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Abstract

Ethical issues with technology are emerging more frequently as new technologies, widespread access and massive content become prevalent. With zip disks and cracker sites, people can easily copy entire applications that could have cost them thousands of dollars. The developer of the application software has a loss of revenue. However, people often view this as a victimless crime. Particularly students, fail to see the broader implications of software piracy and other ethical issues with technology. Yet, in the Information Systems classroom, the topic of ethics or computer crime is sometimes neglected. In teaching Object Oriented Programming, for example, an instructor might not spend time on discussions about computer copyright laws or liability of computer programs.

This paper describes the development of a multimedia ethical situations simulator. The premise is that letting a student face ethical issues in a web-based simulation will better prepare them for situations they may find themselves in at work in the future. The use of multimedia is important in that it is a visual approximation of reality, rather than reading a case or a legal document. The participant sees the event. It makes the student an active role player in a visual scenario and it gives students an opportunity to exercise ethical decision making before they actually are exposed to an ethical dilemma in business. Furthermore, the web based training can educate them further as to the consequences of several actions taken in scenarios related to ethics and technology.

Introduction

Ethical scenarios are used in research and in the classroom to examine how people feel about specific ethical dilemmas or to train people about ethical policies and laws (Cohen and Cornwell, 1989; Cougar, 1989). Studies on ethical issues in computing are abundant, reporting evidence of ethical behaviors associated with age, gender and income (Shim & Taylor, 1988; Solomon & O'Brien, 1990). At James Madison University, the Office of Information Technology Planning, has textual scenarios that educate users regarding several issues of ethics and technology (Dixon, 2000). The use can navigate through scenarios, selecting answers and finding out legal correctness of the options they chose.

The advantage of using scenarios is that people can role-play, or put themselves in the position of being in an ethical problem and evaluate how they would act or what decisions they might make. The goal of this project was to develop a video-based scenario that people could participate in, examine the consequences of their actions, and become more educated about the legal implications of their choices. Using video instead of text was to entice the person with a 'closer to life' scenario and enables them to practice a skill of ethical decision making in a benign environment prior to being faced with an actual situation.

Approach

Discovery based learning attempts to put the user in the position of actively choosing and uncovering their own sources for knowledge. Proponents of this pedagogy believe that learning is enhanced because the student it an engaged participant, making decisions about what they learn, creating heightened attention and improved learning, (Andrews, 1984; Keegan, 1995). The web based scenarios took the approach of guided discovery one step further, attempting to make the scenarios first person. The implication was that this approach with the multimedia technology would more closely simulate a real-life circumstance. Furthermore, the use of first-person, play is popularly said to be extremely realistic and engaging.

Proponents of multimedia in education claim that visual media can create a more engaging experience for the student (Dempsey et al., 1996). Others claim that efforts to create truly educational multimedia have fallen very short of their goal (Wiebe, 1994; Noble, 1996). Rather there are games that students interact with by pointing and clicking but very little synthesis takes place, and students focus on the goal rather than content leading up to the goal. This project uses discovery based learning to do two things:

- Discovery based learning lets the student follow their own path, uncovering solutions and alternatives based upon their own whim and intuition. This makes them active participants, albeit with a limited number of responses from the application.
- Discovery based learning allows the student experience the existence of several possibilities, not just one choice. The navigation usually

indicates three choices for the student, impressing the idea that in an ethical decision, there is not always only one alternative.

Ethical issues with technology arise frequently. Distributing pornography on the Internet, URL squatting and Spam are all examples of behaviors linked with technology that pose ethical issues today. Mason (1986) suggested four ethical issues of the information age: property, accuracy, privacy and access. The two scenarios that have been developed for this project deal with property (software piracy) and privacy (e-mail privacy). Based upon short ethical scenarios developed by the author in 1986, scripts were written with several outcomes. Figure 1 gives a brief description of the scenarios used for application. The scripts typically set up the scenario and offer the user three alternatives. For example, in the email piracy scenario, a student is working on a project and the computer lab is about to close. A friend offers to give him the software, he decides to either decline, accept or give a rationalization. The user selects the outcome of the scenario based upon these three options and then is lead to information about the implications of their choice.

Development of the scenarios took place over a ten week period and involved student interns who posed as actors and provided technical support. A VHS video camera was used to capture scenes and edited in Adobe Premier. The movies were compressed using Real Media producer and incorporated into a web based navigation scheme using HTML, JavaScript and Flash. Other content is planned for the areas of access and accuracy. Figure 2 shows screen shots from the application.

Figure 1. Scenario Descriptions

E-mail Privacy	**Software Piracy**
An employee sees that the boss's email is open and sees her name there. She can ignore it, read it and find nothing, read it and find something. Upon reading it, she can find several things: that the email is derogatory about her, that the email contains a racial slur, that the boss is embezzling money, that the boss is having an affair, or that she is about to be fired. This scenario can end with stakeholders being fired, going to jail or calling on the expertise of the human resources department.	A student is trying to finish a project for a CIS class. The only lab on campus is about to close in 10 minutes. A friend offers to 'give' them the software. They can decline, accept declaring they will delete the software when they are through or accept entirely. The options eventually lead to not deleting the software and software executives charging more money to accommodate for the business losses incurred by software piracy.

Figure 2 – Screen Shots of Ethics Application

Conclusions and Future Research

Eventually, it will be nice to have students use the simulator in a classroom setting and attempt to measure their response to it. However, with this type of tool, measurement is problematic. There is no sure way to measure whether the exposure to these scenarios gives them confidence when they face these problems in their lives. Measurements at best are perceptual and self-reported. With ethical decisions too, participants may be reluctant to be truthful about their intentions and past actions.

What will be interesting to test empirically is whether students, given the opportunity to learn by discovery, take the actions necessary to explore all alternatives to ethical dilemmas. The design of the interface is intended to draw them in and entice them to explore all alternatives. However, some educational software is criticized for offering richness in the content that students never explore because they are focused on finishing the game (Grundy, 1991). It may also be interesting to run two groups of students through text based and video based scenarios and determine whether the multimedia application, touted to be more immersive, actually results in a more positive effect on learning.

Integrating ethics into the classroom and into the workplace is increasingly important. The use of multimedia technology could provide for an effective way to integrate subject matter without impacting already unit intensive academic programs. In industry, multimedia technology could be cost-effective in educating people about corporate policy and conduct. Technology can enhance learning by making more entertaining training tools where the user becomes a participant, where a person can learn at their own pace and where many avenues are explored.

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