

2005

## Raising students' ethical sensitivity with a value relevance approach

Michael Coyne

Fairfield University, [mcoyne@fairfield.edu](mailto:mcoyne@fairfield.edu)

Dawn W. Massey

Fairfield University, [dmassey@fairfield.edu](mailto:dmassey@fairfield.edu)

Jay Thibodeau

Follow this and additional works at: <https://digitalcommons.fairfield.edu/business-facultypubs>

Copyright 2005 Emerald

Peer Reviewed

---

### Repository Citation

Coyne, Michael; Massey, Dawn W.; and Thibodeau, Jay, "Raising students' ethical sensitivity with a value relevance approach" (2005). *Business Faculty Publications*. 90.

<https://digitalcommons.fairfield.edu/business-facultypubs/90>

### Published Citation

Coyne, M., Dawn Massey and Jay Thibodeau. 2005. "Raising students' ethical sensitivity with a value relevance approach." *Advances in Accounting Education: Teaching and Curriculum Innovations*, Volume 7, pp. 171-205.

This item has been accepted for inclusion in DigitalCommons@Fairfield by an authorized administrator of DigitalCommons@Fairfield. It is brought to you by DigitalCommons@Fairfield with permission from the rights-holder(s) and is protected by copyright and/or related rights. **You are free to use this item in any way that is permitted by the copyright and related rights legislation that applies to your use. For other uses, you need to obtain permission from the rights-holder(s) directly, unless additional rights are indicated by a Creative Commons license in the record and/or on the work itself.** For more information, please contact [digitalcommons@fairfield.edu](mailto:digitalcommons@fairfield.edu).

# **RAISING STUDENTS' ETHICAL SENSITIVITY WITH A VALUE RELEVANCE APPROACH**

Michael P. Coyne  
Assistant Professor of Accounting  
Bucknell University  
Department of Management  
Lewisburg, PA 1783 570-577-3628  
mcoyne@bucknell.edu

Dawn W. Massey\*  
Associate Professor of Accounting  
Fairfield University  
Charles F. Dolan School of Business  
1073 North Benson Road  
Fairfield, CT 06430-7524  
dmassey@mail.fairfield.edu

Jay C. Thibodeau  
Associate Professor of Accounting  
Bentley College  
Department of Accountancy  
175 Forest Street  
Waltham, MA 02154-4705  
jthibodeau@bentley.edu

\*Corresponding Author

**Length: 48 Pages**

## **ABSTRACT**

*This paper introduces a new approach to raising students' ethical sensitivity. This new "Value Relevance Approach" (VRA) employs active instructional techniques to demonstrate the costs (benefits) associated with acting in an unethical (ethical) manner. Using a within and between subjects, pre/post-test design, we (1) assess the effectiveness of the VRA in affecting students' ethical sensitivity and (2) compare the effectiveness of the VRA in affecting students' ethical sensitivity to that of a traditional learning approach (TLA). The results indicate that ethical sensitivity improves for subjects in the VRA condition and also improves to a greater extent than for subjects in the TLA condition, suggesting that the VRA is more effective than a TLA in promoting ethical sensitivity among students.*

## INTRODUCTION

The recent financial statement restatements made by corporate giants such as Enron, WorldCom, and Tyco have contributed towards perhaps the biggest loss of investor trust that has ever occurred in the United States since the stock market crash of 1929 (Eichenwald 2002, 3.1). Much of the responsibility for the current crisis has been placed squarely on the backs of accounting professionals (Byrnes et al. 2002, 44; Eichenwald 2002, 3.1; Nelson 2002, C1). While the passage of the Sarbanes-Oxley Act of 2002 lays a foundation to restore investor confidence, the behavior of individuals must change if the law is to have its desired effect (*Harvard Law Review* 2003, 2123; *Report of the National Commission on Fraudulent Financial Reporting* 1987).

Indeed, the importance and value of personal integrity has become increasingly salient within the prevailing investment information marketplace. Consider remarks recently made by S. Scott Voynich, chairman of the American Institute of Certified Public Accountants (AICPA), who commented (Tie 2003, 57) that “Competence can be purchased anywhere, but without integrity and objectivity, you don’t have value.” In a recent “advertorial,” PricewaterhouseCoopers (PWC 2003, 9) echoed Voynich’s sentiment, stating, “Rules, regulations, laws, concepts, structures, processes, best practices, and even the most progressive use of technology cannot ensure public trust. This can only come about when people of integrity are committed to doing the right thing.” It has become clear that for society to restore trust and credibility to the investment information marketplace, it must assure the integrity of accounting professionals.

One way to impact the moral fabric and integrity of accounting professionals is by raising their ethical sensitivity while they are college students. Ethical sensitivity, an

individual's "ability to recognize that a situation has ethical content when it is encountered" (Shaub 1989, 7), is a necessary antecedent to an individual's consideration of a situation from an ethical perspective (cf., Myyry and Helkama 2002, 35).

Accordingly, improving students' ethical sensitivity can foster the development of their cognitive framework in a way that helps to facilitate the students' identification of ethical dilemmas that they encounter as they progress through their career. The development of such a framework is consistent with the cognitive-developmental perspective, which suggests that since the ethical decision process is cognitive in nature, it is subject to development (Kohlberg 1969).

Educators have a responsibility to help "the next generation of business leaders to act with integrity and principle" in completing their duties (PWC 2003, 15). For some time, accounting researchers (American Accounting Association Committee on the Future Structure, Content, and Scope of Accounting Education (the Bedford Committee) 1986, 179; Fischer and Rosenzweig 1995, 440-441; Kerr and Smith 1995, 993; Williams 2003, 15) have suggested improving the moral fabric of accountants, starting with their ability to identify ethical dilemmas (i.e., their ethical sensitivity). However, there has been criticism regarding the manner in which accounting educators have attempted to reach this goal. For example, Kerr and Smith (1995, 998) criticized accounting textbooks for their singular emphasis on professional ethics codes. In addition, unlike other resources Kerr and Smith discuss (e.g., case problems, videotape presentations, educational novels, etc.), textbooks lack content regarding actual ethical issues and dilemmas, suggesting that an emphasis on ethical codes and rules will not be enough to prepare accounting professionals to restore trust and credibility to the investment

information marketplace. The profession needs an innovative approach to raising ethical sensitivity.

In this paper, we introduce and provide theoretical support for a new pedagogical approach, the “Value Relevance Approach” (VRA), to improve the ethical sensitivity of accounting students. The VRA focuses on the substantial costs (benefits) of unethical (ethical) behavior, as demonstrated through the use of relevant, real-world ethical vignettes and stories. In so doing, the VRA acknowledges the benefits of sharing the consequences associated with relevant, real-life vignettes/stories in helping to impart critical knowledge (Lavelle and Borus 2004, 88). In the education psychology literature, using relevant, real life vignettes and stories has long been acknowledged as an excellent manner in which to impart knowledge (McWilliam et al. 1996, 4). Indeed, Simmons (2001, xvii) refers to stories and vignettes as “the oldest tool of influence in human history.” And, in the accounting education literature, Stewart (1997) describes narratives as a powerful approach in teaching ethics.

The results of an experiment administered to 208 students from three universities provide support for the effectiveness of the VRA in raising students’ ethical sensitivity. Specifically, for subjects in the VRA condition, the results indicate a higher ethical sensitivity after the VRA intervention, suggesting that the VRA is effective in promoting ethical sensitivity among students. Further, subjects in the VRA condition improved their ethical sensitivity to a greater extent than subjects in the Traditional Learning Approach (TLA) condition, suggesting that the VRA is more effective in promoting ethical sensitivity than the TLA. Taken together, these results provide support for the effectiveness of the VRA in raising students’ ethical sensitivity.

We organize the remainder of this paper into five sections. The next section presents a review of the literature investigating the development of ethical sensitivity. The second section discusses the Value Relevance Approach in detail, providing theoretical support for the approach and developing the research hypotheses. Section three describes the research method. Section four presents the results. The final section describes the conclusions, implications, and limitations of this study.

## **LITERATURE REVIEW**

The vast majority of studies investigating the development of ethical sensitivity in accounting have their foundation in the cognitive-developmental perspective, most of which rely on Rest's (1979, 1994) model of ethical action (see, e.g., Jones, et al. 2003 and Louwers, et al. 1997 for reviews of the literature). The cognitive-developmental perspective generally focuses on the cognitive and developmental nature of the reasoning structures that precipitate ethical decisions or choices (Kohlberg 1969). Thus, according to the cognitive-developmental perspective, the ethical decision process is cognitive in nature and, like other cognitive abilities, is subject to development.

According to Rest's (1979, 1994) model of ethical action, there are four components to the ethical decision process: (1) Identification of an Ethical Dilemma; (2) Formulation of Ethical Judgment; (3) Determination of an Intention to Act Ethically; and (4) Ethical Action/Behavior. Of particular importance in affecting the behavior of accounting students is component (1), students' ability to identify situations as having an ethical component and thereby initiate the ethical decision process (i.e., their ethical sensitivity) (Armstrong et al. 2003, 4; Jones et al. 2003, 46; Mayper et al. 1999, 5-8;

Shaub 1989, 7). Simply stated, “[b]efore one can act ethically, one must understand that an ethical issue exists” (Armstrong et al. 2003, 4).<sup>1</sup>

Additionally, several researchers indicate that “intensity” affects individuals’ ability to identify ethical dilemmas in general (Jones 1991, 380; Rest 1983, 559) as well as in accounting (Karcher 1996, 1045; Mayper, et al. 1999, 8). Intensity, “the extent of issue-related ethical imperative in a situation” (Jones 1991, 372), is a multi-dimensional construct comprising six components: the magnitude of consequences, the degree of social consensus, the probability that harm will occur, temporal immediacy, proximity of harm to the target, and the concentration of effect. In accounting, Karcher (1996, 1045) finds that subjects are more likely to identify an issue as an ethical dilemma if the legal or professional consequences are severe. Thus, research results highlight the important association between the magnitude of consequences and accountants’ ability to identify ethical dilemmas.

To date, very little research in accounting has focused on improving component (1) of Rest’s (1979, 1994) model of ethical action, the ability to identify ethical dilemmas (i.e., ethical sensitivity) (see Armstrong et al. 2003 for a review of the literature). That is, despite calls for increased attention to improving ethical sensitivity (The Bedford Committee 1986, 186; Report of the National Commission on Fraudulent Financial Reporting 1987, 82), only one empirical study investigates whether ethical sensitivity improves as a result of an educational intervention. Fulmer and Cargile (1987, 216) report that although accounting students exposed to the AICPA Code of Professional Conduct perceived ethical issues more frequently than other business students, they do not choose different actions as a result of differences in their ethical perceptions. Thus, results in Fulmer and Cargile (1987) indicate, as Armstrong et al. (2003, 5) state, that

simple exposure to the AICPA Code of Professional Conduct “may be necessary, but not sufficient, to change students’ ethical behavior.” Because of the dearth of studies in the area, however, it is unclear what educational interventions might better improve ethical sensitivity and result in changes in students’ behavior.

There has been considerable debate in the accounting literature about the appropriate mechanisms that should be employed in affecting individuals’ overall ethical decision process (e.g., Kerr and Smith 1995; Langenderfer and Rockness 1989; Loeb and Rockness 1992; Ponemon 1993). On the one hand, accounting educators might employ traditional learning approaches that are passive in nature (e.g., student reading or student note-taking from instructor lecture). On the other hand, accounting educators might employ more contemporary learning approaches that are active in nature (e.g., case analysis and discussion or student role play).

Of relevance to the current study, Kerr and Smith (1995) discuss the various pedagogical devices available for educators in presenting ethical issues and provide two important suggestions. First, Kerr and Smith (1995, 989) recommend, “When using case problems to present ethical issues, attention could also be given to the disastrous personal consequences of unethical behavior.” This sentiment was echoed by Sarah B. Teslick, executive director of the Council of Institutional Investors who acknowledged the difficulty of teaching corporate ethics and suggested that “case studies exploring the consequences of real-life behavior” can be an effective mechanism to impart change (Lavelle and Borrus 2004, 88). This supports the important role of the magnitude of consequences in ethics training (cf., Karcher 1996, 1045).

Second, Kerr and Smith (1995, 992) recommend a focus on realistic ethical dilemmas students may encounter in the workplace, suggesting the use of “Current

articles on ethics [that] pique students' interest and reinforce the timeliness and significance of [the issue]." This recommendation highlights the important role of using relevant cases in ethics training.

### **THE VALUE RELEVANCE APPROACH**

Based on the foregoing discussion, there are important links between (1) the severity of the consequences and identification of an ethical dilemma and (2) the use of relevant cases and vignettes and training to enhance individuals' ability to identify an ethical dilemma. Accordingly, we propose a new approach focusing on "value" and "relevance", the Value Relevance Approach (VRA), to improve accounting students' ability to identify an ethical dilemma. We discuss each in turn.

#### ***Focus on Value***

The first tenet of the VRA emphasizes the notion that "value" is impacted by both ethical and unethical behaviors.<sup>2</sup> That is, acting in an ethical manner enhances a business professional's value in today's knowledge and relationship-based economy. On the other hand, unethical behavior (e.g., fraudulent financial reporting) will often lead to substantial human and financial costs to individuals, organizations, and society at large.

The information value chain perspective helps to establish the relationship between value and ethical as well as unethical behavior. According to this perspective, the value-added role of an accounting professional is to deliver critical knowledge at the point-of-need for upper managers and investors with "trustworthiness and unbreachable integrity" (Elliott 2000, 83). If the character dimension of an accounting professional has been tarnished by an unethical action, the knowledge provided by that professional is not

likely to be trusted by senior management and investors. Thus, the value of such an accounting professional decreases because of the unethical action.

Indeed, over the past couple of years, numerous prestigious CEOs have gone on record to emphasize the value premium presently associated with high integrity, high ethics professionals (e.g., Brennan 2002). In short, to maximize their value, professionals must have trust. If this trust is ever broken as a result of an unethical action – whether in or outside of a work-related situation – it is unlikely that any associate would ever trust that individual as a business professional. And, in an economy where the primary value drivers are knowledge and relationships (Elliott 2000, 83), this lack of trust clearly results in a loss in value.

### ***Focus on Relevance***

The second tenet of the VRA emphasizes the importance of “relevance” when imparting knowledge about ethical sensitivity. That is, the VRA features relevant cases (i.e., timely vignettes), presenting them using relevant approaches (i.e., an active learning approach coupled with feedback). For example, one approach that might be considered under the VRA would be to have students take a “current-events ethics quiz” cold (i.e., without any prior study) and then provide them with feedback about their answers. Such a quiz might require that students formulate independent estimates of the costs of a real life example of unethical behavior and then receive feedback about the accuracy of their responses.

An important feature of the VRA is its use of timely, real-world examples in the learning activity. For more than a decade, there have been calls for accounting educators to bring “practical reality” into the classroom (Albrecht and Sack 2000, 51; Arthur Andersen et al. 1989; Knechel 2000, 709). These calls apparently have merit as empirical

results also suggest the importance of linking classroom experiences to real-world events (e.g., Etnier 1983, 155; Mohrweis 1993, 391).

In the ethical domain, Rest and Narváez (1994, 217) suggest that successful ethics interventions help subjects develop a “cognitive framework of understanding.” By including real-world events in the VRA, we believe that the VRA helps the students to draw connections between actual unethical (ethical) behavior and the costs (benefits) of that behavior, thereby promoting the development of the students’ cognitive framework for understanding the magnitude of the costs of ethical misdeeds. In this way, we believe inclusion of real-world events in the VRA to be an important element for assisting students in successfully bridging the gap between the classroom and real-world practice.

Additionally, the VRA uses two relevant approaches, the first of which is its application of an active learning strategy. According to Bonwell and Eison (1991, 2), active learning is defined as “instructional activities involving students in doing things and thinking about what they are doing.” The pedagogical value of active learning activities has been well documented in higher education in general (e.g., Bonwell and Eison 1991) and in accounting education (e.g., Ferguson et al. 2000; Groomer et al. 1992; Krumwiede and Blin 1997; Pillsbury 1993). It is not surprising, then, that calls continue for accounting faculty to “design educational experiences for students that require them to be active, independent learners and problem solvers rather than passive recipients of information” (Bedford Committee 1986, 187; see also: AECC 1990; Albrecht and Sack 2000). By asking students to take an “ethics quiz” without any prior preparation, the VRA would require students actively to connect an example of unethical behavior with the costs of such behavior. We believe that use of such an active learning approach in the VRA is important for furthering students’ ethics education.

Finally, the VRA also incorporates the use of timely and accurate feedback to complete the learning experience. In the example provided, students taking the “ethics quiz” would be provided with timely information about the accuracy of their estimates made during the quiz (i.e., outcome feedback). In general, results of prior research suggest that outcome feedback is effective for improving generic decisions involving a simple criterion outcome (e.g., Balzer et al. 1989, 412) as well as decisions in an accounting context (e.g., Bonner and Walker 1994, 173; Emby et al. 2002, 87; Hirst et al. 1999, 286; Tuttle and Stocks 1998, 104). In the ethical domain, Rest and Narváez (1994, 217) suggest the importance of “integrating direct experience with reflection” as an additional factor important for development of subjects’ cognitive framework of understanding. As applied to the current study, the instructor utilizes the feedback incorporated in the VRA to focus subjects on the costs and benefits associated with a real ethical dilemma. As such, it allows the students to integrate direct experience with reflection and, theoretically, should enhance subjects’ cognitive framework for understanding ethical issues.

Given the theoretical support for the features embodied in the VRA discussed above, we anticipate that the VRA intervention will result in an improvement in students’ ethical sensitivity. Further, we anticipate that the VRA intervention will result in a greater improvement in students’ ethical sensitivity than an intervention based on a traditional learning approach (TLA). These expectations give rise to Hypotheses 1 and 2:

**HYPOTHESIS 1:** The VRA will result in a significant increase in students’ ethical sensitivity.

HYPOTHESIS 2: The VRA will result in a greater increase in students' ethical sensitivity than a TLA.

## **RESEARCH METHOD**

### *Participants and Task*

Our sample includes 208 accounting majors (sophomores through fifth year students) from three private universities in the Eastern United States. Of the total, 70, 58, and 80 were students at Universities 1, 2, and 3, respectively. Subjects' participation in the study was voluntary. However, to encourage participation, instructors afforded extra credit points (e.g., 2 percentage points added to their raw final examination grade) to all subjects participating in the experiment.

Subjects completed a six-task experiment that included (1) a pre-experimental questionnaire to elicit demographic information as well as subjects' general awareness of and attitudes toward accounting scandals prior to the experiment; (2) a pretest questionnaire to assess ethical sensitivity at the outset of the experiment; (3) the VRA intervention or the TLA intervention; (4) a distracter task (an unrelated survey); (5) a post-test questionnaire to assess ethical sensitivity following the intervention; and (6) a post-experimental questionnaire to elicit subjects' comments about the experiment as well as their general awareness of and attitudes toward accounting scandals following the experiment. We randomly assigned approximately one-half of the subjects to each the VRA and TLA conditions in task 3 (the intervention). Appendices 1-6 contain hard-copy samples of the experimental task materials. <sup>3</sup>

### *Measures of Ethical Sensitivity*

Ethical sensitivity is an individual's ability to identify a situation as having an ethical dimension and thereby initiate the ethical decision process (Armstrong et al. 2003, 4; Jones et al. 2003, 46; Myyry and Helkama 2002, 35). A key feature of ethical sensitivity is an affective aspect—awareness that one's actions affect others (Rest 1994, 23). Thus, to the extent individuals are more perceptive to others, they will be more ethically sensitive.

Prior research generally has measured ethical sensitivity by assessing whether or not an individual recognized that a particular issue had an ethical dimension (e.g., Abdolmohammadi and Owhoso 2000; Karcher 1996; Shaub, et al. 1993). However, when an intervention is used, as in the present context, the possibilities of demand effects complicate any posttest measure of an individual's recognition or lack of recognition that a particular issue has an ethical dimension. Therefore, we do not employ this measure of ethical sensitivity.

Instead, we use Forsyth's (1980) Ethics Position Questionnaire to assess changes in subjects' ethical sensitivity, based on the work of Shaub and his colleagues. Shaub (1989) argues that because those who are strong relativists believe that moral absolutes cannot be relied upon in making ethical decisions, they are less likely to learn the norms guiding professional behavior, such as those prescribed in a code of conduct. As a result, strong relativists lack knowledge of professional guidelines and thus are less sensitive to the ethical dimension of the situations they encounter. Thus, Shaub et al. (1993) posit and find a significantly negative association (at a correlation of  $-.160$ ) between relativism and ethical sensitivity.

Shaub (1989) also argues that because those who are strong idealists believe that doing the right thing will necessarily produce positive consequences, they are more likely to focus on the affective aspect of their actions. Accordingly, Shuab et al. (1993, 154) hypothesize a significantly positive association between idealism and ethical sensitivity. However, results in Shaub et al. (1993, 163) actually controvert their hypothesis, as they found a marginally *negative* relationship between idealism and ethical sensitivity (at a correlation of  $-.077$ ). Thus, while idealism and ethical sensitivity should, theoretically, bear a positive relationship, empirical results suggest that the opposite may be true.

Following Shaub et al. (1993), we use changes in an individual's measures of relativism and idealism from Forsyth's (1980, 178) Ethics Position Questionnaire as proxies to assess that individual's change in ethical sensitivity. In other words, we associate decreases in subjects' relativism scores with increases in ethical sensitivity and changes in subjects' idealism scores with increases in ethical sensitivity.<sup>4</sup> In addition, because prior research (Karcher 1996, 1043) has found that age is a significant factor impacting an individual's ethical sensitivity, we control for age when analyzing differences in the measures of ethical sensitivity between subjects.

### ***Overview of the Intervention***

As discussed previously, approximately one-half of the subjects participated in each the VRA and TLA conditions of the experiment (task 3). The VRA condition of the experiment consists of an active learning activity. Without any advance preparation on their part, we ask students in the VRA condition to provide answers to questions on an "ethics quiz" by formulating estimates for the costs of unethical behavior associated with real ethical lapses. Following the students' attempts at responding to the quiz, we provide

them with feedback about the answers to the questions on the quiz. In contrast, students in the TLA condition take part in a more passive learning activity. That is, students in the TLA condition read a summary about the costs of unethical behavior associated with recent ethical lapses.

### *The VRA Condition*

Recall that the two major elements of the VRA are the approach's focus on value and emphasis on relevance. To incorporate features inherent in both of these elements, we developed an "ethics quiz" that, in the experiment, allowed us to:

- (1) Focus the students' attention on the impact of unethical behavior on value;  
and
- (2) Incorporate timely, real-world cases that both:
  - a. Engage the students (i.e., utilize an active learning activity); and
  - b. Provide the students with feedback.

In the current business environment, there were a number of real-world ethical irregularities involving major corporations from which to choose material for the VRA condition. We chose the majority of our real-world questions from the highly publicized Enron/Andersen, WorldCom and Martha Stewart ethical scandals because our experiences suggested that students would have some general familiarity with these scandals, yet would not necessarily know the specific costs of the unethical behavior (e.g., loss in company market value or loss in jobs). We then chose a number of other, even more recent ethical accounting scandals that, at the time, were less-publicized than those involving Enron/Andersen, WorldCom and Martha Stewart to elicit responses across ethical scandals covering a wide spectrum of publicity (e.g., Health South and Kmart).

The quiz asked students a series of questions related to the Enron, WorldCom and Martha Stewart cases that focused on the financial and human consequences of these scandals. See Appendix 3. The questions attempted to provide students with a sense of what was “gained” or “lost” from the unethical behavior by estimating various losses (e.g., market value, jobs, etc.) After completing the quiz, we gave students feedback about the answers to the questions posed in the quiz. See Appendix 4.

It is important to note that although the particular ethical scandals we chose to include may be current now, in time they will not be. Recall, however, that a key feature of the VRA is its incorporation of timely, real-world events that assist students in linking actual unethical behavior to the costs of those misdeeds. Consequently, the particular quiz we developed is simply one example of a learning activity that could be used in the VRA.

#### *The TLA Condition*

As is typical of traditional learning approaches, the learning activity embodied in the TLA condition was more passive in nature. In the TLA condition, the researchers provided students with a written summary that briefly discussed the Enron/Arthur Andersen, WorldCom and Martha Stewart scandals. The written summary focused on the financial consequences (e.g., loss in company market value) and the human consequences (e.g., loss of jobs) related to these scandals. The document also listed a series of less publicized accounting scandals (e.g., Xerox and Kmart). Overall, the content in the written summary was identical to that provided in the feedback about the answers to the ethics quiz in the VRA condition. See Appendix 5.

## RESULTS

### *Demographic Information*

The sample consisted of 208 accounting majors from three private institutions in the Eastern United States. To assess the robustness of the VRA across a wide spectrum of students, we drew accounting majors from the sophomore through fifth-year levels and randomly assigned them to the experimental (VRA) condition (101 subjects) and control (TLA) condition (107 subjects). Overall, there were 112 males (54%) and 96 (46%) females in the sample. The students ranged in age from 19 to 56 (mean age of 23.1 years old). In addition, the percentage of students who had taken an ethics course was also quite similar (44% of students in the VRA group and 43% of students in the TLA group). Table 1 presents a summary of the sample – by experimental condition – for each of the demographic characteristics, as well as for pretest relativism scores and pretest idealism scores. There were no statistically significant differences in any of the demographic characteristics between the VRA and TLA conditions.

Additionally, Table 1 presents a summary of responses to two questions that focused on determining subjects' general awareness of and attitudes toward the relevant accounting scandals prior to the experimental treatment. Overall, the responses indicate that, prior to the experimental treatment, the groups' awareness of the accounting scandals as well as their attitudes regarding the seriousness of the accounting scandals were uniform. Specifically, students in each group were able to name the same number of companies involved in the relevant accounting scandals prior to the experimental treatment (i.e., 2.7). And, only 2% of students in each group believed that the accounting scandals were not a serious problem. The remainder thought the accounting scandals were either a serious or very serious problem.

-----  
Insert Table 1 about here  
-----

### *Results of Hypothesis Testing*

To demonstrate that the VRA was effective in raising students' ethical awareness, we calculated relativism and idealism scores for each subject from both the pre- and the post-experimental Ethics Position Questionnaires (Forsyth 1980, 178). These scores were then used to complete a within-subjects analysis of the treatment group and a between-subjects analysis comparing the treatment group to the control group. Each of these analyses is now presented in turn.

#### *Within-Subjects Analysis*

To complete the within-subjects analysis, we compared scores for subjects in the VRA condition from both the pre- and the post-test Ethics Position Questionnaires for relativism and idealism using paired samples t-tests. For comparative purposes, we also compared pre- and post-test relativism and idealism scores for subjects in the TLA condition using paired samples t-tests.

-----  
Insert Table 2 about here  
-----

As shown in Table 2, there are no significant changes for either relativism or idealism scores for subjects in the TLA condition (at  $p=0.921$  and  $p=0.323$ , respectively). For students in the VRA condition, as expected, the relativism rating mean score decreased from 5.00 on the pre-experimental questionnaire to 4.78 on the post-experimental questionnaire. A paired sample t-test comparison of these means indicates

that this decrease was significant (one-tailed  $p=0.009$ ), suggesting that the VRA improved students' ethical sensitivity. A graphical illustration of the change in pre- and post-test relativism scores across experimental conditions is shown in Figure 1.

-----  
Insert Figure 1 about here  
-----

The idealism scores for subjects in the VRA condition also changed, from 6.38 on the pre-experimental questionnaire to 6.50 on the post-experimental questionnaire. A paired sample t-test of these means indicates that this increase was marginally significant (two-tailed  $p=0.088$ ), which further suggests that the VRA affected students' ethical sensitivity. A graphical illustration of the change in pre- and post-test idealism scores across experimental conditions is shown in Figure 2.<sup>5</sup>

-----  
Insert Figure 2 about here  
-----

Importantly, to place the efficacy of the TLA and the VRA results in context, we calculate the effect size gains of both treatments and compare them to the effect size gains for other ethics interventions of similar length. Effect size is an indicator of the power of the treatment. For each independent treatment group, effect size for that treatment is represented by the difference between the mean of the pre-test and the post-test divided by the pooled standard deviation (i.e., the weighted average standard deviation within the groups of the study) (cf., Rest and Thoma 1986, 76-78). Importantly, in a meta-analysis of short-term ethics interventions, Rest and Thoma (1986, 84) report effect size gains of about .09 for interventions with time horizons comparable to this study (i.e., between 30 and 60 minutes) up to and including interventions lasting three weeks. In the present study, subjects in the TLA condition experienced small effect

size gains in both their pre to post relativism scores (.01) and their pre to post idealism scores (.09). Thus, effect size gains in the TLA condition in this study are similar to Rest and Thoma (1986, 84). In contrast, for the VRA condition, the effect size gains for relativism and idealism were .26 and .18, respectively. Given these results, there is strong support for H1. <sup>6</sup>

*Between-Subjects Analysis*

To complete the between-subjects analysis, we first tested whether there were any differences between the pre-experimental relativism and idealism scores for subjects in the VRA condition as compared to those for subjects in the TLA condition. This step is important because it establishes that across the treatment and control groups, the subjects' ethical sensitivity was the same before the experimental treatment. As shown in Table 1 and discussed previously, the pretest relativism (idealism) score for subjects in the VRA condition of 5.00 (6.37) was not significantly different from the pretest relativism (idealism) score for subjects in the TLA condition of 5.11 (6.29) ( $p=0.464$  for relativism,  $p=0.618$  for idealism). Accordingly, we proceeded with our between-subjects analysis, the results of which appear in Table 3.

-----  
Insert Table 3 about here  
-----

Given the statistical similarity of the subjects' ethical sensitivity before the experimental treatment, we performed an ANCOVA to assess whether, after controlling for pretest scores and age, subjects' relativism (idealism) scores in the posttest could be attributed to the experimental condition. In the ANCOVA for relativism, both covariates, pretest relativism score and age, are significant (at  $p=0.000$  and  $p=0.003$ , respectively). In

addition, the experimental condition is significant at  $p= 0.025$ . Supplementary analysis finds that on average, subjects in the experimental group experienced a decrease in their relativism score of 0.22 while, on average, relativism scores for subjects in the control condition were virtually unchanged (i.e., increase of 0.01). This result implies that the VRA was more effective than a TLA in increasing the ethical sensitivity of students (as reflected by decreasing relativism scores) and provides support for H2.

In the ANCOVA for idealism, the covariate pretest idealism score is significant ( $p=.000$ ); however, the covariate age and the experimental condition are not significant ( $p=0.374$  and  $p=0.557$ , respectively). Supplementary analysis finds that on average, subjects in the experimental group experienced an increase in their idealism score of 0.13 while, on average, idealism scores for subjects in the control condition increased (by 0.07). Although in the correct direction, this result was not statistically significant.<sup>7</sup>

Taken together, one result (i.e., ethical sensitivity as measured by relativism) suggests that the VRA improved students' ethical sensitivity while one result (i.e., ethical sensitivity as measured by idealism) does not. Accordingly, the results in this study provide partial support for H2.

#### *Supplemental Analysis of Responses to the Pre- and Post-Questionnaires*

To provide supplemental evidence in support of the effectiveness of the VRA, we also analyzed several of students' pre and post questionnaire responses (see Appendix 1 and Appendix 6). A brief discussion of the significant results now follows. The detailed results are presented in Table 4.

-----  
Insert Table 4 about here  
-----

*Question 5: Student Assessments about the Financial Costs of Unethical Behavior*

Question 5, which appeared only on the post-questionnaires, asked students whether the financial cost of unethical behavior was greater or less than they originally expected. We based the data for analyzing this question on three possible responses the students could have given (i.e., greater, same or less cost than expected).<sup>8</sup> To assess whether the experimental treatments differentially affected student ethical sensitivity and, thus, their assessment of the financial cost of unethical behavior, we performed an ANCOVA. In our ANCOVA, the students' post assessment of the financial cost of unethical behavior (greater, same or less) was the dependent variable; the treatment (VRA or TLA) was the independent variable; and age was the covariate. As shown in Table 4 (Panel B), our ANCOVA revealed that the covariate age was not significant ( $p=.827$ ) and the experimental condition was marginally significant ( $p=.061$ ). Further analysis reveals that, on average, 82% of the subjects in the experimental group reported the financial cost was greater than they thought, whereas in the TLA condition, 68% responded that the effect was greater. These results suggest the VRA heightened student awareness of the financial costs of unethical behavior to a somewhat greater extent than the TLA.

*Question 7: Student Surprise about the Costs of Unethical Behavior*

Question 7 also appeared only on the post-questionnaires. It asked students whether they were surprised by the cost of unethical behavior. We based the data for analyzing this question on two possible responses the students could have given (i.e., yes or no). To assess whether the experimental treatments differentially affected student ethical sensitivity and, thus, their surprise at the cost of unethical behavior, we performed an

ANCOVA. In our ANCOVA, the students' surprise at the cost of unethical behavior (yes or no)<sup>9</sup> was the dependent variable; the treatment (VRA or TLA) was the independent variable; and age was the covariate. As shown in Table 4 (Panel D), although the covariate age was not significant ( $p=.708$ ), the experimental condition was significant ( $p=.000$ ). Further analysis reveals that, on average, only 19% of subjects in the control group reported they were surprised by the information in the study, while 70% of subjects in the VRA condition reported being surprised. These results underscore the superior effect of the VRA, when compared to the TLA, in sensitizing students to the costs of unethical behavior.<sup>10</sup>

## **DISCUSSION**

This paper introduces an innovative approach to raising students' ethical sensitivity. This new "Value Relevance Approach" (VRA) uses an active instructional technique to demonstrate the costs associated with acting in an unethical manner and the benefits of acting in an ethical manner. In addition to introducing and providing theoretical support for the VRA, we also tested whether this approach is more effective than a traditional learning approach (TLA) in raising the ethical sensitivity of students.

Overall, as hypothesized, the results indicate that the VRA was effective in raising the ethical sensitivity of students. Evidence of the effectiveness of VRA is provided in three ways. First, a within-subjects analysis revealed that the ethical sensitivity of students exposed to the VRA increased significantly when assessed via relativism and marginally significantly when assessed via idealism. At the same time, while there was no significant change in the ethical sensitivity of students exposed to a TLA (whether assessed via relativism or idealism). Second, results from a between-subjects analysis

indicate that the ethical sensitivity of students exposed to the VRA increased, but the results were only significant when assessed via relativism (idealism results were not significant). Third, for a series of measures calculated from the pre- and post-questionnaire responses, additional evidence suggests the VRA was more effective than the TLA in sensitizing students to the number of companies involved in the accounting scandals and the costs of unethical behavior. Most notably, as compared to subjects in the TLA condition, many more subjects in the VRA condition expressed surprise by the actual costs of unethical behavior.

Three key implications follow from with these findings. First, the results suggest that in the near term, VRA shows promise for increasing students' sensitivity to ethical issues. This result is significant because improving students' ethical sensitivity, which precedes initiation of their ethical decision process (Armstrong et al, 2003, 4) can help students develop cognitive frameworks that can help them identify and resolve the ethical dilemmas they may encounter as they progress in their careers. Because we find that students are more sensitive to ethical issues following the VRA, VRA is a promising training tool for educators to add to their accounting-ethics curriculum. Future research may also explore the effect and effectiveness of the VRA on practicing CPAs.

Second, a key feature of the VRA is its incorporation of current, real-world events. For example, the quiz we used in the VRA condition in this study included events that are now current, but that in time will not be. Accordingly, our results underscore the need for educators to update their courses to reflect reality (cf., Albrecht and Sack 2000, 51; Arthur Andersen et al. 1989; Knechel 2000, 709). Future research could, however, assess the long-term effect on ethical sensitivity of using the VRA.

Third, our results provide evidence to support the theoretical arguments presented in Shaub et al. (1993). Namely, that increases in ethical sensitivity are associated with increases (and not decreases) in subjects' idealism. Interestingly, while significant changes in relativism scores were apparent following the short-term VRA intervention, changes in subjects' idealism scores were less pronounced. Accordingly, future research may explore the effect and effectiveness of the VRA over a longer term, particularly as it relates to idealism scores for practicing CPAs.

In this paper, we chose to feature losses that relate to unethical behavior as a way of raising ethical awareness. As an extension of testing the Value Relevance Approach, future researchers might feature benefits that relate to ethical behavior or compare whether featuring losses as opposed to benefits is more effective at impacting ethical behavior. In addition, future research can address the differential effect of various types of losses or benefits, such as whether personal losses or benefits have a greater or lesser effect on ethical behavior than societal losses or benefits.

Finally, although the results we attained might be limited by factors that are idiosyncratic to this particular study (e.g., using convenience samples, self-reported measures, and one example for the VRA), we believe the VRA approach can have wide usefulness. Indeed, we designed the VRA for application to any level of students, undergraduate and graduate. In addition, others might utilize the approach in any accounting class. The key, we believe, is for a faculty member to incorporate the salient features of the VRA into a learning activity: (1) focusing the students' attention on the market value effects of unethical behavior and (2) incorporating timely, real-world cases that (a) engage the students by utilizing an active learning activity and (b) provide the students with timely feedback. Thus, by utilizing the VRA we believe faculty can

improve students' ethical sensitivity and then, perhaps we, as educators, can help our students to stay on the straight and narrow. By doing so, it is possible that we can help to reduce the apparent decline in the moral fabric of our students and, ultimately, of accounting professionals.

## REFERENCES

- Abdolmohammadi, M. and V. Owghoso. (2000). Auditors' ethical sensitivity and assessment of the likelihood of fraud. *Managerial Finance*, 26, 21-29.
- Accounting Education Change Commission (AECC). (1990). Objectives of education for accountants: Position statement number one. *Issues in Accounting Education*, Fall, 307-312.
- Albrecht, W. and R. Sack. (2000). *Accounting Education: Charting the Course through a Perilous Future*. A joint project of: AAA, AICPA, IMA, Arthur Andersen, Deloitte and Touche, Ernst and Young, KPMG, PricewaterhouseCoopers. *Accounting Education Series, Vol. 16*. Sarasota, FL: AAA.
- American Accounting Association Committee on the Future Structure, Content, and Scope of Accounting Education. (The Bedford Committee). (1986). Future accounting education: Preparing for the expanding profession. *Issues in Accounting Education*, Spring, 168-195.
- Armstrong, M., E. Ketz, D. Owsen. (2003). Ethics education in accounting: Moving toward ethical motivation and ethical behavior. *Journal of Accounting Education*, 21, 1-16.
- Arthur Andersen & Co., Arthur Young, Coopers & Lybrand, Deloitte Haskins & Sells, Ernst & Whinney, Peat Marwick Main & Co., Price Waterhouse, and Touche Ross. (1989). *Perspectives on Education: Capabilities for Success in the Accounting Profession*. New York.
- Balzer, W., M. Doherty, and R. O'Connor, Jr. (1989). Effects of cognitive feedback on performance. *Psychological Bulletin*, 106(3), 410-433.
- Bonner, S. and P. Walker. (1994). The effects of instruction and experience on the acquisition of auditing knowledge. *The Accounting Review*, 69 (January), 157-178.
- Bonwell, C. and J. Eison. (1991). *Active learning: Creating excitement in the classroom*. ASHE-ERIC Higher Education Report No. 1. Washington, DC: The George Washington University, School of Education and Human Development.
- Brennan, J. (2002). The market value of integrity. *The Sears Lectureship in Business Ethics*, October 29, Waltham, MA: Bentley College Center for Business Ethics.
- Byrnes, N., M. McNamee, D. Brady, and L. Lavelle. (2002). Accounting in crisis: Reform is urgent. Here's what needs to be done. *Business Week*, January 28, 44-48.
- Eichenwald, K. (2002). Even if heads roll, mistrust will live on. *New York Times*, October 6; Late Edition (East Coast), 3.1.

- Elliott, R. (2000). Who we are as a profession - and what must we become? *Journal of Accountancy*, 189 (Feb), 81-85.
- Emby, C., A. Gelardi, and D. Lowe. (2002). A research note on the influence of outcome knowledge on audit partners' judgments. *Behavioral Research in Accounting*, 14, 87-103.
- Etnier, D. (1983). The next best thing to an audit practice set. *Journal of Accounting Education*, 1, 155-157.
- Ferguson, C., G. Richardson and G. Wines. (2000). Audit education and training: the effect of formal studies and work experience. *Accounting Horizons*, June, 137-167.
- Fischer, M. and K. Rosenzweig. (1995). Attitudes of students and accounting practitioners concerning the ethical acceptability of earnings management. *Journal of Business Ethics*, 14 (6), 433-444.
- Forsyth, D. (1980). Taxonomy of ethical ideologies. *Journal of Personality and Social Psychology*, 39 (July), 175-184.
- Fulmer, W., and B. Cargile. (1987). Ethical perceptions of accounting students: does exposure to a code of professional ethics help? *Issues in Accounting Education*, 2, 207-219.
- Groomer, S., L. Mohrweis and D. Ward. (1992). An empirical examination of a video simulation for audit instruction. *Accounting Educators' Journal*, 4, 40-52.
- Harvard Law Review*. (2003). The good, the bad, and their corporate code of ethics: Enron, Sarbanes-Oxley, and the problems with legislating good behavior. 116 (May), 2123.
- Hirst, M., P. Lockett, and K. Trotman. (1999). Effects of feedback and process predictability on process learning and judgment accuracy. *Abacus*, 35 (3), 286-301.
- Jones, T. (1991). Ethical decision making by individuals in organizations: An issue-contingent model. *Academy of Management Review*, 16, 366-395.
- Jones, J., D. Massey, and L. Thorne. (2003). Auditors' ethical reasoning: Insights from past research and implications for the future. *Journal of Accounting Literature*, 22, 45-103.
- Karcher, J. (1996). Auditors' ability to discern the presence of ethical problems. *Journal of Business Ethics*, 15 (10), 1033-1050.

- Kerr, D. and L. M. Smith. (1995). The importance of and approaches to incorporating ethics into the accounting classroom. *Journal of Business Ethics*, 14 (12), 987-995.
- Knechel, W. (2000). Behavioral research in auditing and its impact on audit education. *Issues in Accounting Education*, 15 (Nov), 695-712.
- Kohlberg, L. (1969). Moral stages and moralization: The cognitive-developmental approach to socialization. In *Handbook of Socialization Theory and Research*, ed. D. Goskin, 347-480. Chicago: Rand McNally.
- Krumwiede, T. and D. Bline. (1997). Encouraging active learning through the use of student developed problems. *Accounting Educators' Journal*, IX (Fall), 116-129.
- Langenderfer, H. and J. Rockness. (1989). Integrating ethics into the accounting curriculum: Issues, problems and solutions, *Issues in Accounting Education*, 4 (1), 58-69.
- Lavelle, L. and A. Borrus. (2004). Ethics 101 For CEOs. *Business Week*, January 26, 88.
- Loeb, S. and J. Rockness. (1992). Accounting ethics and education: A response. *Journal of Business Ethics*, 11 (7), 485-490.
- Louwers, T., L. Ponemon, and R. Radtke. (1997). Examining accountants' ethical behavior: A review and implications for future research. In *Behavioral Accounting Research: Foundations and Frontiers*, ed. V. Arnold and S. Sutton, 48-88. Sarasota, FL: American Accounting Association.
- Mayper, A., W. Hoops, R. Pavur, and B. Merino. (1999). Accounting: A moral discipline? Paper presented at American Accounting Association Southwest Regional Meeting, Houston, TX, March.
- McWilliam, P., M. Kersgard, W. Hedrick, and S. Vance. (1996). *The case method of instruction (CMI) project*. (Final Report to the Office of Special Education Programs (Special Projects), the U.S. Department of Education.) Chapel Hill, NC: University of North Carolina, June 30.
- Mohrweis, L. (1993). Teaching audit planning and risk assessment: An empirical test of the Dermaceutics instructional resources. *Issues in Accounting Education*, 8 (4) Fall, 391-403.
- Myry, L. and K. Helkama. (2002). The role of value priorities and professional ethics training in moral sensitivity. *Journal of Moral Education*, 31 (1), 35-50.
- Nelson, S. (2002). Healing the accounting industry: The push is on for audit reform, before sting of Andersen verdict fades. *The Boston Globe*, June 23, C31.

- Pillsbury, C. (1993). Systems softball: An integrative, group game for teaching internal control evaluation. *Issues in Accounting Education*, 8 (Spring), 128-138.
- Ponemon, L. (1993). Can ethics be taught in accounting? *Journal of Accounting Education*, 11 (2), 195-210.
- PricewaterhouseCoopers. (2003). *Stand and be counted*. Advertorial Campaign. New York.
- Report of the National Commission on Fraudulent Financial Reporting*. (1987). Washington, DC: National Commission on Fraudulent Financial Reporting.
- Rest, J. (1979). *Development in Judging Moral Issues*, Minneapolis, MN: University of Minnesota Press.
- Rest, J. (1994). Background theory and research. In *Moral Development in the Professions: Psychology and Applied Ethics*, ed. J. Rest and D. Narváez, 1-26. Hillsdale, NJ: Lawrence Erlbaum Associates.
- Rest, J. and D. Narváez. (1994). Summary: What's possible? In *Moral Development in the Professions: Psychology and Applied Ethics*, ed. J. Rest and D. Narváez, 213-224. Hillsdale, NJ: Lawrence Erlbaum Associates, Inc.
- Rest, J. and S. Thoma. (1986). Educational programs and interventions. In *Moral Development: Advances in Research and Theory*, ed. J. Rest, 59-88. New York: Praeger Publishers.
- Shaub, M., (1989). An empirical examination of the determinants of auditors' ethical sensitivity, Unpublished doctoral dissertation, Texas Tech University.
- Shaub, M., D. Finn, P. Munter. (1993). The effects of auditors' ethical orientation on commitment and ethical sensitivity. *Behavioral Research in Accounting*, 5, 145-169.
- Simmons, A. (2001). *The story factor: Inspiration, influence, and persuasion through the art of storytelling*. Cambridge, MA: Perseus Publishing.
- Stewart, I. (1997). Teaching accounting ethics: The power of narrative. *Accounting Education*, 2 (2), 173-184.
- Tie, R. (2003). The profession's roots. *Journal of Accountancy*, November, 57-59.
- Tuttle, B. and M. Stocks. (1998). The use of outcome feedback and process property information by subjects with accounting-domain knowledge to predict financial distress. *Behavioral Research in Accounting*, 10, 76-108.
- Williams, P. (2003). Association for integrity in accounting enters the discussion of accounting reforms. *The CPA Journal*, 73 (4), 14-15.

**Table 1**  
**Descriptive Statistics**

Characteristic	All Subjects	Experimental Subjects (VRA)	Control Subjects (TLA)
Females <ul style="list-style-type: none"> <li>• Number</li> <li>• Percent</li> </ul>	96 46%	48 48%	48 45%
Age In Years* <ul style="list-style-type: none"> <li>• Mean</li> <li>• Range</li> </ul>	23.1 19-56	22.6 19-52	23.5 19-56
Those Who Took An Ethics Course <ul style="list-style-type: none"> <li>• Number</li> <li>• Percent</li> </ul>	90 43.5%	44 44%	46 43%
Pretest Relativism** <ul style="list-style-type: none"> <li>• Mean</li> <li>• (s.d.)</li> </ul>	5.07 (1.17)	5.00 (1.22)	5.11 (1.10)
Pretest Idealism** <ul style="list-style-type: none"> <li>• Mean</li> <li>• (s.d.)</li> </ul>	6.33 (1.28)	6.37 (1.11)	6.29 (1.39)
Pretest Number of Companies Students Named As Being Involved in Ethics Scandals in the Last 2 Years (Average)	2.7	2.7	2.7
Pretest Percentage of Students Indicating That The Accounting Scandals Were <i>Not</i> a Serious Problem <ul style="list-style-type: none"> <li>• Number</li> <li>• Percentage</li> </ul>	4 2%	2 2%	2 2%
Sample Composition <ul style="list-style-type: none"> <li>• Number</li> <li>• Percent</li> </ul>	208 100%	101 49%	107 51%

**Notes:**

\*Note that one subject in the TLA condition did not report his or her age.

\*\*Experimental subjects' relativism (idealism) scores were not statistically different from control subjects' relativism (idealism) scores at  $p > .70$  ( $p > .86$ ).

**Table 2**  
**Within Subjects Analysis: Paired Samples T-Tests (H1)**

*Panel A: Subjects in the TLA Condition*

	Mean (s.d.) Pretest Score	Expected Relationship (Pretest: Posttest)	Mean (s.d.) Posttest Score	t	Two-tailed p-value
Relativism	5.11 (1.10)	=	5.11 (1.30)	0.10	.921
Idealism	6.29 (1.39)	=	6.35 (1.5)	-0.99	.323

*Panel B: Subjects in the VRA Condition*

	Mean (s.d.) Pretest Score	Expected Relationship (Pretest: Posttest)	Mean (s.d.) Posttest Score	t	p-value*
Relativism	5.00 (1.22)	>	4.78 (1.42)	2.40	.009
Idealism	6.37 (1.11)	≠	6.50(1.25)	-1.70	.088

**Note:** \*One-tailed p-value for relativism; two-tailed p-value for idealism

**Table 3**  
**Between Subjects Analysis: ANCOVA Results for Subjects in the VRA versus the TLA Conditions (H2)**

*Panel A: Relativism\**

Source of Variation	Sum of Squares	df	Mean Square	F	Two-tailed p-value
Covariate (Pretest Relativism)	236.37	1	236.37	375.21	.000
Covariate (Age)	5.55	1	5.55	8.81	.003
Experimental Condition**	3.20	1	3.20	5.08	.025
Explained	257.74	3	85.914	136.38	.000
Residual	127.88	203	.63		
Total	385.62	206			

*Panel B: Descriptive Statistics for Differences in Relativism*

(n <sub>experimentals</sub> , n <sub>controls</sub> )	Mean Pre to Post Difference in Relativism for Experimentals (s.d.)	Mean Pre to Post Difference in Relativism for Controls (s.d.)
(101,107)	-0.22 (0.91)	+0.01 (0.70)

**Notes:**

\* Model: Posttest Relativism Score =  $b_0 + b_1$ \*Pretest Relativism Score +  $b_2$ \*Age +  $b_3$ \*Experimental Condition +  $\epsilon$

\*\*The covariate-adjusted means are 5.07 for the TLA condition and 4.82 for the VRA condition.

**Table 3**  
**Between Subjects Analysis: ANCOVA Results for Subjects in the VRA versus the TLA Conditions (H2) (continued)**

*Panel C: Idealism* \*\*\*

Source of Variation	Sum of Squares	df	Mean Square	F	Two-tailed p-value
Covariate (Pretest Idealism)	279.41	1	279.41	552.78	.000
Covariate (Age)	.40	1	.40	.794	.374
Experimental Condition ****	.18	1	.18	.346	.557
Explained	287.1	3	287.1	189.33	.001
Residual	102.61	203	.51		
Total	389.71	206			

*Panel D: Descriptive Statistics for Differences in Idealism*

(n <sub>experimentals</sub> , n <sub>controls</sub> )	Mean Pre to Post Difference in Idealism for Experimentals (s.d.)	Mean Pre to Post Difference in Idealism for Controls (s.d.)
(101,107)	+0.07 (0.69)	+0.13 (0.74)

**Notes:**

\*\*\* Model: Posttest Idealism Score =  $b_0 + b_1$ \*Pretest Idealism Score +  $b_2$ \*Age +  $b_3$ \*Experimental Condition +  $\epsilon$

\*\*\*\* The covariate-adjusted means are 6.39 for the TLA condition and 6.44 for the VRA condition.

**Table 4**  
**ANCOVA Results for Pre- and Post-Questionnaire Analysis**

*Panel A: Question 1 – Student Knowledge of Accounting Scandals*

Dependent Variable	Source of Variance	<i>F</i>	Two-tailed p-value	Comments
Companies Named	Covariate (Pre-Experimental Score)	62.52	.000	
	Covariate (Age)	3.92	.049	
	Experimental Condition	1.71	.192	Not significant, but greater increase in VRA (1.5) versus TLA (1.2)

*Panel B: Question 5 – Student Assessments about the Financial Costs of Unethical Behavior*

Dependent Variable	Source of Variance	<i>F</i>	Two-tailed p-value	Comments
Financial Cost	Covariate (Age)	.05	.827	
	Experimental Condition	3.65	.061	82% of VRA thought cost greater versus 68% of TLA

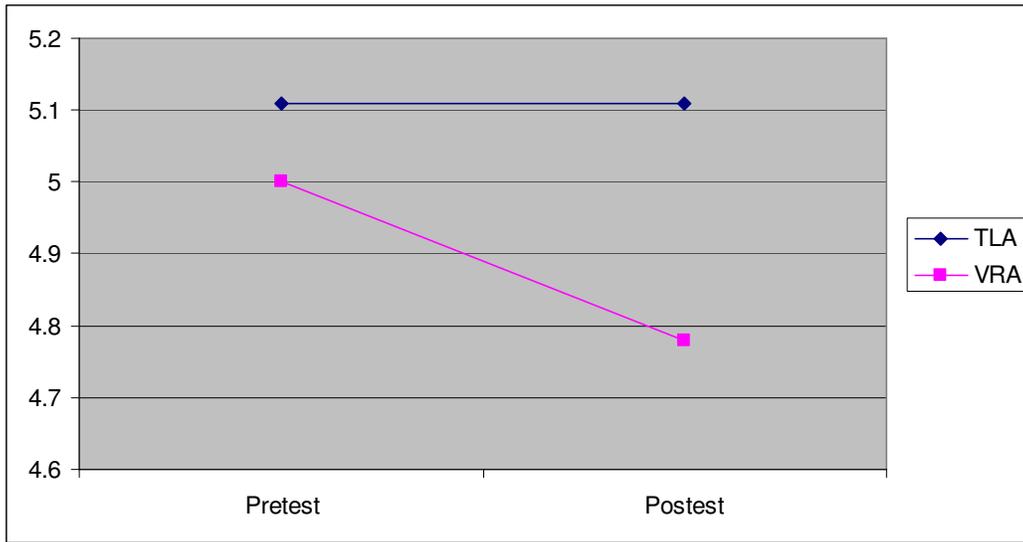
*Panel C: Question 6 – Student Assessments about the Human Costs of Unethical Behavior*

Dependent Variable	Source of Variance	<i>F</i>	Two-tailed p-value	Comments
Human Cost	Covariate (Age)	.39	.533	
	Experimental Condition	.19	.664	

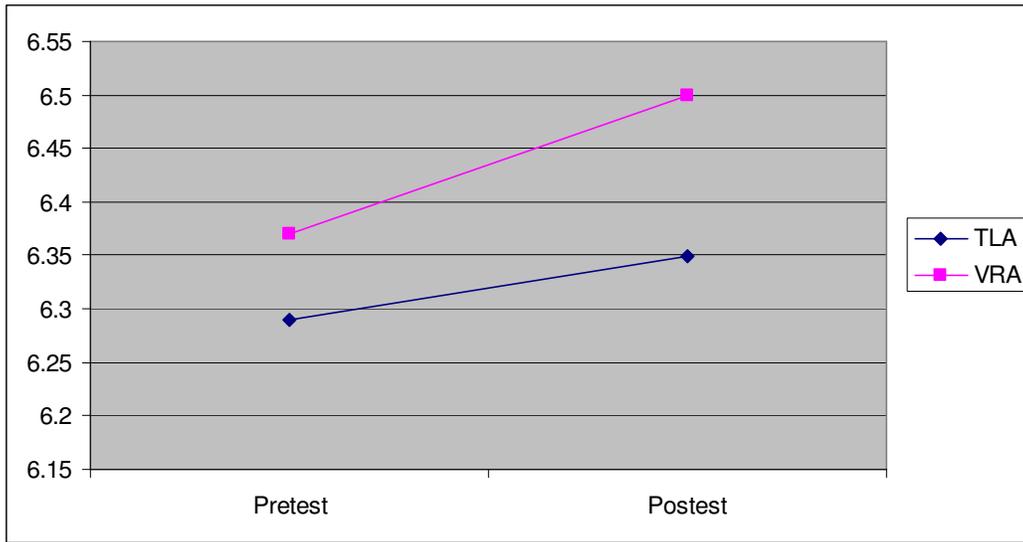
*Panel D: Question 7 – Student Surprise about the Costs of Unethical Behavior*

Dependent Variable	Source of Variance	<i>F</i>	Two-tailed p-value	Comments
Surprised	Covariate (Age)	.14	.708	
	Experimental Condition	109.65	.000	79% of VRA surprised versus 19% of TLA surprised

**Figure 1 - Relativism Score**  
**Comparison of Value Relevance Approach to a Traditional Learning Approach**



**Figure 2 – Idealism Score**  
**Comparison of Value Relevance Approach to a Traditional Learning Approach**



## APPENDIX 1 – PRE-EXPERIMENTAL QUESTIONNAIRE

**Please answer the following:**

Gender \_\_\_\_\_

Age \_\_\_\_\_

Major \_\_\_\_\_

Accounting Courses Taken \_\_\_\_\_

Undergraduate Class (First year, Sophomore, Junior, etc.) \_\_\_\_\_

G.P.A. \_\_\_\_\_

1. Name any companies that you know were involved in accounting scandals during the past two years.
  
  
  
  
  
  
  
  
  
  
2. How serious of a problem do you think that these accounting scandals are?
  
  
  
  
  
  
  
  
  
  
3. Have you ever taken an ethics course or a course that focuses largely on ethics?
  - a.) If so, what was the name of the course?
  
  
  
  
  
  
  
  
  
  
  - b.) When was the course taken?
  
  
  
  
  
  
  
  
  
  
  - c.) Briefly describe the topics that were covered in the course?

**APPENDIX 2 – ASSESSMENT OF ETHICAL SENSITIVITY  
(USING FORSYTH’S ETHICAL POSITION QUESTIONNAIRE<sup>1,2,3</sup>)**

**QUESTIONNAIRE**

You will find a series of general statements listed below. Each represents a commonly held opinion and there are no right or wrong answers. You will probably agree with some items and disagree with other. We are interested in the extent to which you agree or disagree with such matters of opinion.

Please read each statement carefully. Then indicate the extent to which you agree or disagree with such matters of opinion by placing in front of the statement the number corresponding to your feelings, where:

- |                         |                                |                      |
|-------------------------|--------------------------------|----------------------|
| 1 = Completely Disagree | 4 = Slightly Disagree          | 7 = Moderately Agree |
| 2 = Largely Disagree    | 5 = Neither Agree nor Disagree | 8 = Largely Agree    |
| 3 = Moderately Disagree | 6 = Slightly Agree             | 9 = Completely Agree |

\_\_\_1. A person should make certain that their actions never intentionally harm another even to a small degree.

\_\_\_2. Risks to another should never be tolerated, irrespective of how small the risks might be.

\_\_\_3. The existence of potential harm to others is always wrong, irrespective of the benefits to be gained.

\_\_\_4. One should never psychologically or physically harm another person.

\_\_\_5. One should not perform an action which might in any way threaten the dignity and welfare of another individual.

\_\_\_6. If an action could harm an innocent other, then it should not be done.

\_\_\_7. Deciding whether or not to perform an act by balancing the positive consequences of the act against the negative consequences of the act is immoral.

\_\_\_8. The dignity and welfare of people should be the most important concern in any society.

\_\_\_9. It is never necessary to sacrifice the welfare of others.

\_\_\_10. Moral actions are those which closely match ideals of the most “perfect” action.

## APPENDIX 2 (Continued)

\_\_\_11. There are no ethical principles that are so important that they should be a part of any code of ethics.

\_\_\_12. What is ethical varies from one situation and society to another.

\_\_\_13. Moral standards should be seen as being individualistic; what one person considers to be moral may be judged to be immoral by another person.

\_\_\_14. Different types of moralities cannot be compared as to “rightness.”

\_\_\_15. Questions of what is ethical for everyone can never be resolved since what is moral or immoral is up to the individual.

\_\_\_16. Moral standards are simply personal rules which indicate how a person should behave, and are not to be applied in making judgments of others.

\_\_\_17. Ethical considerations in interpersonal relations are so complex that individuals should be allowed to formulate their own individual codes.

\_\_\_18. Rigidly codifying an ethical position that prevents certain types of actions could stand in the way of better human relations and adjustment.

\_\_\_19. No rule concerning lying can be formulated; whether a lie is permissible or not permissible totally depends upon the situation.

\_\_\_20. Whether a lie is judged to be moral or immoral depends upon the circumstances surrounding the action.

<sup>1</sup>This instrument was used for both the pre-test assessment of ethical sensitivity (task 2) and the post-test assessment of ethical sensitivity (task 5).

<sup>2</sup>The idealism score is obtained by taking the mean of items 1 through 10. The relativism score obtained by taking the means of Items 11 through 20.

<sup>3</sup>Original Source: A Taxonomy of Ethical Ideologies by Donelson Forsyth. 1980. *Journal of Personality and Social Psychology* 39 (July), 175-184.

**APPENDIX 3 – ETHICS QUIZ GIVEN TO SUBJECTS IN THE VRA  
CONDITION**

**Please read the following and fill in what you feel is an appropriate answer for each of the seven questions.**

Arthur Andersen's annual revenue from its client, Enron, was approximately \$55 million per year (\$25 million audit and \$30 million for consulting). In 2002 Arthur Andersen was found guilty of obstruction of justice in relation to its dealing with Enron. Various clients chose to leave Andersen before and after the verdict and the firm ceased doing public audits on August 31, 2002.

1. What do you think was the total revenue of Arthur Andersen that was lost as a result of the Enron scandal \_\_\_\_\_?
2. How many jobs were lost at Arthur Andersen in the U.S. alone as a result of the scandal?

WorldCom allegedly hid \$4 billion in expenses over a series of years and was forced to file for bankruptcy in July of 2002?

3. Its drop in company market value since the scandal became public was approximately \_\_\_\_\_?
4. The jobs losses since the scandal occurred are approximately?
5. The estimated amount of retirement savings that was lost by employees as a result of the World Com bankruptcy was

Martha Stewart, the president and CEO of Martha Stewart Living, sold \$227,000 worth of ImClone stock in late 2001. She was subsequently accused in early 2002 of insider trading.

6. Since the accusations have become public, the price of her company's stock has gone down substantially and she has personally lost approximately \_\_\_\_\_ dollars?

7. Which of the following companies have been accused of accounting irregularities? Circle as many as you feel are applicable.

- |                    |                      |
|--------------------|----------------------|
| a. AOL Time Warner | e. Health South      |
| b. Bristol Meyers  | f. Kmart             |
| c. Global Crossing | g. Merck             |
| d. Halliburton     | h. Qwest Corporation |
|                    | i. Xerox             |

**APPENDIX 4 – FEEDBACK REGARDING ANSWERS FOR ETHICS QUIZ  
GIVEN TO SUBJECTS IN THE VRA CONDITION**

**Answers to the questions posed in the preceding pages appear (in bold) below:**

Arthur Andersen's annual revenue from its client Enron was approximately \$55 million per year (\$25 million audit and \$30 million for consulting). In 2002 Arthur Andersen was found guilty of obstruction of justice in relation to its dealing with Enron. Various clients chose to leave Andersen before and after the verdict and the firm ceased doing public audits on August 31, 2002.

1. What do you think was the total revenue of Arthur Andersen that was lost as a result of the Enron scandal \_\_\_\_\_?

**\$9 billion. The \$55 million in Enron revenue represented less than 1% of the company's total revenue.**

2. How many jobs were lost at Arthur Andersen in the U.S. alone as a result of the scandal?

**28,000 in the United States. This represents virtually their entire workforce except around 500 people who are doing final cleanup and will likely be losing their jobs in the next year.**

WorldCom allegedly hid \$4 billion in expenses over a series of years and was forced to file for bankruptcy in July of 2002.

3. Its drop in company market value since the scandal became public was approximately \_\_\_\_\_?

**\$50 billion**

4. The jobs losses since the scandal occurred are approximately

**23,000 people or (approximately 25% of the work force)**

5. The estimated amount of retirement savings that was lost by employees as a result of the bankruptcy was

**\$1 billion**

6. Martha Stewart, the president and CEO of Martha Stewart Living, sold \$227,000 worth of ImClone stock in late 2001. She was subsequently accused in early 2002 of insider trading. Since the accusations have become public, the price of her company's stock has gone down substantially and she has personally lost approximately \_\_\_\_\_dollars?

**\$ 400 Million**

7. Which of the following companies have been accused of accounting irregularities?

Circle as many as you feel are applicable.

- |                    |                      |
|--------------------|----------------------|
| a. AOL Time Warner | e. Health South      |
| b. Bristol Meyers  | f. Kmart             |
| c. Global Crossing | g. Merck             |
| d. Halliburton     | h. Qwest Corporation |
|                    | i. Xerox             |

**All of the above companies have been accused of accounting irregularities.**

## APPENDIX 5 – CASE WRITE UP GIVEN TO SUBJECTS IN THE TLA CONDITION

### **Please Read the Following:**

Arthur Andersen's annual revenue from its client Enron was approximately \$55 million per year (\$25 million audit and \$30 million for non-audit services). In 2002 Arthur Andersen was found guilty of obstruction of justice in relation to its dealing with Enron. Various clients chose to leave Andersen before and after the verdict and the firm ceased doing public audits on August 31, 2002.

The total revenue of Arthur Andersen that was lost as a result of the Enron scandal was \$9 billion. The \$55 million in Enron revenue represented less than 1% of the company's total revenue. 28,000 jobs were lost at Arthur Andersen in the U.S. alone as a result of the scandal. This represents virtually the entire U.S. workforce except for approximately 500 people who are doing final cleanup and will likely be losing their jobs within the next year.

WorldCom allegedly hid \$4 billion in expenses over a series of years and was forced to file for bankruptcy in July of 2002. Its drop in company market value (since the scandal became public) was approximately \$50 billion. The number of jobs lost since the scandal occurred are approximately 23,000 people (approximately 25% of the work force). The estimated amount of retirement savings that was lost by employees as a result of the bankruptcy was \$1 billion.

Martha Stewart, the president and CEO of Martha Stewart Living, sold \$227,000 worth of ImClone stock in late 2001. She was subsequently accused in early 2002 of insider trading. Since the accusations have become public, the price of her company's stock has gone down substantially and she has personally lost approximately \$400 million dollars. In addition to the companies discussed above, the following other companies have been accused of accounting irregularities in the recent past:

AOL Time Warner  
Global Crossing  
Health South  
Merck

Bristol Meyers  
Halliburton  
Kmart  
Qwest Corporation  
Xerox

## **APPENDIX 6 – POST-EXPERIMENTAL QUESTIONNAIRE QUESTIONNAIRE**

### **Please answer the following:**

1. Name any companies that you know were involved in accounting scandals during the past two years.
  
2. How serious of a problem do you think that these accounting scandals are?
  
3. Did your answer to question 2 change after completing this exercise?
  
4. If so can you explain why?
  
5. Was the financial cost of unethical behavior greater or less than you originally expected?
  
6. Was the human cost of unethical behavior greater or less than you originally expected?
  
7. Were you surprised by any of the costs associated with the unethical behavior?
  
8. If you have any other thoughts about these materials, feel free to share them now.

## ENDNOTES

<sup>1</sup> Note that the focus of the current study is on ethical sensitivity, which ultimately underlies ethical behavior. Ethical behavior is behavior that complies with a generally accepted code of conduct (whether formal or informal) and is distinct from both moral behavior and legal behavior. Moral behavior is behavior that complies with an individual's own conceptions of right and wrong, while legal behavior is behavior that complies with local, state or federal laws.

<sup>2</sup> We use the term "value" instead of "severity of the consequences" in the present study because value is a more neutral term that allows for the possibility of either positive or negative consequences a related to ethical or unethical behavior.

<sup>3</sup> Because of their tangential relationship to the study, we do not include the distracter task surveys as an appendix. Copies are available by request of the corresponding author.

<sup>4</sup> Because Shaub et al.'s (1993) results for idealism were contrary to the authors' theoretical arguments and expectations, we do not presuppose a direction for changes in subjects' idealism scores. Rather, if different, the direction of the change in subjects' idealism scores from the pretest to the posttest in this study will provide additional evidence to support or refute Shaub et al.'s (1993) seemingly contrary results.

<sup>5</sup> Further analysis of the data by school also supports the results reported for the overall sample. That is, at each school, pretest relativism (idealism) scores were higher (lower) than post-test relativism (idealism) scores.

<sup>6</sup> We also analyzed pre-post differences on an item-by-item basis for questions 11-20 on the EPQ for the VRA group using a MANCOVA. Also, to assess the relative importance of each dependent variable, post hoc univariate F tests were completed for each of the responses to questions 11-20. The results of this post hoc analysis revealed that the responses to question 19 ( $F = 4.54, p = .034$ ) and question 20 ( $F = 6.74, p = .010$ ) were significant, while the response to question 14 ( $F = 3.517, p = .062$ ) was marginally significant. The responses to all of the remaining questions were not significant. Overall, the results of the MANCOVA suggest that the responses to questions 14, 19 and 20 were the main contributors to the significant result reported in Table 3.

<sup>7</sup> As a test of sensitivity, we also conducted the relativism and idealism analyses using the difference between each subject's pre- and post relativism and idealism scores, respectively, as the dependent variable measure (instead of using pretest relativism or idealism score as a covariate). The results were substantively the same. In addition, to ensure that school-by-school differences were not affecting our results, we re-ran the ANCOVAs by including a variable for "school." Results of this analysis were substantively the same as those obtained without the "school" variable. Importantly, we did not obtain significance on the "school" variable, suggesting that school-by-school differences were not affecting our results.

<sup>8</sup> Ninety-nine students in both the VRA and the TLA conditions provided an answer to this question. Ten students gave inappropriate responses that we purged from the data.

<sup>9</sup> One hundred students in both the VRA and the TLA conditions provided an answer to this question. Eight students gave inappropriate responses that we purged from the data.

<sup>10</sup> It should be noted that for Question 9, we could not conduct any meaningful analysis because subjects' responses varied significantly and many comments could not be coded in terms of a positive or negative response. For example, 22 students (19 in the VRA Condition and three in TLA condition) commented on the Martha Stewart case even though there was no question in the post-experimental questionnaire that asked directly about the case. In contrast, only 6 students commented on the Enron/Arthur Andersen Case. Also, we were unable to draw any definitive conclusions from question 2 because, prior to the experiment, only 2% of the subjects in each treatment condition considered the problem "not serious." Therefore, calculating any meaningful measure of change in student's attitudes on this issue was not possible.