

We can't get no satisfaction! Ethical reasoning and satisfaction with ethics education

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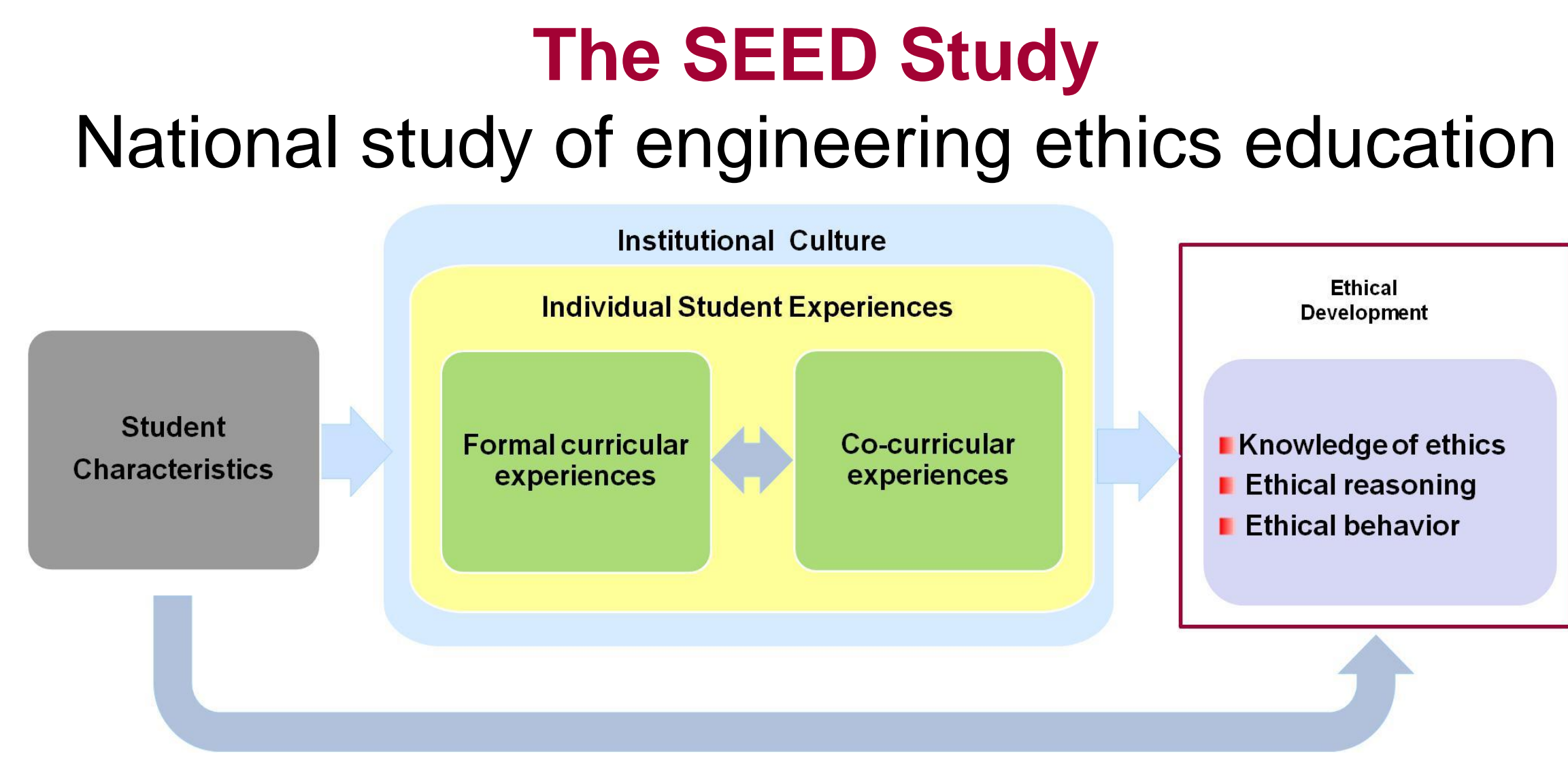
1. The Problem Statement

Context: Educators know little about the relationship between student satisfaction and other factors, including program effectiveness.

- Student satisfaction used in decisions on programs and resource allocation
- Can “prime the pump” for other outcomes
- Used as a proxy for program effectiveness

Research Question: *What is the relationship between engineering students' satisfaction with ethics education and their ethical reasoning?*

2. Methods



Satisfaction: How satisfied are you with the quality of the engineering ethics education you have received (Very Dissatisfied, Dissatisfied, Satisfied, Very Satisfied)?

Variables

- Data Collection**
- 18 Partner institutions that vary by:
 - Size
 - Geography
 - Carnegie classification
 - Characteristics of student body
 - 3,914 Undergraduate engineering students

Ethical Reasoning: Measured by DIT-2 N2 Score, a widely used and validated assessment of complexity of students' moral judgment

3. Statistical Analysis

ANOVA

Are there significant differences in ethical for students with the four different levels of satisfaction?

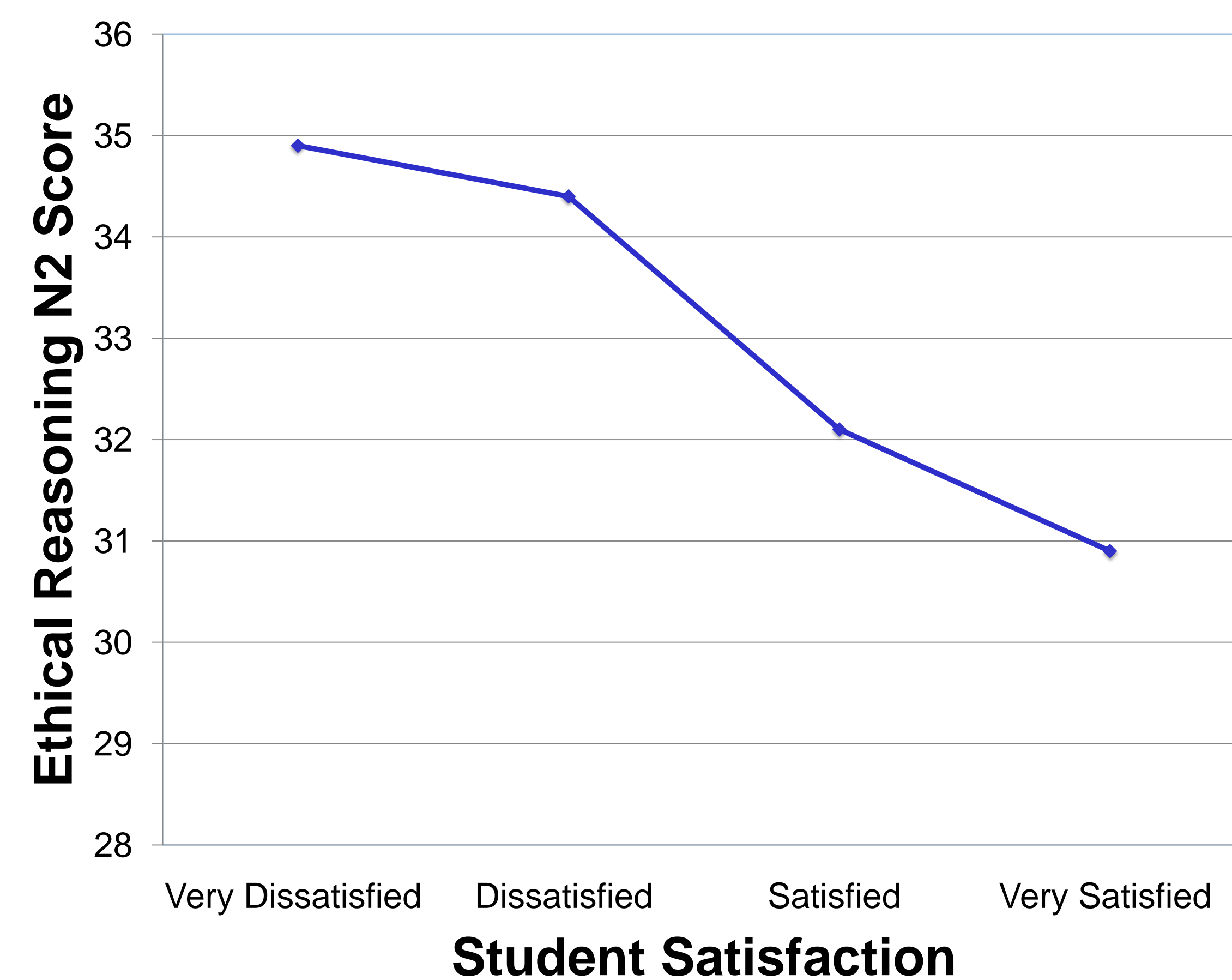
Ordinal Logistic Regression

How does satisfaction predict ethical reasoning, after controlling for other factors?

- Class year, gender, race, and other student characteristics
- Grade-point average
- Belief in the importance of ethics education
- Number of ethics education experiences
- Type of instructions in ethics education

4. ANOVA Results

The more satisfied students are with their ethics education, the lower their levels of ethical reasoning ($f=6.179$; $p<.001$).



5. Ordered Logistic Regression Results

Result Highlights

- Even when controlling for other factors, higher levels of ethical reasoning predict less satisfaction with ethics education.
- The more advanced students are in their education, the less satisfied they are. Sophomores, juniors, and seniors are increasingly less satisfied.
- Students who experience more ethics education are more satisfied.
- Requiring students to perform higher order cognitive tasks – evaluation and application – leads to higher satisfaction.

Independent Variable	Direction of Effect
Ethical Reasoning Score	- **
Increasing Class Year	- ***
Female	- ***
Under-represented Minority	-
International Student	+
Transfer Student	+
Likely to use ethics education	+ ***
Believe ethics education is “very important”	+ ***
Number of Ethics Education Experiences	+ ***
Evaluated ethical decisions of other engineers	+ **
Apply information to new ethical situations	+ *

* $p<.05$, ** $p<.01$, *** $p<.001$

6. Implications

Satisfaction should **not** be used as a proxy for effectiveness. As engineering ethics is currently taught, satisfaction and ethical reasoning are **negatively** related.

- Increase amount of ethics education for students and use cognitively complex teaching methods
- Design easy-to-administer assessments of program effectiveness.
- Ethics education should focus on both black-and-white issues (like codes of ethics) and more nuanced and complex issues.
- Focus on designing ethics education that is both effective *and* satisfying.