Academic Integrity and Ethical Decision-Making in Engineering Undergraduates

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http://www.engin.umich.edu/research/e3/
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Goals of the team’s research

- Examine students’ ideas about cheating
- Understand students’ ethical decision-making process
- Improve ethical development of engineers
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WHY?
Past research on cheating

- Unethical behavior of high school students has increased from 1992 to 2002 (*Report Card on the Ethics of American Youth*, The Josephson Institute)
  - Cheating to succeed: 34% → 43%
  - Cheating on exams: 61% → 74%
  - Lying to teachers: 69% → 83%
- 70 to 96% of all college students report cheating at least once in college
Cheating by engineering students

- Engineering students are second among all students in self-reported rate of cheating (1964 to 1997)
  - Business: 66%  91%
  - Engineering: 58%  82%
  - Natural sciences: 47%  73%
  - Social science: 52%  73%

- Up to 23% of engineering students admit to repetitive exam cheating
Implications of cheating

- Lack of comprehension of material by students
- Falsely earned credit or recognition for work
- Undermined efforts to develop moral integrity (character development)
- Reduced faculty and student morale
- Desensitization to cultural norm of integrity
- Unethical behavior in other contexts
  - Risky driving
  - Theft from employers
  - Shoplifting
  - Alcohol abuse
  - Cheating on taxes
Research Conducted over Seven Years

- **Perceptions and Attitudes towards Cheating among Engineering Undergraduates (PACES-1)**
  - Goal was to investigate general perceptions and attitudes associated with cheating
  - 139 question multiple choice survey
  - 643 engineering u’grads @ 11 institutions

- **Work Experiences Study (WES)**
  - Goal was to examine classroom and workplace factors that affect ethical decisions
  - 13 quantitative questions and self defined qualitative scenarios in both settings
  - 130 engineering u’grads @ 2 institutions
Research Conducted over Seven Years

**PACES-2**
- Goal was to validate and compare a theoretical model for decision making for both engineering & humanities u’grads
- Multiple choice PACES-2 survey (TPB) and DIT-2
- 527 engineering and humanities u’grads @ 3 institutions

**Survey of Engineering Ethical Development (SEED)**
- Goal is to use a model for ethical development to identify and disseminate best practices
- Three part online survey that includes FE, TPB, and DIT-2
- 4000+ engineering u’grads @ 20 diverse institutions
PACES-1 Study

- Clear relationship between students’ attitude toward a behavior (their definition as “cheating”, “unethical but not cheating”, or “neither”) and their self-reported behavior
- Students engage in behaviors that they know are wrong and that they know have significant consequences
- Factors that influence students’ decisions about cheating vary by context (i.e., exams versus homework)
- *Moral obligation* and *shame* are unilateral deterrents
- Students often rationalize cheating behavior using *instructor-based* neutralizations
- Individual efforts to improve teaching and show concern for learning may reduce cheating and promote integrity
Past unethical behavior predicts subsequent unethical behavior in both college and workplace

The decision-making process for college extends to the workplace

Common factors influence decisions across setting

College interventions could extend to professional settings
PACES-2 Study

- Engineering undergraduates cheat more in college than those in humanities, independent of number of opportunities.
- Results revealed a statistically significantly different moral reasoning score for humanities students.
- These differences do not exist in high school.
- Psychological factors are common predictors across context and discipline.
- Emphasizing higher-order learning skills and using more qualitative assessments may promote better behavior.
- Understanding the common aspects of ethical decision-making may result in more effective interventions.
SEED Study

- Conduct a national assessment of approaches that positively impact the ethical development of engineering undergraduates
- Validate an empirical model of the ethical development of engineering undergraduates
- Assess the impact of educational experiences (curricular, co-curricular, and cultural) on ethical development
- Identify and disseminate approaches that have the most positive impact on ethical development
Questions to Ponder

- As educators, what does it mean to prepare our students for ethical practice in engineering?
- What kind of educational environment would most likely engender this sort of development? Does the current environment reflect this ideal?
- How can we best move engineering education forward to accelerate the ethical development of our students?
Our Team Belief

■ The point is not to stop cheating, but rather to foster moral growth (character development) such that students act with integrity.

■ Cheating prevention consumes time and energy and really only produces better cheaters.

■ Current practices focus more on authority (who has it and who is trying to circumvent it).
Institutional Character Education!

- Foster Moral Identity
- Liberal Education
- Service Learning
- Fair Communities of Learners