Work In Progress - Ethics Instruction for the Workplace

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Abstract - Ethics has long been a part of engineering education and practice. Thus, engineering educators have adopted various strategies for teaching ethics, including the use of various codes of ethics promulgated by professional organizations. Additionally, case studies have been used to introduce the subtleties and complexities of engineering ethics within engineering projects. This paper describes another approach to engineering ethics instruction, one that can be used in lieu of, or in conjunction with, other common ethics instruction scenarios. The approach focuses on various aspects of ethics important to young engineers as they enter industry, e.g., “workplace ethics.” The materials developed cover a variety of practical subjects important for a new engineer to know when entering the engineering workplace. The teaching materials are based on the experiences of a group of practicing engineers.

Index Terms – engineering ethics, ethics instruction, workplace ethics

INTRODUCTION

Ethics has long been a part of engineering education and practice. The Fundamentals of Engineering exam [1] includes ethics content and ABET student outcomes require demonstration of graduates awareness of ethical behavior [2]. Many engineering students take a specific ethics class, often taught within the engineering college, or have ethics instruction embedded within various classes, e.g., a capstone design course. Thus, engineering educators have adopted various strategies for teaching ethics including the use of various codes of ethics promulgated by professional organizations [3]. Additionally, case studies are often used to introduce the subtleties and complexities of engineering ethics within engineering projects.

Another approach to ethics instruction is offered here, one that fits within most common ethics instruction scenarios. The approach provides a very practical flavor by focusing on aspects of ethics important to young engineers as they enter the workplace.

DEVELOPMENT PROCESS

The author has included ethics’ instruction in his junior level Professional Seminar class over the years. This instruction involved multiple lectures focused on ethics and professionalism. Portions of several different professional codes of ethics, i.e., the National Society of Professional Engineers [3], were distributed to the students and discussed in class. In addition, several “working approaches” to ethical behavior are provided to the students. These working approaches are essentially sets of simple questions, i.e., Is it legal?, to be used when deciding on a course of action. A priority list was provided to the students emphasizing the need to put society and the public, the law, the profession, etc., ahead of themselves when making decisions.

As these materials were presented to the students, homework consisted of sets of multiple choice questions. The questions were written to be similar to the type of ethics questions encountered on the Fundamentals of Engineering exam. Thus, the questions tended to focus on situations more commonly encountered in engineering consulting. In general, performance of the students on these questions was not very high, with overall class averages typically in the 62 - 65% range. Also, survey data from recent graduates indicated only average preparation with regards to ethics.

Several events led to development of a different approach. First, information about ethics instruction at Augusta Technical College [4] was discovered. In this two-year Engineering Technology program, the faculty embed “workplace ethics” into their instruction. Unfortunately, the content was viewed as not comprehensive enough for a Bachelor of Science program.

A Google search revealed the opposite situation. Sites addressing “ethics in the workplace” provide ethics content focused on executives, managers, ethics officers, etc., responsible for managing ethics and ethics training [5] – [6]. Thus, while aspects of this sort of material could be adapted to undergraduates in engineering programs, it is not ideal.

Fortuitously, during the fall semester of 2003, the author had a class where six students were experienced engineers, with industry experience ranging from 10 to 30 years with a variety of companies. This team of engineers was assigned the project of developing instructional materials focused on “workplace ethics.” Their goal was to address a variety of ethics’ subjects important for a new engineer entering the workplace. Microsoft PowerPoint was selected as the content medium with the intent that they could easily be used in the classroom or dispersed to the students via course management software like Blackboard [7].
Over the course of several weeks, the team investigated their various companies’ codes of ethics and policy guides regarding employee behavior to infuse the materials with practical information that might keep a new graduate from unknowingly violating typical norms of behavior. The team spent several hours reviewing the initial PowerPoint slides with the course instructor. After this comprehensive review, the team did a revision of the slides.

TEACHING MATERIALS

The resulting teaching materials consist of approximately 30 PowerPoint slides in four sections. The first section is an introduction containing a list of references and the basics of ethics, e.g., definitions. The references are a mix of company web sites and national organizations like the National Society of Professional Engineers. The definitions provide the student the fundamentals about codes of ethics, the special responsibility of being a member of a profession, and upholding the public trust.

The second section addresses the broader picture of ethics in the workplace. Scandals stemming from ethical lapses recently featured in the news are mentioned. But the bulk of the material in this section focuses on why companies need employees to act ethically. In part, this is tied to how successful companies need to have their employees act as professionals and exhibit personal integrity. One specific topic is ethical behavior as a team member since this was viewed as very important to new employees.

The third section addresses issues around how individuals interact with other company employees. The team developing the materials felt that new graduates might not realize that standards of personal interaction are more stringent in industry than in college, with higher penalties when inappropriate actions occur. While acceptable/unacceptable behavior norms are often assumed as common knowledge, in fact, there are graduates who may not possess it. Thus, the team felt that instruction about this type of ethical behavior should be a specific focus—one typically not associated with ethics instruction in engineering or engineering technology curricula. In fact, the less restrictive academic environment students are immersed in prior to entering industry may give some students an inappropriate sense of acceptable behavior. Thus, content addresses include various forms of harassment, appropriate use of computer resources, substance abuse, safety, forms of employee fraud and the more common ethics instruction subjects of gifts and conflicts of interest.

The fourth section addresses employee actions on behalf of the company. Content on fair competition (interacting with competitors and suppliers), particularly when working for large companies, is included. Issues surrounding confidentiality of both customer and supplier information are discussed. Finally, students are made aware of ethical issues surrounding company performance data and other insider information about the company. While current news content has raised awareness of these issues at the moment, the public memory is short and students need to be continually reminded about revealing information inappropriately.

CONCLUSIONS

These “Ethics in the Workplace” PowerPoint materials contain straightforward advice about ethical behavior in the engineering workplace. As noted in the last slide of the materials, most of the content may be viewed as common sense by experienced engineers. But young, inexperienced engineers may not realize how easy it is to fall into an ethical trap. The materials can also serve as a standalone module for students embarking on an internship or cooperative education. Anyone wishing to obtain the materials is welcome to contact the author.

The author plans to use these materials in the fall of 2004. Student response data will be gathered during the semester. In addition, longitudinal data will be gathered by tracking if recent graduate survey data show students judging their ethical preparedness at a higher level. It is expected that some of the ethics content currently taught will be retained in the class. Thus, the ethics in the workplace content will supplement the more traditional content. In addition, after these teaching materials have been used in class, one or two engineering managers (not involved in the development of these materials) who have hired recent graduates will be asked to visit the class. They will discuss workplace ethics with the students and provide common situations “testing” ethical behavior of their companies employees.

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REFERENCES


