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When the Life Lesson is More Important than Course Content

Abstract

In many academic programs there are times when students fail in their moral responsibilities and succumb to the easy way out: they cheat. The overwhelming response to such events is assigning a failing grade and making the students repeat the course, or in some cases, dismiss them. What may not happen is remediation of the moral issue leading to a more ethical person. Of course, what we want as faculty and engineers is a graduate who has exemplary ethics. Taking the course over, getting a new grade may do this but are there other ways?

This paper is about a real incident and a method of resolving the ethical/moral situation in favor of the course content. It is about learning what is right by stressing what is wrong and how a practicing engineer or an engineering system could stray ethically resulting in violation of our engineering responsibility of safety, health and welfare of the public. Those involved at the faculty level took a chance with this resolution method since this was the first such remediation, and the students responded well to the process. The details of the incident are intentionally sketchy – the resolution procedure and the learning are highlighted.

Introduction

The level of professional ethics desirable in graduates is listed in the NSPE Code of Ethics for Engineers[1]. These six cannons are what we, as educators, should strive to inculcate in our students. Teaching ethics in engineering and engineering technology programs has been a growing topic for many years and has been a subject of numerous papers.[2-6] It is incumbent on the faculty to teach ethics as part of the profession and because it is a topic which is evaluated by everyone: including, ABET. As with all courses, teaching ethics is different from learning and internalizing ethics.

By the time engineering students are seniors they have been taught the importance of ethics through lectures, speakers, course work, and the student code of conduct. Unfortunately, it is all too often that students (young engineers), even before graduation, fall short when it comes to the application of ethics. Presented in this paper, is an ethics remediation process that became necessary when several students violated the honor code. It is believed that while its effect was greatest on only the few students that "participated", although other students were involved in the periphery, the unique approach is one that might be used successfully by other educators.

Background

"Ethics is the discipline dealing with what is good and bad with moral duty and obligation; it is the principles of conduct governing an individual or a group; it is a guiding philosophy[7]. For practicing engineers, ethics can have a heightened importance when a wrong decision leads to loss of life. It is often a young engineer in industry that must have the courage and principles to stand up to the pressure of customers, suppliers, or even superiors within their company. In academia, it is incumbent on the faculty to teach ethics as part of the professional development of students. Some teach the subject because it is evaluated during ABET visits. But on a grander scale, ethics is mentioned in the code of every professional organization: the American Society of Mechanical Engineers (ASME), the American Society of Civil Engineers (ASCE), to name a few. In the academic world, teaching ethics is different from learning and internalizing ethics.

So, the question is: Why are we so concerned about an ethical issue and how it might play out in a graduate's future? The old adage, "give them an inch they take a mile" may pertain to this concern. Perhaps a better adage is "if you pass by a deficiency you have set a new standard." That is exactly the case with cheating: if it is not addressed then the lesson is that it is perfectly acceptable conduct. Donald McCabe of the Rutgers University states that, "A strong relation was observed between student cheating and students' perceptions of dishonest behavior on the part of their peers, may suggest that academic dishonesty is not only learned from observing the behavior of peers, but that the peers' behavior provides a kind of normative support for cheating."[8-9]. "Trust and integrity are important aspects of every leader and follower in an organization"[10], and academics should take their charge as developers of the next generation of engineering leaders and followers seriously: they cannot let character flaws become ways of life.

When students fall short of the moral code of ethics by copying the work of others, it is the normal response in academia to punish the students with failing grades. Students who show a lack of integrity have time to mature and learn from the lapse in judgment before graduating. But, is a failing grade an adequate learning mechanism? Will they become engineers with a strong moral astuteness virtually on their own? Faculty cannot presume that college students will develop greater ethical sensitivity and awareness upon graduation without instruction and guidance.[11] So, are we as educators missing a golden opportunity to teach an ethics lesson to those who may need it most?

These were the questions being asked in spring of 2011 when it was found that three senior level students, acting as a team, turned in reports that were not their

own work. After consultation with all involved it was learned that the three had electronically stolen the documents from someone previously enrolled in the class. The class, an upper level laboratory, is a one-credit laboratory. The students work in the first portion of the class was not in question but later assignments were plagiarized. All three students were given a failing grade in the class; each had just one semester until graduation. The one credit course is only offered in the spring semester meaning the students would have to put off graduation one term to repeat the course.

After much thought on the part of the faculty and administration it was decided that repeating the course would not teach the crucial lesson. Repeating the one-credit laboratory would confirm that they understood the material but this was of secondary importance to the real lesson that needed to be learned, ethics. It is important to note that ethics and the student code of conduct are tied to the academics while in college: whereas, ethics and professional codes are what we expect in industry. The tie is ethics in general and, if we can assist students in thinking and behaving ethically, there is a chance that they will develop the character necessary to be successful in industry. There is one more caution, good ethical behavior in college does not guarantee the same in industry; bad ethical behavior in college indicates a problem but does not precisely predict the future. It was from this framework that it was decided that there were options available to foster further learning.

The students were given an option, delay graduation for a semester and repeat the laboratory or participate in an independent study on engineering ethics and graduate on time. They were told that the chance to graduate on time came with very high expectations. Either way, the failing grade would remain on their records.

This solution was available due to the nature of the academic integrity program under which the students worked. The program allows the instructor and the student to work out the penalty for first time rules infringements. Depending on the seriousness the faculty member may give a zero on a question, test or project, or can award a failing grade for the course. If the faculty member feels that it is warranted, a full review board may be asked to determine a more stringent resolution: including, suspension or dismissal. Likewise, the student can either agree on the resolution offered by the faculty member, or they can raise the issue to a review board where resolution can be any or all of those previously listed. These students agreed to take the failing grade. Subsequent integrity failures result in suspension or dismissal and are adjudicated at the Integrity Officer level. Due to their pending graduation status, the faculty and administration decide to offer the independent study to resolve the need for that one credit in the

curriculum, to provide them with an experience that tied ethics to their future, and to do so, not as punishment but as a learning exercise. Each selected the independent study. As a side note: the decision to allow this took the faculty some time and several discussions. In the end, development of an ethical graduate became more important than the content of the course.

Independent Study

The one-credit course, developed to replace the laboratory course, was overseen by both the Division Head and the Department Head which emphasized the importance placed on the resulting work and provided repeated opportunities to mentor the students on ethics. The students worked individually. To complete the requirements of the independent study, they were first required to write a 25 page formal paper on an engineering ethics topic and to present their paper to a class of their peers. They were encouraged to choose a contemporary topic that would show how a poor ethical decision, made by an individual, led to catastrophic results. The restriction on the topic was to demonstrate to the students that a lapse in ethics, by an individual, in industry can have truly devastating ramifications. The students' progress was tracked by intermediate assignments which began with topic approval, then progressed to an outline of the paper, a draft copy (that was first proofed by one another) and lastly the final paper. Throughout the entire process, feedback was given to stress that an elevated level of excellence was expected and to ensure that they meet this standard. Throughout the writing process, they were told that a substandard effort could result in another failing grade – they took this seriously. Near the end of the term the students presented their papers to a class of approximately 90 freshmen.

Discussion of Application and Feedback

As might be expected, each phase of the assignment was submitted on time. Initially, two of the students needed guidance on the quality of the paper but in the end they were generally very good. It was obvious that they had taken the time needed to properly research and write quality papers. Three elements were used to determine the overall grade: the paper, the presentation, and the "get it" factor. The "get it" factor was not discussed with the students but was observed and determined by the evaluators. This factor was further reinforced through students' unsolicited response to the exercise. In other words, to what level did they understand the depth of their transgression and the importance of being engineers with integrity?

To the evaluators of the project, success was appraised not just by the quality of papers and the presentations but also by the awareness gained by the students.

Immediately following the incident it was obvious that one of the three was remorseful for his actions. He had written a thoughtful letter to the instructor apologizing and expressed his regret to both the division and department heads. The other two students remained quiet and said little in meetings giving the impression that they were only sorry to have been caught.

Following the presentations one of the quieter students approached the department head and thanked her for the experience and the second chance. He expressed how much the "hard lesson" had taught him in an honest and genuine way. The other two students sent the following emails:

- *"I would like to thank you for helping me out with my poor decision making. I know that I put you and Dr.___ in a tough decision whether or not to just make me come back for another semester or let me make it up and graduate on time with my class. You didn't have to help me out like you did; I really appreciate all the things that you have done for me. I have learned a lot of things about myself through this whole experience and it has helped me improve as a person. I feel that it is better to learn from your mistakes now while I'm in school and not in the real world when the results can be more severe. I hope that the presentation that I gave influenced the freshman class to the extent that it had on me. I cannot thank you enough for everything that you have done for me."*
- *"I want to thank you and Dr. ___ again for all the help you gave us this semester with the ethics project as well as my other school work. You have been a great help to me over the past few years. I really appreciate how you went out of your way to help us when you did not need to. I feel that in doing so I have learned a very valuable lesson that I can look back on throughout my career. I am very glad that I made this mistake now when I could fix the problem rather than later and lose my job. I hope that the presentations we did can help the freshman be more aware of the situation and avoid making the same mistakes that we did. I am also excited to hear that you are writing a paper on the situation. I agree that our experiences could definitely benefit other young engineers elsewhere. Thanks again for everything."*

The students had fulfilled the requirements of the independent study and would have passed and graduated without the acknowledgements provided. But, as an instructor it is reassuring to hear their sincere appreciation and acknowledgment of a lesson learned.

Application at Other Schools

The resolution discussed in this paper is one that can be easily repeated at other institutions and should be considered a component of remediation in all cases of student cheating and plagiarism. While there is a clear need for research into remediation following cheating, little has been done. The focus has been found to

lie solely on the reasons for cheating and punishment. In the case presented earlier, a one-credit laboratory was involved at the end of the term. The students had proven their knowledge of the course material so the independent study made sense in the grand scheme of student learning. However, the independent study can be applied in different ways depending on the severity of the violation and the decision of the instructor/school. Regardless, of what punishment is handed down, it can be a component of the remediation. For example, if the entire course warrants repeating, it can be an added requirement for remaining in school. Or, if the student is allowed to finish the course and perhaps just given a zero for an assignment, the independent study can be added as a requirement of graduation. Of course, in academic institutions with honor codes or otherwise centralized rules for such cases this process may not be available or allowed.

The following are several recommendations for success.

1. Do have persons of authority oversee the independent study. This demonstrates the importance placed on the exercise and can be a humbling for the student and allows an opportunity for one on one mentoring.
2. Do make the assignment meaningful and ordered so that the students know what is expected. In this case the work required was to evaluate a topic, write an outline, a final paper, and a presentation.
3. It is important to impress upon the students early that it will be an easy class to fail if they are irresponsible. This is the time when they need to be accountable for themselves. Do not fall into the trap of sending reminders of assignments etc.
4. Be certain to show your integrity. Do not announce or make known to those not involved that the independent study is because of cheating. While it may be tempting to humiliate the student taking the independent study it will not help them to remain open minded to the process. You will not achieve the “get it” factor if the student has a chip on their shoulder. In addition, as an educator you must be careful about privacy laws.
5. Make sure that there is support for the independent study and that it can be assigned and graded as a requirement for graduation.

Closing

In closing, by simply punishing students for cheating and plagiarism educators are missing an opportunity to teach students the “hard lesson” of ethics. By simply expecting them to repeat a class or redo an assignment they may be ashamed that they were caught but not necessarily be remediated. By adding an engineering ethics component as a part of the remediation, students are able to look ahead to see that often a breach of ethics can lead to catastrophic results. They need to see

that the easy way out can cause the destruction of a facility, the lives of people in the facilities and careers. There should be nothing that justifies the easy route.

As educators, there is nothing more gratifying than seeing our students succeed. In the case presented, it is acknowledged that three students graduated having deeply learned several very important lessons, the importance of engineering ethics and moral principles. Is it possible that similar reports should be a requirement for all students? The answer: probably so. But in many cases the real learning may not occur because the assignment is for everyone. In this case the assignment was obviously for those who had transgressed – they knew it – they accepted it – and they left as better people.

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