Plagiarism Education: Teaching Students to Use Information Ethically

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Abstract

The engineering profession has always valued ethical behavior. However, it seems that unethical behavior is more and more prevalent in our classes. The rising incidence of plagiarism is and should be a concern to educators not only to ensure academic integrity, but because of the implications for our profession. The ethical use of engineering information is important for our students to learn.

There are two ways to combat plagiarism: detection and education. Programs like Turnitin and SafeAssignment make plagiarism much easier to detect. The fear of detection stops many would-be offenders before they start, but it has its limitations. Education strives to teach the student what plagiarism is and why it is wrong. There is a strong belief that one of the main causes of plagiarism is a lack of understanding. Often students don't understand what plagiarism is and how they can avoid it. This paper focuses on the effects education can have to reduce plagiarism.

Furthermore, the paper discusses a series of short videos which the author created to help teach students to ethically use engineering information. They are designed to be inserted into a class's BlackBoard site. In addition to plagiarism, these videos summarize copyright law.

Introduction

Ethics has always played an important role in the engineering professions. According to the Code of Ethics for Engineers presented by the National Society of Professional Engineers, "engineers are expected to exhibit the highest standards of honesty and integrity."[1] In fact, the document gives as one of its fundamental cannons that engineers should, "conduct themselves honorably, responsibly, ethically, and lawfully so as to enhance the honor, reputation, and usefulness of the profession."

Unethical academic practices commonly occur in the university setting. It would be nice to think that engineering students are more ethical than their counterparts, but one study has shown the opposite to be true. Donald McCabe found that 72% of engineering students admitted to "one or more acts of serious cheating in the past year" compared to 66% of other students.[2] As engineering educators, we need to do all we can instill ethics into our engineering students. Learning to use information in an ethical manner should not be overlooked in teaching about ethics.

The Plagiarism Problem

Plagiarism is a problem that can frustrate and even sicken the professors that need to deal with it. But what is it? Chamber's Dictionary describes plagiarism as "to steal ideas or writings from another person and present them as one's own."[3] The definition is easy, but wrapping your fingers around it becomes harder. It can be inadvertent or deliberate, blatant or surreptitious. Some are obvious where a student will copy whole paragraphs without citation or even bothering to change the voice to match the rest of the paper. Other times the authors struggle with paraphrasing or when citations are necessary. Part of the dilemma is that plagiarism isn't one single problem, but a group of problems which will be discussed later in the paper.

Plagiarism is not new to the academic environment, but it seems to be on the rise. Even publishers of scholarly journals are worried about the rising occurrences of plagiarism in articles submitted for publication[4]. McCabe found that there was no significant change in the incidence of cheating on written work over a 30 year period with 65% of the students admitting to such behavior in 1963 compared to 66% in 1993. He did find, though, that "student comments in the 1993 survey suggested that this younger generation of students was more lenient in defining what constitutes plagiarism."[5]

The Internet has changed way students plagiarize to some extent because it has changed the way they research. A wealth of information is now at the researcher's fingertips. A library of information is brought strait to their desks. The phrase "cut and paste plagiarism" expresses the ease of copying a sentence, paragraph, or more from an article into a term paper. Additionally, the upcoming generation views materials retrieved online differently than those obtained from other sources. Clifton Poole stated "there is a tendency to think that cutting and pasting from the Internet is a form of good research and not plagiarism."[6] Several students are further confused because of online access to scholarly journals and conference reports through their libraries web sites. Townley and Parsell note that "the Internet presents mixed messages that may confuse people as to what is and what is not acceptable appropriation practice."[7]

The Internet also facilitates the ultimate form of plagiarism, turning in someone else's paper as one's own. A simple search for "research papers" on Google will produce a list of places to purchase a paper on any topic, commonly referred to as paper mills. These paper mills come in two types. The first provides prewritten papers which are ready for downloading. The second type is more expensive, but it provides custom-written papers. All it takes is a Visa card. An engineering research paper written by someone with a master's degree will cost $19.95 per page with a two-day notice at superiorpapers.com. For $32.95 per page it can be completed in just six hours. Every custom paper mill site I visited included an anti-plagiarism message. Superiorpapers.com was the most interesting. It states, "Academic ethics prohibits any form of plagiarism. Our writers produce authentic and duly-referenced papers, they do not cut and paste. The papers are checked with anti-plagiarism software to guarantee you a 100% plagiarism free work."[8] Scanlon and Neumann found that 3% of students felt that faculty members didn't think it was wrong "to purchase papers from online paper mills." It is even more alarming that another 6.7% students neither "agree nor disagree" that their teacher would find it unethical.[9]

Why Students Plagiarize

In order to understand how to combat plagiarism, we must understand why students plagiarize. The list of reasons is long and varied. One of the first reasons is that students don't realize they are plagiarizing. Granitz and Loewy studied the files of several students who were caught plagiarizing at a major university. Over 40% of the cases fell into this category.[10] Students often do not know what plagiarism is and what the plagiarism policy is at their university. We can not assume that students were taught about plagiarism in high school. It may be covered in a freshman English class, but many students test out.

Students often lack the skills needed to avoid plagiarism. Many students don't believe it is necessary to provide citations for paraphrased materials. Pamela Jackson found that "students did not see using direct quotes or paraphrasing as a means to validate and support their ideas. Rather, they viewed using the work of others as a means to communicate their ideas better than they think they can."[11] Even when students know they should give credit to another source, they may not know how to cite the source properly.

Unfortunately, the other reasons for plagiarism show at least some conscious level of unethical behavior. Procrastination is a trap that many students fall into. Failing to manage time wisely can lure the student who would not usually plagiarize to employ unethical practices to complete an assignment.[12] Online paper mills with a six-hour turn around time provide a tempting alternative to pulling the more traditional all-night writing session.

Another contributing factor to plagiarism is a changing view of the purpose of college. Grades and degrees are becoming more important than the education which they represent.[13, 14] When students see the grade as more important than the learning process they are more likely to take short cuts. If they feel that plagiarism with help them get a better grade, it seems more appealing. The excitement of learning something new may not even be considered.

The next reason for plagiarism is also related to grades. Scanlon and Neumann found that although only 8% of students admitted to frequently using "cut and paste plagiarism" they felt that over 50% of their peers did so.[15] Students feel that their peers are less ethical than they are. When students, correctly or incorrectly, believe that their peers are cheating and getting away with it, they may justify cheating themselves so that they aren't penalized.[16] Some considering the curve to be tainted plagiarize to get the grade they would have gotten if everyone else was honest.

Combating Plagiarism

Most actions to combat plagiarism fall into two groups: detection and education. The idea behind detection is to find occurrences of plagiarism so that appropriate action can be taken. It is a great deterrent because if students believe they will get caught cheating they are less likely to do so. The first step to using detection effectively is recognizing instances of it. Gibelman, Gelman, and Fast performed a simple study in which three papers were given to eleven reputable professors to grade. They were told it was for a study on grading practices. The first paper was a legitimate student paper written for a class. The next was downloaded from a paper mill and reformatted. The third paper was custom ordered from another paper mill. Only two of the professors suspected plagiarism for any of the papers.[17] Traditionally, detection has been

difficult because finding the proof of plagiarism required so much extra work. There is a difference between finding the sources someone plagiarized from and just suspecting that a student has received extra help.

Programs such as Turnitin and SafeAssignment have made it much easier to detect plagiarism. A paper can be submitted electronically and be checked against thousands of scholarly journals and web sites. Even the readymade papers available at several paper mills are checked. It is a fairly simple process that many schools are now using.

On one level, plagiarism detection software can help improve students' trust in the system. If plagiarism is being detected and penalized, they no longer feel like their peers are getting away with cheating. Therefore, they don't have to compete against unfair competition. This only works if action is taken when plagiarism is detected. Ignoring detected plagiarism only reinforces the mistaken view that it is acceptable behavior.[18]

Plagiarism detection programs do have limitations. The most heinous offenders, those that purchase papers from custom paper mills, will not be detected. Even though detection can find instances of plagiarism, it does not address many of the reasons of why the plagiarism occurred in the first place. If those reasons are not addressed, students may just find another way to get away with the unethical behavior. Ironically, detection programs may also erode the trust of our students. Using detection programs may cause us to be seen as the enemy and not as the mentors which we strive to be.[19] Lawrence Hinman compared the use of plagiarism detection software to mandatory drug testing.[20] Detection finds the problems, but it projects an assumption of guilt on all students. In this adversarial position students are even more likely to focus on the final grade and less on whether or not they learned in the process. Students will learn best if they are in a trusting and invigorating academic setting. A balance needs to be drawn between deterring cheaters and building environments of trust.[21]

Education focuses on eliminating plagiarism by arming our students with the skills they need to avoid plagiarism. Just like other topics, educating students about plagiarism requires careful planning, preferably at a time when the lesson can be put into practice. Even the most prepared students will likely have questions or concerns, which when carefully addressed can enhance the learning process. Ashworth, Bannister, and Thorne surveyed several students about issues related to plagiarism. "For the majority it had been a new concept." They did not recognize why citing information was necessary, and didn't understand why their teachers were "so uptight about this issue."[22] Students need to understand why correctly citing sources is important. They need to see that "these issues are ethical issues, not just something that is a custom or literary preference."[23]

Often we don't know what our students don't know. De Voss and Rosati tell the story of a young teacher who found three plagiarized papers in one of her classes. She handled it by announcing to her class that any student who had plagiarized must see her during office hours or they would fail the class. In stead of just three, fourteen students visited her. Most hadn't plagiarized, but were so unsure of their skills that they questioned if they had been the guilty party.[24] An important part of education is assuring that students know what constitutes

plagiarism and what does not. Brown and Howell found that providing detailed information to students about plagiarism and its consequences has positive affects on their behavior.[25]

So, what can be done to help educate our students? First, place anti-plagiarism statements in your syllabus. This makes it clear from the beginning where you stand on the issue. Details are important to include.

Another option is to have a librarian give your class a presentation about plagiarism. A segment on the ethical use of information can easily be included into another information literacy lecture or it can be done on its own. Librarians have a background in information science that will help in teaching about plagiarism. It also gives the student an additional contact person for help with plagiarism questions. Without some initial personal contact students may be hesitant to ask librarians for help.

Last semester, a number of faculty members asked me to help with a plagiarism problem in their department. I gave a brief lecture in one of the classes, but after reflecting upon the conversation I determined that I could do more to meet their needs. Some faculty mentioned that they didn't have a lecture period to spare for information literacy, but would still like some sort of lecture on plagiarism to be available for the students. The final product is a series of short videos which can be inserted into a class's BlackBoard site. The videos explain why information should be used ethically, the basics of copyright law, what plagiarism is, and how to cite sources properly. A link to *Plagiarism: A Student's Guide to Recognizing It and Avoiding It*[26] by Cecilia Barnbaum is also included. Barnbaum's document gives several examples of common plagiarism mistakes and also explains how to avoid making those mistakes. Having the videos on the BlackBoard site makes the videos part of the course. It has yet to be seen what effect these videos will have, but if nothing else their presence in the BlackBoard page will reiterate the importance of avoiding plagiarism.

Arthur Sterngold has suggested several strategies in changing research paper assignments that can reduce plagiarism and add to the student's educational experience at the same time. These include:

- Break up major research papers into smaller assignments,
- Choose some required source material for your students,
- Incorporate assignments into class discussions,
- Meet with students to discuss their research, and
- Require students to submit printouts of source materials.[27]

All of these strategies engage the reader in the learning process. They also make detection easier without focusing on detection.

One of the best examples I have seen of creating plagiarism resistant assignments came in a graduate environmental engineering class. Almost all of these strategies were used. The professor assigned a series of interrelated tasks ending in a class presentation and poster session. At the beginning of the semester students chose a topic with the approval of the professor. The next task was to create an annotated bibliography of resources which they would use. As the

librarian I was asked to introduce the class to the databases they needed as well as reviewing citation skills. The skills were integrated immediately into their efforts to create bibliographies. Each task took them toward the final projects. Each student met briefly with the professor twice during the semester to discuss their progress. At the sessions any problems could be discussed. The incremental nature of the assignments combined with the individual feedback and information literacy instruction effectively eliminated plagiarism. Interestingly enough, I don't think that eliminating plagiarism was a factor in breaking up the assignments in this manner. He was just trying to get his students involved in more active learning. A byproduct of getting students immersed in learning is that it removes many of the reasons to plagiarize, thus reducing the temptation.

Plagiarism detection software can also be used as an education tool. If rough drafts are submitted in electronic format, they can be checked for plagiarism. Not only will plagiarism be detected, but the students who lack the skills to use information properly can be identified. Some timely mentoring can ease student anxiety as well as teach them basic skills which will stay with them. Detection will then become asset to increase trust rather than a detriment to it.

One final idea is to show students by example. Henry Walker suggests that too often students see their teachers borrow an example from a text book or a problem for a test without attribution.[28] How often do their teachers refer to papers properly? Most students don't see their teachers using information in papers or presentations. Without an occasional example, they may feel that plagiarism only applies to students.

Conclusion

Plagiarism is a complex problem which can not be ignored. It also can't be solved simply by using plagiarism detection software. It is critical to take steps to educate students about the ethical use of information. With the proper steps our students will not only learn to avoid plagiarism, but they will also be more engaged in learning.

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