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Ethics and Accounting Education

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ABSTRACT: The current study investigates how a university accounting education affects the rationales used by accounting and first-year business students in making ethical decisions, the level of deliberative reasoning they employ, and their ethical decisions. Senior accounting students (with approximately four accounting courses to complete) were found to exhibit higher deliberative reasoning, make more frequent use of post-conventional modes of deliberative reasoning, and make more ethical decisions than first-year accounting students. These results suggest that a university accounting education has a positive effect on deliberative reasoning, on the use of post-conventional modes of deliberative reasoning, and on ethical decisions. There was no difference between the level of deliberative reasoning and ethical decisions of first-year accounting and first-year business students, but there were differences in their modes of deliberative reasoning. These results suggest that first-year accounting and first-year business students may make ethical decisions differently, implying the need for a different emphasis when teaching ethics to these two groups of students.

Keywords: deliberative reasoning; modes of deliberative reasoning; ethical decisions; university accounting education.

INTRODUCTION

Education has been suggested as a means by which ethics may be improved in the accounting profession. The American Accounting Association, Committee on the Future Structure, Content, and Scope of Accounting Education (AAA 1986) has stated that the introduction of ethical standards is one of the purposes of accounting education, and this has found widespread support (e.g., Stark et al. 1986). The transference of ethical standards has been described as essential to the socialization of students into the accounting profession (Clikeman and Henning 2000). Warth (2000, 69) even claims that the vast majority of accounting firms "rely primarily on colleges to cover the ethics and ethical behavior expected of the profession," rather than providing ethics training themselves.

Research indicates that a university education has a positive effect on accounting students' ethical standards (Keller et al. 2007), their cognitive moral capability (e.g., Armstrong 1987, 1993; Armstrong and Mintz 1989; Bernardi 1995; Cohen and Pant 1989; Jones et al. 2003; Ponemon 1993; Ponemon and Glazer 1990; St. Pierre et al. 1990), and their prescriptive reasoning (e.g., Dellaportas et al. 2006 and Welton et al. 1994). The current study reexamines the effect of a

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university education on ethical decisions in an accounting context by investigating its effect on deliberative reasoning rather than cognitive moral capability or prescriptive reasoning. Cognitive moral capability (prescriptive reasoning) is the level of ethical reasoning an individual is capable of in general contexts (in a particular context). Deliberative reasoning, however, is the actual level of ethical reasoning an individual is utilizing in a particular context (Rest 1979). This is important, since research indicates that accounting students may not use their full moral capability when facing ethical accounting dilemmas and have higher prescriptive reasoning scores than deliberative reasoning scores (Thorne 2001). The current study is the first to examine how the modes of deliberative reasoning utilized by accounting students are affected by an accounting university education and how this ultimately affects ethical decisions. Understanding these issues will allow accounting educators to better understand possible deficiencies in the ethical decision making of accounting students beginning their accounting education as well as those who are on the verge of completing theirs and, hence, provide some direction in terms of what needs to be emphasized in order to improve students' ethical decision making.

University accounting educators are typically charged with teaching at least two accounting courses to non-accounting business students. Treating them the same as accounting students may negatively impact the effectiveness of the ethics education they receive if the ethical decision making of these two groups of students differs. In fact, a disproportionately high level of accounting students and practicing accountants has a sensing/thinking cognitive style that is associated with low levels of ethical reasoning (e.g., students: Geary and Rooney 1993; Fisher and Ott 1996; and practicing accountants: Vaassen et al. 1993; Schloemer and Schloemer 1997; Abdolmohammadi et al. 2003). Studies indicate that accounting students have the same or higher cognitive moral capability, the degree to which an individual may potentially incorporate higher order principles into his/her ethical reasoning (Thorne 2001), than other business students (Icerman et al. 1991; Jeffrey 1993). The current study again compares the ethical reasoning of first-year accounting and first-year business students. The study compares deliberative reasoning rather than cognitive moral capability because, as discussed above, this may be a more relevant measure of ethical decision making.

COGNITIVE MORAL CAPABILITY AND DELIBERATIVE REASONING

Most ethical research in accounting has assessed ethical reasoning using Rest's (1979) Defining Issues Test (e.g., Lampe and Finn 1992). The Defining Issues Test (DIT) calculates an individual's p-score, a measure of cognitive moral capability. Higher cognitive moral capability has been linked to better ethical decision choices in practicing accountants (Ponemon 1992), accounting students (Abdolmohammadi and Baker 2007), university students (West et al. 2004), and individuals generally (Blasi 1980). Empirical results, however, have been mixed (see Blasi 1980; Rest 1986 for reviews). Statistically significant relationships have been found in about two-thirds of the studies reviewed in Rest (1986), and the size of the correlation has been modest. Cognitive moral capability explains 10–15 percent of the variation in ethical behavior (Thoma 1994).

Issues have been raised about the relevance of using cognitive moral capability as a measure of ethical reasoning (e.g., Thorne et al. 2003). Thorne (2000, 2001) argues that while cognitive moral capability measures the level of principled ethical considerations of which an individual is capable, it does not describe the actual level of principled ethical considerations an individual applies in resolving an ethical issue. Empirical results suggest, for example, that cooperative accounting students do not use their full cognitive moral capability when making accounting-specific ethical decisions (Thorne 2000, 2001). Cognitive moral capability is also measured in a context-free setting as opposed to, say, an accounting setting. This is an issue since it is widely held that context plays a major role in ethical decisions (e.g., Shaub 1994; Arnold 1997; Rest et al. 1999).

The current study assesses deliberative reasoning, "the formulation of an intention to act on a particular moral (ethical) dilemma" (Thorne 2001, 106). Rest et al. (1999) posit that individuals are more likely to use more principled ethical reasoning to resolve context-free ethical issues than issues they face in everyday life. In support of this, Thorne (2001) found that accounting students' cognitive moral capacity was significantly greater than their deliberative reasoning. Consequently, Earley and Kelly (2004) suggest that it would be interesting to examine potential differences between the results obtained using the DIT measure of cognitive moral capacity and accounting specific measures such as Thorne's (2000, 2001) measure of deliberative reasoning.

MODES OF DELIBERATIVE REASONING

A multidimensional ethics scale (MES) has been used in a number of studies (e.g., Flory et al. 1992; Cohen et al. 1993, 1996, 2001) to measure the use of different modes of reasoning in resolving ethical issues. The MES assumes that individuals can use one or more rationales in making ethical decisions and that the reliance on these rationales may vary with the decision context. Moral equity, contractualism, relativism, utilitarianism, and egoism are five rationales of ethical reasoning from the moral philosophy literature that have been identified (Reidenbach and Robin 1988). Moral equity posits that decisions should be evaluated in terms of their inherent fairness, justice, goodness, and rightness. With contractualism, decisions are based on the implied responsibilities individuals have toward each other. Relativism proposes that ethical decisions depend on their context; there are no universal rules. Utilitarianism asserts that decisions should be based on the outcome; the goal being to maximize benefits and minimize costs. Like utilitarianism, egoism is focused on benefits and cost, but with egoism, the focus is on the individual decision maker rather than society (Reidenbach and Robin 1990).

Previous studies using the MES approach have used general business (e.g., Cohen et al. 1992, 1996; Reidenbach and Robin 1990), management accounting (e.g., Flory et al. 1992), and auditing contexts (Ge and Thomas 2008). Empirical results indicate that auditors were most aware that actions were culturally/traditionally unacceptable (relativism) and least aware that they violated rules and unspoken promises (contractualism). Auditors and business students relied on moral equity, contractualism, and utilitarianism but not relativism when assessing the morality of most of the actions taken. Auditors relied primarily on these same three factors when determining if they would perform the act (Cohen et al. 1996, 2001).

COGNITIVE MORAL DEVELOPMENT AND MODES OF DELIBERATIVE REASONING

Research indicates that the five modes of deliberative reasoning used by decision makers are affected by their level of deliberative reasoning (Ge and Thomas 2008). The five modes of deliberative reasoning have been placed into three levels described by Kohlberg's (1969, 1976) Cognitive Moral Development (CMD) Theory. At the pre-conventional level, decisions are based on the benefits the decision maker will experience as a result of the decision. This is consistent with the egoism approach identified by Reidenbach and Robin (1988). At the conventional level, the focus is on the expectations of significant others. This is consistent with relativism, another of the five modes of ethical reasoning. With relativism, ethical rules are not universal; they are context-dependent. At the post-conventional moral development level, individuals apply universal ethical principles when making ethical decisions. This is consistent with the other three modes of reasoning identified by Reidenbach and Robin (1988). At this level, individuals consider universal fairness (moral equity), the good of society (utilitarianism), and personally held principles (contractualism) when making ethical decisions.

HYPOTHESIS DEVELOPMENT

Empirical results suggest that a university education has a positive effect on the cognitive moral capability of accounting students (e.g., Armstrong 1987, 1993; Armstrong and Mintz 1989; Bernardi 1995; Cohen and Pant 1989; Ponemon 1993; Ponemon and Glazer 1990; St. Pierre et al.1990). Although research indicates that accounting students do not use their full cognitive moral capability when facing accounting-specific ethical dilemmas, it has been found to be positively correlated with deliberative reasoning (Thorne 2001). It is, therefore, expected that a university education will have a positive effect on deliberative reasoning. The first hypothesis is, therefore, as follows:

H1: Senior accounting students use higher deliberative reasoning than first-year accounting students.

Students choosing accounting have a cognitive style associated with low levels of ethical reasoning (e.g., Geary and Rooney 1993; Fisher and Ott 1996; Abdolmohammadi et al. 2003). However, research indicates that first-year accounting students have a higher moral capability than first-year business students (Jeffrey 1993). The current study, therefore, revisits this issue, this time examining deliberative reasoning, the level of principled ethical considerations actually applied to resolve ethical dilemmas, instead of cognitive moral capability or prescriptive reasoning, the level of principled ethical consideration an individual is capable of using (Thorne 2001). The second hypothesis is, therefore, stated in the null form as follows:

H2: There is no difference between the level of deliberative reasoning of first-year accounting and first-year business students.

Since the five modes of deliberative reasoning used by decision makers are affected by their level of deliberative reasoning (Ge and Thomas 2008) and senior accounting students are hypothesized to have higher deliberative reasoning than first-year accounting students (H1), it follows that senior accounting students will make more frequent use of higher modes of deliberative reasoning. On the other hand, it is unclear whether first-year accounting students have higher deliberative reasoning than first-year business students, so no predictions can be made regarding their use of different modes of deliberative reasoning. The next two hypotheses are, therefore, as follows:

H3a: Senior accounting students make more use of post-conventional modes of deliberative reasoning than first-year accounting students.

H3b: There is no difference in the use of post-conventional modes of deliberative reasoning between first-year accounting and first-year business students.

Cognitive moral capability is the highest level of principled ethical consideration of which an individual is capable and has been linked to more ethical decisions (e.g., Abdolmohammadi and Baker 2007). Research indicates that higher deliberative reasoning leads to more ethical decision choices (Ge and Thomas 2008). Since senior accounting students are expected to use higher deliberative reasoning than first-year accounting students, they are further hypothesized to make more ethical decisions. Also, since it is hypothesized that there will be no difference between the deliberative reasoning of first-year accounting and business students, it is further hypothesized that there will be no difference in the number of ethical decisions they make. The remaining hypotheses are, therefore, as follows:

H4a: Senior accounting students make more ethical decisions than first-year accounting students.

H4b: There is no difference in the ethical decisions of first-year accounting students compared with first-year business students.

RESEARCH METHODOLOGY

Subjects

Subjects consisted of 70 senior accounting students with approximately four accounting courses to complete, 42 first-year accounting students, and 106 first-year business students at a western Canadian liberal education university. Their average ages were 24 years, 21 years, and 21 years, respectively, with age ranges 20 to 36, 18 to 35, and 18 to 37, respectively. Of the senior accounting students, first-year accounting students, and first-year business students, 36 percent, 50 percent, and 44 percent, respectively, were female. Participation was anonymous and voluntary.

Instrument

The current study combined Thorne's (2000) accounting-specific defining issues test (DIT) instrument based on Rest's (1979) instrument and the MES approach. Subjects responded to four scenarios, each involving an ethical auditing dilemma, as they believed the person in the case would respond. Response choices were either that the unethical action would be taken, would not be taken, or that the subject could not decide. In making the decision, different issues needed to be considered. Subjects ranked the importance of each issue, on a scale ranging from 1 (Great) to 4 (No). They then ranked the four issues of greatest importance for making the decision. According to their rankings, the individual's level of deliberative reasoning was determined by calculating a p-score, ranging from 0 to 95, determined from the ranking that the individual assigned to post-conventional items of consideration in resolving an ethical dilemma (Thorne 2000). Other studies have also employed Thorne's (2000) instrument to test the ethical reasoning of accounting professionals (e.g., Thorne et al. 2003) and accounting students (e.g., Ge and Thomas 2008; Bernardi et al. 2002).

The MES scale was used in previous accounting studies (e.g., Ge and Thomas 2008; Cohen et al. 1998, 2001). The procedure followed was the one that was used in the Ge and Thomas (2008) study. For each of the four scenarios, subjects were asked to assess the action according to the five MES factors comprised of 13 items: three each for moral equity, utilitarianism, and relativism; and two each for contractualism and egoism, using a seven-point Likert-type scale. The items for moral equity, for example, had end points "fair/unfair," "just/unjust," and "morally right/not morally right." Item scores were averaged for the moral equity, contractualism, and relativism factors. The Cronbach's alpha measure for these items exceeded the 0.70 score recommended by Nunnally (1978). When the Cronbach's alpha measure was low, through trial and error, the item combination with the highest alpha score would be used. The Cronbach alphas for egoism and utilitarianism were less than 0.60, regardless of the item combinations, so the item deemed best to represent the factor was chosen. For egoism, for example, it was believed that the item "personally beneficial/not personally beneficial" was a superior measure to the item "in the best interest of the audit firm/not in the best interest of the audit firm." For utilitarianism, the item "minimizes benefits while maximizes harm/maximizes benefits while minimizes harm" was chosen. Table 1 reports reliability measures (Cronbach's alphas) for each of the scales. These measures were comparable with the Ge and Thomas (2008) study, which had alphas ranging from 0.814 to 0.892, 0.870 to 0.903, and 0.689 to 0.820 for moral equity, contractualism, and relativism, respectively. This study also used one item each for egoism and utilitarianism because of low alpha values. The alpha scores of the present study were also comparable to those of the Cohen et al. (1998, 255) study. The Cohen et al. (2001)

TABLE 1

Reliability Measures (Cronbach's Alphas) for each of the Multi-Dimensional Ethics Scale (MES) Items

	Cases			
	1	**2**	**3**	**4**
Moral Equity	0.954	0.934	0.874	0.940
Contractualism	0.923	0.942	0.958	0.865
Relativism	0.729	0.765	0.760	0.724

Utilitarianism and egoism were measured using one scale.

study did not give detailed alpha scores, but the reported scores appear comparable (Cohen et al. 2001, 6).

RESULTS

Table 2 presents the ages, working hours per week, number of years of work experience, and grade point averages of the subjects. While there were significant differences, these factors were not correlated to deliberative reasoning (Table 3). An analysis of variance indicated no relationship between deliberative reasoning (p-scores) and gender. Table 4 presents the results of an analysis of variance and multiple comparison tests of the deliberative reasoning of first-year accounting, first-year business, and senior accounting students. Since empirical results suggest that a university education has a positive effect on cognitive moral capacity (e.g., Armstrong 1987, 1993; Armstrong and Mintz 1989; Bernardi 1995; Cohen and Pant 1989; Ponemon 1993; Ponemon and Glazer 1990; St. Pierre et al. 1990), and cognitive moral capacity is positively correlated to deliberative reasoning (Thorne 2001), it was hypothesized (H1) that senior accounting students would have higher deliberative reasoning than first-year accounting students. Table 4 presents results in support of H1.

TABLE 2

Descriptive Information

	Means (S.D.)			
	First-Year		Senior	
	Accounting Students (n = 42)	**Business Students (n = 106)**	**Accounting Students (n = 70)**	**p-value**
Age	20.57 (3.62)	21.63 (5.84)	24.26 (3.38)	0.000
Working hours per week	9.62 (10.53)	7.75 (10.10)	16.36 (14.69)	0.001
Number of years of work experience	1.89 (0.43)	2.12 (0.26)	2.87 (0.34)	0.123
Grade Point Average (GPA)	3.15 (0.41)	3.01 (0.49)	3.19 (0.41)	0.056

TABLE 3

Pearson's Correlations among Selected Items for Subjects

	Age	*Work*[1]	*Week*[2]	GPA	p-score
Age	1				
Work[1]	0.688**	1			
Week[2]	0.374**	0.460**	1		
GPA	0.019	−0.050	0.018	1	
p-score	0.080	0.086	0.057	0.142	1

** Correlation is significant at the 0.01 level (two-tailed).
Work[1] = Number of years of work experience.
Week[2] = Working hours per week.

TABLE 4

Deliberative Reasoning Scores

Panel A: The Deliberative Reasoning (p-scores) of First-Year Accounting, Business, and Senior Accounting Students

Subject	Mean	Std. Deviation
First Yr. Bus. Students	0.28537	0.151840
First Yr. Acc. Students	0.27640	0.165389
Senior Acc. Students	0.33893	0.134773
Total	0.30084	0.150997

Panel B: Tests of Between-Subjects Effects

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	0.152	2	0.076	3.407	0.035
Intercept	17.069	1	17.069	765.228	0.000
Subject	0.152	2	0.076	3.407	0.035
Error	4.796	215	0.022		
Total	24.678	218			
Corrected Total	4.948	217			

Panel C: LSD (Least Significant Difference) Multiple Comparisons of p-scores

(I) Subject	(J) Subject	Mean Difference (I − J)	Std. Error	Sig.
First Yr. Acc. Students	First Yr. Bus. Students	−0.00898	0.027231	0.742
	Senior Acc. Students	−0.06253*	0.029150	0.033
Senior Acc. Students	First Yr. Bus. Students	0.05356*	0.023002	0.021
	First Yr. Acc. Students	0.06253*	0.029150	0.033

* The mean difference is significant at the 0.05 level.

The p-scores of senior accounting students were found to be higher than that of first-year accounting students.

Past research has indicated that first-year accounting students have higher cognitive moral capacity than first-year business students (Jeffrey 1993). However, research has also suggested that accounting students have a cognitive style associated with low levels of ethical reasoning (e.g., Geary and Rooney 1993; Fisher and Ott 1996). H2 was, therefore, posited in the null form, that there would be no difference between the deliberative reasoning of first-year accounting and first-year business students. The results supported this hypothesis.

Given that senior accounting students are expected to have higher deliberative reasoning than first-year accounting students (H1), H3a proposed that senior accounting students would make more use of post-conventional modes of deliberative reasoning than first-year accounting students. Table 5 presents the results of ordinal logistic regressions of subjects' decisions on the MES factors for each of the cases. These results are summarized in Table 6 and provide support for this hypothesis. In all cases, senior accounting students used post-conventional modes of deliberative reasoning. In contrast, first-year accounting students used post-conventional modes of deliberative reasoning in only one of the cases (Case 3). H3b proposed that there would be no difference in the use of post-conventional modes of deliberative reasoning between first-year accounting and first-year business students. Both used post-conventional modes in Case 3, however, business students also used post-conventional modes in Case 4. First-year accounting students did not use post-conventional modes in any other case (Tables 5 and 6). The hypothesis was, therefore, not supported. There appears to be a difference in the use of post-conventional modes of deliberative reasoning between first-year accounting and first-year business students.

H4a predicted that senior accounting students would make more ethical decisions than first-year accounting students. Table 6 summarizes the decisions made in each case by subjects. Significantly more senior accounting students made ethical decisions than unethical ones in three of the four cases. In no case did significantly more senior accounting students make unethical decisions than ethical ones ($p < 0.05$, Table 7, Panel A and Table 8). Significantly more first-year accounting students made ethical decisions than unethical ones in only two of the four cases. Furthermore, significantly more first-year accounting students made unethical decisions than ethical ones in one of the four cases ($p < 0.05$, Table 7, Panel B and Table 8). This latter result was repeated for first-year business students. Significantly more first-year business students made ethical decisions than unethical ones in only two of the four cases. Also, significantly more first-year business students made unethical decisions than ethical ones in one of the four cases ($p < 0.05$, Table 7, Panel C and Table 9). The percentage of senior accounting students making ethical decisions was greater than the percentage of first-year accounting students making ethical decisions for each of the four cases. This difference was statistically significant for Cases 1 and 2 ($p < 0.05$, Table 8). The percentage of senior accounting students making ethical decisions was also greater than the percentage of first-year business students making ethical decisions in all four cases. This difference was statistically significant for all four cases ($p < 0.05$, Table 9). These results, therefore, provided support for H4a.

H4b posited that there would be no difference in the ethical decisions of first-year accounting students compared with first-year business students. The percentage of first-year accounting students making ethical decisions was greater than the percentage of first-year business students making ethical decisions in three of the four cases. This difference, however, was not statistically significant ($p < 0.05$, Table 9). Significantly more first-year accounting students made more ethical decisions than unethical ones in Cases 3 and 4. Also, significantly more first-year accounting students made more unethical decisions than ethical ones in Case 2 ($p < 0.05$, Table 7, Panel B and Table 8). These results were the same for first-year business students ($p < 0.05$, Table 7, Panel C and Table 8), thus providing support for H4b.

TABLE 5

Ordinal Logistic Regressions of Subjects' Decisions on the MES Factors

Panel A: Case 1—First-Year Business Students

	−2 Log Likelihood	Chi-Square	df	Sig.	Estimate	Std. Error	Wald	df	Sig.	95% Confidence Interval Lower Bound	95% Confidence Interval Upper Bound
Model											
Intercept Only	111.274										
Final	86.214	25.060	5	0.000							
MES Factors											
Moral equity					−0.405	0.232	3.061	1	0.080	−0.860	0.049
Utilitarianism					0.264	0.196	1.811	1	0.178	−0.121	0.649
Contractualism					−0.004	0.182	0.000	1	0.984	−0.360	0.353
Relativism					−0.239	0.272	0.773	1	0.379	−0.772	0.294
Egoism					−0.398	0.151	6.908	1	0.009	0.101	0.694

Panel B: Case 1—First-Year Accounting Students

	−2 Log Likelihood	Chi-Square	df	Sig.	Estimate	Std. Error	Wald	df	Sig.	95% Confidence Interval Lower Bound	95% Confidence Interval Upper Bound
Model											
Intercept Only	49.907										
Final	36.373	13.533	5	0.019							
MES Factors											
Moral equity					0.034	0.342	0.010	1	0.920	−0.636	0.705
Utilitarianism					−0.022	0.315	0.005	1	0.943	−0.641	0.596
Contractualism					0.025	0.377	0.004	1	0.947	−0.713	0.763
Relativism					0.202	0.448	0.203	1	0.652	−0.677	1.080
Egoism					−0.818	0.295	7.714	1	0.005	0.241	1.396

Panel C: Case 1—Senior Accounting Students

	−2 Log Likelihood	Chi-Square	df	Sig.	Estimate	Std. Error	Wald	df	Sig.	95% Confidence Interval Lower Bound	95% Confidence Interval Upper Bound
Model											
Intercept Only	57.169										
Final	28.925	28.244	5	0.000							
MES Factors											
Moral equity					−1.052	0.474	4.931	1	0.026	−1.981	−0.124
Utilitarianism					0.487	0.399	1.490	1	0.222	−0.295	1.269
Contractualism					0.027	0.341	0.006	1	0.936	−0.642	0.697
Relativism					0.196	0.520	0.142	1	0.706	−0.823	1.216
Egoism					−0.400	0.300	1.780	1	0.182	−0.987	0.187

(continued on next page)

TABLE 5 (continued)

Panel D: Case 2—First-Year Business Students

	−2 Log Likelihood	Chi-Square	df	Sig.	Estimate	Std. Error	Wald	df	Sig.	95% Confidence Interval Lower Bound	95% Confidence Interval Upper Bound
Model											
Intercept Only	43.757										
Final	36.581	7.176	5	0.208							
MES Factors											
Moral equity					0.071	0.311	0.052	1	0.819	−0.538	0.680
Utilitarianism					−0.275	0.311	0.783	1	0.376	−0.884	0.334
Contractualism					−0.565	0.292	3.759	1	0.053	−0.006	1.137
Relativism					0.437	0.370	1.397	1	0.237	−0.288	1.162
Egoism					−0.593	0.210	7.935	1	0.005	0.180	1.005

Panel E: Case 2—First-Year Accounting Students

	−2 Log Likelihood	Chi-Square	df	Sig.	Estimate	Std. Error	Wald	df	Sig.	95% Confidence Interval Lower Bound	95% Confidence Interval Upper Bound
Model											
Intercept Only	29.306										
Final	15.836	13.470	5	0.019							
MES Factors											
Moral equity					−0.203	0.653	0.097	1	0.755	−1.482	1.076
Utilitarianism					−1.080	0.628	2.958	1	0.085	−0.151	2.311
Contractualism					0.365	0.689	0.281	1	0.596	−0.984	1.715
Relativism					1.525	1.007	2.293	1	0.130	−0.449	3.499
Egoism					0.227	0.336	0.458	1	0.499	−0.431	0.885

Panel F: Case 2—Senior Accounting Students

	−2 Log Likelihood	Chi-Square	df	Sig.	Estimate	Std. Error	Wald	df	Sig.	95% Confidence Interval Lower Bound	95% Confidence Interval Upper Bound
Model											
Intercept Only	82.108										
Final	47.210	34.898	5	0.000							
MES Factors											
Moral equity					−1.325	0.525	6.358	1	0.012	−2.354	−0.295
Utilitarianism					−1.296	0.410	9.994	1	0.002	0.492	2.099
Contractualism					−0.677	0.367	3.407	1	0.065	−1.396	0.042
Relativism					−1.155	0.474	5.924	1	0.015	0.225	2.085
Egoism					−0.556	0.218	6.534	1	0.011	−0.983	−0.130

(continued on next page)

TABLE 5 (continued)

Panel G: Case 3—First-Year Business Students

	−2 Log Likelihood	Chi-Square	df	Sig.	Estimate	Std. Error	Wald	df	Sig.	95% Confidence Interval Lower Bound	95% Confidence Interval Upper Bound
Model											
Intercept Only	103.677										
Final	71.234	32.444	5	0.000							
MES Factors											
Moral equity					−0.087	0.287	0.093	1	0.761	−0.650	0.476
Utilitarianism					0.324	0.209	2.396	1	0.122	−0.086	0.733
Contractualism					−0.664	0.210	10.023	1	0.002	−1.076	−0.253
Relativism					0.183	0.289	0.404	1	0.525	−0.382	0.749
Egoism					−0.405	0.185	4.783	1	0.029	0.042	0.768

Panel H: Case 3—First-Year Accounting Students

	−2 Log Likelihood	Chi-Square	df	Sig.	Estimate	Std. Error	Wald	df	Sig.	95% Confidence Interval Lower Bound	95% Confidence Interval Upper Bound
Model											
Intercept Only	34.106										
Final	21.522	12.584	5	0.028							
MES Factors											
Moral equity					−1.000	0.467	4.592	1	0.032	−1.915	−0.085
Utilitarianism					−0.725	0.356	4.150	1	0.042	−1.423	−0.027
Contractualism					−0.512	0.459	1.246	1	0.264	−1.411	0.387
Relativism					−1.748	0.813	4.620	1	0.032	0.154	3.342
Egoism					0.313	0.350	0.800	1	0.371	−0.373	1.000

Panel I: Case 3—Senior Accounting Students

	−2 Log Likelihood	Chi-Square	df	Sig.	Estimate	Std. Error	Wald	df	Sig.	95% Confidence Interval Lower Bound	95% Confidence Interval Upper Bound
Model											
Intercept Only	47.683										
Final	28.011	19.673	5	0.001							
MES Factors											
Moral equity					−0.377	0.477	0.625	1	0.429	−1.312	0.558
Utilitarianism					−0.620	0.350	3.150	1	0.076	−1.305	0.065
Contractualism					−1.501	0.589	6.503	1	0.011	0.347	2.655
Relativism					−0.515	0.556	0.859	1	0.354	−1.605	0.574
Egoism					−0.249	0.363	0.470	1	0.493	−0.961	0.463

(continued on next page)

TABLE 5 (continued)

Panel J: Case 4—First-Year Business Students

	−2 Log Likelihood	Chi-Square	df	Sig.	Estimate	Std. Error	Wald	df	Sig.	95% Confidence Interval Lower Bound	95% Confidence Interval Upper Bound
Model											
Intercept Only	102.945										
Final	76.508	26.437	5	0.000							
MES Factors											
Moral equity					−1.021	0.311	10.782	1	0.001	−1.630	−0.411
Utilitarianism					0.201	0.227	0.789	1	0.374	−0.243	0.646
Contractualism					−0.207	0.258	0.646	1	0.422	−0.713	0.298
Relativism					0.585	0.379	2.376	1	0.123	−0.159	1.328
Egoism					0.043	0.159	0.075	1	0.785	−0.268	0.354

Panel K: Case 4—First-Year Accounting Students

	−2 Log Likelihood	Chi-Square	df	Sig.	Estimate	Std. Error	Wald	df	Sig.	95% Confidence Interval Lower Bound	95% Confidence Interval Upper Bound
Model											
Intercept Only	33.503										
Final	15.963	17.540	5	0.004							
MES Factors											
Moral equity					−1.093	0.664	2.711	1	0.100	−2.394	0.208
Utilitarianism					−1.404	0.741	3.594	1	0.058	−0.048	2.856
Contractualism					0.335	0.602	0.310	1	0.577	−0.845	1.516
Relativism					−0.955	0.959	0.991	1	0.319	−2.836	0.925
Egoism					0.341	0.754	0.205	1	0.651	−1.136	1.819

Panel L: Case 4—Senior Accounting Students

	−2 Log Likelihood	Chi-Square	df	Sig.	Estimate	Std. Error	Wald	df	Sig.	95% Confidence Interval Lower Bound	95% Confidence Interval Upper Bound
Model											
Intercept Only	59.598										
Final	27.199	32.399	5	0.000							
MES Factors											
Moral equity					−2.928	1.190	6.054	1	0.014	−5.261	−0.596
Utilitarianism					0.299	0.578	0.268	1	0.605	−0.833	1.431
Contractualism					0.365	0.437	0.699	1	0.403	−0.491	1.222
Relativism					1.509	0.969	2.427	1	0.119	−0.390	3.409
Egoism					−0.402	0.375	1.148	1	0.284	−1.137	0.333

TABLE 6

Summary of MES Factors Used and Decisions Made in Each Case by Subjects

	Cases			
	1	**2**	**3**	**4**
MES Factors:				
Moral Equity	Senior Acc.	Senior Acc.	1st Yr. Acc.	1st Yr. Bus. Senior Acc.
Utilitarianism		Senior Acc.	1st Yr. Acc.	
Contractualism			1st Yr. Bus. Senior Acc.	
Relativism		Senior Acc.	1st Yr. Acc.	
Egoism	1st Yr. Bus. 1st Yr. Acc.	Senior Acc.	1st Yr. Bus.	
Decisions:				
Senior Acc.	Ethical		Ethical	Ethical
1st Yr. Acc.		Unethical	Ethical	Ethical
1st Yr. Bus.		Unethical	Ethical	Ethical

Case 1: Conflict of Interest
Case 2: Auditor Independence
Case 3: Client Confidentiality
Case 4: Conflict of Interest

DISCUSSION AND CONCLUSION

Consistent with previous findings that examined cognitive moral capability and prescriptive reasoning, the current study found that a university accounting education appears to have a beneficial effect on deliberative reasoning (e.g., Armstrong 1987, 1993; Armstrong and Mintz 1989; Bernardi 1995; Cohen and Pant 1989; Dellaportas et al. 2006; Ponemon 1993; Ponemon and Glazer 1990; St. Pierre et al. 1990; Welton et al. 1994). This is an important finding since deliberative reasoning describes the level of ethical consideration applied to resolving issues, as opposed to cognitive moral capability and prescriptive reasoning that describe the ethical consideration that an individual is capable of (Thorne 2000, 2001). This area of inquiry is also consistent with the suggestion that empirical results using the DIT measure of cognitive moral capability should be compared with results using accounting specific measures, such as the deliberative reasoning measure used in the current study (Earley and Kelly 2004). The results suggest the positive impact of a university education on ethical decision making and decisions and supports the reliance of accounting firms, as described by Warth (2000, 69), on colleges to provide ethics training. Senior accounting students were found to have higher deliberative reasoning than first-year accounting students. Furthermore, they made more frequent use of post-conventional modes of deliberative reasoning and thus made more ethical decisions than first-year accounting students.

Ethics education needs to focus on the use of the post-conventional modes of deliberative reasoning rather than relativism and egoism. When senior accounting students used only post-conventional modes of deliberative reasoning (moral equity, utilitarianism, and contractualism), significantly more made more ethical than unethical decisions. When they used relativism and egoism (Case 2), there was no significant difference in the number that made ethical decisions compared with the number that made unethical decisions. When first-year accounting students did

TABLE 7

Ethical and Unethical Responses

Panel A: Chi-Square Tests Comparing Senior Accounting Students' Ethical and Unethical Responses to the Cases

	Case 1	Case 2	Case 3	Case 4
Chi-Square	24.067	0.803	34.129	20.763
df	1	1	1	1
Asymp. Sig.	0.000	0.370	0.000	0.000

Panel B: Chi-Square Tests Comparing First-Year Accounting Students' Ethical and Unethical Responses to the Cases

	Case 1	Case 2	Case 3	Case 4
Chi-Square	0.000	19.703	10.939	5.143
df	1	1	1	1
Asymp. Sig.	1.000	0.000	0.001	0.023

Panel C: Chi-Square Tests Comparing First-Year Business Students' Ethical and Unethical Responses to the Cases

	Case 1	Case 2	Case 3	Case 4
Chi-Square	2.390	76.455	15.070	5.128
df	1	1	1	1
Asymp. Sig.	0.122	0.000	0.000	0.024

not use post-conventional modes of deliberative reasoning, there was either no difference in the number of students making ethical decisions compared with those making unethical decisions (Case 1), or there were more students making unethical decisions (Case 2). An important area of inquiry is examining the effect of different types of ethical training on individuals' use of the different modes of deliberative reasoning.

Ethics education should, therefore, focus on minimizing the use of relativism and egoism in ethical decisions. Relativism suggests that ethical decisions depend on their context and that ethical values cannot be universally applied. Ethics education should emphasize that certain values, such as being honest and maintaining fiduciary responsibility, are universal and should never be violated. Egoism posits that the goal of ethical decisions is to maximize benefits for the decision maker and minimize costs. In contrast to this, students should be taught that the consequences to the decision maker should never be the primary consideration; instead, goals such as inherent fairness, justice, goodness, and the good of society should be pursued.

The issue of auditor independence appears to be a challenging one. There was no significant difference in the number of senior accounting students making ethical decisions compared with those making unethical decisions for the auditor independence case (Case 2), and this was the only case in which they used conventional (relativism) and pre-conventional (egoism) modes of deliberative reasoning. Significantly more first-year accounting students made unethical decisions with this case than those that made ethical decisions. This suggests that special attention needs to be

TABLE 8

Chi-Square Tests Comparing First-Year and Senior Accounting Students' Responses to the Cases

Panel A: Case 1

					Chi-Square Tests				
	Unethical	Ethical	Total	Percent Ethical	Value	df	Asymp. Sig. (Two-Sided)	Exact Sig. (Two-Sided)	Exact Sig. (One-Sided)
First Yr. Acc. Students	18	18	36	50.0					
Senior Acc. Students	11	49	60	81.7					
Total	29	67	96						
Pearson Chi-Square					10.700	1	0.001		
Continuity Correction					9.252	1	0.002		
Likelihood Ratio					10.547	1	0.001		
Fisher's Exact Test								0.002	0.001
Linear-by-Linear Association					10.590	1	0.001		

Panel B: Case 2

					Chi-Square Tests				
	Unethical	Ethical	Total	Percent Ethical	Value	df	Asymp. Sig. (Two-Sided)	Exact Sig. (Two-Sided)	Exact Sig. (One-Sided)
First Yr. Acc. Students	32	5	37	13.5					
Senior Acc. Students	34	27	61	44.3					
Total	66	32	98						
Pearson Chi-Square					9.902	1	0.002		
Continuity Correction					8.553	1	0.003		
Likelihood Ratio					10.747	1	0.001		
Fisher's Exact Test								0.002	0.001
Linear-by-Linear Association					9.801	1	0.002		

Panel C: Case 3

					Chi-Square Tests				
	Unethical	Ethical	Total	Percent Ethical	Value	df	Asymp. Sig. (Two-Sided)	Exact Sig. (Two-Sided)	Exact Sig. (One-Sided)
First Yr. Acc. Students	7	26	33	78.8					
Senior Acc. Students	8	54	62	87.1					
Total	15	80	95						
Pearson Chi-Square					1.118	1	0.290		
Continuity Correction					0.581	1	0.446		

(continued on next page)

TABLE 8 (continued)

					Chi-Square Tests				
	Unethical	Ethical	Total	Percent Ethical	Value	df	Asymp. Sig. (Two-Sided)	Exact Sig. (Two-Sided)	Exact Sig. (One-Sided)
Likelihood Ratio					1.082	1	0.298		
Fisher's Exact Test								0.377	0.221
Linear-by-Linear Association					1.106	1	0.293		

Panel D: Case 4

					Chi-Square Tests				
	Unethical	Ethical	Total	Percent Ethical	Value	df	Asymp. Sig. (Two-Sided)	Exact Sig. (Two-Sided)	Exact Sig. (One-Sided)
First Yr. Acc. Students	8	20	28	71.4					
Senior Acc. Students	12	47	59	79.7					
Total	20	67	87						
Pearson Chi-Square					0.727	1	0.394		
Continuity Correction					0.336	1	0.562		
Likelihood Ratio					0.709	1	0.400		
Fisher's Exact Test								0.422	0.277
Linear-by-Linear Association					0.719	1	0.397		

placed on the auditor independence issue as well as the importance of relying on post-conventional, rather than conventional and pre-conventional, modes of deliberative reasoning.

There was no significant difference in the deliberative reasoning or the ethical decisions of first-year accounting as compared with first-year business students. There was, however, a difference in their modes of deliberative reasoning. First-year accounting students used egoism in one of the four cases while first-year business students used egoism twice. First-year accounting (business) students did not use contractualism (utilitarianism) in any of the cases. These results suggest important areas of differences between these two groups of students that educators should consider when delivering ethics education.

The accounting literature has examined the process by which ethical values can and should be effectively passed on to university students. Welton et al. (1994), for example, suggest the extensive use of written and video ethics cases while McPhail (2001) suggests techniques such as group learning, case studies, role-playing, and film. Research also indicates the effectiveness of multimedia presentations (e.g., Canarutto et al. 2010; Smith et al. 2005). The current study attempted to extend this research by identifying topics that should be the focus of ethics instruction. The study suggests the importance of emphasizing the use of certain modes of deliberative reasoning (moral equity, contractualism, and utilitarianism) and the dangers of others (relativism and egoism). The study also indicates that auditor independence may be an issue that needs specific attention in accounting ethics education.

The current study used a convenience sample rather than one that was randomly selected. The sample was collected from one university, and so it is possible that the students who responded

TABLE 9

Chi-Square Tests Comparing First-Year Business and First-Year Accounting Students' Responses to the Cases

Panel A: Case 1

					Chi-Square Tests				
	Unethical	**Ethical**	**Total**	**Percent Ethical**	**Value**	**df**	**Asymp. Sig. (Two-Sided)**	**Exact Sig. (Two-Sided)**	**Exact Sig. (One-Sided)**
First Yr. Bus. Students	34	48	82	58.5					
First Yr. Acc. Students	18	18	36	50.0					
Total	52	66	118						
Pearson Chi-Square					0.740	1	0.390		
Continuity Correction					0.434	1	0.510		
Likelihood Ratio					0.737	1	0.391		
Fisher's Exact Test								0.425	0.255
Linear-by-Linear Association					0.733	1	0.392		

Panel B: Case 2

					Chi-Square Tests				
	Unethical	**Ethical**	**Total**	**Percent Ethical**	**Value**	**df**	**Asymp. Sig. (Two-Sided)**	**Exact Sig. (Two-Sided)**	**Exact Sig. (One-Sided)**
First Yr. Bus. Students	93	6	99	6.1					
First Yr. Acc. Students	32	5	37	13.5					
Total	125	11	136						
Pearson Chi-Square					2.012	1	0.156		
Continuity Correction					1.135	1	0.287		
Likelihood Ratio					1.834	1	0.176		
Fisher's Exact Test								0.170	0.144
Linear-by-Linear Association					1.998	1	0.158		

Panel C: Case 3

					Chi-Square Tests				
	Unethical	**Ethical**	**Total**	**Percent Ethical**	**Value**	**df**	**Asymp. Sig. (Two-Sided)**	**Exact Sig. (Two-Sided)**	**Exact Sig. (One-Sided)**
First Yr. Bus. Students	25	61	86	70.9					
First Yr. Acc. Students	7	26	33	78.8					
Total	32	87	119						
Pearson Chi-Square					0.749	1	0.387		
Continuity Correction					0.403	1	0.526		

(continued on next page)

TABLE 9 (continued)

					Chi-Square Tests				
	Unethical	**Ethical**	**Total**	**Percent Ethical**	**Value**	**df**	**Asymp. Sig. (Two-Sided)**	**Exact Sig. (Two-Sided)**	**Exact Sig. (One-Sided)**
Likelihood Ratio					0.773	1	0.379		
Fisher's Exact Test								0.491	0.266
Linear-by-Linear Association					0.743	1	0.389		

Panel D: Case 4

					Chi-Square Tests				
	Unethical	**Ethical**	**Total**	**Percent Ethical**	**Value**	**df**	**Asymp. Sig. (Two-Sided)**	**Exact Sig. (Two-Sided)**	**Exact Sig. (One-Sided)**
First Yr. Bus. Students	29	49	78	62.8					
First Yr. Acc. Students	8	20	28	71.4					
Total	37	69	106						
Pearson Chi-Square					0.672	1	0.412		
Continuity Correction					0.346	1	0.556		
Likelihood Ratio					0.686	1	0.407		
Fisher's Exact Test								0.492	0.281
Linear-by-Linear Association					0.666	1	0.415		

were not representative of students from other universities. Future research should examine the effect on students at other universities and other accounting programs. The current study looked only at conflict of interest, auditor independence, and client confidentiality issues. Future research should look at other auditing, as well as other accounting ethical issues. Two of the MES factors, utilitarianism and egoism, were measured using single items because of low Cronbach alpha scores. It is, therefore, possible that these items did not faithfully represent the concepts they were intended to capture. Also, the survey approach used in the current study may not invoke the real-world pressures faced by individuals in an actual ethical scenario.

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