who requested anonymity, posted this story under the subject heading, “A classroom first . . .” to an Internet listserv:

Just by chance last semester I was grading final papers and discovered, while cruising websites on mind-altering drugs (the final paper was based on the Aldous Huxley novel \*Brave New World\*) that a student had lifted two or three entire paragraphs from an amateurish website on Prozac. It was the sort of plagiarism that is very hard to spot because the lifted material wasn't of much better quality than the student's own writing. However, I recognized the passage. I notified my department chair and gave her [the student] an F for the paper. She still passed the class (though now I wonder what other papers contained plagiarized material that I just didn't catch). When I returned her outraged phone call, she kept saying, “I can't believe you're doing this to me! I worked so hard in this class!”

The professor's conclusion? Her students have a “consumer mentality when it comes to grades, and seem to believe that they should get grades based on effort rather than on achievement.”

And why shouldn't students have this attitude? Universities have also fallen prey to the consumer mentality, this time directed at students. With the proliferation of “Maymesters,” which contrive to give the illusion that you can condense a semester's worth of learning into a short few weeks, universities have given up some of the pretense that learning is the purpose of classes. One of our colleagues at another academic library, when confronted with a maymester student, said “Thank you for your money.” With students cut off by time constraints from interlibrary loan, retrieval of articles, or even the time to analyze information, what exact message are the students receiving on the value of any knowledge they may accidentally glean from their frantically paced class? As the television character President Jed Bartlet of *The West Wing* said in the episode “What Kind of Day Has It Been?” when speaking of youth apathy on voting: “Are we failing you or are you failing us? . . . A little of both” (episode 22, season 1, May 17, 2000).

This is compounded by the change in purpose of university attendance from actually learning something to getting a job with the degree that signifies that you supposedly learned something, even if it is focused on learning how to learn (Fain & Bates, 2000). In a consumer society,

students have been trained in the fine art of cost/benefit analysis. Several years ago, one of the authors objected to a change in terminology for library users from "patron" to "customers" because the latter encourages the attitude that students have paid for information rather than for the opportunity to learn how to learn. Somewhere the learning of the individual becomes separated from just getting the work done, leading to situations where students justify plagiarism and cheating based on various factors such as the assignment, the professor, the class size, and the importance of the grade. These situational ethics are seen in the results of a survey done by Michael Moffatt (1990), who found that one way students "fine-tune their situational moralities is to claim they only cheat in the unimportant courses they 'have-to take' in college, never in their majors" (p. 16). For some students, all of the courses in college are ones that they "have-to take." These students need a college degree for entry to a particular job or career and may see little or no justification for that requirement. Even within librarianship, library school can be considered a rubber stamp that you need to get in order to work in the profession rather than an actual learning experience. A former teacher sent a condemnation of this trend to one of the authors under the subject line, "College-Educated Cashiers." Too many of her students were only in college because their careers required a bachelors degree as an entry requirement, even though years ago those jobs did not require college degrees. She decried the fact that these students were wasting four years getting a degree when they should have spent time accumulating experience in their careers. The result was that these students were not interested in learning and diminished the educational experience for those students who did want to be in her classes (McGee, personal communication, 2000).

Students may also not be as personally interested in their own education versus their career aspirations. Haines, Diekhoff, LaBeff, and Clark (1986) found in a study of cheating that students who were not paying for their own tuition and books were more likely to cheat, perhaps due to a lack of "personal financial investment" in their education (p. 352). Even students who are concerned about the learning part of their education may justify plagiarism based on the fear that others are already cheating, causing "unfair competition" (Fain & Bates, 2000). Donald McCabe (1992) of Rutgers University talks about the denial of responsibility of academic dishonesty by students who justify cheating based on the behavior of their classmates (p. 369).

Perhaps an additional problem is that there are varying responses to plagiarism outside academia. Even though the journalism world is a world of words, depending on the concept of intellectual property, when Trudy Lieberman (1995) examined "twenty newspaper and magazine plagiarism cases" since 1988, she found that the "punishment is uneven, ranging from severe to virtually nothing even for major offenses" (paragraphs 4, 7,

p. 22). The for-profit world of the visual arts (movies, television, painting, photography, and so forth) takes plagiarism much more seriously. For example, the creator of *Babylon 5*, a science fiction television show, had a standing policy that fans not send him story ideas or even speculations on what was going to happen. The reason was that if anything even vaguely matched what he did in the show, he was open to being sued by that person. Despite his policy, one of his fans did send him a speculative note, resulting in the fan having to sign a legal document that he would not sue before the show was filmed (Wexelblat, 1996). In the world of written fiction, many major authors will not read new authors' manuscripts, fearing that they will be sued for stealing someone else's work.

### FACULTY ATTITUDES

Faculty are often reluctant to report students for plagiarism for a complex array of reasons. Maramark and Maline (1993) list some of these reasons: "lack of knowledge of institutional procedures," "cases are difficult to prove," "sanctions are inappropriate for offense," the likelihood of damaging "the student's reputation or career," that it would "reflect negatively on their teaching skills," and "fear of litigation" (p. 6). Sometimes the faculty member may lack the knowledge of how to report it or what will be the consequences for the student. Donald McCabe of Rutgers University conducted a faculty survey in 1993 to determine whether faculty had ever reported cheating. Among 800 professors at sixteen institutions, 40 percent said "never," 54 percent said "seldom," and only 6 percent said "often" (Schneider, 1999, p. A8). While part of the results could have been from confusion of what the different levels of plagiarism are (after all, what does "often" mean to you? Once a semester? Twice in an academic year? Twice in an academic career?), it does show that being caught for plagiarism is on a par with being caught for driving over the speed limit—a lot more people are doing it than are being caught. Singhal (1982) surveyed eighty Arizona State University (ASU) faculty and found that "while 65% of the faculty caught students cheating in some form, only 21% of them reported it to the ASU administration and only 57% of the faculty covered the topic of cheating in their course orientation" (p. 778). Sometimes a professor would prefer to work out the violation with the student directly rather than have the violation be part of the student's permanent academic record. In a case involving one of the authors, a student had obviously copied the work of another student on one of the three library homework assignments, which are part of the student's final grade for the class. The matter was turned over to the professor who was reluctant to go to the university level with it due to concerns about damaging the student's permanent record. Eventually the professor decided to give the student zeros for all of the library assignments, resulting in zeros for six assignments comprising 15 percent of the final grade. While the

punishment was severe in the context of the class, it was never reported at the university level, leading one to question whether statistics on academic dishonesty must be treated as merely the tip of the iceberg, with some cases never being reported. What does lead to a case actually getting to the university? Maramark and Maline (1993) report from a survey of faculty that "the nature and severity of the offense dictated how each case would be handled" (p. 6).

Another factor that can dissuade faculty from pursuing a charge of academic dishonesty is the time requirements. This is especially true if the university judicial system is time-consuming and/or complicated. Cheryl Ruggiero (n.d.-a), an English professor at Virginia Tech, reported that two students, because they had plagiarized papers in her class, "stole about 15 hours of my time from my other students" (paragraph 6). Joe Kerkvliet, an associate professor of economics at Oregon State University, found in a self-report survey that 500 students in twelve classes reported cheating anywhere from .002 percent in one class to 35 percent in another class (Schneider, 1999, p. A9). Multiply 7.5 hours to pursue an academic dishonesty charge times 35 percent of a class and it is clear why some professors choose to not recognize or pursue plagiarism. Schneider (1999) found in talking to professors that most thought that their university's judicial system was "laborious, even labyrinthine" (p. A8). Craig Thompson (1998), who left academic teaching after a dozen years, said that he had better things to do than make trouble for himself, especially since the punishment for plagiarism was "small" (p. 49).

### WHAT CAN WE DO?

The librarian's role on campus has been somewhat limited in the past. Access to students has been through point-of-use aides, reference interviews, and instructional classes. Librarians must now actively seek out new roles on campus that will create open and regular dialogues with students about information and its ethical use. Carla Stoffle, dean of Libraries at the University of Arizona, during her talk as featured speaker at the Library Orientation and Exchange (LOEX) 2000 conference, encouraged librarians to partner with faculty in curriculum development as an educational role, integrating information literacy directly into the class. Trends toward student-centered learning have opened up many opportunities. Freshmen seminars and learning communities, to note only two, offer librarians the chance to get to know students on a personal level and to exchange ideas while on common ground. These shared experiences can create a pathway toward making students comfortable with asking questions and seeking answers from their librarians.

#### *Informing Faculty—Paper Mills, Software, and the Internet*

With initiatives that increase the amount of writing throughout the

curriculum, more faculty need to be concerned about whether their students are plagiarizing. Composition and English faculty may already be aware of paper mills and software that detects possible plagiarism, but the majority of faculty are probably unaware that such sites and software exist. Librarians with liaison responsibilities or those who have good rapport with academic departments should begin a dialogue with faculty about the extent to which students plagiarize in their classes and provide information about Web sites and software. This may help the faculty battle the problem. Basinger and McCollum (1997) discuss the work of Anthony Krier, a librarian from Franklin Pierce College in New Hampshire, who has maintained a Web-based list of paper mills. His compiled list of paper mills is now available to members of the Center for Academic Integrity (<http://www.academicintegrity.org>). These authors were unable to confirm this due to the material being placed in the members-only section. William McHenry's (1998) Web site offers another very useful comparison table of paper mills for those who wish to investigate possible incidents of plagiarism.

Once plagiarism is suspected, the librarian can help the professor through both traditional and technology-oriented methods. Before the advent of software and Internet checking methods, professors ended up looking through sources and trying to find the original material. Early in the career of one of the authors, she helped a professor check through literary criticism sources such as the *Contemporary Literary Criticism* and *Twentieth Century Literary Criticism*, looking for material that seemed out of place in a student's paper, both by concept and vocabulary. This method was very time consuming and carried limited promise of success. Today, there are myriad software packages and Internet sites available to a professor who suspects plagiarism especially if the professor's students submit papers electronically.

Preventing plagiarism before it happens is better than detecting it after the event. Librarians, as research and information literacy experts, should help faculty examine their existing or future assignments to determine the ease with which students could plagiarize. To make plagiarism difficult, faculty should consider "requiring topic proposals, idea outlines, multiple drafts, interim working bibliographies and photocopies of sources" (Hinchliffe, 1998, paragraph 4). This has the added benefit of reducing the likelihood that a student would plagiarize based on lack of time, since the requirement to regularly submit the steps displaying progress on a paper leads to less frantic time pressure. Requiring working bibliographies with annotations of what the students have learned from each source can also provide an opportunity to teach students how to differentiate between their own ideas and ideas that they have gleaned from their sources (Miller, 2000, p. 420).

Renard (1999/2000) also offers faculty several suggestions for preventing plagiarism. A teacher should get a sample of in-class writing at the

<i>Title and URL</i>	<i>Result</i>	<i>Fees</i>	<i>Method</i>
Plagiarism.org <a href="http://www.plagiarism.org">http://www.plagiarism.org</a>	Originality report	\$20 for first 30 papers uploaded and \$.50 for each additional one.	<ul style="list-style-type: none"> <li>• Paper mills</li> <li>• Professor-submitted papers</li> <li>• Internet sites</li> </ul>
IntegriGuard Inc. <a href="http://www.integriguard.com">http://www.integriguard.com</a>	E-mail to professors about which sentences "failed"	\$4.95/month (1998)	<ul style="list-style-type: none"> <li>• database of papers.</li> <li>• students submit papers electronically to noheating.com and the company then tests each paper for plagiarism</li> </ul>
Glatt Plagiarism Screening program <a href="http://www.plagiarism.com">http://www.plagiarism.com</a>	Plagiarism probability score	\$250-300	Eliminates every fifth word from student papers. Students can then be asked to fill in the blanks.
Essay Verification Engine (EVE2) <a href="http://canexus.com/eve/index.shtml">http://canexus.com/eve/index.shtml</a>	Provides links to Web sites from which students may have plagiarized, % of paper plagiarized, annotated copy of paper with all plagiarized sections highlighted.	\$19.99 per teacher. Unlimited use.	Performs Internet searches.
WordCHECK <a href="http://wordchecksystems.com">http://wordchecksystems.com</a>	% of match between compared data	\$95-293 for software download	Keyword uses and keyword frequencies
<b>Web Sites—</b>			
Findsame <a href="http://findsame.com">http://findsame.com</a> Digital Integrity Inc.			Better at detecting cut-and-paste plagiarism from Internet sites than comparing to paper mills papers
AltaVista.com HotBot.com			Search Web sites for unusual words or phrases

Figure 3. Useful Software and Internet Sites for Detecting Plagiarism.

beginning of the term. This gives a basis for comparison to see if a later paper matches the original sample based on tone and level of ability. Having the original essay done in class precludes plagiarism on the comparison essay and gives a base line for comparison. Another suggestion is to make writing assignments more interesting and thus less likely to be easily available on free or cheap paper mills. Tom Rocklin, a professor at the University of Iowa, says that when teachers give broad general-knowledge papers, they are unwittingly encouraging students to cheat (Zack, 1998, p. B11). Papers that are mere recitation or recounting of information are the most vulnerable for cheating, not only because these types of papers are the most available from paper mills, but also because students have the least amount of themselves invested in the paper. When personal connections to a topic or personal experiences are expected, students are more likely to engage in higher-level thinking skills (Renard, 1999/2000, p. 41). A professor at the University of Maryland has changed the writing assignments in one class, requiring more personal writing, due to the rise in Internet-related cheating. He knows that Internet-related cheating happens since he has caught students trying to use material from the Internet (Lemke, 1999, paragraph 8). While a student can still commission a paper written on a more inventive topic, it is usually much more expensive than a more generic one, hopefully creating a fiscal barrier to plagiarism.

One of the most basic and overlooked methods of preventing plagiarism is to talk to the students about it, both defining it and what the professor's policies are concerning it (Hinchliffe, 1998, paragraph 4). Making students aware that professors are concerned and are looking for plagiarism can discourage at least the casual incidents of the quick cut-and-paste type of plagiarism. What arguments can be used to persuade students not to plagiarize? Kroll (1988) studied students' views on plagiarism and found that the majority of student comments fell into three categories. Forty-seven percent of students expressed the belief that they have a responsibility to themselves not to plagiarize "either because plagiarism involves cheating oneself (usually out of learning or improving as a writer), or because it violates the duty to do one's own work (and thus use one's own mind or creative capacity)" (p. 211). Fairness was cited by 46 percent of students as a reason for not plagiarizing; the students cited the injustice of not giving credit where it is due or the giving of credit to those who do not deserve it (Kroll, 1988, p. 212). Lastly, 36 percent of students equated plagiarism with theft of property, an illegal act understood by all students (Kroll, 1988, p. 213).

### *Instruction*

Instructional sessions would seem the perfect method for providing students with information about how to appropriately use Web pages and full-text articles in their research. Librarians have an ethical obligation to

teach bibliographic citation methods and strategies for how to best avoid plagiarism, especially of Internet sources (Gresham, 1996; Malone & Videon, 1997). However, every librarian who does instruction has faced the dilemma of deciding what to include in his or her instructional sessions. Since information literacy is seldom integrated into the curriculum, most of us are grateful for even a fifty-minute class where we can introduce the bare essentials of the research method. At Virginia Tech, the library's representative to the Undergraduate Honor System appealed to librarians who do instruction sessions to cover plagiarism more in their sessions, a request prompted by a sharp increase in honor code violations (see Figure 2).

We argue here that plagiarism should be considered a vital topic for every class. It takes only a few minutes to introduce the concept and consequences of plagiarism and to point out to students where citation style guides can be found. Librarians should also indicate the questionable quality and age of most papers available on the Internet, and that students could get into trouble for plagiarizing, submitting a poorly written paper, or both (Targett, 1997; McHenry, 1998). It is also helpful to suggest to students that they start the research process early, choose a topic that truly interests them, consciously avoid selecting materials solely based on full-text electronic availability rather than quality of material, and keep a record of their citations to assist with the creation of their bibliographies.

Those librarians with good collaborative relationships with faculty might establish additional contact with students through a second class period, a brief question-and-answer session in the regular classroom, a course listserv, or with a course chat room. Perhaps the best method involves working with the professor directly. Working directly with professors to integrate a discussion of plagiarism into the instructional session will help the faculty integrate the topic into their classes as well as offering an opportunity to present information about designing assignments in a way that will combat plagiarism.

Web-based instruction shows great potential for actively engaging students in learning how to avoid plagiarism and how to create citations. Instead of reinventing the wheel, librarians should seek permission to use tutorials already in existence or form partnerships on campus to create their own. Successful integration of such a tutorial into the curriculum depends upon nurturing relationships with faculty and demonstrating the widespread need for it to administrators through statistics and faculty testimonials.

### *Handouts*

The purpose of any instructional class or reference interview is to point students to information they can either find on their own or take with them. The proliferation of the World Wide Web and other electronic

resources seems to be contributing to declining numbers of questions being asked at reference desks. According to calculations based on data from the Association of Research Libraries (ARL) Web site, reference transactions for eighty-three of its member libraries have decreased by approximately 18 percent between 1996 and 1999 (Association of Research Libraries, 1998-99, table 1). For this reason alone, print and online guides need to be readily available for students to find information on their own. Therefore, librarians need to provide students and faculty alike with information, in various formats, about citing online information. Both print handouts and Web pages can give students information about how to use various citation styles and where to find more information about this issue. Handouts are particularly useful since they can be used in any setting and students can write notes directly on them for future reference. Web pages are useful for pointing to external Web-based style guides. Such a "Webliography" might include Nancy Crane and Xia Li's authoritative Web-based guide "Bibliographic Formats for Citing Electronic Information" (<http://www.uvm.edu/%7encrance/estyles>).

Library Web pages and handouts are perfect for handling questions at the reference desk since they are easy to point to or distribute at the moment of need. Since initial contact at the desk usually leads to more questions, librarians can raise students' awareness of the need to cite information by mentioning it early on and by offering ready-reference materials and referrals to Web sites, help pages, or the on campus writing centers.

## CONCLUSION

As libraries increase the number of full-text resources such as electronic journals, Web sites, and periodical databases (e.g., InfoTrac), so does the need to educate users about the ethical use of information. In fact, this ties in nicely with the Association of College and Research Libraries' (ACRL) Information Literacy standards that were approved at the American Library Association (ALA) Midwinter Conference 2000. This document spells out particular student outcomes that universities and their libraries should strive toward in their curriculum. The last section deals specifically with the difficulties that students have in understanding issues related to plagiarism, copyright, and the use of citation styles ("Information Literacy," 2000). University administrators are slowly recognizing the need to ensure that their graduates are not only competent users of technology but also able to find and use information. Therefore, our responsibility always has involved, and will always involve, increasing our users' awareness of the ethical and legal implications of using information.

In order to better educate our users, we must first be aware and informed ourselves. Campus resources are valuable sources of information in this area since they reflect how other units on campus are approaching

these issues. A search on the Internet can identify other resources that might expand or improve one's understanding of the definitions and situations surrounding plagiarism. A cursory search on AltaVista of university writing centers and plagiarism retrieved 146 results, many of them directly related to the topic. It is also useful to discover the number of plagiarism cases reported on campus to capture an accurate picture of how prevalent (or how underreported) acts of plagiarism are on campus. This information can then be used to begin a dialogue with faculty. Librarians should work with faculty in not only redesigning research assignments, but also work with them to re-examine their curriculum in order to identify points and places where discussion or information about plagiarism should be discussed with students. Librarians should supply faculty with helpful pointers to paper mills, detection software, and Internet search strategies that faculty can use to investigate plagiarism when a case is suspected.

It is obvious that students are in great need of guidance on how to use information ethically and legally. Instructional sessions with librarians should include direct information about plagiarism and its consequences along with practical steps students can take to avoid the risk of plagiarism in their research assignments.

To predict the future would be risky at best. Currently there is somewhat of a mish-mash without much guidance on what or how to cite Web information, with different style manuals gathering different information, not all of which is available. Even the sites that are updates of the usual citation guides, such as APA, are not especially helpful. However, it is hoped that the future will see the creation of consistency among style manuals, particularly in regard to citing Internet material.

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