

Development and Testing of a Survey to Measure Ethics Education Experiences & Outcomes

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1. The Problem Statement

SEED Study Research Question: *What is the impact of educational experiences and institutional culture in students' ethical development?*

Problem: Develop a survey measuring educational experiences, personal characteristics, and ethical development.

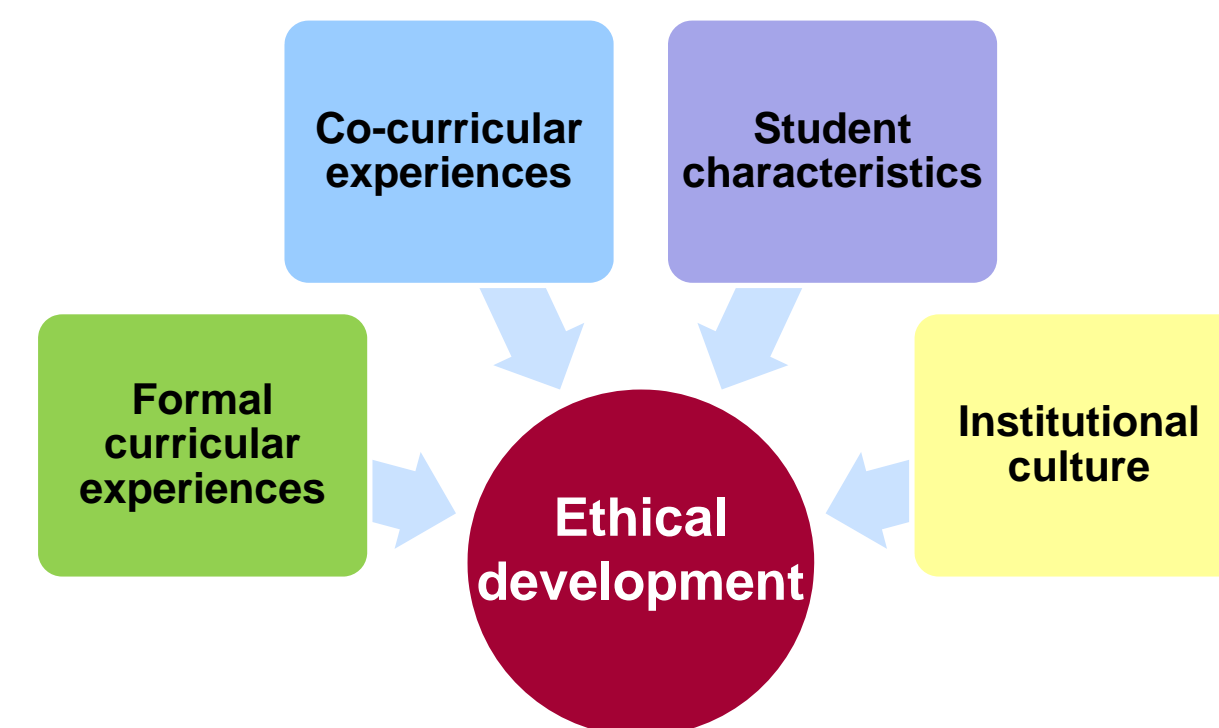


Illustration: Using *exploratory and confirmatory* methods to develop instrument assessing co-curricular ethics education.

2. Survey Development: Exploratory Phase

Goals

- Capture range of co-curricular ethical education
- Reduce likelihood of omitted items
- Use item wording to best reflect language used and understood by potential respondents

Data Collection

- 14 colleges of engineering
- Student focus groups ($n=90$)
- Faculty focus groups ($n=86$)
- Administrator interviews ($n=28$)

Protocol Sample Questions

Can you tell me a non-academic experience you've had that affected or influenced your ethical development?

What about:

- Professional engineering orgs?
- Greek life?
- Volunteering/community service?

3. Results: Exploratory Phase

Importance of student organizations: "Most of the stuff that I've learned about engineering ethics has been through non-curriculars."

Religious organizations: "[I've had] a lot of service work through campus Christian clubs."

Engineering organizations: "Engineers Without Borders has a huge impact on ethics by acknowledging conditions throughout the world."

ROTC: "[Students in ROTC have] more exposure to ethical instruction and ethical scenarios."

4. Survey Questions: First Draft

Questions: Track students' involvement in co-curricular activities.

Dimensions: Time commitment, level of involvement, and service activities

	Elected or appointed leader?	Participated in service?
Engineering student organization based on major, discipline, or professional interests		
Engineering student organization focused on service (e.g., Engineers Without Borders or EPICS)		
Student government		
ROTC (Reserve Officers Training Corp)		
Tutor, learning center staff, or other supplemental instructor		
On-campus religious organization		
Intercollegiate athletic team		

5. Survey Development: Confirmatory Phase

Survey Testing

Cognitive Interviews ($n=7$)

- Talk through draft questions and follow-up probes
- Interpret questions and response options
- Decrease measurement error

Focus Groups ($n=16$)

- Is organization appropriate?
- Are instructions clear?
- How long does it take?

Protocol Sample Questions

- What did "Participated in Service" mean to you?
- Can you give me an example of an "Engineering student organization based on major, discipline, or professional interest?"

Sample Results

What Does "Participated in Service" Mean?

- Community service and volunteering
- Services provided by the organization
- Opposite of "Elected or Appointed Leader"

Other Results

- Intercollegiate v. intramural sports
- Been a tutor v. received tutoring
- Does student government include dorm or school-specific gov't?

6. Revised Survey Draft

Revised survey, based on confirmatory testing results (changes in red)

	Elected or appointed leader?	Participated in volunteer service sponsored by group?
Engineering student organization based on major, discipline, or professional interests		
Engineering student organization focused on service (e.g. Engineers Without Borders or EPICS)		
Any type of student government or council		
ROTC (Reserve Officers Training Corp)		
Provided tutoring organized by the college or university		
On-campus religious organization		
Varsity athletic team		