

Work-in-Progress: Polytechnic Perceptions of the Engineering Classroom Experience

UNIVERSITY OF WISCONSIN
STOUT

Devin Berg and Anne Schmitz
Department of Engineering and
Technology

Our institution carries a “polytechnic” designation, which is marketed as “applied”.



Labs & Classrooms

Where theoretical instruction meets **interactive learning** environments.

UW-Stout provides you with a multitude of **applied learning** opportunities through our unique **classroom to lab curriculum**. Our programs begin with theoretical instruction which is then realized through **hands-on** study in our interactive lab learning environments.

Applied learning is at the core of our polytechnic advantage. We prepare you to be career-ready through the development of critical thinking, complex problem solving, and communication skills. Our labs put these skills to the test so you are ready to take on a leadership role in your career.

<https://www.uwstout.edu/academics/colleges-schools/labs-classrooms>

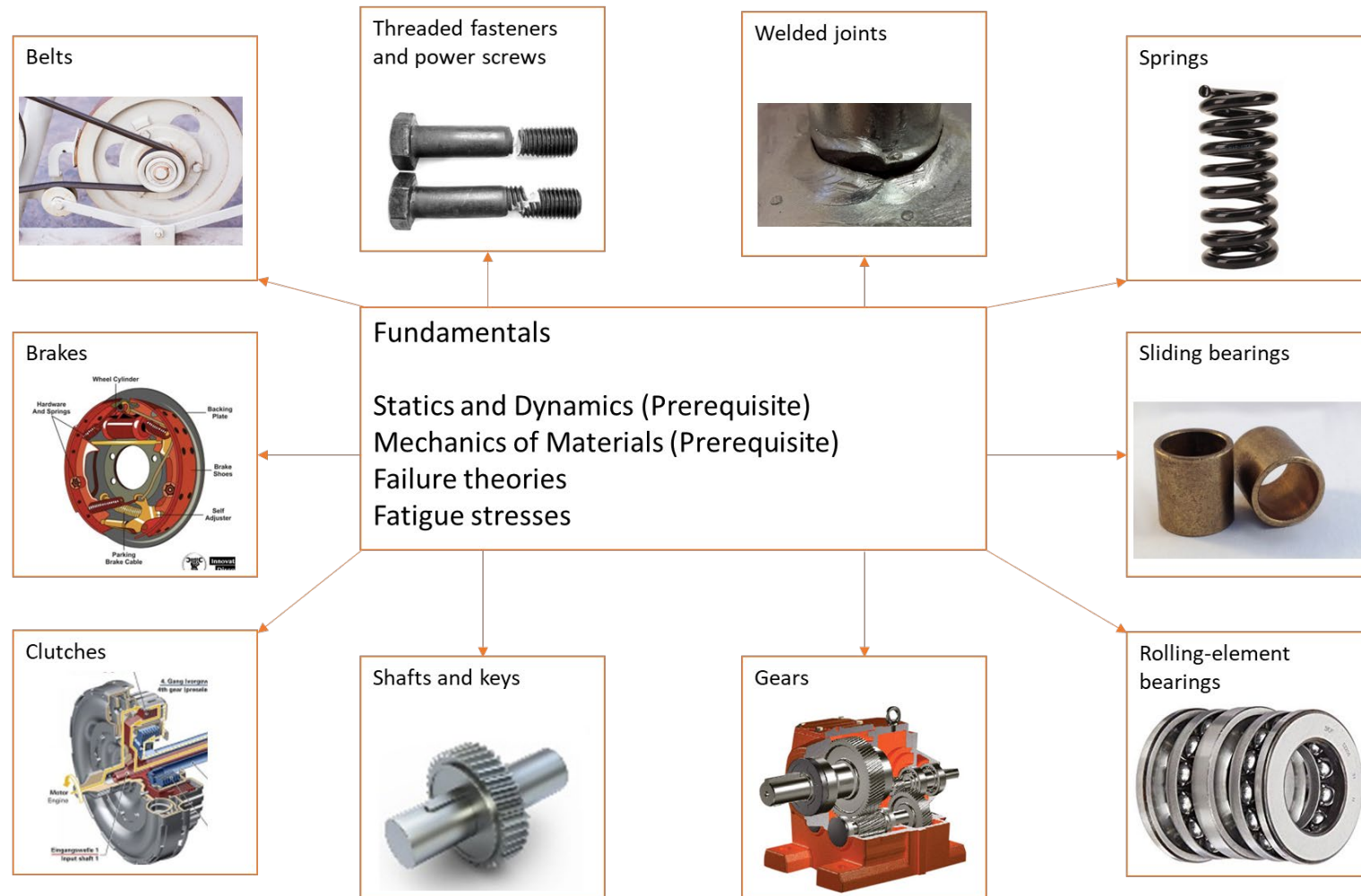
Questions to Answer in our Study

- What perception do students have of what these hands-on courses will look like?
- How do different pedagogical approaches align with this perception?

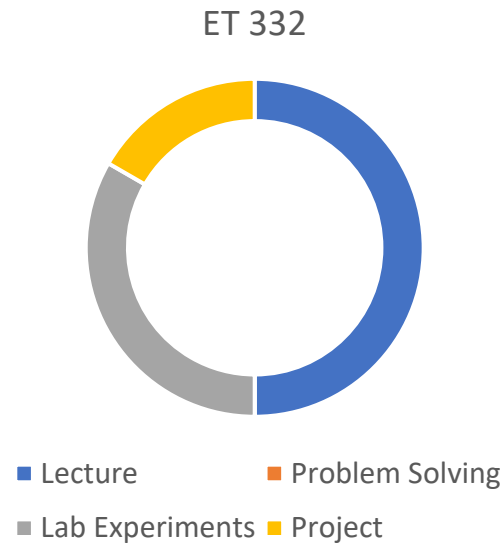
Survey: 3 yes/no, 1 Likert scale, and 4 open-ended questions

Machine Components Course

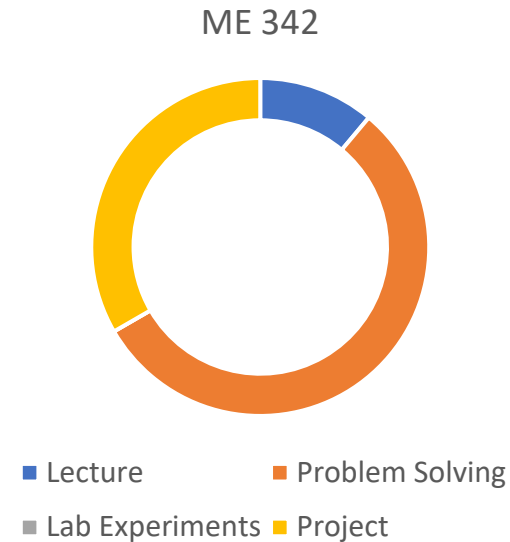
- Required undergraduate course, junior/senior level
- 2 sections: mechanical engineering, engineering technology



The main difference between the two course sections of this study was the structure of the class time.

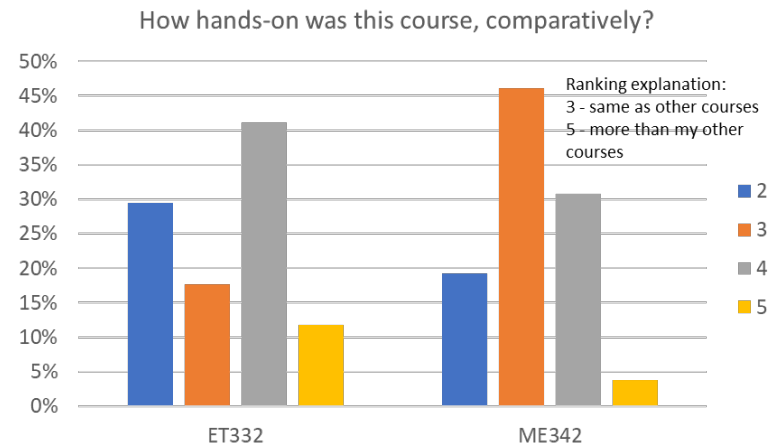
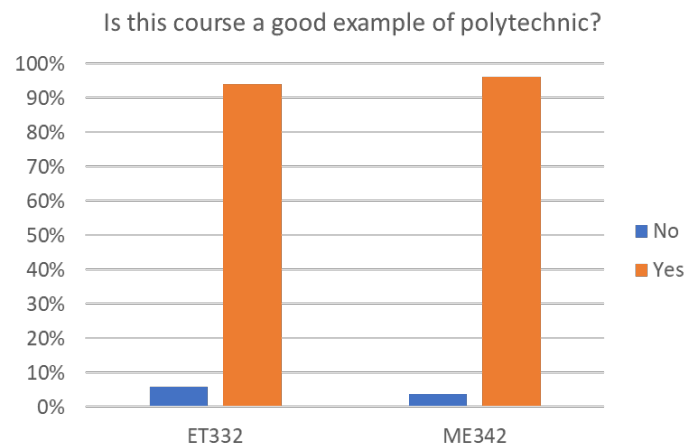
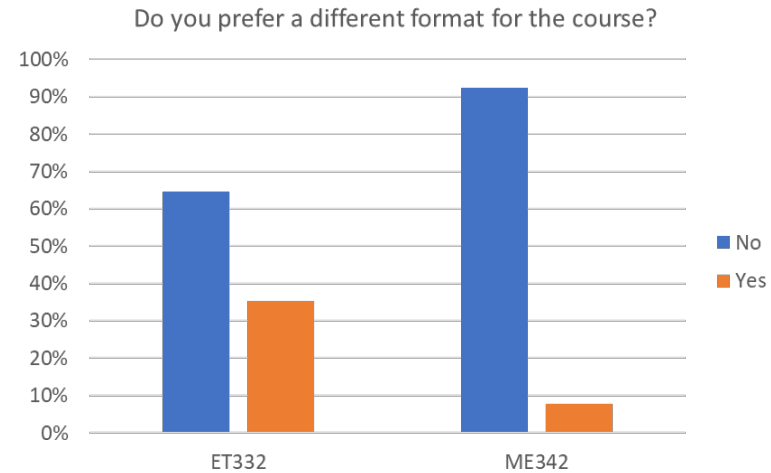
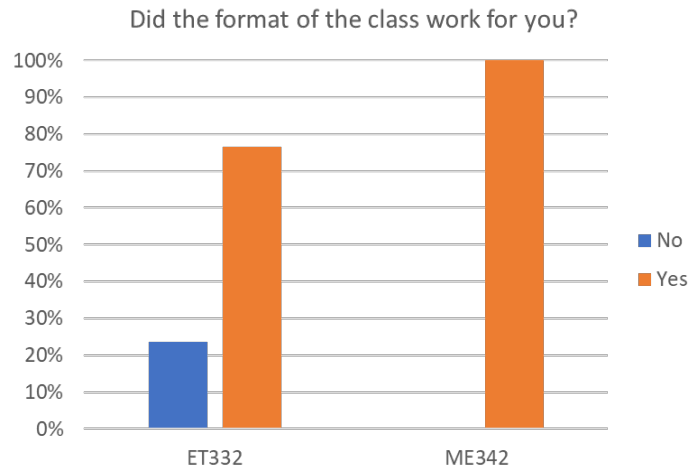


Structured lecture and lab time



Class time for open-ended problem solving in a flipped classroom format

Regardless of the pedagogy, most students found the format appropriate and a good example of a polytechnic course.



To students, polytechnic education means hands-on classroom experiences.

What does polytechnic education mean?

ET 332

“It means to be able to learn with my hands rather than a book. It means going out and trying something to see if it will work rather than sitting behind a desk saying it will work.”



ME 342



“It means to work with your hands/ learning something by doing it. Not only studying theories and actually putting them into practice.”

Take Home Message

- Student perceptions of polytechnic nature of a class did not differ with pedagogy
- Students found class representative of polytechnic because of hands-on, physical labs
- Did not matter if labs were open-ended or structured