

The Perceptions of Construction Students Regarding the Ethics of the Construction Industry

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This study replicates work done by Dr. Barbara Cole at the University of Memphis regarding the "ethics of business students and of business practitioners regarding business ethics," (1993). The purpose of this study was to assess the perceptions of construction students regarding the ethics of the construction industry. A questionnaire was administered to 285 college construction students from six universities, one from each of the six ASC regions. The study focused on the responses of college senior construction students to a series of basic ethical situations. Students were first asked to answer, as they believe the typical construction person would respond and, second, to answer as they believe the ethical response would be. The results indicate that the students perceived a significant difference between the "ethical" response made to the basic situations, and the "typical construction person's response" to the basic situations. The effects of demographic variables including gender, age, grade-point average, family in construction, ethics courses required, and number of ethics courses taken were also analyzed. All demographic variables analyzed had an impact on students' responses with the exception of grade-point average.

Key Words: Ethics, Ethical Standards, Student Perceptions, Ethical Behavior, Construction Ethics

Introduction

Two hundred years ago, Benjamin Franklin insisted that business is the pursuit of virtue. The founding fathers of this country were not saints, they were businessmen. Franklin insisted that business is a way of life that is, at its very foundation, ethical. After all, what is more central to business than the honoring of contracts, or paying ones debts on time, or coming to mutual agreements about what is fair exchange? "Ethics are not superimposed on business. Business is itself an ethics, defined by ethics, made possible by ethics," (Solomon, 1994).

Do the business and ethics perceptions of Benjamin Franklin and Solomon hold even a tread of resemblance to perceptions held today? Or do the concerns of Kidder (1997), who suggests that we are raising an entire generation of people without their own built-in sense of ethics, hold more validity in today's fast paced, high pressure, high technology society.

We may only need to look to current headlines to gain insight into this matter. According to USA Today (1997), a major study, based in Bryn Maer, Pennsylvania, found that ethical and legal lapses are common at all levels of the American workforce. Nearly half, 48 percent, of U.S. workers admit to taking unethical or illegal actions in the past year. The Ethics Officer Association and the American Society of Chartered Life Underwriters & Chartered Financial

Consultants sponsored the survey of 1324 randomly selected workers, managers, and executives in multiple industries, including construction.

The study revealed that 56 percent of workers feel some pressure to act unethically or illegally on the job. And the problem seems to be getting worse. The same study found that more than 60 percent of workers feel more pressure than 5 years ago and 40 percent feel greater pressure than a year ago. Despite more than two decades of intense media scrutiny, public pressure, academic research and corporate ethics programs designed to teach values and integrity, the business world seems unable to curb unethical behavior or improve its own image (Greengard, 1997). Combine this pressure with a workforce full of ethical confusion, mixed messages, razor-thin profit margins, and cutthroat competition and it is not difficult to see why the problem seems so prevalent.

The construction industry is by no means immune from this national trend in ethical erosion. Given the current environment, should we as construction professionals and educators, expect any different behavior from our students once they enter the workforce? Where do our students stand regarding ethics? And how do these students perceive the ethical behavior of the construction industry itself? And finally, what factors impact these perceptions? This study attempts to answer these questions.

Methodology

Participants

A questionnaire was administered to construction students at six universities across the continental United States. One school from each of the six Regions of the Associated Schools of Construction was selected. The schools were selected from the 1995-1996 Associated Schools of Construction membership directory. To limit curriculum content variances, only schools with ACCE accredited baccalaureate construction programs were considered. The six schools surveyed included:

- Region 1: Northeast - Virginia Polytechnic Institute
- Region 2: Southeast - Auburn University
- Region 3: Great Lakes - Purdue University
- Region 4: North Central - Colorado State University
- Region 5: Southwest - Texas A&M University
- Region 6: Far West - California Polytechnic State University

The sample of students consisted of university senior construction majors. A total of 340 questionnaires were sent to faculty at the six universities. The faculty at each of the schools was asked to administer the questionnaires to their senior construction students.

Instrumentation

The instrument utilized in this study was first developed by Froelich and Kottke, (1991) to assess an individual's perceptions of appropriate and inappropriate ethical behavior and to identify personal ethical beliefs that could conflict with company interests. The original survey consisted of 21 items representing basic ethical situations, which may encountered in a business/organizational setting. Through extensive validation analysis, 11 of the original 21 items were eliminated. Chronbach's alpha (internal-consistency estimate) for the revised 10-item scale was 0.89. This study, like the Cole study (1993), utilized the 10 validated items of the Froelich and Kottke measurement scale (see Appendix A).

The participants were asked to respond to each of the 10 items using a Likert scale with six response options. Values of 1 to 6 were assigned to the responses from strongly agree to strongly disagree. The higher the response to the item, the stronger the disagreement with the statement, therefore, the higher the ethical response. The options of "not sure" or "undecided" were not used.

The students were asked to respond to each item twice. They were first asked to respond as they thought the "typical construction person" would respond. Then they were asked to respond, as they believed the "ethical" response would be. For the purposes of this study, students were instructed to assume the "typical construction person" to be an individual with at least 5 years of construction experience in either a management or field position. The term "ethical response" refers to behavior that is not only legal but also honest, honorable, fair, responsible, socially acceptable, etc.

As in the Cole study, students were not asked how they themselves would respond to the ethical situations. It was believed that more honest responses would be obtained by asking what the *standard* should be and then how well *others* met the standard. A person's answers in the "ethical" response category should give a good indication of that person's ethical standards regarding the situations presented in the survey (Cole & Smith, 1996).

Each questionnaire included a demographic information section in addition to the Froelich and Kottke (1991) measurement scale. The demographic information collected on each student included gender, self-reported GPA, age, construction experience, immediate family being involved in construction, whether ethics was a required course, and the number of ethics courses taken.

Data Analysis

Data collected was analyzed using the Statistical Package for Social Sciences (SPSS). The data were first analyzed for homogeneity of variance and found to be significantly lacking in homogeneity between "typical" and "ethical" responses. Therefore, non-parametric tests were chosen for data analysis.

To test for differences at the .05 level of significance between "typical" and "ethical" responses of students, the Wilcoxin Matched-Pairs Signed Ranks test was used. This test was selected

because the study employs two related samples ("typical" responses and "ethical" responses made by the same person).

To test for relationships at the .05 level of significance between students' perceptions of ethics and the demographic variables, the Kruskal-Wallis one-way analysis of variance was used. The Kruskal-Wallis test was selected because the data are from independent samples (categories) that can be ranked in a continuous distribution. On variables with more than two categories for which significant relationships were found, Mann-Whitney tests were run as the follow-up tests.

Results

Response Rates

Each of the six schools surveyed returned questionnaires. Of the 340 questionnaires sent out, a total of 285 useable questionnaires were returned, or just under 84 percent.

Student Profile

Demographic characteristics of the student sample are presented in Table 1. Of the 285 student respondents the ratio of male students to female students was almost 10 to 1, and the majority of the students were between the ages of 18 and 25. Self-reported grade-point averages indicated that slightly less than half the students reporting had a GPA of 3.00 or above.

Of the 285 students surveyed, approximately 4 out of 10 students indicated that they did have immediate family (mother, father, sister, brother) involved in the construction business, and over 65 percent had over 1.5 years of construction experience themselves. Only 10 percent of the students indicated having no experience in the construction industry.

Almost seventy-five percent of the students who responded reported that ethics was not a required course in their construction programs, and yet seventy-five percent had taken at least one course where ethics was a major topic covered. Almost twenty percent of the students responding had taken 3 or more courses where ethics was a major topic covered.

It should also be noted that of the 285 students surveyed, 97 percent consider ethics to be an important issue in construction, and 83 percent said that they would probably find it easy to fit into the ethical environment of the industry. Furthermore, over 93 percent believe that they have become more aware of the ethical aspects of construction business decision-making as a result of their college education, and 83 percent think that ethics is adequately taught in their construction programs.

The "Ethical Standards" of Construction Students

As previously stated, students were not asked how they themselves would respond to any of the 10 scenarios given. However, the students were asked what the *ethical standard* should be. Therefore, how a student answers in the "ethical" response category to each of the 10 questions

should give a good indication of that student's ethical standards, whether they would actually act in accordance with that standard or not. The results of this study clearly indicate that construction students know what *should* be done in the presented situations. A mean of 6.0 indicated the strongest possible disagreement with the statements and thus the highest ethical standard. The construction students surveyed had an average mean score of 5.2 on the "ethical" response to the 10 questions (see Table 2).

Students' Perceptions of the Difference between "Typical" and "Ethical" Behavior

This study also provides strong evidence that students believe that ethical behavior is not what it should be in the construction industry. In other words, the students perceive a significant difference between the "typical" response of construction people to the given situations, and the "ethical" response to the same situations. On each of the 10 questions, significantly more students scored higher on the "ethical" response than scored higher on the "typical" response (see Table 3). For example, nearly 90 percent of the students ranked the "ethical" response higher than the "typical" response to Statement 2 (necessary for company to engage in shady practices because the competition is doing so).

Table 1

Demographic Characteristics of Students

Category	n	Percentage
Gender		
Male	250	87.7
Female	35	12.3
Age		
18–25	248	87.0
Over 25	37	13.0
GPA (Self-Reported)		
3.00 and over	127	44.6
Under 3.00	157	55.1
Unreported	1	.4
Immediate Family in Construction		
Yes	110	38.6
No	171	60.0
Unreported	4	1.4
Years of Experience		
1 year or under	96	33.7
1.50-5.00 Years	136	47.7
Over 5 years	46	16.1
Unreported	7	2.5
Ethics Is a Required Course		
Yes	73	25.6
No	211	74.0
Unreported	1	.4
Ethics Courses Taken		
No courses	72	24.0
1 Course	84	28.0
2 Courses	83	27.7
3 Courses or more	59	19.7
Unreported	2	.7

Table 2

Comparison of the "ethical" response and "typical" response of students

Question	Mean Ratings	
	Ethical Response	Typical Response
supervisor asking employee to support someone else's incorrect viewpoint	5.15	3.78
necessary for company to engage in shady practices because the competition is doing so	5.30	3.27
overlook someone else's wrongdoing if in best interest of company	4.95	3.16
supervisor should not care how results are achieved as long as desired outcome occurs	4.89	3.13
supervisor asking employee to falsify document	5.71	4.56
profits should be given priority over product safety	5.58	4.18
lie to customer/client to protect company	5.11	3.35
lie to co-worker to protect company	5.15	3.55
lie to supervisor/manager to protect company	5.28	3.85
lie to another company's representative to protect company	5.01	3.32
Average	5.21	3.60

Note: A mean of 6.0 would represent the strongest possible disagreement with the statement, and the highest ethical response.

Table 3

Relationships between "Ethical" and "Typical" Responses according to Number of Student Respondents

Question	Ethical > Typical		Ethical < Typical		Ethical = Typical		<u>Z</u>	2-Tailed <u>P</u>
	f	%	f	%	f	%		
	supervisor asking employee to support someone else's incorrect viewpoint	213	75.3	8	2.8	62		
necessary for company to engage in shady practices because the competition is doing so	255	89.5	2	0.7	28	9.8	-13.795	.000*
overlook someone else's wrongdoing if in best interest of company	235	82.7	4	1.4	45	15.8	-13.320	.000*
supervisor should not care how results are achieved as long as desired outcome occurs	235	83.3	2	0.7	45	15.9	-13.347	.000*
supervisor asking employee to falsify document	203	71.5	3	1.0	78	24.5	-12.372	.000*
profits should be given priority over product safety	203	72.0	2	0.7	77	27.3	-12.400	.000*
lie to customer/client to protect company	233	82.9	1	0.4	47	16.7	-13.395	.000*
lie to co-worker to protect company	231	81.0	1	0.4	53	18.6	-13.258	.000*
lie to supervisor/ manager to protect company	208	73.2	5	1.8	71	25.0	-12.487	.000*
lie to another company's representative to protect company	222	77.9	1	0.4	62	21.7	-13.048	.000*

*Significance at the .05 level

Although some might consider students to be somewhat naive when it comes to answering the "typical" construction person's response to each of the situations, it should be kept in mind that a large majority of the students surveyed (over 65 percent) already had over 1.5 years of experience working in construction. Therefore, the fact that significantly more students scored higher on the "ethical" response than scored higher on the "typical" response to all 10 questions is somewhat disturbing. This is particularly true when you consider the context, in which some of the questions could play out in the construction industry (i.e. falsifying a document, profits over safety, shady practices, etc.)

Demographic Factors

Among student demographics, all factors measured, with the exception of grade-point average, had a significant impact on student responses to several of the questions.

Gender

As Table 4 indicates, the mean ranks of female students were significantly higher than those of male students on the "ethical" response to 4 of the 10 questions (1- asking employee to support incorrect viewpoint, 3- overlook wrongdoing if in best interest of company, 4- not care how results are achieved, and 9- lie to supervisor to protect company). Female students also scored higher on the "typical" response to question 1. It should be noted in this case as well as in all the ones that follow, that the higher the score, the stronger the level of disagreement with the statement and, thus, the more "ethical" the response to the statement. This finding supports the research of Budner (1987) and McBride and Cline (1990) that found male students significantly more accepting of questionable practices than female students. However, one could question the reliability of such a finding when the sample size of women to men is somewhat small (35 female students to 250 male students). However, because this ratio of women to men among construction students is relatively close to the ratios that exist in the construction workforce, appropriate consideration of the results might be prudent.

Age of Students

The results of this study reveal that younger students hold a more idealistic view of the "ethical" behavior associated with 3 of the 10 questions. Students 18-25 scored significantly higher (stronger disagreement to the statements) than did students over the age of 25, to the "ethical" responses to question 5 (supervisor asking employee to falsify a document), question 7 (lie to customer/client to protect company), and question 10 (lie to another company's representative to protect company).

This result may simply indicate a naiveté on the part of the younger students. It may also indicate that as awareness and familiarity with the construction industry increases, "ethical" response decreases. This may be a reflection of the "everybody's doing it" syndrome prevalent in the industry.

Years of Experience

Those students with one year or less of experience in construction scored higher to the "ethical" response to 4 of the 10 questions, (4- not care how results are achieved, 5-asking employee to falsify document, 6- profits over safety, and 10- lie to another company's representative). This finding may be related to age of students where younger students (presumed less experienced) score higher than older (more experienced) students, suggesting a more unrealistic view of the construction industry. In this situation, multiple regression analysis might be an appropriate approach in future studies.

Table 4

Comparison of the "Ethical" Responses of Male and Female Students

Question	Mean Ratings		Corrected for Ties	
	Males	Females	Chi-Square	Significance
supervisor asking employee to support someone else's incorrect viewpoint necessary for company to engage in shady practices because the competition is doing so	5.10	5.57	6.644	.010*
overlook someone else' wrongdoing if in best interest of company	4.91	5.26	3.777	.052*
supervisor should not care how results are achieved as long as desired outcome occurs	4.83	5.26	5.878	.015*
supervisor asking employee to falsify document	5.68	5.89	3.124	.077
profits should be given priority over product safety	5.55	5.77	2.183	.140
lie to customer/ client to protect company	5.08	5.31	1.116	.291
lie to co-worker to protect company	5.11	5.40	3.291	.070
lie to supervisor/ manager to protect company	5.24	5.57	5.037	.025*
lie to another company's representative to protect company	4.98	5.20	1.585	.208
Average Mean Rating	5.17	5.48		

*Significant at the .05 level
 Note: A mean of 6.0 would represent the strongest possible disagreement with the statement, and the highest ethical response.

Immediate Family in Construction

The one question where the involvement of a student's family significantly influenced the "ethical" response was question 2 (necessary for company to engage in shady practices because the competition is doing so.) Those students whose families were involved in construction scored significantly higher ($p = .006$, stronger disagreement) than those students whose family was not involved in construction. This particular situation suggests questionable behavior with potentially legal consequences. It appears that a student's family being involved in construction strongly influences their "ethical" response to this question. Among family members involved in construction there may be discussion related to where one draws the line in regard to acceptable behavior.

Ethics Courses Required and Ethics Courses Taken

Whether ethics courses was required in the student's program or not seemed to have little bearing on the responses. Only the "typical" response to question 7 (lie to customer/ client to protect company) was affected. Students with ethics courses required scored significantly higher ($p = .030$) than did students with no ethics courses required. No differences were found among the "ethical" responses.

However, in regard to the number of ethics courses taken, the result was somewhat unexpected. One would think that the "ethical" score would go up as the number of ethics courses went up. However, when it came to question 5 (supervisor asking employee to falsify document), those students taking no ethics courses or only one course where ethics was a major topic, scored significantly higher than those students having 2, or 3 or more courses where ethics was the major topic. There are those who would argue that somehow the "water gets muddy" the more ethics is discussed. However, the situation in question 5 is not really a gray area.

It is unclear as to why the "ethical" response to this question would go down as the number of courses discussing ethics goes up. This finding may relate to the concerns of such people as Frank, Gilovich, & Regan (1993), Kumar (1991), Peters (1989), and Wolfe (1993) who fear that the typical business curriculum may lead students away from rather than toward strong ethical values. The conclusions of these authors suggest that the problem may not lie with the ethics courses but with the rest of the business curriculum that stresses profit and performance with an "end justifies the means" focus (Cole, 1993). It may be wise to consider the bigger messages regarding ethics being delivered in construction classrooms as well.

Implications and Recommendations

Ethics has never been a clear-cut issue in the business environment or in the classroom. There have been many attempts in the last two decades to curb ethical transgressions. The number of firms with ethics training programs has increased from 7 percent to 40 percent in 1994. Companies with ethics codes have swelled from 13 percent to 73 percent during the same period (Greenwald, 1997). Ethics can not be mandated by training programs, codes, corporations, or by institutions. Ethics is a personal issue.

Because individuals make decisions and are the ones to take actions, it is individuals who will make a difference in the ethical environments of our corporations. Individuals are the ones who must be grounded in ethics. As teachers and professors we have an opportunity to influence individuals.

In an attempt to close the gap between typical and ethical behavior clearly reflected by this study, construction programs need to take a proactive approach to ethics education. By addressing the "real" concerns of the industry and discussing the implications of certain ethical behaviors to all parties involved and to the industry as a whole, educators may influence the next generation of construction managers and executives. Ethics and principles should be integrated into every aspect of the construction management process as a natural thought process. In other

words, ethics should be involved in the decision making process automatically and shown to be an issue of personal and professional accountability. The emphasis in instruction should be on developing individual ethical thinking processes rather than on presenting answers to ethical issues or listing rules for behavior.

An example of this approach might be a new course currently being taught by the author. The new course, required of all freshmen students within the author's Construction Management department, involves team building and principle centered leadership, with a heavy dose of ethics. The course focuses on *individual accountability* and after only one semester appears to be having an impact on students' understanding of individual principles and ethics as they relate to success in business and the concept of team. As one student stated, "The most important thing I learned from taking this class is to sit down and look at my own personal code of ethics. I think I always knew what they were, but this class really made me think about them and put them into perspective." Another student shared "that ethics and principles still have a place in the business world and if utilized can lead to personal and corporate success." There appears to be a real hunger and appreciation for such instruction among those students who have participated in the new course.

Construction programs and individual faculty should concern themselves with the messages being delivered in the classroom regarding ethics and how they relate to the construction industry. A conscientiousness regarding the messages being delivered in the classroom is important if education is to have an impact on the ethical environment of the construction industry. Undoubtedly, professors do communicate their own ethical views, whether intentionally or inadvertently, and they influence the perceptions of students.

If construction companies are interested in closing the gap that this study indicates exists between ethical and typical behavior then they need to make known their concerns about the issue. Construction companies and their trade associations need to increase their efforts to make aware and promote ethical conduct and decision-making at all levels. Top executives need to set standards and model ethical behavior for their companies, and encourage open communication and discussion regarding ethical concerns. A real effort must be made by the construction leadership to clarify the ethical parameters within which all parties associated with the construction project are to operate.

Conclusion

This study is but a first look into a very important topic previously not addressed in construction. Although the 10 questions used in this study create a baseline for ethical measurement, further research should be done using questions specifically related to construction (bidding and estimating procedures, quality of work, adherence to specifications, etc.). An industry that so heavily depends on teamwork, the cooperation of numerous entities (municipalities, manufacturers, suppliers, trades people, professionals, craftsmen), and the management of billions of dollars, can not and should not take the issue of ethics lightly.

The temptation to become apathetic or disillusioned by the results of this study regarding the state of the “ethical environment” associated with construction should be countered by the possibility for groundbreaking research and application in education and industry. There is much work to be done, but work that can only result in good things for all involved.

A follow up study including the assessment of construction practitioners is being conducted and the results should be available in spring 1999.

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Appendix A

Opinion Survey on Ethics in Construction

Please respond to the following statements in two ways. In the first column, indicate how you believe the typical construction person would respond to the statement; in the second column, indicate what you believe the ethical response to the statement would be.

For the purposes of this survey, the typical construction person should be assumed to be an individual with at least 5 years of construction experience in either a management or a field position. The term ethical response refers to behavior that is not only legal but also honest, honorable, fair, responsible, socially acceptable, etc.

SA = Strongly Agree, A = Agree, MA = Mildly Agree, MD = Mildly Disagree, D = Disagree, SD = Strongly Disagree. Please circle your selection.

	The Typical Construction Person's Response	The Ethical Response
It is okay for a supervisor to ask an employee to support someone else's incorrect viewpoint.	SA A MA MD D SD	SA A MA MD D SD
It is sometimes necessary for the company to engage in shady practices because the competition is doing so.	SA A MA MD D SD	SA A MA MD D SD
An employee should overlook someone else's wrongdoing if it is in the best interest of company.	SA A MA MD D SD	SA A MA MD D SD
A supervisor should not care how results are achieved as long as the desired outcome occurs.	SA A MA MD D SD	SA A MA MD D SD
There is nothing wrong with a supervisor asking an employee to falsify a document.	SA A MA MD D SD	SA A MA MD D SD
Profits should be given a higher priority than the safety of a product.	SA A MA MD D SD	SA A MA MD D SD
An employee may need to lie to customer/client to protect the company.	SA A MA MD D SD	SA A MA MD D SD
An employee may need to lie to co-worker to protect the company.	SA A MA MD D SD	SA A MA MD D SD
An employee may need to lie to a supervisor/manager to protect the company.	SA A MA MD D SD	SA A MA MD D SD
An employee may need to lie to another company's representative to protect the company.	SA A MA MD D SD	SA A MA MD D SD

Survey instrument adapted from "Measuring Individual Beliefs About Organizational Ethics" by K.S. Froelich and J.L. Kottke, 1991, Educational and Psychological Measurement, 51(2).

Appendix B

Student Survey

The following statements should be answered as they apply to you personally.

I believe I have become more aware of the ethical aspects of construction business decision-making as a result of my college education. SA A MA MD D SD

I will probably find it easy to fit into the ethical environment of the construction industry. SA A MA MD D SD

Ethics is an important issue in construction. SA A MA MD D SD

Ethics is adequately taught in my construction curriculum. SA A MA MD D SD

STUDENT INFORMATION

Gender: _____ Male _____ Female

Age: _____ Under 18 _____ 18-25 _____ 26-35 _____ Over 35

Classification: _____ Jr _____ Sr _____ Grad _____ Other

Cumulative GPA: _____ 3.00 or above _____ 2.00-2.99 _____ Under 2.00

I have immediate family (mother, father, sister, brother) who have previously, or are currently working or involved in the construction industry. Yes No

I have experience working in the construction industry. Yes No

Number of years: _____

Number of courses taken at the college level in which ethics was the major topic covered: _____0 _____1 _____2 _____3 or more

Ethics is a required course in my construction program: Yes No

Survey instrument adapted from "Measuring Individual Beliefs About Organizational Ethics" by K.S. Froelich and J.L. Kottke, 1991, Educational and Psychological Measurement, 51(2).