Project Title

Evaluating the Impact of Industry-Inspired Projects and Professional Mentorship on Student Learning in Engineering Design Education

Project Description

Experiential learning has become a cornerstone of engineering education, providing students with opportunities to apply theoretical knowledge to authentic engineering problems. Increasingly, engineering programs are incorporating industry-inspired design projects and professional mentorship to expose students to real-world engineering practice, industry expectations, and workplace problem-solving approaches. While these initiatives are widely viewed as beneficial, there remains limited empirical evidence regarding their impact on student learning, engagement, professional identity development, and career readiness.

This research project aims to investigate the educational impact of industry-inspired projects and structured mentorship within undergraduate engineering design courses. The study will examine how authentic industry challenges and interactions with practicing engineers influence students' technical learning, design decision-making, motivation, confidence, and understanding of professional engineering practice.

The research assistant will contribute to the design and implementation of a mixed-methods study involving surveys, interviews, focus groups, reflective journals, classroom observations, and analysis of student project artifacts.

The project will involve collecting and analyzing both qualitative and quantitative data to better understand the mechanisms through which authentic industry experiences contribute to student learning. Particular attention will be given to identifying the elements of mentorship and project design that are most effective in supporting student growth and success.

Students participating in this research will gain experience in educational research, survey and interview design, qualitative and quantitative data analysis, learning assessment, and engineering education scholarship. The project offers opportunities to contribute to conference and journal publications focused on experiential learning, engineering design education, and industry-academic partnerships.

This project is particularly suited for students interested in engineering education, experiential learning, workforce development, design education, educational assessment, or the integration of industry perspectives into higher education. The findings will help inform the development of evidence-based approaches for designing impactful industry-engaged learning experiences that better prepare engineering students for professional practice.

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