Relationships between Engineering Students’ Curricular and Co-Curricular Experiences and their Ethical Development: An Exploratory Analysis

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1 The Problem Statement

Problem
• Current instruction focuses on knowledge rather than ability to resolve ethical dilemmas or behave ethically.
• No conclusive evidence about what curricular activities best influence ethical development.

Purpose
• Analyze current state of curricular and co-curricular experiences and student ethical development.

2 Conceptual Framework

3 Method

Data
• Student Engineering Ethical Development (SEED) survey
• 3,914 respondents at all class levels at 18 institutions

Variables
• Student characteristics (e.g., gender, underrepresented racial/ethnic minority (URM) status)
• Number of curricular experiences: Up to 63 possible choices (e.g., instruction about ethics through presentation by a professor in an introductory engineering course)
• Involvement in co-curricular experiences: Highest level of involvement in 15 types of experience (2=freq, 0=never)
• Knowledge of ethics: Number of correct answers to five questions
• Ethical reasoning ability: Score on DIT instrument
• Frequency of cheating (5=every time, 0=never)

4 Results

A: URM students show a higher likelihood of involvement in curricular experiences.
B: Females show a greater frequency of involvement in co-curricular experiences.
C: Females show a greater knowledge of ethics.
D: Females and non-URM students show higher levels of ethical reasoning ability.
E: Little evidence regarding gender differences in cheating behavior is shown.

5 Summary of Key Findings

• Important differences by gender and URM status are illuminated.
• Largely descriptive in nature.
  ➢ Future research is warranted:
    ➢ To strengthen the causal inference between curricular and co-curricular experiences and ethical development and
    ➢ To gain better insight into more effective curricular and co-curricular approaches that will improve ethical development of all students.
• Will serve the important goal of improving ethics instruction at the engineering undergraduate level and
  ➢ Will, ultimately, lead to engineers who have the tools and understanding to act ethically in their careers.

6 Conclusions

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