Integrating the Lean Launch curriculum into engineering courses
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Motivation
- Entrepreneurship education brings many benefits to engineering students
  - Graduating students cannot simply be technically proficient
  - Entrepreneurial skills (professionalism, communication, creativity, flexibility) are important for any engineer
  - Engineers must be able to develop technologies and ensure their success on the market
  - Traditional engineering curricula do not incorporate entrepreneurial development

How can we integrate entrepreneurship education into our existing engineering courses?

Lean Launch
- An entrepreneurship curriculum developed by Steve Blank
- Fast-moving development process to ensure success for entrepreneurs
- "Evidence-based entrepreneurship" - business models are iteratively revised using feedback from potential customers, ensuring product-market fit before launch

Research Questions
1. How does the Lean Launch process compare or contrast to the engineering design process?
2. What engineering learning outcomes are also outcomes in the Lean Launch curriculum?
3. What types of engineering behaviors do instructors believe students develop by engaging in the Lean Launch curriculum?
4. What benefits does the Lean Launch curriculum bring to engineering design curricula?

Methods
- Participants
  - 3 entrepreneurs who leverage the Lean Launch curriculum
- Settings
  - Undergraduate and graduate Center for Entrepreneurship courses
  - iCorps
  - Incubator for start-ups
- Data collection
  - Semi-structured interviews
  - Entrepreneurs checked off items related to engineering (in terms of the design process, learning outcomes, and behaviors) if they were present in the Lean Launch curriculum

Parallels between the Engineering Design Process & Lean Launch

Parallels between the Engineering Learning Outcomes & Lean Launch

Implications
Implementing Lean Launch into our courses can greatly improve the teaching and assessment of our curriculum. There are many specific benefits to integrating Lean Launch into engineering courses:
- Development of entrepreneurial knowledge
- Creating a business model
- Determining product market fit
- Engagement in Customer Discovery:
  - Formalizing the human-centered aspect of design: students must gain first-hand feedback about user needs
  - Fostering the application and development of engineering skills in a different context: students practice important engineering skills, but considering customer feedback as data
- Simplifying the teaching and assessing of ABET skills

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