Information Ethics Education for a Multicultural World

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ABSTRACT

How can we prepare information systems students to face the ethical challenges of a globalized world? This paper describes a three-step approach for addressing these challenges. First, we have designed undergraduate and graduate information ethics courses that expand the range of learning of ethical theories beyond the traditional Western canon to include a wide spectrum of non-Western and feminist theories. Second, we have designed interactive cases for this course that adopt a collaborative learning approach where students work together in small groups by playing different roles that make interdependent decisions. Third, we deliver these cases via an educational simulation, making the approach scalable and transferable to other institutions across the country and around the world. The data for this study includes textual answers from end-of-semester questionnaires completed by 101 undergraduate and graduate students during four information ethics courses that included use of the simulation. Data was analyzed using thematic analysis, focusing on the multicultural and global dimensions of student learning. Five themes emerged from data collected in the four courses: Learning about a Diverse Range of Ethical Theories; Learning about how Ethical Theories are Related to Culture and Values; Relating International and Multicultural Dimensions to Understanding Oneself; Relating International and Multicultural Dimensions to Understanding Others; and Understanding the Role of Ethics and Culture in Information Systems Design and Use. Based on these results, the three-step approach developed in this study can be implemented across the country and around the world to ensure that students are prepared for the ethical challenges of a globalized world.

Keywords: ethics, culture, diversity, role-play, simulation, educational software

1. INTRODUCTION

Information systems students will face a wide range of ethical dilemmas throughout their careers, related to issues such as trust (Kelton, Fleischmann, and Wallace, 2008), transparency (Fleischmann and Wallace, 2005, 2009), and security (Fleischmann, 2010; Jaeger et al., 2007), and they must be prepared to solve these ethical dilemmas as members of an increasingly globalized workforce. Information systems professionals routinely engage in multinational collaborations, where they face important value conflicts (Fleischmann and Wallace, 2010). They must work with coworkers from across the globe, and in many cases they may work temporarily or permanently in countries with cultures that are dramatically different from the one(s) in which they are raised and educated. Different cultures handle (and even perceive) ethical dilemmas differently, and have different ethical touchstones that establish the expectations for ethical behavior. Thus, to prepare information systems students to enter the increasingly global

workforce, it is critical to engage these students in ethical decision-making scenarios that will help each student to develop sensitivity toward the diverse ethical perspectives and values of their future colleagues, managers, and information system users from around the world.

This paper describes a subset of the activities of an interdisciplinary research team that aims to promote multicultural information ethics education. Specifically, one activity has been to develop a series of information ethics courses that expose, through readings on sixteen different ethical theories from four continents, both undergraduate and graduate students to a wide range of ethical theories and theorists from across time and around the world, allowing instructors to transcend the traditional Western bias often found in information ethics education. Another activity has been to use case-based education to engage small groups of students in ethical problem solving involving cases as seen from multiple perspectives of stakeholders within the scenarios, and frequently with an explicit international and/or multicultural flavor (Fleischmann, Robbins, and Wallace, 2009; Robbins, Fleischmann, and Wallace,, 2009). Finally, these cases have been embedded within an educational simulation that allows students to collaboratively solve cases through either face-to-face or online education (Robbins and Butler, 2009, 2010; Robbins, Fleischmann, and Wallace, 2009). This paper focuses on describing the educational interventions accomplished to date and providing a preliminary evaluation of their effectiveness through thematic analysis of feedback received from students at the end of the courses, as well as describing the future plans of the research team to continue expanding the educational opportunities for multicultural information ethics education.

The background section introduces the theoretical framework that guides the study. The methods section details the educational approach taken by the research team in developing: undergraduate and graduate information ethics courses, multi-perspective cases for these courses, and an educational simulation used to deliver these cases. The results section summarizes findings from the thematic analysis of feedback received from 101 undergraduate and graduate students. The discussion section illustrates how the finding can be used to extend the theoretical framework introduced in the background section. Finally, the conclusion section summarizes the contributions made by this paper to information ethics education theory and practice.

2. BACKGROUND

Both nationality and culture are linked to variations in ethical decision making. For example, Peppas (2002) finds significant differences in the ethical perspectives of Asians and Americans. Axinn et al. (2004) demonstrate the interconnectedness of culture and values. Recent research demonstrates that the effect of personal values across cultures affects ethical decision making. For example, Shafer et al. (2006) find differences among Americans and Chinese in their views regarding social responsibility and economic efficiency but also identify similar and positive relationships among self-transcendence values and attitudes regarding socially responsibly behavior across the two countries. Further, when comparing the values of people living in the US and the Middle East, Ford, Nonis, and Hudson (2005) discover that these two cultural groups differ significantly in terms of their social, political, and religious values. Finally, while numerous studies have examined pieces of the overall relationship across these dimensions, there is a need for further systematic research that examines how ethical decision making may vary across national cultural contexts and how ethics education can address this challenge.

One way to begin developing a holistic understanding of ethical decision making across cultures is to base it on how different people resolve ethical dilemmas. In this vein, James Rest developed the Four-Component Model (Moral Interpretation-Moral Judgment-Moral Intention-Moral Behavior) to describe the interacting psychological activities that occur when individuals resolve ethical dilemmas (Rest, 1986). Resolving ethical dilemmas is equivalent to ethical problem solving (Robbins, Wallace, and Puka, 2004). Ethical problem solving is a form of ill-structured problem solving (Robbins and Wallace, 2007). Operations researchers have clarified core ill-structured problem solving activities (Bartee, 1973; Benson et al., 1995; Cowan, 1986; Eilon, 1985; Fernandes and Simon, 1999; Herden and Lyles, 1981; Kilmann and Mitroff, 1979; Lang et al., 1978; Lipshitz and Bar-Ilan, 1996; McPherson, 1967; Mintzberg et al., 1976; Mushkat, 1986; Newell and Simon, 1972; Schwenk and Thomas, 1983; Willemain, 1995; Witte, 1972). If we leverage Rest's Four-Component [Ethical Problem Solving] Model with what we understand about the process of ill-structured problem solving based upon the operations research community (Lipshitz and Bar-Ilan, 1996), we reach the following description: Ethical problem solving is a set of interacting processes (see Figure 1) that correspond with Rest's (1986) four components: 1) Understanding Context: Interpreting the environment by identifying a problem (based upon what the individual and those near that person understand and value and how each interacts with others) and Structuring Problem: Characterizing the problem or sub-problems in a synthetic or analytic fashion; 2) Developing Solutions: Using a particular problem-solving approach to search for, develop, infer, consider, and evaluate current or new beliefs; 3) Assessing Solutions: Verifying and validating an alternative or alternatives; and 4) Implementing: Acting towards expressing the decision(s) (Davidson and Sternberg, 2003; Kahneman and Tversky, 2000; Keller and Ho, 1988; Lipshitz and Bar-Ilan, 1996; Maani and Maharaj, 2004; Marshall, 1995; Rachlin, 1989; Vakkari, 1999).

These processes use and are driven by the problem solver's beliefs. These beliefs may be declarative representations about the world, procedural prescriptions for solving problems, records of past experiences with regards to applying prescriptions in the context of one's beliefs about the world, as well as personal values and attitudes towards potential and actual objects and actions within our world (Brophy, 2000; Carroll, 1993; Eagly and Chaiken, 1993; Fishbein and Azjen, 1975; Hambrick and Engle, 2003; Lipshitz and Bar-Ilan, 1996; Mumford et al., 2002; Newell, 1980; Newell and Simon, 1972; Robbins and Hall, 2007; Rokeach, 1973; Schwartz, 1996; Simon, 1999; Smith, 1988, 1993). Thus, as ethical problems are solved by different people, they are considered and solved using multiple perspectives. These perspectives provide uniquely correct resolutions for an ethical dilemma for each person.

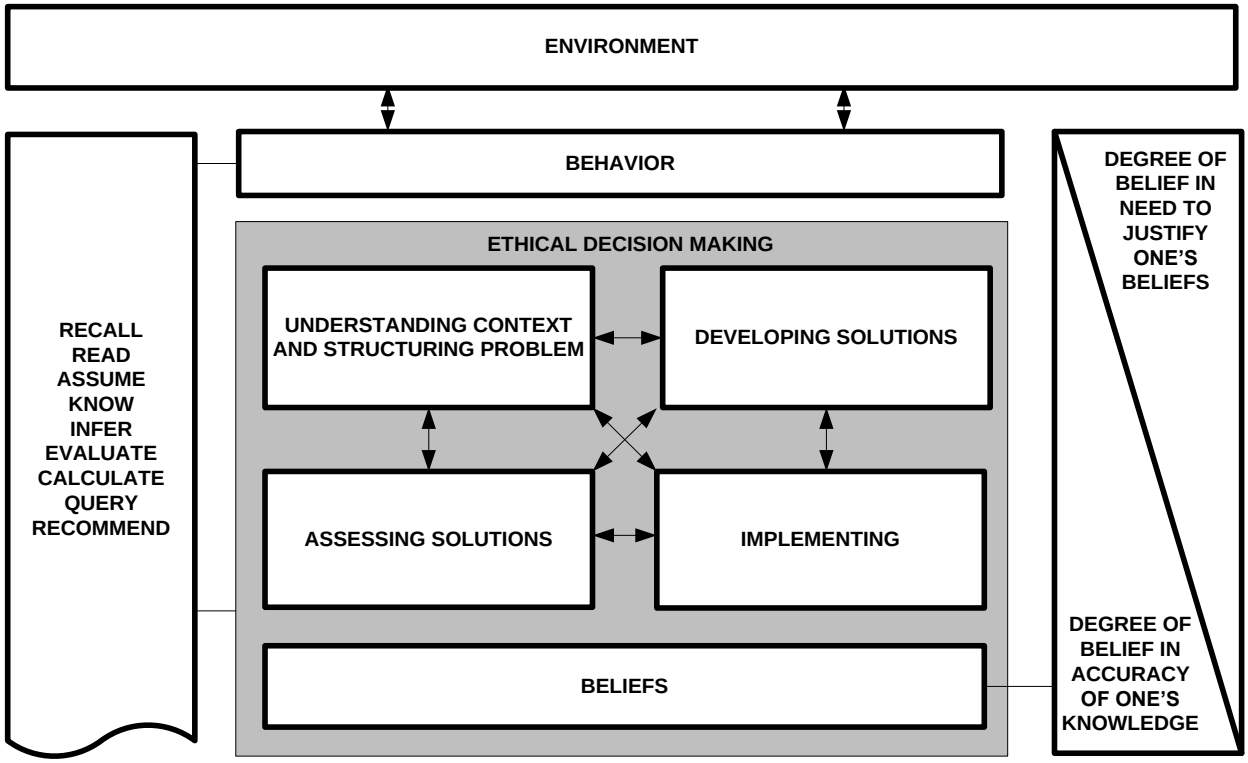


Figure 1. Theoretical Framework

If problem solving is based upon knowledge in the form of beliefs is applied to a problem, a theory of how knowledge is perceived by humans is helpful. King and Kitchener (1994) provide the Reflective Judgment Model. This model centers on the degrees to which individuals believe their knowledge is an accurate representation of the universe and the need to justify (to others and themselves) their knowledge using evidence and argument. At the lowest temporarily uncertain. A person exemplifying this level of judgment defends beliefs by referring to authorities when their beliefs are known or self-generated opinion in other cases. A fourth level of belief-based judgment occurs as the problem solver considers knowledge to be uncertain and idiosyncratic, and based upon factors that led to the knowledge. For example, some knowledge may be ambiguous due to incomplete data collection. A fifth level of knowledge-based judgment recognizes that others' conclusions could be correct, especially if they are based upon different arguments and different data about the same phenomena. A sixth level of judgment recognizes that knowledge is uncertain but that increased levels of surety can be provided by taking multiple perspectives across different contexts and evaluating solutions across different criteria. A seventh level of judgment considers perceptual biases, explanatory value of observations, weight of the evidence, risk of erroneous conclusions, consequences of alternative judgments, and the inter-relationships of these factors (King and Kitchener, 1994, pp. 14-16).

Given that ethical decision making is now situated within a globalized, multicultural world, and based upon this theoretical framework, how can we best prepare information systems students for the challenges that they will face, level of the consideration of knowledge, beliefs are interpreted to be accurate representations of the world or aspects of interacting with it. A second level of epistemic belief considers knowledge as something that is definitely extant and available via perception and authority figures, but not necessarily known by the individual. A third level of beliefs about knowledge is when individuals believe that knowledge about the world is absolutely certain o including appreciating the diverse perspectives of their co-workers, managers, and users? This paper sets out to answer this research question through a series of educational interventions and a preliminary evaluation of their effectiveness.

3. METHODS

The educational approach used in this paper has three key components: information ethics courses that cover a diverse range of ethical theories from across time and around the world; cases that engage students in collaborative ethical decision making by incorporating multiple perspectives, often with an international dimension; and an educational simulation in which the cases are embedded, facilitating the use of the case-based learning approach in online as well as face-to-face courses.

Three information ethics courses were designed through this project. These courses included the first undergraduate and graduate ethics courses at the University of Maryland and the first course in the ethics of modeling at Rensselaer Polytechnic Institute. Specifically, the graduate level course, "Information Ethics," at the University of Maryland included 47 students (22 in spring 2010 and 25 in spring 2011)

enrolled in the Master of Information Management, Master of Library Science, and PhD in Information Studies programs. The undergraduate course at the University of Maryland, "The Ethics of Information Technology in a Multicultural World," included 44 students with a wide range of majors including Information Systems, Computer Science, Engineering, Biology, Chemistry, Economics, Psychology, Sociology, Anthropology, Communication, Journalism, and English. The undergraduate course at Rensselaer Polytechnic Institute included 28 seniors in Industrial and Systems Engineering. Thus, a total of 119 students were enrolled in these four offerings of these three courses.

Various editions of Quinn's (2011) Ethics for the Information Age have been used to teach this course. Like most other information ethics textbooks, Quinn focuses primarily on Western ethical theories, including Kantianism, Act Utilitarianism, Rule Utilitarianism, and Social Contract Theory and also Divine Command Theory, Subjective Relativism, Cultural Relativism, and Virtue Ethics in passing. Quinn's latest edition also adds a brief discussion of Ethical Egoism. However, the range of ethical theories covered by Quinn, again as is the case for most standard texts, is fairly restricted to Western ethical theories. Thus, to ensure broad coverage of ethical theories from across time and especially from around the world, the courses augment the ethical theories presented by Quinn with additional readings that cover a wider range of ethical theories including Indian Ethics (Hindu, Jaina, and Gandhian Ethics) (Bilimoria, 1993); Islamic Ethics (Nanji, 1993); Buddhist Ethics (De Silva, 1993); Classical Chinese Ethics (Hansen, 1993); Ubuntu (Prinsloo, 1998); Ethics of Care (Held, 2008); and Situated Knowledges (Haraway, 2003), as well as an additional reading that goes into more depth for Ethical Egoism (Smith, 2006). Thus, the courses add five non-Western ethical theories from East and South Asia (Indian Ethics, Buddhist Ethics, and Classical Chinese Ethics), the Middle East (Islamic Ethics), and Africa (Ubuntu), as well as two feminist ethical theories from North America (Ethics of Care and Situated Knowledges). Also, during the semester, students play six cases on important information ethics topics, and also build their own cases using the CaseBuilder tool also developed as part of this project (Fleischmann et al., 2011). Table 1 includes a summary of all readings covered in the course, including the topic for each week, with specific theories listed for weeks that focus on learning about ethical theories and cases listed in italics for the weeks that focus on cases.

The cases developed for these courses incorporate multiple perspectives by having students play different roles within small groups. Each student's role faces an ethical dilemma, and one student's choice affects the ethical dilemma faced by the next student. As such, each student faces an ethical dilemma that influences and/or is influenced by how other students solve ethical dilemmas. This approach ensures that students learn about the interconnectedness of ethical decision making, which is an especially important concept in an increasingly globalized and multicultural world. Students also have a chance to see how their peers make ethical decisions, and how their peers' ethical decision making is influenced by their diverse values and perspectives. The pen and paper cases were first used in two semesters of Information Ethics and were shown to help students to learn about diversity, perspectives, values, and pluralism (Fleischmann, Robbins, and Wallace, 2009).

Week	Topic	Readings	Ethical Theories/*Cases*
1	Introduction		
2	The Information Age	Quinn, 2011, chapter 1	
3	Values	Schwartz, 2007 Friedman and Kahn, 2008	
4	Ethics	Quinn, 2011, chapter 2	Divine Command Theory, Subjective Relativism, Cultural Relativism, Kantianism, Act Utilitarianism, Rule Utilitarianism, Social Contract Theory, Ethical Egoism
5	Additional Ethical Approaches I	Bilimoria, 1993; Nanji, 1993; Prinsloo, 1998; Smith, 2006	Indian Ethics; Islamic Ethics; Ubuntu; Ethical Egoism
6	Additional Ethical Approaches II	De Silva, 2003; Hansen, 1993; Haraway, 2003; Held, 2008	Buddhist Ethics; Classical Chinese Ethics; Situated Knowledges; Ethics of Care
7	Professional Ethics	Quinn, 2011, chapter 8	
8	Networking	Quinn, 2011, chapter 3	*Internet Use in Public Libraries*
9	Intellectual Property	Quinn, 2011, chapter 4	*Information Systems Textbooks*
10	Privacy	Quinn, 2011, chapter 5	*Computer Science Research*
11	Computer and Network Security	Quinn, 2011, chapter 6	*How to Vote*
12	Computer Reliability	Quinn, 2011, chapter 7	*Mission to Mars*
13	Work and Wealth	Quinn, 2011, chapter 9	*Laptops for Children in Developing Countries*
14	Case Presentations		

Table 1: Schedule of the Course, Including Topics, Readings, and Ethical Theories/*Cases*

These cases were then embedded within an educational simulation and used in two semesters of the Information Ethics course as well as Ethics of Information Technology in a Multicultural World and Ethics of Modeling. The educational simulation is text-based, and students first select roles to play within the case. The roles then make decisions sequentially, with the first role first facing an open-ended ethical dilemma with a prompt to discuss the possible decisions that the student playing the first role could make. The first role is then given two specific decisions and asked to discuss the ethical implications of each decision and to finally choose between the two decisions. This choice then determines the dilemma faced by the second role, going through the same open-ended and closed-ended phases before the third role again faces open-ended and closed-ended phases of a dilemma determined by the choices of both the first and second roles. Preliminary analysis of the data from a single course, the first offering of Information Ethics to use the simulation, led to the development of a thematic map for understanding the components of ethical decision making (EDM), including understanding one's own EDM, understanding others' EDM, understanding the importance of EDM, understanding the complexity of EDM, and understanding how and under which circumstances EDM can be applied (Fleischmann, Robbins, and Wallace, 2011).

At the end of each class, students completed a post-test questionnaire that asked questions about what they learned in the class. Graduate students were asked several questions on this topic, including: "What did you learn about ethical theories during this semester?" "Please explain how the group interaction helped you to learn about ethical theories, if at all?" "What did you learn about your values during the semester?" "What did you learn about other people's values during the semester?" "Did this class help to prepare you to confront ethical challenges in your academic career? Please explain:" "Did this class help to prepare you to confront ethical challenges in your professional career? Please explain:" Undergraduate students were asked a more general question: "What did you learn in this class?" A total of 101 of the 119 students completed the post-test questionnaire (85%).

The results of the data collected in all four semesters were analyzed using thematic analysis. First, the entire data set was reviewed, and initial ideas were noted. Next, initial codes were generated, and data was recoded as needed during the evolution of the coding frame. These codes crystallized into five major salient themes. The entire data set was re-reviewed to ensure the validity of the five themes. Data was then reorganized according to these five themes, with tracking of which question had prompted each answer and which semester the data came from. The names of the themes were finalized during the reporting of the results. Quotes were used to illustrate the themes, including examples of contradictory evidence, and different possible explanations of results were given. To provide evidence of the five themes, three to six quotes are used to illustrate each theme, demonstrating the robustness of the analysis. Thus, data analysis followed the key principles of thematic analysis (Braun and Clarke, 2006).

4. RESULTS

Thematic analysis of the post-test data revealed five major salient themes related to students' learning about the international and multicultural dimensions of information ethics (see Table 2). These five themes were: *Learning about a Diverse Range of Ethical Theories*; *Learning about how Ethical Theories are Related to Culture and Values*; *Relating International and Multicultural Dimensions to Understanding Oneself*; *Relating International and Multicultural Dimensions to Understanding Others*; and *Understanding the Role of Ethics and Culture in Information Systems Design and Use*. Each of these themes was based on data from multiple courses, and three to six quotes are provided to illustrate each theme, ensuring that the themes spanned the various course offerings that used the diverse range of ethical theories as well as the multi-role cases embedded within the educational simulation described above.

Major Salient Themes
Learning about a Diverse Range of Ethical Theories
Learning about how Ethical Theories are Related to Culture and Values
Relating International and Multicultural Dimensions to Understanding Oneself
Relating International and Multicultural Dimensions to Understanding Others
Understanding the Role of Ethics and Culture in Information Systems Design and Use

Table 2. Major Salient Themes

The first theme was learning about a diverse range of ethical theories. For example, a spring 2010 Information Ethics student, when asked, "What did you learn about ethical theories during this semester?" replied, "I learned several more than the traditional ones covered in most ethics classes." In response to the same question, a spring 2011 Information Ethics student stated, "Ethics does not come with one set of rules to follow – there are many different ways to approach ethics. Learned a couple of new ones, too (Mozi)." Mozi was one of the theorists from Classical Chinese Ethics covered during the course. Also in response to the same question, a spring 2010 Information Ethics student commented, "I didn't know much before taking this class, so I learned a great deal. Almost all of the non-Western theorists were new to me." Finally, another spring 2010 Information Ethics student replied to the question with, "I was familiar with most of the Western ethical theories. I enjoyed being exposed to theories beyond America and Europe." Thus, due to the wide range of ethical theories covered in the course, students could learn something new regardless of their prior level of familiarity with ethics. Students also learned a broader lesson about the wide range of ethical perspectives found worldwide, as exemplified by one spring 2010 Information Ethics student, who replied to the question with, "They come from all different times and places." Thus, the diverse array of ethical theories clearly made an impression on students.

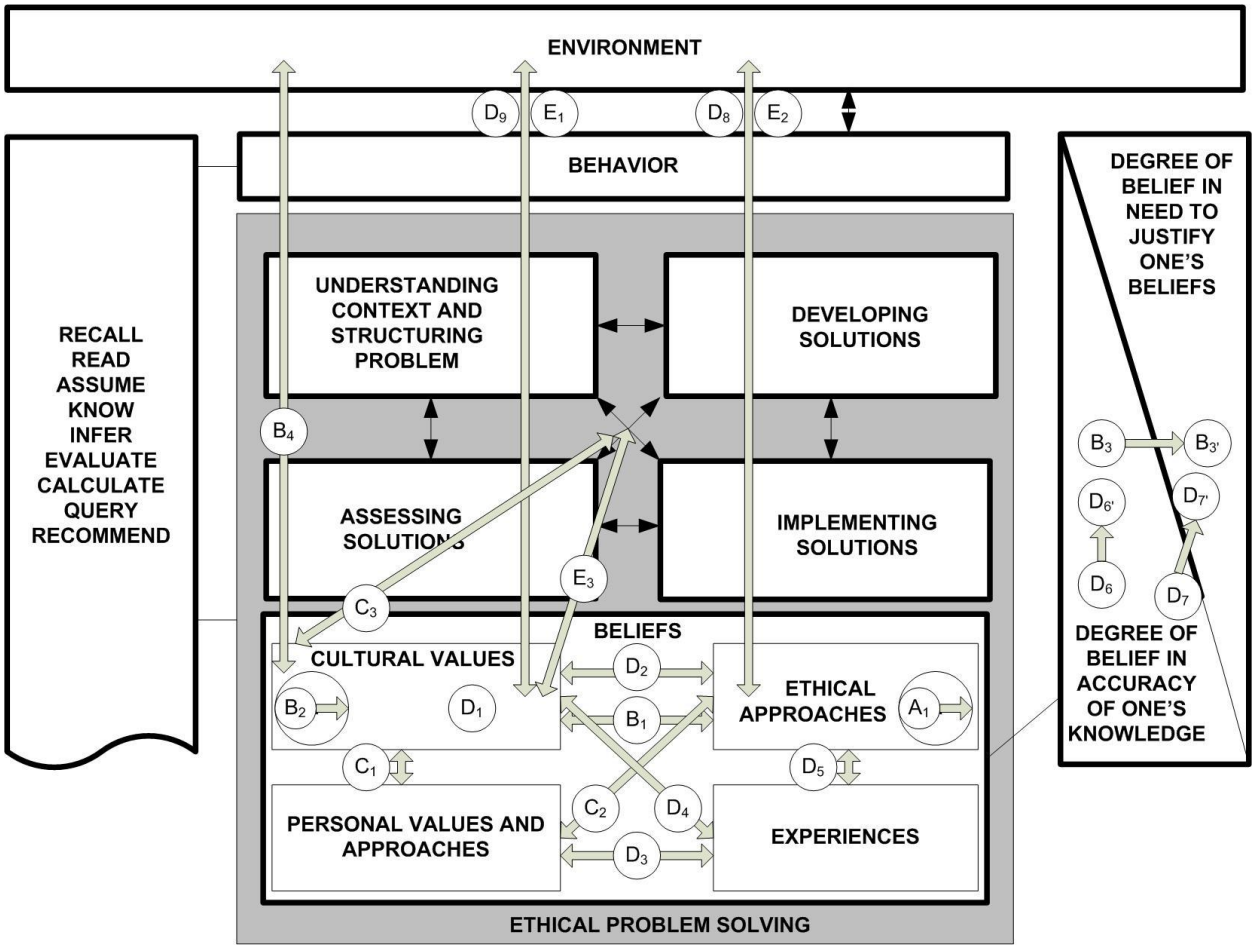
The second theme was learning about how ethical theories are related to culture and values. For example, in

response to the same question about ethical theories, a spring 2010 Information Ethics student shared, "I learned that there are many different ethical theories and all are affected by the culture and values of the people and the society that create them." Thus, this student was able to connect the broad range of ethical theories with diversity across cultures. Another spring 2010 Information Ethics student, in response to the question, "Did this class help to prepare you to confront ethical challenges in your academic career? Please explain:" noted, "Very much so. It made me consider our 'Western' ethical viewpoints which are largely grounded in Christianity, vs. the rest of the world. The rest of the world is due consideration when facing ethical dilemmas. It's never a case of one viewpoint being the correct one, and this class has taught me that." This student has gained increased appreciation for global diversity through the course. Similarly, responses from students in the fall 2010 Ethics of Information Technology in a Multicultural World to the question, "What did you learn in this course?" included: "I learned that ethics is wide-ranging and spans all across the globe, with specific ethical theories that differ between people, nations, cultures, lifestyles, etc.;" "That there is not one set of ethics for the world and that it is different for each society;" and "That there are many different ethics in the world and to be aware and conscious of it." All of these responses emphasize the increased appreciation of cultural differences across national boundaries, which lead to different approaches to ethical decision making. Interestingly, though, in response to the question, "What did you learn about other people's values during the semester?" a spring 2011 Information Ethics student revealed, "There can be a wide range of values in a single culture." Thus, while the predominant emphasis within this theme was on cultural differences based on different national cultures, this quote points to the potential for cultural differences beyond national culture, which may include regional culture, professional culture, and organizational culture.

The third theme was relating international and multicultural dimensions to understanding oneself. In response to the question, "What did you learn in this class?" one Fall 2010 Ethics of Information Technology in a Multicultural World student commented, "I learned how various philosophical and cultural ethics can agree or disagree with my own." Thus, the ethical theories covered helped this student to understand to put the student's ethical viewpoint into perspective. A spring 2010 Information Ethics student, in response to the question, "What did you learn about your values during this semester?" noted, "My values are formed from a variety of ethical frameworks and cultural norms. I wonder if I grew up in another country with a different religion how different my values would change. I bet a lot!" Thus, this student uses imagination and creativity to put values into perspective. Finally, in response to the question, "Please explain how the group interaction helped you to learn about ethical theories, if at all?" a spring 2011 Information Ethics student replied, "People of different backgrounds really make you confront your own ethical decisions." Thus, students did learn about their own values and ethical decision making through the educational approaches employed within the courses.

The fourth theme was relating international and multicultural dimensions to understanding others. For example, a spring 2010 Information Ethics student, in response to the question, "What did you learn about other people's values during the semester?" replied, "They are vast and are largely dependent upon their culture, religion, and past experiences." This student thus gained a greater appreciation for cultural differences in values. In response to the question, "Did this class help to prepare you to confront ethical challenges in your professional career? Please explain:" a spring 2011 student noted, "Yes, but more in the sense of working with and discussing ethical viewpoints with people who have a multitude of perspectives." Further, in response to the same question, a spring 2010 student provided a compelling example, "Yes, certainly. I work at a major university with many exchange students. So it sort of makes me reconsider how our rules might appear to them. Also, I felt pretty grounded in feeling a certain way about things, but listening to others' viewpoints was persuasive enough to make me think twice." This example makes concrete the learning that occurred about others within the course. Interestingly, in response to the question, "Please explain how the group interaction helped you to learn about ethical theories, if at all?" one spring 2011 Information Ethics student stated, "By working among such a diverse set of classmates I learned so many more perspectives about the issues. Each personal story or experience helped to understand each theorist more deeply." Thus, there was a relationship between learning about others and learning about ethical theorists. A student from the same class, in answer to the same question, explained, "I really enjoyed the group interaction because we all come from different backgrounds and hearing other people's perspectives and stories helps broaden my own ethical views." This example illustrates the relationship between learning about others and one's own ethical perspective. Finally, another student, from the same class, in answer to the same question, said, "The more minds involved, the larger the pool of ideas – especially when those minds all came from different backgrounds." Here, the student is focusing on the importance of diversity for considering multiple perspectives and options. Thus, overall students learned much about others' perspectives through the course.

The fifth and final theme was understanding the role of ethics and culture in information system design and use. For example, in response to the question, "What did you learn in this class?" a fall 2010 Ethics of Information Technology in a Multicultural World student replied, "Cross-cultural implications" in reference to the topic of the course, information technology. Thus, this student learned about the importance of understanding the relationship between culture, ethics, and technology. Similarly, a fall 2010 Ethics of Modeling student, in answer to the same question, stated, "How much culture can impact decision making." Clearly, this student was able to gain an appreciation for the relationship between the type of ethical decision making that influences information system design and use and cultural differences. Finally, in response to the same question, a fall 2010 Ethics of Information Technology in a Multicultural World student noted, "We must learn to effectively manage [information technology] while satisfying the needs of a diverse society." Thus, students were able to learn about how ethics and culture can influence information system design and use.



(A) Learning about a Diverse Range of Ethical Theories

(B) Learning about how Ethical Theories are Related to Culture and Values

(C) Relating International and Multicultural Dimensions to Understanding Oneself

(D) Relating International and Multicultural Dimensions to Understanding Others

(E) Understanding the Role of Ethics and Culture in Information Systems Design and Use

Figure 2. Application of the Themes within the Theoretical Framework

5. DISCUSSION

The background section explained the theoretical framework employed in this study. To understand the effects of the simulation on students' ethical problem solving, Figure 2 projects the five themes described above onto the theoretical framework originally introduced in Figure 1 above. While the theoretical framework is a static depiction of the different components involved in ethical problem solving, the five themes provide a dynamic, illustrating the connections between the components of the theoretical framework. As such, the themes are depicted as arrows connecting the components of the theoretical framework, such that A1 is the first arrow for the first theme, C2 is the second arrow for the third theme, etc. Thus, this section focuses on the new connections between the components of ethical problem solving initiated and reinforced by the five themes. The first theme described above was learning about a diverse range of ethical theories. A1 in Figure 2 illustrates that the primary impact of this theme was to broaden the range of ethical approaches available to students. Since ethical approaches are also connected to several other components of the theoretical framework, broadening the range of available ethical theories has a range of direct and indirect implications.

The second theme was learning about how ethical theories are related to culture and values. B1 illustrates the relationship between cultural values and ethical approaches illustrated by this theme. B2 illustrates students' growing awareness of diverse cultural values. B3 shows how students

learned to communicate their beliefs with others. Finally, B4 shows the relationship between cultural values and environment given the importance of understanding others' ethical decision making for understanding the environment within which one's own ethical decision making occurs.

The third theme was relating international and multicultural dimensions to understanding oneself. C1 illustrates the connection that is thus enhanced between cultural values and personal values and approaches. C2 demonstrates that personal values and approaches also connect here to ethical approaches, including the expanded range of ethical approaches covered within this course. Finally, C3 encompasses the finding that some students also began comparing the processes they had used to resolved ethical dilemmas and how these might be related to cultural values.

The fourth theme was relating international and multicultural dimensions to understanding others. Students reported increased knowledge of cultural values (D1), as well as an understanding of the relationships of values of others and their respective approaches to ethical problems (D2). Students often became sensitive to others' values (D3) and their approaches to ethics (D4), especially in reaction to students from one culture shared past experiences with students from another culture (D5). Some students questioned their own beliefs as a result of this interaction (D6). This may have helped many students begin to believe in the importance in justifying one's own beliefs to oneself and to others (D7), which some of these students indicated would help them in their professional careers when they addressed ethical dilemmas (D8) with others from different cultures (D9).

The fifth theme was understanding the role of ethics and culture in information systems design and use. As part of this theme, students understood the relationship between diverse cultural values and the increasingly globalized workplace (E1). They also developed a stronger understanding through exposure to a broad range of ethical theories of how people from different national contexts might employ different ethical approaches (E2). Finally, these insights led to changes in their approach to ethical problem solving (E3).

6. CONCLUSION

As shown in our findings and reviewed in the context of our theoretical framework, feedback from students demonstrates that students learned a number of important lessons about the international and multicultural dimensions of information ethics in the courses, including: Learning about a Diverse Range of Ethical Theories; Learning about how Ethical Theories are Related to Culture and Values; Relating International and Multicultural Dimensions to Understanding Oneself; Relating International and Multicultural Dimensions to Understanding Others; and Understanding the Role of Ethics and Culture in Information Systems Design and Use. Learning about a diverse range of ethical theories is important given that different individuals from different cultures may have different starting points and touchstones for ethics due to cultural differences between East versus West, etc. Learning about how ethical theories are related to culture and values is important because it ensures that students are able to relate what they learn about the broad array of ethical theorists and theories from across time and around the world to understanding the importance and implications of diversity in the globalized workforce. Relating international and multicultural dimensions to understanding oneself is important because today's information systems professionals need to be able to figure out how they relate to the globalized workforce, and introspection can teach students important lessons. Relating international and multicultural dimensions to understanding others is critical since students will be working with individuals from around the world, and must be able to reach common understandings and relate. Finally, understanding the role of ethics and culture in information systems design is essential to ensure given the importance of information systems for the everyday lives of so many individuals around the world (indeed, it could be argued that everyone around the world today is affected in some way by information systems, even if they do not directly interact with any microprocessor-based technology, since information systems are used to make decisions with global implications such as regulation of chemicals that may influence the Earth's climate and national and international investments that may influence the availability of welfare and humanitarian aid from governments and non-governmental organizations). Thus, the lessons learned through this approach are vital for information systems professionals in the Twenty-First Century.

The approach employed in this project can easily be employed in additional educational settings, following the description of the course provided in the methods section particularly Table 1. This approach has already been tested in multiple universities, with both undergraduate and graduate students in a range of majors and degree programs. Covering a wider range of ethical theories from around the world is easy to incorporate into any information ethics course, and the readings used in this course can serve as examples of effective readings for this purpose. Discussing a broader range of ethical theories can help to prepare future information systems professionals to interact with co-workers, managers, and users from around the world. The approach to case design employed here can also be broadly employed, ensuring that future information systems professionals are prepared to see ethical dilemmas from multiple perspectives, and to consider how their decisions might be affected by and affect others. Finally, the educational simulation packages the approach to case design in a format that can be used either for face-to-face or online education at any university. The simulation is being developed as open-source software, so other researchers and educators can either modify the source code or just directly use the current version of the simulation. This approach to information ethics education is thus broadly applicable and can serve as both source material and inspiration to others who wish to ensure that information systems professionals are adequately prepared to face the emerging ethical challenges of our globalized and multicultural world.

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