ETHICAL REASONING INSTRUCTION IN UNDERGRADUATE COST ACCOUNTING: A NON-INTRUSIVE APPROACH

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ABSTRACT

This article discusses a series of studies designed to yield statistically significant improvements in student moral reasoning when specific strategies and instructional materials were utilized in non-ethics undergraduate accounting and other business courses taught by instructors who were not formally trained in business ethics. The most recent research study reported in this article was conducted in an undergraduate Cost Accounting course. The results of the current study have yielded statistically significant increases in student moral reasoning as measured by the DIT-2, confirming the effectiveness of an intervention methodology. The specific intervention strategies and instructional materials utilized were developed through several iterations of developmental research studies that were carried out over a four-year period at a mid-sized Midwestern university. The measurement instrument of moral reasoning used in all of the research studies is the revised version of the Defining Issues Test, the DIT-2 (Rest, Narvaez, Bebeau & Thoma, 1999). Originally funded by a grant from the Lilly Endowment, the most recent study reported in this article was funded by a generous grant from the Delta Pi Epsilon Research Foundation, Inc.

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

INTRODUCTION

This article discusses a series of studies designed to yield statistically significant improvements in student moral reasoning when specific strategies and instructional materials were utilized in non-ethics undergraduate accounting and other business courses taught by instructors who were not formally trained in business ethics. The most recent research study reported in this article was conducted in an undergraduate Cost Accounting course. This study is one part of a larger set of confirmatory studies designed to corroborate results of previous research (Wilhelm, 2008) during the developmental phase for the intervention protocol. Control

groups that were used in the previous studies (Wilhelm, 2008) served as proxy controls for the present study. Originally funded by a grant from the Lilly Endowment, the most recent study reported in this article was funded by a generous grant from the Delta Pi Epsilon Research Foundation, Inc.

NEED FOR THE STUDY

A profession such as accountancy is formed on the basis of (1) a generally accepted body of knowledge, (2) a widely recognized standard of education, and (3) a code of ethics (Smith & Smith, 2010). A code of ethics is a crucial element in guiding the behavior of a professional. The three major accounting professional organizations that have established a professional code of ethics are the American Institute of Certified Public Accountants (AICPA), the Institute of Management Accountants (IMA), and the Institute of Internal Auditors (IIA). The responsibilities that the three codes of ethics place on accountants and the related professional standards for each organization have many similarities. They all require professional competence, confidentiality, integrity, and objectivity. Accounting professionals should only undertake tasks that they can complete with professional competence, and they must carry out their responsibilities with sufficient care and diligence. Ethics in accounting has become even more important in light of the scandals at Enron, WorldCom, Tyco, Arthur Anderson, and others in the early 2000s. The Sarbanes-Oxley Act of 2002 is a reaction to these scandals. The act created the Public Company Accounting Oversight Board (PCAOB), and places greater responsibility on the company officers as to internal control and independent central oversight of public accounting firms that perform audit services.

While business schools accredited by the Association to Advance Collegiate Schools of Business (AACSB) must meet ethics training expectations delineated by Assurance of Learning Standard 15: Management of Curricula ("Eligibility Procedures," 2007), AACSB does not specify any courses or program template for delivering ethics and corporate social responsibility training to students. However, AACSB does proffer the notion that it is business faculty – not faculty from outside the business school, who should teach these concepts to undergraduate and MBA students. As stated in the AACSB study document, Ethics Education in Business Schools (AACSB International, 2004):

Faculty involvement is an important indicator of the salience of issues in academic environments. Relegation of ethical issues to a small fraction of the faculty or to those perceived as having low status vitiates the power of the educational experience. Also, in an environment where concern over ethical issues has risen sharply, lack of business school faculty involvement may indicate a disconnection between the academic experience and the real world. If ethics content is taught primarily by faculty from outside the business school, questions

should be raised as to what is done to convey the relevance of ethics in business practice. (p. 19).

Since "business ethics" and "corporate social responsibility" are not business disciplines in the traditional sense, and since many business professors do not feel themselves sufficiently trained to teach such courses (see Bok, 1988; Klein, 1998; Norman, 2004), business schools are left to grapple with the conundrum of how to teach business ethics to all students by using a large percentage of business school regular faculty. Teaching business ethics throughout the core curriculum in delineated integrative programs has proved problematic for some business schools because the longevity of these programs is limited by faculty turnover and new faculty members' unwillingness to assume responsibility for teaching outside of their areas of specialization.

Therefore, the objective of this stream of research has been to identify non-intrusive classroom instructional methods and materials that can be effectively used by accounting course instructors (and instructors in other business disciplines not formally trained in ethics) to positively affect levels of moral reasoning of undergraduate business students. Instructional methods are *non-intrusive* in the sense that the classroom interventions are reasonably easy to integrate into an instructor's course plan without causing a major displacement of the content that is normally taught in the course, nor requiring extensive instructor training in ethical theory.

The current study was conducted in a Cost Accounting course for undergraduate accounting majors (juniors and seniors) in order to corroborate and confirm the validity of the intervention methodology developed in this stream of research which had previously generated statistically significant increases in student moral reasoning in other sample groups. The results of the current study have also yielded statistically significant increases in student moral reasoning as measured by the DIT-2, confirming the effectiveness of the intervention methodology.

MORAL DEVELOPMENT RESEARCH

The best-known model of moral reasoning is Kohlberg's (1969, 1981) model, which 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. Kohlberg's six stages of moral development can be characterized as follows (Jeffrey 1993, p. 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 Kohlberg's developmental levels as more akin to schemata than to stages. Rest's schema theory conceptualizes cognitive moral developmental reasoning 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 (Rest et al., 1999).

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 *reasoning* 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).

MORAL DEVELOPMENT ASSESSMENT

James 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). Based on the notion that moral reasoning 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.

While moral behavior is not dictated by one's sensitivity to a moral dilemma or even by one's choice of the correct moral decision, moral behavior has been shown to correspond closely to moral reasoning. A significant number of research studies relating to moral behavior based on Kohlberg's and Rest's methods of assessment (Blasi, 1980; Rest, 1986) found that moral behavior was closely correlated to moral decision making. 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 reasoning and behavior" (p. 135).

MORAL EDUCATION RESEARCH IN BUSINESS AND ACCOUNTING

While descriptive studies about levels of moral reasoning among students number in the thousands, the number of studies that deal with evaluations of effectiveness of ethics education interventions for accounting students is considerably less. James Rest cited numerous intervention methods that were designed as educational programs with the objective of increasing student moral reasoning (Rest et al., 1999). These interventions include elements of lecture, guest-speaking appearances, video exemplars, case analyses using an ethical decision-making framework, philosophic studies of ethical theory, and reflective analysis.

Utilizing a class in ethics and professionalism to introduce an array of ethical instructional interventions ranging from studies in ethical reasoning to analyses of congressional investigations, Armstrong (1993) reported a statistically significant difference in changes in DIT post-conventional (P) scores among students who took the course over those in a control group that did not. Armstrong also reported that students who had taken previous classes in ethics (as reported by the students) demonstrated increased levels of moral-reasoning maturation.

Green and Weber (1997) assessed the levels of moral reasoning in accounting and other business majors both before and after they had completed an auditing course which emphasized the AICPA Code of Professional Conduct. Moral reasoning levels were assessed separately by both authors utilizing the Abbreviated Scoring Guide based on Kohlberg's scoring method (Weber, 1991). They found no differences in ethical development between junior accounting majors and other junior-level business majors. They did, however, find significant differences between senior-level accounting and non-accounting students' levels of moral development. The primary difference appeared to be related to the auditing course taken by the senior accounting students (Green & Weber, 1997).

Bigel (2002) demonstrated through the use of similar learning activities (lecture, case analysis and the study of ethical theory) that a course in business ethics has a positive effect on students' moral development, particularly with undergraduates. Sampling Canadian graduate accounting students, Thorne (2000) tested whether a person's cognitive moral capacity, i.e., the most sophisticated moral reasoning a person is capable of, matches that person's moral reasoning, i.e., how a person actually decides an ethical dilemma. Thorne questioned whether a person solves ethical dilemmas using their cognitive moral capacity or some lower level of reasoning. Two accounting-specific tests, one prescriptive and one deliberative, were developed using the DIT as a model. Prescriptive reasoning involves considering what should ideally be done as prescribed by laws or codes within the context of internally defined concerns for principle and fairness. Deliberative reasoning involves intent to act on an ethical dilemma while using more sophisticated and complex moral structures acquired through maturation and exposure to external influences. The validity and reliability of the accounting-specific tests, as determined by professional accountants and experts, were found comparable to those of the DIT. The results indicated that accountants do not resolve ethical dilemmas at their cognitive moral capacity. The subjects' scores on the two accounting tests are lower than their scores on the DIT.

Another study that seems to confirm Thorne's findings, Dellaportasa, Cooperb and Leungc (2006) studied the moral reasoning levels of 97 accounting students over a one-year period using the DIT and a context-specific instrument developed by Welton (Welton, LaGrone & Davis, 1994). Test scores were significantly higher on the DIT than scores on the Welton instrument suggesting that accounting students use higher levels of moral reasoning in resolving hypothetical social dilemmas and lower levels of moral reasoning in resolving context-specific dilemmas.

Bay (2002) was critical of the DIT's use in assessing ethical development in accountants and accounting education programs. Claiming that the DIT had inherent biases toward political conservatives, religious conservatives, and different cultures, she cautioned the dependence upon the DIT as a sole measure of moral development in the accounting profession. Her criticism of the DIT as biased against political and religious conservatives is not a legitimate claim. Cognitive moral theory substantiates the invariant requirement for an advanced degree of empathy in individuals possessing moral reasoning of the highest – post-conventional – levels (Gibbs, 2010; Gilligan, 1982; Hoffman, 2000; Kohlberg, 1969, 1981; Rest, 1979, 1986; Rest et al., 1999). As defined by Gibbs (2010) empathy "is a biologically and affectively based, cognitively mediated, and socialized predisposition to connect emotionally with others" (p. 78). Conservative perspectives in politics and religion by nature do not focus on empathic primacy. Primacy lies instead in the tenets of the political beliefs or the religious dogma. There is some legitimacy to Bay's critique of using the DIT to assess the moral development of non-Westernized cultures because of potentially significant differences in closely held values of fairness and justice (individualism versus collectivism), but that does not weaken the instrument's validity in ethics research in the United States. Further, Bay's criticisms only addressed descriptive research studies that attempted to characterize sample populations as to moral development. There is no reason to suggest that the DIT in its newest version (the DIT-2) is not a valid and reliable instrument to use in measuring *changes* in levels of moral reasoning in studies that assess the effectiveness of ethical training intervention protocols. [For a bibliographic review of ethics research studies covering a wide range of foci in accounting see Uysal (2010).]

METHODOLOGY

Consistent with the findings from many of the studies discussed above, and after reviewing the top U.S. business schools' instructional practices for business ethics education, the primary researcher set about the task of developing an instructional protocol and instructional materials that can, when properly sequenced and integrated into undergraduate non-ethics business content courses taught by professors not formally trained in ethical reasoning pedagogy, increase levels of student moral reasoning as measured by the revised version of the Defining Issues Test (DIT-2). All iterations in this series of research studies were approved by the primary researcher's institutional review board prior to the first study. This section will first present an overview of the studies that took place during the development of the intervention protocol and instructional materials, and then will present the findings from the most recent study used to confirm previous findings of effectiveness of the protocol and instructional materials with undergraduate accounting students.

Intervention Developmental Studies

Each study in the developmental stage of this research (Wilhelm, 2010) involved the continuing attempt to refine the instructional methodology and materials (interventions) so that non-ethics business course instructors could simply and effectively integrate the methodology into their courses in order to teach ethical decision-making theory and engage undergraduate business students in reflective analysis so as to improve their moral reasoning as measured by the DIT-2. The instructional methods employed in these interventions included the following:

• Reading assignments explicating commonly taught Western ethical theories (deontology, teleology, virtue theory and social conventions and mores) and a step-by-step ethical decision-making framework handout. The present study used two articles written by the primary researcher to accomplish this explication (Wilhelm, 2006a, 2006b).

- Lecture and classroom discussion to clarify the ethical theories and the ethical decisionmaking framework. The lecture was organized into a PowerPoint presentation with instructor lecture notes prepared by the primary researcher.
- Cases related to each content area, but also containing ethical elements or dilemmas. All cases were discipline specific and were selected by each course instructor.
- Both reflective individual written and/or interactive group discussions of the cases. As will be shown below, written reflective case analyses using the ethical decision-making framework proved the most effective.
- Quizzes to assess student comprehension of reading assignments.
- Grades related to the ethical reasoning component in each course.

All iterations of the studies in this research (Wilhelm, 2010) involved the nonequivalent control group quasi-experimental design (Campbell & Stanley, 1963) which can be used when true randomization of subjects and extraneous variables cannot be achieved. The selection of subjects based solely on their self-selection to the different courses did not involve random assignment. However, pretest P-score comparisons showed that the groups were similar. According to Campbell and Stanley (1963), comparable pretest scores help confirm internal validity:

The more similar the experimental and control groups are in their recruitment, and the more this similarity is confirmed by the pretest, the more effective this control becomes. Assuming that these desiderata are approximated for internal validity, we can regard the design as controlling the effects of history, maturation, testing, and instrumentation. (pp. 217-218).

Assessment of improvements in moral reasoning was based on pretest – post-test 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 the researcher made adjustments and refinements to the instructional methodology (intervention) based on findings from each previous study and debriefings of student participants and course instructors. Convenience samples used for each study consisted of students in a range of undergraduate core business courses composed of foundation business disciplines – including undergraduate accounting – at a mid-sized Midwestern university.

Current Research Study

The current study utilized the same pretest-posttest design that was used in the previous iterations of the research. An accounting professor who had used the ethical decision-making instructional materials in previous developmental stages of this research volunteered to follow the most recent refinement of the instructional protocol by incorporating the instructional

procedures and materials into two sections of his undergraduate Cost Accounting course. While enrollments for the two sections totaled 35 students, only 30 DIT pretest-posttest protocols ($n_1 = 17$, $n_2 = 13$) were acceptable for inclusion in the sample. This course is a required class for all accounting majors and may be taken by other business majors as an elective. The two classes contained predominantly accounting majors with three to four finance and business administration majors respectively. The students were all juniors or seniors; 10 were male and 20 were female.

In both classes the DIT-2 was administered on the first day of class. The two essays prepared by the primary researcher to explicate Western ethical theory and the ethical decision-making framework were assigned for study. Each essay was subsequently discussed in class for approximately 35 minutes. The 20-question quiz designed for this research was administered after the classroom discussion of the ethical decision-making framework, and counted for 40 points out of 1,000 course grade points.

During the course of regular cost accounting instruction, the students were also assigned four cases containing ethical dilemmas and were informed that they would have to prepare a written reflective analysis for each case using the steps delineated in the ethical decision-making framework. The instructor and the primary researcher had determined through previous iterations of this research that a single case was insufficient in helping students to engage in ethical decision making since it took practice on more than one case to successfully utilize the ethical decision-making framework. In addition, the instructor and the primary researcher determined in previous iterations that more than four ethical case analyses in a non-ethics course were overly laborious for students and motivationally problematic. Therefore, the instructor selected four single-page ethics cases from the Carnegie Mellon Tepper School of Business Arthur Andersen Case Studies in Business Ethics website. The instructor chose cases containing ethical dilemmas that related to each chapter's content. For example, a case containing an ethical budgeting dilemma was used with the budgeting chapter. The four cases were covered over a contiguous five-week period.

All cases were discussed briefly in class before students began their reflections. This was accomplished so that the students clearly understood the ethical dilemma in each case. The professor noted that several students asked for this clarification as they had problems identifying just one ethical dilemma. During the class in which the reflective case analyses were turned in, the case was discussed in more detail and solutions were evaluated. Student's written reflective analyses were graded on how well they followed the steps delineated in the decision-making framework and the logic and strength of their arguments. Their final decision did not impact their grade; just how well they supported their decision using the framework. Each of the four cases was worth 40 points. The quiz and ethics case analyses equaled 20% of each student's final grade. The DIT-2 posttest was administered on the last day of class.

An independent samples t-test using the pretest P and N2 scores of the two undergraduate cost accounting classes ($n_1 = 17$, $n_2 = 13$) established that there were no differences in the mean

pretest scores, and since the professor taught both classes in exactly the same way, the two samples were combined and treated as a single sample (n = 30). The post-test scores are shown in Table 1. Paired samples t-test post-test results and effect size calculations showed statistically significant increases in the P scores with a medium effect size (pretest $\bar{x} = 30.7000$, posttest $\bar{x} = 36.5415$), t(29) = -2.379, p < .05, two-tailed, r = 0.404094. Additionally, the paired samples t-test results and effect size calculations showed a statistically significant increase with a large effect size in N2 post-test scores (pretest $\bar{x} = 31.2015$, posttest $\bar{x} = 40.2511$), t(29) = -5.601, p < .05, two-tailed, r = 0.720860.

Table 1: Cost Accounting Course Pretest-Posttest Results								
DIT-2 Measure	Mean	Std. Deviation	Std. Error Mean	t	df	Sig. (2- tailed)	r Effect size	Effect size
P score	-5.84150	13.44907	2.45545	-2.379	29	.024	0.404094	med
N2 score	-9.04960	8.85031	1.61584	-5.601	29	.000	0.720860	large
Source: Primary								

These results demonstrate significant increases in levels of student of moral reasoning based on both measures on the DIT-2, i.e., the post-conventional P score and the new index, N2 score, with medium and large effect sizes respectively. According to Thoma, "N2 is more sensitive to change ..., whereas P scores seem to be more strongly related to political variables" (personal communication, Steve Thoma, August 27, 2009). This insight about the N2 by one of its developers would seem to indicate with a significant degree of certainty that the instructional materials and methodology developed throughout this research and used in this Cost Accounting course did indeed improve undergraduate student moral reasoning. (Statistically significant increases in moral reasoning were also found in other non-accounting student samples in this most recent study. These results are contained in another manuscript currently under review.)

CONCLUSIONS AND RECOMMENDATIONS

Utilization of the instructional practices and materials developed throughout this research effort can produce statistically significant increases in moral reasoning of undergraduate accounting students enrolled in non-ethics accounting courses taught by instructors not formally trained in ethical theory. While instructors need to invest significant time and effort to successfully incorporate case-based moral decision-making instruction into their courses, and significant grade incentives are needed for students to engage the use of the ethical decisionmaking content, instructors not formally trained in ethical theory can indeed generate positive improvements in student moral reasoning.

The procedures identified in this research allow for substantial flexibility in instructional methodology, but do require a close adherence to some tenets. First, students need to be

introduced to the basics of Western ethical theory including deontology, teleology, virtue theory and cultural conventions and mores – more in layman's terms than in philosophical terminology. Second, students need to study and apply to more than just a single ethical case dilemma (preferably three or four) an ethical decision-making framework. Three, students need to write their reflections and analysis of how they applied the ethical decision-making framework to each case study. Four, students need to know that the ethical component in the non-ethics course is of sufficient grade weight that it must be engaged with effort and commitment.

While there are many and varied approaches to teaching ethical reasoning to undergraduate business students, this research has identified a combination of practices and instructional materials that work to increase levels undergraduate accounting student moral reasoning at one particular institution. It stands to reason that these practices and instructional materials will also accomplish similar results if utilized as recommended at another institution. Additionally, employment of this type of integrative approach across the business curriculum meets the AACSB caveat that ethics instruction should be taught by business faculty members and not be relegated "to a small fraction of the faculty or to those perceived as having low status" (AACSB International, 2004, p. 19).

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