Predicting Academic Dishonesty in Engineering College Students

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Project Summary

The proposed research seeks to explore the applicability of the Theory of Planned Behavior (TPB) (Ajzen, 1991), with the additional construct of moral judgment, as a model of decisions to participate in academic dishonesty among engineering undergraduate students. The study will involve surveying students from both the freshmen and senior class levels in engineering and humanities disciplines. This design permits the evaluation of the effects of both discipline and college experience on the measured determinants of the TPB. The results of this study could be used to develop targeted interventions of cheating that are more effective for engineering students and those pursuing science, math, engineering and technology (SMET) careers.

Research Questions

The research described here will seek to answer the following questions within our sample:

1. Which determinants (per the Theory of Planned Behavior) have the most significant bearing on the academic dishonesty of engineering students?
2. What are the significant differences in determinants of academic dishonesty between engineering and humanities college students when controlling for level of collegiate experience?
3. What are the significant differences in determinants of academic dishonesty between incoming freshmen and seniors across the full sample, as well as, between engineering and humanities students?
4. How does the inclusion of moral judgment provide additional predictive power to the Theory of Planned Behavior in the context of academic dishonesty?
5. What are the effects of discipline and collegiate experience on the relative significance of moral judgment as a predictor of academic dishonesty?

Background

There is substantial evidence in the academic dishonesty literature from the past 40 years indicating that engineering students are among those most likely to cheat in college and that their self-reported rates of cheating have been increasing during this time (McCabe, 1997; Harp & Taietz, 1966; Bowers, 1964). Furthermore, it is known that students who participate in academic dishonesty in college are more likely to do so in the workplace (Sims, 1993; Nonis & Swift, 2001; Harding, et al., 2004). The proposed research will explore the use of a modified form of the Theory of Planned Behavior to predict the decisions of individuals to participate in academic dishonesty.

Ajzen's Theory of Planned Behavior (Figure 1) (Ajzen, 1991) is a value-expectancy model that can be used to predict behavior and explore the underlying motivations for engaging in that behavior. The TPB is premised on the idea that human beings make rational decisions when faced with a choice. Furthermore, an individual's behavior is
influenced by three determinants: 1) beliefs about the likely outcomes of a behavior (attitude toward behavior), 2) beliefs about societal norms (subjective norms) and 2) beliefs about an individual's control over the outcomes of a behavior (perceived behavioral control). In the aggregate, these beliefs influence an individual's intention to carry out the behavior. Significant support exists for the use of the TPB as a predictive model of academic dishonesty (Whitley, 2002; Beck & Ajzen, 1991; Jordan, 2001).

Though the TPB has been shown to explain much of the systematic variance in many different behaviors, a common criticism is that it fails to include such variables as self-identity, self-efficacy, past behavior, affective response and moral judgment (Conner & Armitage, 1998). Moral judgment might be especially important for predicting decisions about cheating among engineering students for two reasons. First, the decision to cheat involves an ethical component, and moral judgment may be a critical factor in such decisions. Further, opportunities to discuss differing moral perspectives and participate in ethical decision making are not often provided in an undergraduate engineering curriculum. Therefore, for the proposed research moral judgment will be included as an additional construct within the TPB as measured by the Defining Issues Test - 2, developed by Rest (Rest, et al., 1999).

![Diagram](Figure 1: Ajzen's Theory of Planned Behavior (Ajzen, 1991))

Study Design

The proposed study will assess the TPB as a predictor of cheating in engineering and humanities college students. It will involve four student sample groups: humanities freshmen, engineering freshmen, senior humanities students and senior engineering students. Humanities students are included for comparison because of their consistently low self-reported frequencies of cheating as compared to engineering students (Bowers, 1964; McCabe, 1997). Figure 2 provides a representation of the study design. Results from this study will be incorporated with those from other projects currently in progress by the PACES team. The proposed study will consist of two phases: alpha testing of the primary instrument and the main study.
**Alpha Testing:** Alpha testing will be used to develop reliable, internally consistent measures and to identify which attitudinal, normative and control beliefs are most salient for the sub-populations under investigation. The seven-point semantic differential will be used to construct the items. All items in the instrument will be designed with sufficient compatibility and specificity as described by Ajzen (Ajzen, 2004). Care will be taken in drafting context specific questions since the anticipation of consequences has been shown to vary significantly depending on the context of the dishonest behavior (Finelli, et al., 2003). A small sample of students from each sub-population shown in Figure 2 will be asked to complete the alpha instrument.

**Main study:** For the main study, 150 students will be contacted at random from each sub-population with the hopes that 50 will agree to complete the study questionnaires (a 33% response rate), resulting in a total sample size of 200 students. All participants will be recruited from a single institution. Participants will be asked to complete two different instruments: the primary survey (developed through alpha testing) and the Defining Issues Test (Rest, et al, 1999; Rest & Narvaez, 1998). A modified form of the Marlowe-Crowne Social Desirability Scale (Crowne & Marlowe, 1960) will be included at the end of the survey to allow for control of social desirability bias.

**References**


**Biosketch:**

Trevor Harding is Associate Professor of Industrial and Manufacturing Engineering at Kettering University where he teaches courses in manufacturing processes, engineering materials and materials selection for design. He is currently team leader for the PACES (Perceptions and Attitudes towards Cheating among Engineering Students) project, which
has been investigating academic dishonesty within schools of engineering for the past four years. His other research includes wear phenomenon in orthopaedic implants and the fatigue response of high temperature intermetallic alloys. He is a member of the American Society for Engineering Education, ASM International and The Minerals, Metals and Materials Society. He is also Director of the Environmental Scanning Electron Microscopy and the Biomedical Materials Research Laboratories at Kettering University.