

Integrating Instruction in Ethical Reasoning into Undergraduate Business Courses

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Abstract. This article presents findings from a series of research studies designed to identify classroom teaching practices that can enhance moral reasoning of undergraduate students in business foundational courses. The research, conducted over five semesters at a Midwestern university, resulted in the development of teaching methods and materials that can, when properly sequenced and integrated into undergraduate business courses, increase levels of student moral reasoning as measured by the revised version of the Defining Issues Test (DIT-2). Findings in this research demonstrate that faculty members who are not specialists in business ethics can effect positive increases in student moral reasoning in non-ethics business courses. However, significant time and effort must be invested in case-based moral decision making, and grade incentives for students to engage the use of an ethical decision-making framework are required.

Keywords: business schools, business ethics, teaching, moral development, decision-making model, designing a course, integrated curriculum, Defining Issues Test.

1. Introduction

This article presents findings from a series of research studies designed to identify classroom teaching practices that can be used by business instructors to positively affect levels of moral reasoning in undergraduate students enrolled in business foundational courses. Such courses include marketing, management, business communication, finance, accounting, and the like. Funded by a Lilly Endowment Promising Scholars Grant, the research was conducted over five semesters at a Midwestern university in the United States. The measurement of moral reasoning used in the research was the revised version of the Defining Issues Test, the DIT-2 (Rest et al. 1999).

The business school accrediting organization AACSB International¹ has resisted requiring any courses in ethics and/or corporate social responsibility. Basing its argument on the notion that each business school knows best how to structure ethics training for its business students, AACSB simply offers standards to be met. Business schools accredited by AACSB must, in their accreditation

1. Association for the Advancement of Collegiate Schools of Business.

plans, meet expectations delineated by “Assurance of Learning Standard 15: Management of Curricula”, which states

The standard requires use of a systematic process for curriculum management but does not require any specific courses in the curriculum. Normally, the curriculum management process will result in an undergraduate degree program that includes learning experiences in such general knowledge and skill areas as...ethical understanding and reasoning abilities [AACSB International 2007, page 72].

By purposely leaving the delivery structure, content, and credit-hour requirements to be decided by each school of business, this broad-based AACSB stance on ethics education allows a great deal of latitude in how to implement ethics education. At the same time, the indefiniteness of the requirement obliges schools to find their own ways through several areas of disagreement about how to teach business ethics. One area of disagreement is whether a trained ethicist, possibly from outside the business school, should teach an ethics course to business students. Some who argue for this arrangement contend that only individuals trained in the nuances of ethical theory should teach ethics (Bok 1988, Klein 1998 and Norman 2004). Others maintain that the complex variables that exist within organizational and business structures—such as hierarchies of authority and roles of employees, stakeholder groups and influences, company politics, and organizational heuristics and biases—dictate that a business professor can and should learn the nomenclature of ethics and take on the role of teaching ethics to business students (Buono et al. 2005, Carroll 2005, McDonald and Donleavy 1995, Morse 1999).

A second point of concern is the academic level at which ethics instruction should be introduced to business students. Some schools introduce it at the undergraduate level; others only offer it at the postgraduate or MBA level. Another area of concern is how to fit ethics education into already loaded undergraduate and graduate programs, and whether ethics should be taught as a stand-alone course or integrated throughout the curriculum. If a stand-alone ethics course is being considered, often the next major decision is whether it should be required or offered as an elective. Offering ethics only as an elective may demean the perceived worth of the course in the eyes of students, and those students who may need the insights from such a course would likely not enroll in it. Isolating the discussion of ethics from other business disciplines in a separate stand-alone course has also been criticized “for its potential to give students a false impression of the world of business by separating ethical considerations from real-world business consequences” (McDonald 2004, page 373).

Integration of ethics instruction into core courses has been tried by several schools of business but has met with less than desired outcomes, because of the sustainability problem (Wilhelm 2005). Professors who agree to go through training in ethical reasoning in order to teach a course with integrated ethical

content may subsequently leave the institution, and newly appointed instructors may not agree to take on the added responsibility of teaching ethics in their courses. Still other programs face resistance from existing faculty members who are adamant that ethics is not part of their discipline, other than as laid out in professional codes of ethics or legislation relevant to their discipline. Some schools have taken other, quite different approaches to expose students to concepts of ethical reasoning. One school requires evening ethics seminars for MBA students with wine and cheese as enticements, another requires one-hour ethics courses over several years of study, and others require ethics training only for particular majors (Wilhelm 2005). There seems to be no consensus on how best to teach ethics in business schools. This article may provide some insights for institutions that face the daunting task of effectively integrating learning experiences that enhance ethical understanding and reasoning abilities into undergraduate programs.

The objective of the research described here is to identify non-intrusive classroom instructional methods that can be effectively used by foundational business course instructors (as opposed to formally trained ethics instructors) to positively affect levels of moral reasoning of undergraduate business students. They are “non-intrusive” in the sense that the classroom interventions could be easily integrated into an instructor’s course plan without causing a major displacement of the content that is normally taught in the course, nor require extensive instructor training in ethical theory.

2. Theoretical Development

Moral reasoning is a well-established psychological construct that refers to the set of cognitive skills an individual uses to resolve moral dilemmas (Elm et al. 2001). The best-known model of moral judgment is Kohlberg’s (1969, 1981) model, which suggests that an individual progresses through a series of stages in the development of moral reasoning capabilities based on the cognitive developmental process postulated by Jean Piaget (1965). Piaget believed that “morality is the logic of action,” implying that, as people reflect on the consequences of their action for others, and reflect on how to build reciprocal relationships on which cooperation is organized, certain naturally occurring solutions occur to them, thus leading to the stages of morality (Rest et al. 1999, page 170).

Kohlberg’s theory of moral development primarily addresses the formal structures (stages) of ethical development in the cognitive developmental process. Kohlberg focused on ethics in relation to society (i.e., laws, roles, institutions, and general practices) instead of personal, face-to-face relationships that occur in particular, everyday dealings with people—that is, on macro morality instead of micro morality (Rest et al. 1999). Kohlberg’s emphasis was

on “right” as a concept of “justice” rather than “good” based on individual standards of personal perfection, virtue, or theology. The focus is therefore on social morality, on people interacting within a society-wide system of cooperation (Kohlberg 1981). Kohlberg’s six stages of moral development can be characterized as follows (Jeffrey 1993, page 87):

1. Punishment and obedience orientation.
2. Naïve instrumental hedonism.
3. Good-boy or good-girl morality of maintaining good relations, approval of others.
4. Authority maintaining morality.
5. Morality of contract, of individual rights, and democratically accepted law.
6. Morality of individual principles of conscience.

James Rest’s (1979) theory of cognitive moral development recognizes developmental levels as more akin to schemata than to stages. One can think of stages as progressively advanced levels in cognitive development, with each successive stage surpassing and usurping the previous, lower-level stage and thus becoming the predominant mode for cognition. Schema theory, on the other hand, conceptualizes cognitive moral development as encompassing concept-driven ways of thinking based on experience. Cognitive moral development will increase the number of available schemata available for use in solving a dilemma while at the same time increasing the level at which each successive schema is developed, but the newer, more advanced schema doesn’t necessarily usurp all previous lower-level schemata. Given the right set of circumstances, an individual may utilize a previous schema to process a dilemma. In other words, a prior schema can be activated (or triggered or elicited) from long-term memory in the perceiver and thus be utilized to make a decision; that is, schema are content and context related (Rest et al. 1999).

Rest’s theory of moral development recognizes six schemata. In the early phase of ethical reasoning development, the individual utilizes Personal Interest schemata. Motivation at stage 1 is centered on Obedience: “You do what you’re told.” To be moral (and right) is to be obedient. Stage 2 is Instrumental Egoism and Simple Exchange: “Let’s make a deal.” Right is what is good for the actor. There is cooperation with others if it is in each person’s interest. Stage 3 moves to Interpersonal Concordance: “Be considerate, nice and kind and you’ll get along with people.” Reciprocal role taking (empathy) makes friendships possible. Good is based on pro-social motives.

The remaining schemata integrate society into the decision-making process. Stage 4 recognizes Law and Duty to the Social Order: "Everyone in society is obligated and protected by the law." Right is defined by rules that bind all, thereby providing social order. Values are based on the uniform, categorical application of laws that are publicly set, knowable by everyone, and applicable to everyone. The highest order of moral reasoning takes place in the postconventional schema. Stage 5 is characterized by Social Consensus: "You are obligated by whatever arrangements are agreed to by due process procedures." Laws, roles, codes, and contracts are social arrangements that can be set up in a variety of ways. Basic rights are preconditions to social obligations. Stage 6 advances to Non-arbitrary Social Cooperation: "What is moral is how rational and impartial people would organize cooperation." Moral judgments are justified by abstract principles of ideal cooperation. All individuals are viewed as ends in themselves, not means to some other good.

Rest devised a paper-and-pencil instrument to measure moral reasoning, the Defining Issues Test (DIT). The DIT is the most widely used instrument for this purpose and the best documented in terms of reliability and validity (Rest 1986, 1986b). Based on the notion that moral judgment involves distinctive ways of defining social moral dilemmas and evaluating crucial issues in them (Rest 1979), the DIT presents participants with moral dilemmas. Each dilemma is followed by items for the participant to consider in solving the dilemma. The participant rates and ranks the importance of each item and chooses a course of action to resolve the dilemma. Ratings and rankings are used to derive a participant's score. The most used index of the DIT has been the principled reasoning or "P" score. Rest believed that the P score is a reliable index of moral development across the six theoretical stages (Rest 1979).

The new version of the DIT, known as the DIT-2 (Rest et al., 1999), reflects several improvements. The DIT-2 contains moral dilemmas that are more up-to-date, whereas the original DIT contained dilemmas related to the war in Vietnam and culturally antiquated terms such as "Oriental" to refer to individuals of Asian descent. The DIT-2 is also shorter, consisting of five dilemmas instead of six. Instructions for completing the DIT-2 have been improved, and the instrument purges fewer subjects for bogus data. The new N2 index score has a slightly better Cronbach alpha internal reliability, and the DIT-2 is slightly more powerful on validity criteria. Based on a 1995 composite sample ($n = 932$), the Cronbach alpha for the P index was 0.78, whereas for the N2 Index it was 0.83 (Rest et al., 1999). The present study reports both the post-conventional (P) index and the N2 index; both are measures of moral reasoning.

An ability to engage in moral reasoning does not assure morally correct behavior. Moral reasoning is only one part of a model of ethical behavior that Rest called the Four-Component Model (1979). The basic idea behind the four-component model is that four inner psychological processes together give rise to outwardly observable behavior. Moral *sensitivity* involves the ability to interpret

a situation, imagining cause-effect chains of event, and awareness that there is a moral problem when it exists. Moral *judgment* has to do with an individual's capabilities for judging which action would be most justifiable in a moral sense. Moral *motivation* involves the individual's commitment and willingness to take the morally correct course of action, to value moral values over other values, and to take personal responsibility for the moral outcomes of their decision. Moral *character* involves persisting in a moral task, having courage to consistently adhere to the morally correct decisions, overcoming fatigue and temptations, and implementing subroutines that serve a moral goal (Rest et al. 1999).

Behavior, however, is not dictated solely by one's sensitivity to a moral dilemma or even by one's choice of the correct moral decision. Blasi (1980) reviewed 75 studies relating moral judgment to behavior based on some form of Kohlberg's method of assessment and found that 57 reported a significant relationship between moral judgment and behavior (Rest 1986). In 1985, Thoma compiled a review of studies that related DIT scores to behavior. As reported by Rest (1986), "[S]ince we observe a consistent pattern of significant relationships between DIT scores and the behavior measures, it seems safe to conclude that generally there is a link between moral judgment and behavior" (page 135).

3. Research Objective

Extensive use of the Defining Issues Test in thousands of studies over several decades has confirmed the positive affect of formal education on the development of higher levels of moral reasoning (Rest & Narvaez 1979, 1994, 1998; Rest et al. 1999). Thus university professors, who have likely completed advanced degrees through formal education, would seem to have the capacity for moral reasoning at advanced levels. In fact James Rest pointed out that "discussions of the morality of professionals usually assume advanced psychological maturity" (Rest & Narvaez 1994, page ix). For this research, then, it was assumed that professors teaching foundational undergraduate business courses possess the intellectual capacity to fathom basic ethical theory. Further, it was assumed that, as professional educators and experts in their respective business disciplines, they can apply basic ethical theories within a decision-making framework to analyze ethical business dilemmas related to their fields and teach students how to do the same.

The goal of this research is to develop teaching materials that can be successfully integrated into foundational business courses taught by business professors without specialized training in ethics, to accomplish two objectives: student awareness of ethical issues and reasoning competence. While some have pointed to a distinction between philosophically oriented courses that train students in moral reasoning and courses that focus on developing awareness of moral issues in contextual situations such as business (Weber 1990, McDonald

2004), both competencies (i.e., moral reasoning and moral sensitivity) should be taught in business courses that deal with social issues.

Ethical theories used in the teaching materials developed for this research were selected based on those ethical theories most prominently taught in the top fifty business schools in the United States (Wilhelm 2005a)—namely, deontology or ethics as duty, the teleological or utilitarian approach, personal virtue theory, and conventional moral rules and law. The ethical decision-making framework initially employed in this research (used by permission) was one used at Babson College, “A Framework for Ethical Decision Making” (Livingstone, 2003), which reflects these ethical theories.

4. Research Design

This section presents the general design of the research. Each study in this series is part of an ongoing attempt to refine instructional methodology (interventions) for effectively teaching ethical decision-making theory and engaging undergraduate business students in reflective analyses so as to improve moral reasoning, as measured by DIT-2. Based on research into methods used to teach business ethics in the top fifty U.S. business schools, the methods employed included a combination of assigned readings, lecture (using presentation software), classroom discussions, and reflective case analyses using an ethical decision-making framework. Cases relevant to each specific course discipline served as a basis for applying the ethical decision-making framework.

Assessment of improvements in moral reasoning was based on pretest-posttest comparisons of two key indicators on the revised version of the Defining Issues Test (DIT-2): the post-conventional P score and the new N2 score. After each study was completed, adjustments and refinements were made to the instructional methodology (intervention) based on findings from the previous study and debriefings of student participants and instructors. Convenience samples used for each study consisted of students in a range of undergraduate core business courses from foundation business disciplines at a mid-sized Midwestern university.

Preceding the studies described in this article, a campus-wide descriptive research study was carried out using the DIT-2 (Wilhelm 2004). That campus-wide study provided baseline data with which the current series of studies was compared in order to verify internal validity of the sample groups. Pretest P-score comparisons showed that the groups were similar. According to Campbell and Stanley (1963), comparable pretest scores help confirm internal validity. Another preliminary study carried out by the researcher reviewed approaches to ethics education in the top fifty business schools (Wilhelm 2005a) and provided a basis upon which to design the initial intervention. The initial intervention consisted of a reading assignment about ethical theory and decision making, an instructor-

led lecture (using presentation software) and classroom discussion to clarify the reading assignment, assigned case studies with brief classroom discussions followed by reflective writing assignments, and a test of student knowledge covering the ethical reading assignment. After each study was completed, changes were made to improve the intervention based on pretest-posttest results, instructor-researcher discussions, and student debriefings. There were five sequential semester-long studies in this research. The methodology, findings and conclusions for each study will be described next.

4.1. First Study: Methodology, Findings and Conclusions

The first of the five sequential studies (Wilhelm & Czyzewski 2006) tested two different interventions in a nonequivalent control group quasi-experimental design that can be used when true randomization of subjects and extraneous variables cannot be achieved (Campbell & Stanley 1963). Three sections of the same undergraduate accounting course taught by a single instructor were used as the sample. The choice of accounting for the first study was based on the interest expressed in the research by the accounting instructor. The selection of sample subjects was based solely on their self-selection to multiple accounting class sections and therefore did not involve random assignment.

The hypothesis that guided the initial study was that moral reasoning (as measured by the DIT-2) could be improved in undergraduate students in a semester-long accounting course if some instruction in ethical decision making was provided and ethics cases related to accounting were analyzed throughout the course. In order to test this hypothesis, the three accounting class sections were structured such that there was a control group and two test groups. One class section ($n = 15$) was used as the control group (A). The accounting course was taught as usual by the instructor without any emphasis on ethical case analysis or instructions in ethical decision-making. The second section was used as the first test group (B) ($n = 28$), and was also taught using regular instructional methods, but with the added dimension of nine cases with ethical content for discussion. The cases were part of the end-of-the chapter material in the textbook (Kimmel et al. 2004) and were labeled as ethics cases. These cases were discussed during the course for 15 to 20 minutes each. Written answers were not required.

Students in the second test group (C) ($n = 29$) were given instructions to read the Babson College ethical decision-making framework (Livingstone 2003) and told that they would have a ten-question quiz to assess their grasp of the framework during the next class period. Students were informed that, while taking the quiz was mandatory, quiz results did not affect their final grades. Instead, up to 30 extra-credit points for correct responses on the quiz were offered (the average score on the quiz was 57.1%). Following the quiz, the instructor spent one 50-minute class period discussing the ethical decision-making

framework contained in the Babson model and identified it as a tool that was to be used throughout the course to evaluate cases with ethical substance. The same nine ethics cases that the first test group (B) engaged were also analyzed and discussed in group C classes for approximately 20 to 25 minutes each; however, these instructor-led discussions followed the analytical steps specified in the Babson College ethical decision-making framework.² Written answers were not required. All three groups were administered the DIT-2 at the beginning and again at the end of the semester.

There were no significant improvements in DIT scores for either of the intervention groups (B and C) in comparison to the control group at $p = .05$ (for a detailed discussion of the statistical findings from the first study see Wilhelm & Czyzewski 2006). As shown in Table 1, overall, P scores and N2 scores were lower in this study than averages reported in many studies by Rest (Rest & Narvaez 1998). However, these low scores were consistent with an earlier campus-wide study at the same institution (Wilhelm 2003) that found a business major's average P score of 26.28 and an average N2 score of 24.44. Other researchers have warned that the norms reported by Rest are not representative of all college majors and, therefore, may not be generalizable to all college students (Jeffrey 1993).

Table 1: Pretest-Posttest DIT-2 Scores for Accounting Classes (three sections)

| | | Pretest A | Posttest A | Pretest B | Posttest B | Pretest C | Posttest C |
|----------|----------------|-----------|------------|-----------|------------|-----------|------------|
| | N | 15 | | 28 | | 29 | |
| P score | Mean | 17.37 | 23.73 | 21.07 | 22.30 | 23.67 | 21.79 |
| | Std. Deviation | 8.686 | 10.767 | 13.572 | 12.938 | 13.496 | 13.249 |
| N2 Score | Mean | 14.59 | 23.04 | 17.63 | 20.42 | 23.47 | 24.16 |
| | Std. Deviation | 10.761 | 10.851 | 13.809 | 14.619 | 13.043 | 12.855 |

It was somewhat surprising that the P scores for test group C (the group using the ethical decision-making framework along with cases) actually decreased.

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2. The ethical theories presented in the Livingstone's 33-page essay, "A Framework for Ethical Decision Making," were Kant's categorical imperative, the utilitarian approach, personal virtue theory, the role of law, and conventional moral codes and mores. The decision-making steps identified were:
1. Issue identification.
 2. Information gathering.
 3. Brainstorming alternatives.
 4. Evaluating alternatives from various ethical perspectives.
 5. Making a decision with ethical perspectives.
 6. Proposing a convincing ethical decision.
 7. Reflecting on the ethics decision.

However, student responses to a debriefing questionnaire that was sent to them after the posttest helped the researcher identify several needed areas of improvement in the methods and materials used in the intervention. The debriefing results from all three groups indicated that, while there were ample time and sufficient instruction to complete the DIT, students in the test groups would have taken the ethical analyses and discussions more seriously if there had been grade points related to these activities. The students from the intervention group (C) that used the Babson College ethical decision-making framework said that they did not refer to it for clarification or guidance in their analyses because there were no grade points attached to the assignments.³ In addition, students felt that the extra-credit points offered for scoring well on the ethics quiz were offered too early in the course to motivate students to study the essay before the quiz (the average score was 57%). While the students strongly agreed that the class lecture on the ethical framework and discussions of the cases were all clear and understandable, they also indicated that the cases used were far too easy to decide because they were obvious right-versus-wrong choices, as opposed to right-versus-right dilemmas. They did not think the ethical dimensions of the cases were very interesting or challenging. The students from intervention groups B and C indicated that, with respect to engaging the ethical content in the two classes, they did only what they had to do to get by in the class, because there were no grade points related to the ethical content and related activities.

Three important conclusions were drawn from the first study and served as a basis upon which adjustments were made to the intervention for the second study:

1. Intrinsic motivation to learn and utilize a framework for ethical decision making does not occur to the degree that it positively affects the level of moral reasoning.
2. External motivation in the form of assignment grades may help engage students to learn to use a framework for ethical decision making.
3. Ethics cases used with an ethical decision-making framework must be of sufficient rigor and complexity that challenges students to use the framework as a tool in the decision-making process.

Based on these conclusions, adjustments were made to the intervention and a second study was initiated in two sections of the same accounting course in the following semester.

3. To rebut criticism that the research design did not adequately take into account the need for assigning grades to the ethical case analyses assignments in test group C, it should be made clear that it was the researcher's intent to determine, first of all, if intrinsic motivation would be of sufficient magnitude to drive students to engage the ethical decision-making framework in their analyses.

4.2. Second Study: Methodology, Findings and Conclusions

The second study utilized a similar research design and was initiated the following semester in two sections of the same accounting course with the same instructor ($n = 62$). To adjust for lack of student intrinsic motivation discovered in the first study, the intervention was adjusted for the second study such that the ethical assignments in the course were valued at 10 percent of the final course grade. Since there was higher priority placed on understanding the theories and decision-making process identified in the decision-making framework essay (Livingstone 2003) in this second study, the quiz that followed the reading assignment was increased from 10 to 20 questions that more adequately covered the concepts in the essay. Following the reading assignment but before the quiz, the instructor again lectured on the ethical decision-making theories and explained the steps identified in the essay. Cases selected by the instructor were more challenging ethical dilemmas versus the simpler right-versus-wrong cases used in the first study. The instructor obtained the cases from a variety of online and literature sources. Ten cases were assigned and class discussions followed each case introduction, including a brief review of the ethical decision-making steps. Importantly, in this study students were required to reflect upon and write up to a four-page paper about their decision-making process for each case study (versus just discuss in class) using the decision-making steps identified in the essay. Their reflective papers were graded based upon thoroughness of reflection; not the decision reached. Both sections received the same intervention and were considered as one sample group. Both were administered the DIT-2 at the beginning and again at the end of the semester.

There were increases in levels of moral reasoning from pretest to posttest as measured by the DIT-2 in the second study, but the significance levels were mixed. Table 2 shows the aggregate pretest and posttest P score and N2 score comparisons for the two sections, and Table 3 shows the P score and N2 score comparisons broken down for each of the two sections. The mixed results as far as significance derive from the paired-samples T-test which resulted in a P score significance level of 0.206 ($p = .05$), but an N2 score significance level of 0.007, demonstrating statistical significance for the N2 score but not the P score. This statistical significance in the N2 score can be attributed to the large increase in post-test N2 scores in section two (24.6599 to 31.5064) which yielded a 0.004 level of significance in the paired samples T-test. Since the N2 score is also significantly higher for the aggregated sample, and since both measures of the DIT-2 (P score and N2 score) showed increases from pretest to posttest for both sections in the sample, it can be concluded that the intervention was moderately effective at increasing levels of moral reasoning among the students. Significance would have been stronger, however, if the corresponding P score had also shown a statistically significant increase. Regardless, the results seem to indicate that the adjustments noted above that were made to the intervention

were effective at increasing levels of moral reasoning better than the intervention used in the first study. The student debriefing questionnaire yielded additional valuable findings.

Table 2: Aggregate Pretest-Posttest DIT-2 Scores for Accounting Classes (n = 62)

| Combined scores of 2 sections | Mean | Std. Deviation |
|-------------------------------|---------|----------------|
| P score pretest | 27.5808 | 14.02436 |
| P score posttest | 29.5806 | 14.47728 |
| N2 score pretest | 27.0412 | 14.11239 |
| N2 score posttest | 31.2979 | 14.15948 |

Table 3: Pretest-Posttest DIT-2 Scores for Accounting Classes (two sections)

| Scores by sections | | Mean | N | Std. Deviation |
|--------------------|-------------------|---------|----|----------------|
| Section 1 | P score pretest | 28.7276 | 33 | 15.65553 |
| | P score posttest | 30.1818 | 33 | 14.53757 |
| | N2 score pretest | 29.1338 | 33 | 15.66042 |
| | N2 score posttest | 31.1147 | 33 | 14.20468 |
| Section 2 | P score pretest | 26.2759 | 29 | 12.04425 |
| | P score posttest | 28.8966 | 29 | 14.63446 |
| | N2 score pretest | 24.6599 | 29 | 11.94005 |
| | N2 score posttest | 31.5064 | 29 | 14.35624 |

Students felt that the DIT-2 was easily completed and there was sufficient instruction to complete it. They felt that the introductory lecture about the Babson College ethical decision-making framework was helpful in understanding the essay but were adamant that the length of the essay (33 pages) was too much for a basic course in accounting. In addition, while students found the ethics cases used in the course challenging, they expressed concern that ten ethics cases were far too many for a basic accounting course. This criticism was also voiced candidly by several students to another professor in the college. Students also felt that they had more at stake in relation to the ethical content in the course because ethics assignments and the quiz were graded and accounted for part of their final course grade.

The accounting instructor's observations included the fact that scores on the 20-question quiz covering the content of the essay increased 29 percent over the first study's 10-question quiz scores. Additionally, he felt that students had a better grasp of the steps in the ethical decision-making process during class discussions because he briefly reviewed the steps with each case introduced in class. He observed that the reflective writings, while they diminished somewhat in reflective rigor as the course progressed, demonstrated that students had a better grasp of the ethical decision-making concepts than was evident in the first study.

Conclusions drawn from the second study include the following:

1. Extrinsic motivation in the form of grades increases student effort to engage ethical content and reflective reasoning.
2. Ten ethics case analyses can be too much in a course in which the primary focus is content other than ethics.
3. The length of the reading assignment (Babson College essay) about ethical decision making could be condensed.
4. Written reflective analysis increases understanding of case content and ethical implications.

Based on these conclusions, adjustments were made to the intervention and a third study was initiated in one section of a business communications course the following semester.

4.3. Third Study: Methodology, Findings and Conclusions

The third study was undertaken in the following semester in one business communications class section ($n = 21$) taught by the researcher. A similar research design was used as in the previous studies (i.e. convenience sample, pretest-posttest design utilizing the DIT-2 assessment of moral reasoning), but with further refinements and adjustments to the intervention based on the conclusions identified above from the second study.

Several modifications to the intervention were made (1) based on findings from the previous study and (2) to accommodate the content of the business communications course, which was heavily oriented toward business report writing. Before the semester began, a new, condensed essay on ethical decision-making was written by the researcher (Wilhelm 2005b). Based on a synthesis of writings of several business ethics authors (Beauchamp & Bowie 2004, Bowie 1999, De George 1999, Donaldson & Dunfee 1999, Donaldson et al. 2002, Hosmer 2003, Livingstone 2003, Paine 2003, Trevino & Nelson 2004, Valasquez 2002), the revised essay presented condensed discussions of deontology, teleology, virtue theory and conventional moral rules and law; a discussion of the competencies needed in business environments for ethical decision making; and an ethical decision-making framework.

Students were given the essay with instructions that the concepts would be used for case analyses throughout the course and would be tested with a 20-question quiz after the accompanying lecture/class discussion. Students were provided an incentive to study the essay. If they scored 80 percent or higher on the quiz, they were to be exempted from the midterm exam; an accommodation

easily made since most of the grading in the course was of students' written reports.

A lecture (with presentation software) to further clarify the ethical theories and a discussion of a sample case using the decision-making framework followed the reading assignment. Throughout the semester, four cases were assigned, each containing a challenging ethical dilemma. Students were provided a handout summarizing the decision-making steps in the framework, and they wrote three short recommendation reports and one long formal analytical report addressing not only the ethical aspects of each case, but also the managerial aspects. Grades were assigned to the reports using rubrics designed to assess formatting specifications, depth of analytical content (business and ethical logic), and grammatical rigor. Students were administered the DIT-2 at the beginning and again at the end of the semester.

There were statistically significant increases in levels of moral reasoning from pretest to posttest in both measures in the DIT-2. Table 4 presents the descriptive findings which show significant increases in both the P score and the N2 score. The paired samples T-test showed that, at $p = .05$, the level of significance in the P score increase was 0.017 and 0.022 for the N2 score; both were statistically significant. The 34 percent increase in the P score (18.9524 pretest to 25.4286 posttest) and 36 percent increase in the N2 score (20.0332 pretest to 27.2557 posttest) seem to indicate that the adjustments in the intervention did indeed elicit significant increases in moral reasoning in the students.

Table 4: Pretest-Posttest DIT-2 Scores for Business Communications Class (n = 21)

| P & N2 scores | Mean | Std. Deviation |
|--------------------------|-------------|-----------------------|
| P score pretest | 18.9524 | 11.84262 |
| P score posttest | 25.4286 | 12.44416 |
| N2 score pretest | 20.0332 | 14.73364 |
| N2 score posttest | 27.2557 | 14.48246 |

The debriefing that followed the study found that students felt that the ethical case analyses were interesting; the essay, lecture and class discussions were helpful and not too burdensome; and application of the ethical decision-making framework was "less awkward" after a couple of attempts. Further, students felt that there was value in the ethical content integrated into the business writing course. The instructor observed from class discussions that students did grasp the essay and lecture much easier than in previous studies, and that overall students performed better on the 20-question quiz. All but three students scored 80 percent or higher on the quiz. The three students who scored below 80 percent were allowed to earn the additional points by writing out multi-paragraph explanations to correct their wrong answers. The rationales for extending this option to

students were (1) they would be able to learn more about the ethical theories and decision-making framework by correcting their answers, and (2) their motivation would be greater for staying engaged with the ethical reasoning components throughout the rest of the course.

Conclusions drawn from the third study include:

1. Making an ethics component integrated into a core business course grade-related ensures better student motivation to learn and use an ethical decision-making framework.
2. Additional extrinsic motivation (e.g. extra-credit or waived assignments for good performance) may be helpful in motivating students to engage the ethics component of a course focused on content other than ethics.
3. Requiring students to read an essay of moderate length⁴ that explains ethical theories and a decision-making framework, coupled with an in-depth lecture and classroom discussion, can be reasonably integrated into courses focused on content other than ethics.
4. An instructor-led discussion which applies the ethical decision-making framework to a sample ethics case (dilemma) before assigning student case analysis is effective at helping students understand and use the ethical decision-making framework.
5. Requiring students to analyze a moderate number of challenging ethics cases (four ethical dilemmas) results in more time for in-depth analysis of each case and allows students to effectively apply an ethical decision-making framework. However, students' abilities to successfully utilize an ethical decision-making framework improve after one or two attempts at case analyses.
6. The above components employed in a core business course may help increase students' levels of moral reasoning as measured by the DIT-2

The conclusions from this study suggested that the intervention components for effectively teaching ethical reasoning in core business courses were identified to the degree that they could be integrated into other foundational business courses taught by instructors not formally trained in ethics. The fourth study in this series included six classes taught by four instructors in three different disciplines.

4. The revised essay written by the researcher was 15 double-spaced, type-written pages.

4.4. Fourth Study: Methodology and Findings

The fourth study was initiated in the semester following study three and sampled three different disciplines through three different courses (one course in each discipline). Two sections of Buyer Behavior in the marketing program taught by a single instructor ($n = 31$), three sections of a business communications course taught by two instructors ($n = 44$), and one section of a senior capstone management course taught by one instructor ($n = 14$) made up the sample. An analysis of variance was conducted to determine if there may have been pre-existing differences between the groups. The ANOVA results showed that there were no differences.

For the intervention, all instructors used the ethical decision-making instructional materials provided by researcher. Materials included those used in the previous study with some minor modifications. The essay on ethical theory and decision-making used in the third study was refined for publication and used in this study (Wilhelm, 2005c). Supporting this article was the handout and worksheet detailing the steps in the decision-making framework. Instructors also received a copy of the ethics PowerPoint lecture with details and explanations for the instructor incorporated into the application's notes pages. Additionally, instructors received the 20-question quiz covering concepts in the ethical essay and lecture material, and suggestions on how to offer incentives to all students participating in the classroom study.

Importantly, instructors had discretion regarding how to integrate the ethical teaching materials provided by the researcher into their courses. While the researcher made suggestions as how to best utilize the materials and in what sequence they would be most effective (based on previous studies), each instructor was encouraged to determine how the materials would best fit their own respective teaching styles, students, course content, and instructional sequencing. Cases used were selected by each instructor and were related to each respective discipline. The researcher, however, stressed the importance for instructors to select a moderate number of challenging ethical case dilemmas, and to require their students to engage in reflective analysis by using the ethical decision-making steps for each case. The methods used by each instructor and the findings from each sample will be discussed next.

4.4.1. Marketing Course

Undergraduate students ($n = 31$) from two Consumer Behavior classes taught by one professor provided a convenience sample for a course in the marketing discipline. The course description stated that the purpose of the course was to demonstrate how the individual, social, and cultural factors shape the way decisions are made in buying situations, how marketing might help marketers understand consumers and strategically influence the decision making system. The course was taught primarily using assigned readings from the text book

(Schiffman & Kanuk 2006) followed by discussions after each chapter. Generally discussions concentrated on the individual psychological differences affecting consumer behavior such as motivation, personality, perception, attitude, and learning. Most of the chapters in the textbook also contained a section pertaining to ethical considerations related to the chapter topic which students were instructed to read.

Following the DIT-2 pre test at the beginning of the semester, students were provided with the ethical reasoning essay (Wilhelm 2005c) and handout summarizing the ethical decision-making steps as assigned reading. Students next participated in an instructor-led PowerPoint lecture detailing and clarifying the concepts in the essay and decision-making steps, followed by a class discussion to answer student questions and elaborate upon the ethical reasoning concepts presented. As class discussions throughout the semester focused on chapter content, including the ethical issues identified in the chapters' ethics sections and brought up by the instructor, the instructor and students analyzed the ethical issues using the ethical decision-making steps developed for this research. In cases where a section of ethical consideration was not present in the text book, students were asked to think about and discuss in groups what might potentially be an ethical consideration in the context of the topic. Students were required to use the ethical decision-making framework in their ethical deliberations. While five ethical situations were discussed in the course, three were actual ethical dilemmas in which students applied the steps in the decision-making framework.

Assessments in the course that focused on student mastery of course content consisted of four exams, six quizzes and a project. Twenty extra credit points (constituting four percent of the final grade) were offered to students who participated in all segments of the research study including the pretest, the posttest, and achievement of a score of 80% or better on the 20-question ethics quiz. At the end of the semester, students were administered the DIT-2 posttest.

While there were increases in both the posttest P score and the N2 score in the combined Buyer Behavior course sample, only the N2 score showed statistical significance at $p = .05$. Table 5 presents the descriptive findings which show the increases in both the P and N2 scores.

The paired samples T-test showed that, at $p = .05$, the level of significance in the P score increase was .299, not statistically significant. However, the T-test significance level for the N2 score was .050, which is statistically significant. The 8.5 percent increase in the P score (30.1935 pretest to 32.7637 posttest) and 18.3 percent increase in the N2 score (27.1480 pretest to 32.1166 posttest) seem to indicate that the intervention did elicit moderate increases in moral reasoning in the students.

Table 5: Pretest-Posttest DIT-2 Scores for Marketing Classes ($n = 31$)

| P & N2 scores | Mean | Std. Deviation |
|--------------------------|-------------|-----------------------|
| P score pretest | 30.1935 | 15.26962 |
| P score posttest | 32.7637 | 14.26741 |
| N2 score pretest | 27.1480 | 16.64779 |
| N2 score posttest | 32.1166 | 15.70618 |

4.4.2. Business Communication Course

Three sections of Business Report Writing, a course required by all business undergraduates and taught by two instructors (one section by the researcher), provided a combined sample size of 44 students for this study ($n_1 = 14$, $n_2 = 11$, $n_3 = 19$). Since each section was taught the same way utilizing exactly the same assignments and sequencing (but different cases), instructional techniques, assessments and grading methods, and the ethical reasoning instructional materials developed in this research, the three sections were combined to represent a single convenience sample group.

Instruction in all sections of this course included reading assignments, lectures, writing exercises, and writing assignments based on a series of business case studies that required the students to analyze situations depicted therein and synthesize their findings into a series of written reports guided by a variety of report objectives (i.e. informative, recommendation, progress, and formal in-depth analytical reports). The departure from normal course instruction to accommodate the integration of the ethical decision-making instructional materials involved using cases containing business ethics dilemmas and utilizing the ethical reasoning instructional materials developed in this research.

Following the DIT pre test in week three of the semester, students were provided with the ethical reasoning essay (Wilhelm 2005c) and handout summarizing the ethical decision-making steps (covered in the essay) as assigned reading. In week four, students participated in an instructor-led PowerPoint lecture detailing and clarifying the concepts in the essay and decision-making steps, followed by a class discussion to answer student questions and elaborate upon the ethical reasoning concepts presented through use of a sample case.

In weeks five and six, students were given two short report writing assignments based on business cases containing ethical dilemmas. Students had to analyze not only the management and financial ramifications of each case, they also had to identify the ethical dilemma, render a decision, and justify that decision based on their written reflective analysis. Course assessments included individually evaluated written report assignments, a 20-question quiz over the ethical reasoning essay and lecture, and a final exam. In week six, students were given the ethical reasoning quiz. To motivate students to study the ethics essay, they were told that if they scored at least 80 percent on the quiz, they would not

have to take the course midterm exam. While the majority of students passed the quiz with greater than an 80 percent score, those that didn't were offered the option of writing a paragraph explaining the correct answer to each of the questions they had missed in order to gain exemption from the exam. All students accepted this option. The rationale for offering this option was to maintain student motivation and increase their understanding of the ethical concepts.

In week seven, students received the long formal report case assignment which also contained a challenging ethical dilemma within the business problem. Students received instruction in class discussions during the next five weeks in a variety of business analysis and formal report writing techniques and participated in discussions about the ethical ramifications in the case. Students worked in groups to analyze their cases and collect secondary data. In week thirteen, students submitted their formal report assignments containing their business analyses and their decisions regarding the ethical dilemma backed by their justifications based on the ethical decision-making model. Grades were determined based on depth and breadth of both business and ethical analysis, writing techniques and formal report format criteria. Grades were not based on the ethical decision that each student reached; but solely on the reflection and logic presented in their justifications. At the end of the semester, students were administered the DIT-2 posttest.

There were statistically significant increases in levels of moral reasoning from pretest to posttest in both measures in the DIT-2 for the three combined sections of the business communication course. Table 6 presents the descriptive findings which show significant increases in both the P score and the N2 score. The paired samples T-test showed that, at $p = .05$, the level of significance in the P score increase was .002 and .001 for the N2 score; both statistically significant. The 28.4 percent increase in the P score (25.6576 pretest to 32.9321 posttest) and 29.6 percent increase in the N2 score (25.4037 pretest to 32.9204 posttest) strongly indicate that the intervention did indeed elicit significant increases in moral reasoning in the students.

Table 6: Pretest-Posttest DIT-2 Scores for Business Communications Classes ($n = 44$)

| P & N2 scores | Mean | Std. Deviation |
|-------------------|---------|----------------|
| P score pretest | 25.6576 | 13.29969 |
| P score posttest | 32.9321 | 16.86870 |
| N2 score pretest | 25.4037 | 14.57542 |
| N2 score posttest | 32.9204 | 17.72566 |

4.4.3. Management Course

A management class selected for this study ($n = 14$) is a problem-based learning course that serves as the senior capstone course for all undergraduate business majors. The course requires students to take on the roles of managers and employees of a student-run consulting company. They work in teams to develop and carry-out consulting engagements in real organizations such as local small businesses and social service agencies. The class met once weekly for two and a half hours. In addition, student managers attended a weekly management meeting, and all students served dual roles as consultants as well as functional employees working to develop the consulting company.

The ethics instructional materials developed for this research were incorporated into this course during four of the weekly class meetings in the middle of the sixteen-week semester. Following administration of the DIT-2 pre test in week five, at the next week's class meeting students received the ethical reasoning essay and decision-making steps handout (Wilhelm 2005c) as assigned reading for the following week's class. Instruction in the ethical reasoning framework occurred over two subsequent class meetings using the PowerPoint lecture, essay, and handout. The instructor conducted short lectures interspersed with question and answer sessions regarding the ethical reasoning theories and decision-making framework.

Rather than use the ethics quiz developed for this research to assess student understanding of the ethical reasoning essay and lecture, the instructor chose to use it only as a class discussion item, not as a graded quiz. The instructor stated that the exam was treated as a learning exercise rather than an exam because the class used problem-based learning through client consulting projects and did not use exams in the instructional methodology. Students first discussed the quiz questions in groups then presented their deliberations to the entire class.

At the next week's class meeting, the instructor led the class in a brief review of the ethical decision-making framework followed by group analysis of two short business mini cases downloaded from the Tepper College of Business Website⁵ posted by Carnegie Mellon University. Students discussed the cases in small groups using the decision making framework, and then in a general class discussion. There was a four-week period between the last ethics discussion using the framework and the DIT-2 posttest. This gap was due in part to a holiday and the nature of the student consulting projects which required several sessions of work without lecture.

While there were increases in both the P score and the N2 score posttest results for the management class sample (see Table 7), they were not statistically significant. The paired samples T-test showed that, at $p = .05$, the level of

5. Mini cases used were "Check Kiting" (available at <http://wpweb2.tepper.cmu.edu/ethics/AA/mgmt12-case.pdf>) and "I Spy: A Case of Competitive Espionage" (available at <http://wpweb2.tepper.cmu.edu/ethics/AA/mktg20-case.pdf>).

significance in the P score increase was .581 and .120 for the N2 score; both statistically insignificant. The 8.1 percent increase in the P score (24.7133 pretest to 26.7143 posttest) seems to indicate that the intervention as it was applied in the management class did not elicit an improvement in student moral reasoning. The N2 score's increase of 28.6 percent (20.0243 pretest to 25.7607 posttest), while showing a much greater degree of improvement than did the P score, still did not approach significance sufficiently to warrant a claim that the intervention was effective.

Table 7: Pretest-Posttest DIT-2 Scores for Management Class ($n = 14$)

| P & N2 scores | Mean | Std. Deviation |
|-------------------|---------|----------------|
| P score pretest | 24.7133 | 19.04883 |
| P score posttest | 26.7143 | 12.19349 |
| N2 score pretest | 20.0243 | 20.12832 |
| N2 score posttest | 25.7607 | 14.82282 |

Interestingly, the instructor reported that during the time that the ethics component was being introduced and taught during the four week interval, some students expressed concern that the ethics component would interfere with the time they had to conduct their client consulting work. Additionally, while the instructor reported that the class discussions of the two mini cases were very animated, most students agreed on similar courses of action even though they may have used differing ethical criteria from the decision-making framework to reach their respective decisions. In fact, the ethical decision-making framework specifies that all of the criteria (based on deontology, teleology, virtue theory and conventional moral rules) must be used to evaluate all courses of action. This instructor observation would seem to indicate that the instruction and/or comprehension of the instruction in using the ethical decision-making framework were flawed.

4.4.4. Conclusions from Fourth Study

As demonstrated in the two marketing classes, students were able to apply the ethical decision-making framework during reflective classroom discussions of ethical case dilemmas and, as a result, increased their levels of moral maturation. However, as demonstrated in the three business communications classes, the requirement of several individually written reflective case analyses using the decision-making framework seemed to help students increase their levels of moral reasoning much more significantly. Further, application of the framework over a short period of time and with less intensive application in only a couple of simple cases as demonstrated in the management class did not seem to help

students increase their levels of moral reasoning. When grades are not part of the ethical analytical work in a content course, motivation to engage in ethical analysis is not present to the degree necessary for students to feel that the ethics component is a necessary part of the course and not just a distraction from the course content.

At this point in the research, it is believed that the instructional materials developed to teach ethical theory and the decision-making framework are of sufficient quality so as to be effective at increasing student levels of moral reasoning when properly integrated into content courses. Additional courses in the business core have been identified for further study.

4.5. Fifth Study: Methodology and Findings

A fifth one-semester study was conducted in three different courses in the following semester. One class section in finance ($n = 12$) and one class section in management information systems ($n = 20$) were selected to again test if the teaching materials developed for this research when integrated into the courses could be effective at increasing student levels of moral reasoning. In addition, one section ($n = 18$) of Business and Society—a required course for management majors that focused specifically on business ethics and corporate social responsibility—was selected to be used as a comparison group that would not receive the intervention from this research, but rather would utilize the instructional methodology developed specifically for the course. The rationale for including the Business and Society course as a comparison was that the instructor of the course used similar instructional techniques as those developed for this research. Since the course focus was already specifically on ethical reasoning, it was chosen to be included in the pretest—posttest comparisons in order to determine if it was also effective at increasing moral reasoning among undergraduate students given its similar emphasis on learning how to carry out ethical decision making in business dilemmas.

For the intervention, the finance and MIS instructors used the ethical decision-making instructional materials provided by researcher that were used in the previous study with one minor change: the essay on ethical theory and decision-making was again refined for publication in a journal targeted toward collegiate academics (Wilhelm 2006). Supporting this article was the handout and worksheet detailing the steps in the decision-making framework. In addition, the two instructors received a copy of the ethics PowerPoint lecture with instructor explanations incorporated into the application's notes pages. Finally, they received the 20-question quiz covering concepts in the ethical essay and lecture material, and suggestions on how to offer incentives to all students participating in the classroom study.

Again, while the researcher gave guidance as to how the instructional materials and activities would best elicit an improvement in student moral reasoning (based on previous study findings), the two instructors were informed that they had discretion over how to integrate the ethical teaching materials into their courses; each instructor was encouraged to determine how the materials would best fit their own respective teaching styles, students, course content, and instructional sequencing. Cases used were determined by each instructor. Since the Business and Society course was not considered a treatment group but rather a comparison group, the instructor of that class used his regular teaching materials and practices.

An analysis of variance was conducted to determine if there may have been pre-existing differences between the groups. The ANOVA results showed that there were no differences. The methods used by each instructor and the findings from each sample will be discussed next.

4.5.1. Management (Business and Society) Course

The undergraduate management course ($n = 18$), Business and Society, deals with business ethics, corporate social responsibility performance, and stakeholder issues inherent in complex decisions involving the three major sectors of society: business, public, and government. The one-semester course, required for all management majors, focused on enhancing three basic competencies: cognitive, behavioral, and managerial.

Instruction included use of the Socratic teaching method for classroom discussions; assigned readings in deontology, utilitarianism, rights theory, virtue ethics, and conventional moral rules; case study analysis; educational films; and a corporate social responsibility assessment team project. Specific instruction in a step-by-step ethical decision-making model was provided, and students had to write reflections and justifications supporting presentations of their case analyses. The ethical theories studied in this course and use of an ethical decision-making model in conjunction with case analyses were identical teaching methods as in the intervention designed for this research. The actual ethical decision-making model very closely approximated the model used in the intervention described in this research:

1. Recognize the ethical conundrums in this scenario/case.
2. Get the facts FIRST.
3. Identify your options (alternatives)—and think through the ramifications of each—is it legal, right, beneficial? What are stakeholder implications? How will this decision impact corporate reputation? Should I obtain counsel?

4. Decide which option to follow and justify this with various ethical reasoning. Be aware that some ethical theories may be in conflict.
5. Take action and follow-up by monitoring the outcomes of your decision.

Course assessments included an individual character self-assessment, two written tests, group and individual case analyses and presentations, a corporate social responsibility assessment and analysis, and an executive book summary and critique. The DIT-2 pretest-posttest was administered at the beginning and again at the end of the semester.

There was a statistically significant increase in the P score for the Business and Society course. Table 8 presents the descriptive findings. The paired samples T-test showed that, at $p = .05$, the level of significance in the P score increase was .032. The T-test results and the 22.9 percent increase in the P score (24.0000 to 29.4966) seem to indicate that the teaching methodology used by the instructor did indeed elicit increases in the level of moral reasoning in the students. While the N2 score also changed with a similar but slightly less 22.2 percent increase (24.8926 to 30.4240), the paired samples T-test significance at .086, when considered with the significant increase in the P score, cannot be dismissed as statistically insignificant. DIT-2 literature points out that college samples suggest that P scores and N2 scores tend to behave very similarly (Thoma, 2006). It must therefore be assumed that the improvement in moral reasoning in the Business and Society class was indeed significant as reflected in the P score and N2 score increases.

Table 8: Pretest-Posttest DIT-2 Scores for Business and Society Class ($n = 18$)

| P & N2 scores | Mean | Std. Deviation |
|--------------------------|-------------|-----------------------|
| P score pretest | 24.0000 | 12.83378 |
| P score posttest | 29.4966 | 15.95280 |
| N2 score pretest | 24.8926 | 15.13305 |
| N2 score posttest | 30.4240 | 18.16416 |

4.5.2. Finance Course

In the one-semester finance course ($n = 12$) focused on financial institutions taught to undergraduates and graduate students, instruction in ethical decision making was incorporated into various parts of the course as the instructor believed he could best accommodate it without sacrificing emphasis on the course content. The ethical reasoning essay was assigned for students to read in week three, followed by the ethical reasoning PowerPoint lecture presented by the instructor the same week. Classroom discussion of the essay took place in week eight, five

weeks after it was assigned. Subsequent classroom discussions of ethical situations primarily focused on academic dishonesty in this specific class. No ethical cases in finance were used in the course. The twenty-question ethical reasoning quiz was given to the students in week eleven. The DIT-2 pretest and posttest were administered at the beginning and again at the end of the semester.

While there were increases in both the P score and the N2 score posttest results for the finance class sample (see Table 9), they were not statistically significant. The paired samples T-test showed that, at $p = .05$, the level of significance in the P score increase was .466 and .314 for the N2 score; both were statistically insignificant. Since the 10.0 percent increase in the P score (35.0000 to 38.5000) and the 9.8 percent increase in the N2 score (34.3835 to 37.7577) were statistically insignificant, that would seem to indicate that the increases could have happened by chance and the intervention as it was applied in the finance class did not elicit an improvement in student moral reasoning. It can be concluded that the methods in which the instructor integrated the teaching materials into the course, i.e. limited discussion of ethical theories and framework, discussions only focused on classroom dishonesty, no use of ethical cases or reflective analysis with the decision-making framework, and the long time lapse between assignment of the ethical reasoning essay and its discussion, were not effective at engaging students in reflective moral reasoning exercises.

Table 9: Pretest-Posttest DIT-2 Scores for Finance Class ($n = 12$)

| P & N2 scores | Mean | Std. Deviation |
|-------------------|---------|----------------|
| P score pretest | 35.0000 | 14.93014 |
| P score posttest | 38.5000 | 12.96499 |
| N2 score pretest | 34.3835 | 16.88019 |
| N2 score posttest | 37.7577 | 16.88497 |

4.5.3. Management Information Systems Course

In the one-semester introduction to management information systems course required for all business majors ($n = 20$), instruction in ethical decision making and use of the teaching materials developed during this research were incorporated into weeks 12, 13 and 14. During this period, the instructor also covered course content directly related to ethics in information technology. This instruction followed the DIT pre-test which was completed in week five. During week 12, the students had access through an online class site to the ethical reasoning essays, handouts and PowerPoint lecture. The instructor presented the ethical reasoning PowerPoint lecture to the class in week 13 and class discussion followed. Also during week 13, students were assigned to small groups with the task of analyzing an ethical case using the ethical decision-making framework developed for this research.

During week 14, each student team presented their case analysis to the class, answered questions from the instructor and the class, and individually completed an abbreviated version of the ethical reasoning quiz (five questions out of the original 20 questions). As a motivation for students, the instructor informed the students that the grade on the quiz would replace the lowest of their quiz grades in the course. There were no grade points assigned to any other ethical reasoning activities. The DIT-2 posttest was administered at the end of the semester.

There were decreases in both the P score and the N2 score post-test results for the MIS class sample (see Table 10). The paired samples T-test showed that, at $p = .05$, the level of significance in the P score decrease was .558 and .682 for the N2 score; both statistically insignificant. The decreases could have happened by chance; however, the intervention was not effective at increasing student moral reasoning. The major areas in which the instructional methodology departed from previously successful interventions included the use of only a single ethics case for students to analyze, a limited emphasis on the entire ethical reasoning component of only three weeks, ineffective assessment of student knowledge of the ethical concepts through a significantly abbreviated ethics quiz, and the lack of grade accountability.

Table 10: Pretest-Posttest DIT-2 Scores for MIS Class ($n = 20$)

| P & N2 scores | Mean | Std. Deviation |
|--------------------------|-------------|-----------------------|
| P score pretest | 33.3000 | 12.96595 |
| P score posttest | 31.5292 | 18.06845 |
| N2 score pretest | 31.5961 | 13.29981 |
| N2 score posttest | 30.5759 | 17.05831 |

4.5.4. Conclusions from the Fifth Study

The statistically significant increase in the P score and similar increase in the N2 score of the Business and Society management class confirms that the teaching methodology used in the course—which closely duplicates the teaching methodology developed for this research—was effective at improving students' levels of moral reasoning. The Business and Society course was successful at enhancing student moral development because 1) it was designed to help students understand the same ethical theories as those in the research intervention, 2) reflective analysis of several ethical business dilemmas using a formal decision-making framework was required, and 3) grades were tied to student performance with regard to the ethical content.

On the other hand, in the finance course and MIS course, where the recommended methodologies were not employed, student moral development was not enhanced. The conclusion, therefore, is that, while the materials developed for this research can be effectively used in content courses to

significantly increase student moral reasoning, they must be used in such a manner that students have sufficient time to learn the ethical decision-making theories and concepts, and to apply those concepts in a deliberative and repeated process of ethical case analyses.

5. Recommendations

Business content course instructors can successfully integrate ethical reasoning components into their courses without sacrificing course content and without special instructor training in ethical theory if the following techniques are used:

- The most frequently used theories in Western ethics should be taught, i.e. deontology: ethics as duty, the teleological or utilitarian approach, personal virtue theory, and conventional moral rules and law.
- Students should complete assigned readings that present the above theories clearly and concisely. The readings should also introduce a step-by-step ethical decision-making framework that is logical, concise, and utilizes the evaluative components from the ethical theories.
- After students have completed the assigned readings, the ethical theories and decision-making framework should be presented in class by the instructor in one or two class sessions using lecture and modeling (with sample case) to clarify the ethical theories and how to use the decision-making framework. Class discussion should follow the lecture in order to help ensure student understanding.
- Several case studies (more than two but less than six) containing robust ethical dilemmas that are also related to the course content should be assigned for students to analyze using the ethical decision-making framework.
- Grade-related assessments of students' written case analyses and reflective justifications should be conducted. Additionally, a grade-related assessment in the form of a test or quiz over the assigned readings and lecture about the ethical concepts taught should be completed.
- While the introduction of the ethical components into the course may take only one or two class sessions, time for students to reflect upon the ethical concepts and apply them to cases containing ethical dilemmas

should extend throughout the semester as much as possible. Students should be provided several opportunities to employ the decision-making framework and to reflect upon their decision justifications.

- Additional courses in the business core should be identified for further study using the instructional methods developed through this research. The studies should also employ similar pre-test—post-test designs using the DIT-2 in order to gather comparison data.
- As demonstrated in the research findings, while professors need not be specialists in ethics in order to elicit positive changes in levels of student moral reasoning in the business classroom, they must dedicate considerable effort and attention to case analyses employing an ethical decision-making framework. The question naturally follows, then, whether ethics taught across the curriculum can be effective even when individual instructors may not invest all the time and effort that this study found necessary. In such curricula wherein ethics instruction is integrated throughout, additional research is needed to determine if individual professor's efforts, which may be inadequate in and of themselves, might collectively add up to something that is also effective.

While significant increases in student moral reasoning (as measured by the DIT-2) cannot be ensured through the integration of these concepts and teaching activities, there exists a strong likelihood that student moral reasoning will increase. Also, if content area instructors teach these ethical decision-making concepts in their classes and stress the importance of employing a sound ethical decision-making framework in deciding courses of action in business dilemmas, they cannot help but impress upon both students and other faculty members the importance of proper ethical behavior through sound ethical decision making. While the findings in this research demonstrate that faculty members who are not specialists in business ethics can effect positive increases in student moral reasoning in non-ethics business courses, significant time and effort need to be invested in case-based moral decision making in the classroom, and grade incentives for students to engage the use of an ethical decision-making framework are required.

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