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# **IMPROVING THE MORAL JUDGMENT OF ACCOUNTING STUDENTS: AN EXPERIMENT**

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## **ABSTRACT**

Recent highly publicized scandals involving accounting ethical failures have renewed recommendations to include ethics education in the accounting curriculum. Hundreds of studies confirm that the moral judgment of students improves during the college years, but the cause is unclear. Using a pretest-posttest design and the Defining Issues Test, we measured the effect of ethical dilemmas on the moral judgment of 81 accounting students over a semester. Results showed that the moral judgment of accounting students improved significantly.

## **I. INTRODUCTION**

The need for a renewed emphasis in accounting ethics education is apparent. The financial scandals at Enron, WorldCom, Adelphia, Tyco, HealthSouth, Global Crossing, and other companies have adversely affected the reputation of the accounting profession (Wei 2002). Congress reacted with the Sarbanes-Oxley Act of 2002, which among other reforms, mandates ethical changes pertaining to auditor independence (Title II), and a code of ethics for financial officers (Title IV). State Boards of Accountancy are also reacting by revising ethics requirements for both current and new entrants (Thomas 2004). Recognizing that accounting professionals are first exposed to accounting ethics as students, educators have also begun to re-examine ethics education in the accounting curriculum.

Although some may question whether ethics education in college is of any value (McDonald and Donleavy 1995), we favor the recommendation of Piper *et al.* (1993), who conclude that ethics not only can be taught, but must be taught at the college level. In the Literature Review that follows, we examine the evidence that generally supports the effectiveness of teaching business ethics to college students. This literature also reveals various ways of teaching ethics to accounting students, including stand-alone courses on ethics, the use of ethics case studies across the accounting curriculum, and a combination of the two (Armstrong 1993). The Methodology section then describes our experiment to test the effectiveness of case studies in four accounting courses. The Results section reports that the case studies were effective in improving the moral judgment of accounting students in one

semester. A discussion of the implications to accounting ethics education and our recommendations conclude the paper.

## **II. LITERATURE REVIEW**

### **1. KOHLBERG'S THEORY AND THE DEFINING ISSUES TEST**

The theoretical background of accounting ethics research rests largely on the work of Lawrence Kohlberg and James Rest, developmental psychologists. Kohlberg (1979, 1984) noted that as children grow, they advance through definite stages of moral development. From his observations and tests, he identified six specific stages of moral development through which human beings consecutively progress. In the first two stages ("pre-conventional"), people make moral decisions based on rewards and punishments. In the third and fourth stages ("conventional"), people make moral decisions based on society's expectations and the respect for rules and laws. In the fifth and sixth stages ("post-conventional"), people make moral decisions based on logical application of universal moral principles despite legal or social implications.

Using Kohlberg's theory, Rest (1979) developed the Defining Issues Test (DIT), a paper-and-pencil test designed to measure moral judgment. The DIT consists of short ethical dilemmas with questions after each one. Based on the answers, a respondent is categorized into one of the three levels of moral development and given a "P score" that represents the degree to which the answers fit the post-conventional level of Kohlberg's theory.

The DIT has been used in over 500 published articles (reviewed by Bebeau and Thoma 2003), including studies involving accounting students (e.g., Armstrong 1987 and 1993, Ponemon 1990, Thorne 2000). These studies strongly confirm that ethics can be taught to college students. For example, Rest and Thoma (1985) tracked the moral development of students from the end of high school to six years beyond high school. They found that DIT scores increased for those attending college but were stable for those who did not attend college.

### **2. FACTORS THAT PROMOTE MORAL JUDGMENT IN COLLEGE**

While the empirical evidence is strong that the college experience enhances moral judgment, it is not clear as to what it is in the college experience that stimulates it. Possible causal factors include the type of institution, the academic discipline, the curriculum within the discipline, and the amount of time devoted to ethics education.

Type of Institution. Several studies have shown that liberal arts colleges, as compared to other types of colleges and universities, tend to be more conducive to fostering the development of moral judgment, although no firm evidence exists as to why this is so (Pascarella and Terenzini, 1991, McNeel, 1994; Good and Cartwright, 1998).

The Academic Discipline. The evidence that different academic disciplines may affect moral judgment differently is mixed. Pierre *et al.* (1990) found that students majoring in accounting and other business disciplines showed lower levels of moral judgment than students majoring in psychology, math, and social work. Jeffrey (1993) hypothesized that students who majored in liberal arts would achieve a higher level of moral judgment as compared to students who majored in business or accounting, where there is a supposed emphasis on “hard-and-fast rules.” Somewhat surprisingly, Jeffrey’s research did not support his hypothesis. Instead, Jeffrey found that the ethical development of accounting students was higher than the ethical development of other students in lower-division classes and remained so through the senior year. Snodgrass and Behling (1996) found no significant difference in the moral judgment between business and non-business majors.

Since these results are inconsistent in conclusions regarding the correlation between moral judgment and academic major, it may be that these studies indicate that it is the nature of the specific course content and curricular approach that promotes growth in moral judgment. Interestingly, of the over 500 studies reviewed by King and Mayhew (2002) none dealt with course content and curricular approach.

Nature of the Course or Experience. Several studies have investigated the effects that a specific course or type of educational experience may have on moral judgment. Among them are studies on general education courses (Mustapha & Seybert 1989 and 1990), ethics courses (Armstrong 1993, Ponemon 1993, Boss 1994), a freshman colloquium on psychosocial issues (Tennant 1991), participation in service learning (Boss 1994; Gorman *et al.*, 1994), and an outdoor education program (Smith and Bunting 1999). Of note is that virtually all of these approaches were effective in promoting moral judgment. Exceptions were reported by Ponemon (1993) and Tennant (1991). Ferrell *et al.* (2005:109) believe that it is “experience in resolving moral conflicts [that] accelerates an individual’s progress in moral development.” This belief is also postulated by Rest and Deemer (1986) who state that “spending more time contemplating issues” is a key factor in promoting moral judgment (King and Mayhew, 2002:258).

Time devoted to ethics. Following an analysis of 55 studies, Rest (1986) concluded that interventions of longer than twelve weeks had no more impact on

moral judgment development than interventions of three to twelve weeks, and that interventions of less than three weeks did not increase the DIT score. Armstrong (1993) advocates multiple interventions, finding that moral judgment scores are greater for students who are exposed to a class on general ethics followed by an accounting class where ethics is interwoven in the course material, and then a capstone course on accounting ethics. Hence, it appears that repeated exposure to ethics may be superior in developing moral judgment as compared to one-time exposure.

### III. METHODOLOGY

#### 1. EXPERIMENTAL DESIGN

We used a one-group pretest-posttest design (Stanley and Campbell 1966), consisting of students in four accounting courses taken during the spring 2005 semester at a small western university. Neither randomization nor a control group was practical because we could not randomly assign students to classes, and some students may be exposed to ethics education in other courses in our school and university. The following table summarizes selected demographics of the students in the experiment. About three-fourths of the students were juniors or seniors. All but one student were accounting majors.

**TABLE 1**  
**Selected Demographics of Students in the Experiment**

<i>Course</i>	<i>N</i>	<i>Age</i>			<i>Gender</i>		<i>Educational Level</i>			
		<i>18-22</i>	<i>23-24</i>	<i>&gt;24</i>	<i>Male</i>	<i>Female</i>	<i>Soph.</i>	<i>Junior</i>	<i>Senior</i>	<i>Masters</i>
Intermediate Accounting 1	18	8	4	6	12	6	4	8	6	0
Cost Accounting	26	16	6	4	18	8	1	8	17	0
Auditing 1	22	4	7	11	15	7	0	1	21	0
Advanced Cost Accounting	15	6	2	7	8	7	0	0	0	15
All	81	34	19	28	53	28	5	17	44	15

The moral judgment of each student was measured with the Defining Issues Test, Version 2 (DIT-2). Bebeau and Thoma (2003) describe the DIT-2 as a shorter, clearer, and more reliable version of the DIT with updated dilemmas. It takes 35-45 minutes to complete. Because the DIT-2 does not have to be taken in a classroom, each student was allowed to take the DIT-2 out-of-class and return it with a completed answer sheet by the next class period. The answer sheets were mailed to the Center for the Study of Ethical Development at the University of Minnesota for machine-grading. A computer printout and electronic file of each student's answers and

descriptive statistics (the means and standard deviations various indices) were returned within two weeks. Additional statistical analysis (e.g., hypothesis testing) was performed on the electronic file returned by the Center using SPSS.

To motivate a good-faith effort, each student was promised extra credit points (three percent of the total points in the course) if the answers were not identified as frivolous, incomplete, or otherwise unreliable by the computer. The DIT-2 contains several reliability checks (Bedeau and Thoma 2003:7). None of the students in this experiment was excluded due to unreliable answers.

The pretest was administered to all students during the first week of the semester. Students were then given a short lecture on ethics at the start of the semester and exposed to a series of ethical dilemmas (vignettes) during the semester.<sup>1</sup> The short lecture depended on the class. In cost accounting the lecture was a review of *Standards of Ethical Conduct for Practitioners of Management Accounting and Financial Management* (Institute of Management Accounting 2000). In auditing the lecture was a review of ethical or moral philosophies, including egoism, utilitarianism, deontology, and virtue ethics. In most cases, the vignettes were assignments that students completed out-of-class and discussed in class. Each instructor selected vignettes appropriate for the course. For example, in cost accounting the vignettes typically focused on temptations to favorably bias an internal performance report for a supervisor. In intermediate accounting the vignettes typically involved temptations to improve key metrics on external financial reports, which resulted in the financial statements not being as useful as they could have been due to the concepts of relevance and/or reliability being violated. Classroom discussions focused on how to resolve the dilemmas, often by referring to standards of conduct for professional management or the FASB's "Conceptual framework" described in *Qualitative Characteristics of Accounting Information* (Financial Accounting Standards Board 1993). The posttest was administered near the end of the semester. In addition, a posttest questionnaire was given to collect opinions on the effectiveness of the ethics assignments in promoting ethical awareness and decision making.

## 2. HYPOTHESIS TESTING

Bedeau and Thoma (2003:9) report that "DIT scores show significant gains due to moral educational programs of more than three weeks." In addition, Ferrell *et al.* (2005:109) indicate that "according to his [Kohlberg's] model, as people progress through the stages of moral development, and with time, education, and experience, they may change their values and ethical behavior," and "experience in resolving

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<sup>1</sup> In our post-experiment analysis, we discovered that in Auditing 1 ethical dilemmas were neither assigned nor discussed. The results of this unintentional omission are described later.

moral conflicts accelerates an individual's progress in moral development.” Accordingly, our expectation was that the moral judgment of students would improve after completing the ethics assignments over a 15-week semester. To test this expectation, we computed the difference between the posttest and pretest DIT-2 scores for each student and then computed the mean difference, as indicted below:

Mean difference =  $\sum (\text{Posttest DIT-2 score} - \text{Pretest DIT-2 score}) / \text{Number of students}$

The DIT-2 score, termed the “N-2 index,” is similar to the P score of the DIT. Bebeau and Thoma (2003:32) report the correlation of DIT with DIT-2 scores is 0.79, and that the reliability checks on DIT-2 have the same validity as DIT.

The mean difference was tested using the paired t-test and the Wilcoxon signed-rank test at an alpha of 0.05. Although a paired t-test is generally reported to be robust to minor violations of normality and equal variance, we chose to also use the nonparametric Wilcoxon test to strengthen our conclusions (Sheskin 2000). A positive difference implied improvement. The formal hypotheses and interpretations are shown below. If the null hypothesis is rejected at an alpha of 0.05, then the moral judgment of the students exposed to ethics assignments during the semester improved significantly.

<u>Hypotheses</u>	<u>Interpretations</u>
Ho: Mean DIT-2 difference $\leq 0$	The moral judgment of the students did not improve
Ha: Mean DIT-2 difference $> 0$	The moral judgment of the students improved

We also evaluated the sensitivity of the results to course, gender, and education, as these are variables that are commonly reported in ethics intervention studies and collected in the demographic part of the DIT-2. To evaluate the sensitivity of our results to age differences, we separated the ages of our students into three groups (18-22, 23-24, >24). These groups roughly correspond to the ages of undergraduate, graduate, and non-traditional students at our school.

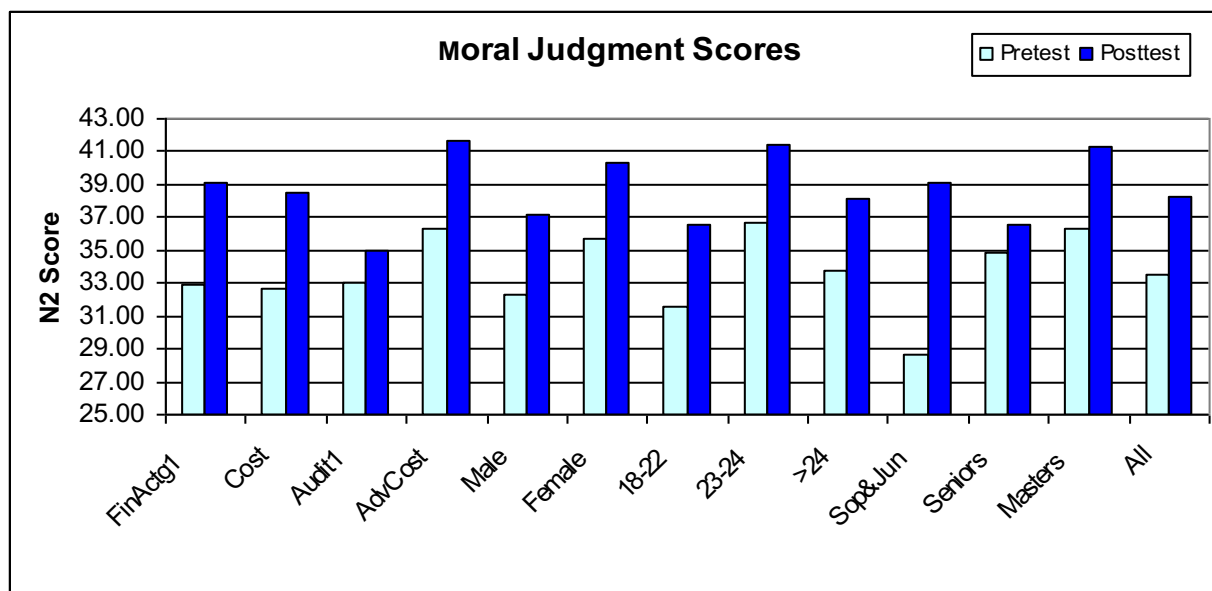
#### IV. RESULTS

As shown in the figure and in Table 2, the moral judgment of the students improved. The mean pretest and posttest scores for the entire sample of 81 students were 33.51 and 38.27, respectively. The difference of 4.76 was significant (paired t-test,  $df = 80$ ,  $t = 4.08$ , one-tailed  $p = 0.000$ ).<sup>2</sup> In general, these results were not sensitive to differences in course, gender, age, and educational level. The only

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<sup>2</sup> The results of the Wilcoxon test were consistent

exceptions were in one class (Audit 1) and one educational level (Senior), where the increases in the mean difference scores were not significant.<sup>3</sup>



**Figure 1. Moral Judgment Scores.**

**TABLE 2**  
**Moral Judgment Pretest and Posttest Scores**

Category	N	Pretest		Posttest		Difference		t	p	
		$\mu$	$\Sigma$	$\mu$	$\sigma$	$\mu$	$\sigma$			
All courses	81	33.51	12.09	38.27	13.28	4.76	10.51	4.08	0.000	*
Financial Accounting 1	18	32.91	11.58	39.16	13.40	6.26	11.21	2.37	0.015	*
Cost Accounting	26	32.72	12.91	38.46	14.18	5.74	11.54	2.53	0.009	*
Audit 1	22	32.98	13.16	34.97	13.53	2.00	8.16	1.15	0.132	
Advanced Cost Accounting	15	36.36	10.17	41.70	11.16	5.34	11.14	1.86	0.042	*
Male	53	32.32	12.29	37.15	13.78	4.83	9.06	3.88	0.000	*
Female	28	35.75	11.57	40.38	12.22	4.63	13.01	1.88	0.035	*
Age (18-22)	34	31.57	12.55	36.60	11.75	5.03	11.04	2.65	0.006	*
Age (23-24)	19	36.64	11.08	41.39	13.43	4.75	11.82	1.75	0.048	*
Age (>24)	28	33.73	12.12	38.17	14.94	4.44	9.17	2.58	0.008	*
Ed. Level (Sophomores & Juniors)	22	28.70	13.81	39.16	17.22	10.46	8.97	5.47	0.000	*
Ed. Level (Seniors)	44	34.88	11.59	36.56	11.86	1.69	10.20	1.07	0.145	
Ed. Level (Masters)	15	36.34	9.53	41.32	10.61	4.98	10.52	1.95	0.034	*

\* Significant at  $\alpha < .05$  (one-tailed t)

<sup>3</sup> We recognize that the small sample sizes of these subgroups may impair the statistical validity of these conclusions.



A class-by-class analysis showed that the moral judgment of the students improved for all classes except Audit 1. Our post-experiment analysis revealed that in this class the instructor presented an ethics lecture after the pretest was administered but did not assign nor discuss ethics vignettes during the semester. This difference may explain why there was no significant improvement in moral judgment in this class and suggests that a single discussion of moral or ethical philosophies is not as effective as assigning ethical dilemmas. With about one half (21 of 44) of all seniors in the experiment in Audit 1, the lack of improvement in Audit 1 may also explain why the moral reasoning score of seniors did not improve significantly.

## V. DISCUSSION

Our results are consistent with other intervention studies. Moral education during the college years works. Based on a meta-analysis of 172 studies using the DIT, King and Mayhew (2002:248) report that “dramatic gains in moral judgments are associated with collegiate participation.” In our experiment, classroom interventions in the form of several ethical dilemmas significantly increased post-conventional moral reasoning. A single lecture on ethics philosophy at the start of the audit class did not increase moral reasoning.

Based on this result, repeated exposures to ethical dilemmas across the accounting curriculum appear to be an effective way to increase the moral reasoning of accounting students. This conclusion supports the recommendation of Armstrong (1993) who advocates that ethics be taught both in existing accounting courses with case studies (as done in our experiment) and in separate courses at the start and end of the accounting curriculum. In the curriculum at our school, all students are required to take one course with a significant ethics component before starting the courses in their major.

Our results were also consistent with the gender differences reported on DIT studies, where the average scores of females are higher than the average scores of males. In Bebeau and Thoma (2003:35), the average score of females was five points higher than their male counterparts. In our experiment, the average score of females was about 3 points higher.

Our experiment has all of the limitations inherent in a one-group pretest posttest design without randomization and a control group. Including a control group was considered impractical at our school. However, in the experiments that used control groups (e.g., Hitlebeitel and Jones 1991, Green and Weber 1997), no significant improvement in the moral reasoning of the control groups was identified.

As a result, we have some confidence in our conclusions despite this limitation. Another limitation of our research is the potential that the increase in moral reasoning is only a short-lived phenomenon. Longitudinal research testing for a long-term effect through the college years and beyond would be useful.

## VI. CONCLUSION

The credibility of the accounting profession is under attack. Some authors have suggested that the ethics education provided to accounting students is inadequate (Albrecht and Sack 2000, Madison 2002, Etzioni 2002), and call for a renewed emphasis in the accounting curriculum. Our experiment shows that assigning multiple, short ethical dilemmas during the semester can significantly improve the moral reasoning of accounting students.

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