USING A COMPUTER SIMULATION TO PROVIDE A REALISTIC FRAMEWORK FOR ANALYSIS OF ISSUES IN BUSINESS ETHICS

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ABSTRACT

Interest in professional ethics is at a high level due to recent business scandals in the United States. As business colleges address pressures to increase students' ability to confront ethical situations appropriately, curriculum and pedagogical methods are changing. This paper explains the use of a computerized simulation in a business

ethics course offered by a philosophy department to train students to reason in the face of realistic situations faced by professionals in business under a time-pressured environment. The paper also includes a description of the simulation and its available output, evaluations of the simulation from students and the instructor, and suggestions for using the simulation to assess student ethical decision-making. The purpose of this paper is to provide instructors with a description of an instructional resource for use in any course where business ethics is a topic.

INTRODUCTION

In response to the preliminary report of its Ethics Education Task Force, the Association to Advance Collegiate Schools of Business (AACSB) has defined four main themes for ethics education in business programs: responsibility of business in society, ethical decision-making, ethical leadership, and corporate governance.

The computer simulation described in this paper relates to the themes of responsibility of business in society and ethical decision-making. It is important for students to understand the relationship between business and society and that the actions of managers affect not only themselves, but all stakeholders (investors, employees, suppliers, governments, and communities). It is also critical to give students the tools they need to identify and analyze ethical issues. Learning experiences should expose students to types of ethical issues they are likely to encounter in the business world. AACSB states that "preparing students for ethical decision-making should be a key component of the preparation of ethical business leaders" (AACSB, 2004, page 12).

This paper explains the use of a computerized simulation in a business ethics course offered by a philosophy department to train business students [1] to reason in the face of realistic situations faced by professionals in business. In addition, students make these decisions within time pressures and other constraints reflected within the simulation.

COMPUTER SIMULATIONS

Computer simulations are widely used in business schools to allow students to practice managerial skills in a realistic environment. Faria (1998) reported that 97 percent of schools accredited by AACSB have used simulations in some way. This widespread use exists for several reasons. First, computer simulations allow students to make decisions quickly in an environment of uncertainty, which incorporates some realism into the exercise that is not possible with other types of assignments, such as written case studies. The computer simulation provides the students immediate response from various employees within the organization and feedback on the consequences of their decisions.

Second, the simulation develops higher-level thinking skills. Springer and Borthick (2004, page 279) indicated that simulations "are designed to give students opportunities to begin practicing the higher-level thinking the profession demands,

where the learner identifies problems, finds relevant information, acknowledges the influence of uncertainties on potential solutions, and then communicates findings to target audiences."

Third, simulations provide the students with an active learning experience, which can result in more interest, motivation, effort, and learning than other types of projects (Tompson and Tompson, 1995). In addition, Cook and Hazlewood (2002) found that game strategies result in students spending more time preparing for class. The simulation replicates the video game playing that many students have experienced; and thus, may more highly motivate students to participate in the classes addressing the subject matter reflected in the computer simulation. Research shows that aspects of gaming and certain human activities allow participants to get "into the zone" and lose track of time (Csikzentmihalyi, 1991; Norman, 2003). Students in college today expect and prefer classroom environments with active learning and the use of technology (Taylor, 2006).

Finally, though some researchers have found that the case method is a preferred pedagogical approach for ethics courses (McNair and Milam, 1993; Goodpaster, 2002), others advocate the use of simulations (Faria, 2002; Prensky, 2000; Thompson and Dass, 2000; Wolfe, 1997). When participating in computer simulations, students build skills in establishing long-term planning and selection of appropriate strategies. Rather than simply reading a case study, students experience the content within the computer simulation scenario that written cases typically only describe.

AACSB AND ETHICS IN THE BUSINESS CURRICULUM

In its "Assurance of Learning Standards", AACSB requires that schools use systematic processes to develop curricula that include experiences in both general knowledge and skill areas as well as in management-specific knowledge and skill areas. Though no specific requirements exist for courses in the curriculum, the AACSB standards include ethics education in both curriculum areas. Experiences in these areas include: (1) "ethical understanding and reasoning abilities" in the general knowledge and skill areas and (2) "ethical and legal responsibilities in organizations and society" in the management-specific area. Because knowledge and understanding of ethical issues in the business environment are key outcomes for business students, we specified the following learning goal concerning ethics in our assessment plan: "Students are to identify and analyze ethical issues in a professional context." A computer simulation exercise provides an ideal environment in which to assess this learning goal because students recognize ethical dilemmas and make decisions based on their examination of the ethical issues in a realistic, professional context.

Though the AACSB does not specify how to integrate general and management-specific learning experiences into the business curriculum, we strongly believe that students should have several opportunities to acquire knowledge and understanding of ethical issues, both in their general education requirements as well as in their business classes. Addressing ethics in the ethics course as well as throughout the business

curriculum instills a sense of integrity in students. In addition to courses in the students' majors containing ethics components, we worked with our Philosophy Department and developed a business ethics course that we advise students to take in the first semester of their third year—concurrent enrollment with the first semester of their upper division courses for their major.

The use of a stand-alone course is consistent with Swanson's (2005) first step of requiring a stand-alone business ethics course in the business curriculum. However, according to MacLean and Litzky (2003), less than 25 percent of the nation's top 50 business schools required a foundational ethics course. An AACSB survey revealed that almost 90 percent of business schools integrate ethics coverage rather than using a stand-alone course (Woo, 2003). We agreed with Sims and Felton, Jr. (2006) and felt that "a course in business ethics needs to be designed to enhance the students' awareness of the ethical dimension of all business decisions" and to help students understand their core values. Thus, our university takes the following unique approach to teaching and integrating ethics within our curriculum.

Since 2005, all business majors at our university are required to take Business Ethics. The course description states that:

The course explores the ethical challenges that arise in the business world. The course begins with a discussion of different normative theories and then applies those theories to areas of concern within the business world. Case studies are used to illustrate theoretical points with particular situations. This course develops critical thinking and writing competencies.

The concepts and frameworks discussed in Business Ethics will help students handle ethical dilemmas they may face in their careers. The simulation provides a realistic framework to address content found in case studies.

The computer simulation used in our course helps students develop many of the skills for effective ethical decision-making outlined by Sims and Felton, Jr. (2006). First, the simulation helps students realize that most business decisions have ethical dimensions. Managers may categorize a decision within a business function such as a manufacturing or marketing decision, but ethical dimensions are intertwined in the decision. Students also learn that ethical decision-making in business is a complicated process that often involves analyzing large amounts of data, some of which are conflicting. Decision makers must take into account the different, and sometimes conflicting, values and interests of major stakeholders. The simulation also has global components, which help students become aware of the complexity of ethical decision-making in different political and cultural contexts and environments. Finally, students become aware that some decisions may appear ethical in the short term, but have unintended, long-term negative impacts.

Thus, the computer simulation provides realistic business problems and offers students a sense of the difficulties encountered in making ethical decisions that are

acceptable to the company and to individuals. In addition, the students experience the realistic pressure of making these decisions with incomplete information and within time constraints built into the scenarios.

DESCRIPTION OF THE SIMULATION AND ITS AVAILABLE OUTPUT

We utilized a computerized simulation called "Turning Gears" [2] with five different scenarios to provide students with realistic business situations requiring various ethical decisions. The five scenarios address the following areas: marketing to children, consumer product safety, TV programming, selection of a product, and child labor. These scenarios address many of the Sims and Felton, Jr. (2006) skills for effective ethical decision-making, including recognizing that most decisions have ethical dimensions; realizing the complexity of ethical decision-making in a global environment; understanding the values and interests of all stakeholders; and being aware of the potential long-term effects of ethical decisions.

Students assume the role of a product manager in the highly competitive toy industry. The company produces educational toys, and the particular toy in the simulation is a plastic console compatible with most DVD players that provides a fun and educational learning experience for 3-5 year old children. The toy, which is one of the company's all-time best sellers, uses a new plastic material developed specifically for Turning Gears. As the Head Product Manager for this toy, the student makes decisions at all stages of production and marketing. The student is accountable for all of the decisions and his/her performance will affect future job opportunities in the company. The Director of Project Management analyzes the student's performance and determines who gets a promotion and who does not. The Director's appraisal of the decisions and management style of the student completing the simulation determines the promotion decision.

Students complete the simulation in three stages. First they read the introductory packet provided with the simulation which provides information about the firm, its competitors, and the toy industry. The packet also provides financial information about Turning Gears and its marketing plan for its toys. Then, the students complete the computer simulation. Finally, students view their performance reports, which display their decisions as compared to the class.

The student (Head Product Manager) makes decisions in five case studies based on real business scenarios. The business decisions require students to indicate how important three different decision-making rules were in their decisions. These rules are:

1. Actions (standards of conduct): focuses on the actions people take and tries to determine whether an act is ethically acceptable, regardless of its consequences. These standards of conduct tell us which actions are acceptable and which are not.

2. Agents (character and virtue): relates to how our patterns of conduct and define the type of person we are.

3. Purposes and Consequences (outcomes): deals with the consequences of moral action. Considering outcomes allows development of decision rules to help managers identify issues, make decisions, and take action while having a basic understanding of the moral dimensions of the situation.

Students make decisions in an uncertain environment and must consider the following issues when making these decisions: (Darden Business Publishing, 2003)

1. Various stakeholders including, superiors and colleagues, communities and customers, and society as a whole hold the student accountable.

2. The student must defend his/her decisions in ethical terms.

3. Ethical problems are part of the job; managers must balance responsibilities to various stakeholders on a daily basis.

4. The student is in a position to make decisions that matter to him/her personally and some decisions may make him/her feel uncomfortable.

5. Legal reasoning is often inadequate because following the law may open a firm to lawsuits.

As students work their way through the scenarios, they must balance their ethical responsibilities with those of satisfying stakeholders and meeting company expectations for profitability and performance. Students must also analyze complex situations with incomplete information and with time constraints.

Each scenario begins with a screenshot of an office setting with a computer monitor, an inbox for inter-office memos, and a phone. A resource box to the left of the office screen shot provides other relevant information. As students progress through a scenario, they receive information in various formats including e-mails, telephone calls, faxes, memos, press releases, and visits from colleagues.

As the first scenario begins, information from the marketing department indicates that the toy is not selling as well as expected and that their research indicates that brand awareness among both adults and children is not as high as anticipated. The current advertising campaign focuses on the 10:00 a.m. to 3:00 p.m. time slots. The choice in this scenario is whether to design advertisements targeted directly toward young children or to continue to focus on marketing toward both parents and children as well as when to air the television commercials. Students must weigh the ethical implications of directing their marketing activities at these children given newly released information on the dangers of targeting advertising to children.

In the second scenario, the ethical decision confronting students involves the fact that one of the plastics the company uses in manufacturing its toys may cause a serious illness in certain people (1 in 100,000 with a specific physical condition). The students must choose whether to continue to use the plastic, to stop using the plastic, or to continue to use the plastic but warn consumers about the potential danger of one of the components of the toys. If the student chooses to continue to use the plastic as the company has been doing, children could be endangered. If they stop using the plastic and go back to the original material, profitability will be negatively affected. The third option is to place warning labels on toys in the warehouse and those in production.

With both the second and third options, another question is how to deal with the toys already sold. Should the company publicly warn people of the potential risks of the plastic material or should the company recall the product? These are all costly and management is concerned about the effects this may have on potential customers. This scenario places the student under a great degree of time pressure. The student hears about the problem for the first time at the end of the workday and has several other important tasks to deal with before leaving work. The scenario carries over into the next day, where the student has approximately 30 minutes at the beginning of the day to begin to deal with this serious problem as well as addressing several other important decisions. If the student takes too much time with one of the problems, the other issues will suffer. So, this scenario places the student in the position to have to prioritize tasks and to make crucial decisions under time pressure.

The ethical issue in the third scenario relates to protests from a group of consumers because the company advertises its products on a network that airs programming with content the consumers feel is inappropriate for young children. Not only do students have to consider the ethical implications of this decision, but they also deal with pressures from outside constituencies and how these pressures can affect their decisions. If the student chooses to keep the current advertising campaign, management and other employees of the company applaud the decision because it shows that the company is tolerant of differences among people and that it will not bend to pressures of outside groups. However, if the decision is to keep the current campaign, some parent groups are very unhappy and threaten the company with negative publicity and lost sales. This decision makes students think explicitly about how the consequences of making an ethical decision can have a negative impact on stakeholder relationships and on company profitability.

The fourth scenario requires students to choose which of four new toys the company should manufacture and market to young children. The choices are a toy vehicle, a calculator, an interactive plush, or a safari hunt. The toys each have benefits and drawbacks and students must weigh ethical and financial considerations in making their decisions.

This simulation provides students with information on customer preferences (parents and children) and return on investment projections for each of the projects. The

interactive plush toy is designed for very young children, the calculator is very educational, the toy vehicle uses DVD technology to put children in adventurous (but educational) situations, and the safari hunt has a fair amount of violence in the form of shooting. The safari toy has the highest projected ROI and the toy vehicle has the lowest. The student must respond to pressures to make an ethical decision and balance these pressures with the desire to make decisions to maximize profitability.

Finally, the last case involves the discovery that the manufacturer of a new toy is located in Southeast Asia. The company is suspected of inappropriate child labor practices (sweatshop labor). The choices the students face are to end the contract with the manufacturer, continue with the current contract, or send a company representative to Southeast Asia to investigate the situation before making a decision. Investigation into the situation results in information that the manufacturer more than complies with laws in its country and provides schooling for all of its child employees. These children actually have a much better situation than most of the other children in the country. However, these practices are still frowned upon in the United States. If the student makes the decision to terminate the relationship, the manufacturer will sue the company for breach of contract and hundreds of children will be without a place to work and a place to attend school. However, a great deal of pressure exists to terminate the relationship from those who feel strongly about child labor practices.

Though all students complete the scenarios in the order mentioned above, they receive different information and follow different paths depending on their decisions. In follow-up classes, this leads to richer discussion as students explain their decisions and discuss the consequences and results of their decision-making.

The simulation (all five scenarios) takes approximately 1½ hours to complete. The student may complete it all in one session or he/she can complete part of the simulation, log out, and log in again at a different time. In this way, students can complete the simulation during class time or outside of class. The students at our university complete the simulation individually, although the instructor could assign groups to complete the simulation.

After completion of each scenario, students receive feedback from supervisors and colleagues within the company. This feedback includes information on whether or not the supervisor approves of the decision from an ethical standpoint and from a profitability standpoint. The student is then asked to rank how important the three decision-making rules mentioned above (actions, agents, purposes and consequences) were in the decisions they made. Finally, the student indicates how comfortable he/she is with the decision(s) made.

When all students have completed the computer simulation, performance evaluations automatically generated by the computer software are accessible to the students, and the instructor can conduct in-class debriefing sessions. These debriefing sessions are discussions held during the class period following the completion of the simulation. The instructor firsts asks the students about any problems or issues they

may have had with the simulation itself. The remainder of the discussion includes dialogue concerning what students thought of the individual cases and how the material in class may have impacted their answers.

The simulation provides results for the student and the instructor. The student receives a performance evaluation from his/her supervisor. Within the simulation programming, the manager awards high ratings for maximizing shareholder value and for paying attention to and considering employee interests. These rewards do not always result from students making the best ethical decision. Here, the students learn that sometimes conflicts exist between financial considerations and ethical decisions.

The supervisor groups a student in one of three areas: exceeds expectations; meets expectations; does not meet expectations. Simulation output provides students a distribution of performance for the class. A student's personal performance by case is provided with each major decision point plotted and feedback of the supervisor's evaluation increasing or decreasing with each decision. Finally, the student sees his/her performance relative to the other participants for each of the five scenarios. The instructor receives reports including a distribution of the scores of all students in the class or group, an individual student graph showing every measured decision by case, and the class's performance by case.

At our university, the ethics professor used this simulation at the end of one semester and the beginning of the next semester. If used at the beginning of the semester, the instructor can easily use the cases as a basis for discussion as similar topics arise in the course readings. However, students are not able to incorporate knowledge of course materials and are less likely to think of issues involved with the ethical decisions. If used at the end of the semester, the tool serves as a potential assessment instrument to evaluate whether students' decision-making reflects the frameworks and concepts discussed throughout the course. This could provide insight and a form of measurement to assess and evaluate the effectiveness of a general business ethics course. The course instructor cited the above advantages and disadvantages of each type of administration (beginning or end of the semester) and indicated that giving the simulation at the end of the semester has a slight advantage over giving it at the beginning because of the benefit to the students of reflecting on what they've learned. [3]

EVALUATION OF THE SIMULATION

The instructor and the students who used the simulation provided feedback on both the mechanics and the effectiveness of the simulation. These results clearly indicated that the simulation was easy to use and provided a realistic decision-making experience. In addition, the instructor's role changed from dispensing knowledge to helping students construct mental representations of how a business operates, the effects of ethical decision-making, and how the business should operate ethically.

Students indicated they wanted a comment section in the simulation to justify and explain their decisions. At some decision points, students felt that no options mirrored what they would do. Adding a comment box or allowing students to access a Word document to provide an opportunity to explain their decision would provide useful information to assess the ethical decision-making. To an instructor, this information would provide valuable input for debriefing and discussion of the case. When asked about the simulation, 78 percent of the students indicated they thought the ethics computer simulation was a fun project, and 81 percent of the students recommended using the simulation in future courses.

When the instructor presented the simulation at the end of the course, students thought the previous class materials were useful in thinking through the situations presented in the simulation. Some students thought they wouldn't have answered differently than they would have before taking the class; but they did feel they thought through the issues in greater detail and that their discussions with the instructor and with each other were more deliberate.

The instructor of the course felt the simulation was a useful tool. For evaluation purposes, the instructor would prefer a summary page that presents all data on the screen, rather than looking through several different pages to see all the aggregate data.

Using a computer simulation provides several advantages that discussions of case studies or current events often lack. First, students make ethical decisions under a time pressured environment and cannot have unlimited time to decide what to do. Also, because the simulation places students in the middle of realistic situations, they make decisions about what they think is the right thing to do without the benefit of hindsight. Often, when the instructor uses case studies or current events, students already know substantial information about the actual outcomes of the decisions. People more easily see ethical concerns surrounding decisions after they become aware of the actual consequences of the decision. The simulation forces students to confront ethical dilemmas without that benefit. In this way, the simulation more closely approximates the time pressure and uncertainty that exist in actual situations students may find themselves in as employees.

The instructor indicated the most serious disadvantage of the simulation is that, given the limitations of the programming at this point, the decisions the students face are forced-choice. Even if they think of other solutions than the options offered to them, the computer simulation offers no way to capture these options. The fact that students have frequently raised this concern is encouraging since it demonstrates that students are thinking through the ethical dimensions of the situations that they have confronted, and are struggling with the process of arriving at an ethically acceptable decision.

Because of this aspect of the simulation, the debriefing sessions are essential. Students want to explain their decisions and apply what they learned in the class to the situations that they confronted within the simulation.

USING THE SIMULATION TO ASSESS ETHICAL DECISION-MAKING

The use of this simulation in business ethics courses provides the opportunity for schools to use student responses and reflections/reactions to the cases for assessment purposes to meet AACSB accreditation standards. Although the computer-generated output provided by the publisher provides the course instructor with useful information concerning student performance as measured within the simulation, the data do not appear useful for assessment. However, follow-up writing assignments can provide useful information to assess students' understanding and analysis of ethical issues they encountered while completing the simulation. The following paragraphs describe the development of an assessment tool that was successfully implemented to meet a university's needs.

Whether the instructor administers the simulation at the beginning or near the end of the course, students can reflect on their experiences in a writing assignment near the end of the course that poses these potential questions: [4]

1) Review your decisions made during the computer simulation. Reflect on the decisions you made at the beginning of the semester. Would you change your decisions? Why or why not?

2) What case presented the greatest ethical dilemma to you? Reflect on the class discussions. Explain one item that is most useful to you in facing this dilemma.

During a recent semester when students completed the simulation at the beginning of the term, the instructor asked the students to reflect on their experiences in an essay assigned at the end of the semester. Of the 48 students who completed the essay, 60 percent indicated they would make one or more changes in their decisions after completing the course materials. Many felt they should have spent more time gathering information and conducting research before making their initial decisions. They also realized their opinions needed support by relevant facts in order to make appropriate decisions. Of the 40 percent who would not have made any changes in their decisions, several students indicated they had more confidence in their decisions after completing the course. They also felt better prepared to consider the ramifications of their decisions.

Students also commented on what they learned by completing the simulation. These comments include:

- Ethical dilemmas frequently exist in business and firms need to balance ethical issues and business decisions.
- A company has obligations to employees and the community (public) beyond making a profit.
- A single business decision affects many different people inside and outside of the company.

- Students expressed discomfort with making decisions that could anger stakeholders.
- The simulation demonstrated the need to make immediate decisions in a business setting and that the decisions made in the simulation were interrelated.
- The simulation was a valuable experience that supported the theories and concepts learned in Business Ethics.

The assessment method described above provides the instructor and the assessment committee with useful information concerning students' ability to identify and analyze ethical issues. To make the assessment of students learning more formal, the instructor, along with members of the school's assessment committee, can develop a rubric or checklist to score the essays/writing assignments that is useful for both grading and assessment purposes. The rubric (checklist) would contain items that relate directly to the learning objective(s) stated in the assessment plan as well as the instructor's course objectives. For example, our learning goal is: "Students are to identify and analyze ethical issues in a professional context." A scoring rubric would assign points to the proper identification of the ethical issue in the scenario, how the student analyzed this issue, and made his/her decision. A writing assignment reflects questions of this nature as well as the student's reflection.

CONCLUSION

To help students recognize the importance of ethical issues, we require all business majors to take the stand-alone Business Ethics course taught within the Philosophy Department. In addition, we have incorporated the use of a computer simulation to provide a realistic setting for ethical decisions. This instructional resource provides a rich training opportunity for students to reason in the face of moral dilemmas that businesses face. The students have an opportunity to practice ethical decision-making in a realistic business setting. Their decisions influence the relevant information that is made available for their access and the results of their decisions are immediately provided. Students indicated that completing the simulation was a valuable experience that reinforces the materials they used in class. The use of the simulation provides an opportunity to collect data relating to ethical decision-making and to assess how students' ethical decision-making changes in a stand alone business ethics course.

ENDNOTES

[1] The term business students refers to all students with accounting, business administration, finance, international business, management, and marketing majors.

[2] Darden Business Publishing distributes the Turning Gears Inc. simulation used by students. The publisher provides an introductory packet that describes the company, the job, and the simulation process. Students must use a purchased code to log into and use the simulation. Students can access the five different scenarios and complete the simulation only once per login code.

[3] The instructor also suggested a slightly different format, which was to structure the course to go through the cases periodically throughout the semester. For example, the students would complete the advertising part of the simulation when the instructor covers the advertising ethics topic in class. The instructor and the students would discuss each case at the time it is completed and students would do a short write up at that time.

[4] The instructor indicated that when the simulation was given at the beginning of the course and the assessment took place near the end of the course, a discussion of the simulation, the cases, and the students' decisions was very useful immediately before giving the writing assignments.

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Note: The graphic at the top of this page was created by Carole E. Scott