Improving Student Learning via an Innovative Final Project (Capstone) Program

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Research tells us that students need:

- Interdisciplinary Experience
- Professional or Project Spine
- Authentic Practice
- Practice with Innovation

Over the last 100 years, the locus of job and wealth creation in the US has been driven by technological innovation. To create a viable and sustainable economy, we need to develop people's creative capacities to innovate.

Challenges that inhibit such an environment

At your tables, think of as many challenges to implementing these things in your study program.

You have 5 minutes.

Challenges that inhibit such an environment

- Large numbers of team-based projects that would be required
- Traditional structure of study program
- Preparation of Students
- Agreement across study programs
- Mentorship of faculty and students
- Financial model required

Overall Goal

ASU's Vice President & University Dean of Entrepreneurship & Innovation Mitzi Montoya: "If I could change one thing about engineering education – well, actually, all education – it would be to center it around solving real problems and making things. In other words, we ought to be creating innovators and inventors at our engineering schools."

who's involved

Think outside of just engineering

Applied Sciences & Math

- chemistry, physics and applied mathematics
- applied biological sciences
- environmental science
- post harvest technology

Management

- agribusiness
- agroecotechnology
- technological entrepreneurship
- management

Engineering & Computing

- electrical engineering
- mechanical engineering
- civil engineering
- computing programs
- Industrial engineering
- environmental engineering
- agricultural engineering

pedagogical innovation

The idea:

- iProjects

iProjects (now eProjects)

investigation

idea

industry

inquiry

invention

innovation

iProjects – How It Works

Academic lead / partner determine project requirements

Partner commits to funding materials, use of labs and equipment, and other expenses.

Programs assigns student team (four to eight students) and faculty advisor.

Partner assigns project liaison.

Projects typically lasts one or two semesters.

Partner receives full access to all project outcomes and results, and retains all IP.

iProjects – How It Works

Faculty and students can sign NDA

Partner signs agreement

Project teams present interim reports and demos

Partner provides feedback

Projects presented during Innovation Showcase

Allows the public to see student work

https://vimeo.com/101467903 for innovation show case video

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Goals and Outcomes

- Increased engagement
- Improve Student Learning Outcomes
- Engage External Partners
- Redesign of academic programs
- Restructure space
- Acquire and train faculty mentors
- Develop a financial model

Types of iProjects

Examples

Build and Test

Design

Hardware Prototype

Software Prototype

Data Collection and Analytics


acting on what matters
Restructuring Space


acting on what matters
Industry Engagement

Questions?

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