Engineering Design for Service…and Leadership Development

A project to infuse leadership pedagogy in EGR 2210

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ORIGINAL ARTICLE

Pedagogical approaches for facilitating engineering leadership development

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Abstract
This article describes transformative, impactful pedagogical practices that engage students in the process of leadership development. We share practical examples of instructional strategies and facilitation techniques from curricular and co-curricular initiatives.

INTRODUCTION

Engineering leadership (EL) programs employ transformative, diverse, entrepreneurial pedagogical approaches to move students from conceptual understanding to active leader-

The Development Pipeline is a framework that identifies the necessary conditions for change (Peterson, 2006)

"When one or more of the conditions are narrow, such as a lack of insight or low motivation, a bottleneck is created, and the development process is limited or even stops."

Insight: How aware are you of the area(s) or behavior(s) that you need to develop?

Motivation: How motivated are you to develop the area(s) identified?

Capabilities: Do you have the skills, abilities, and knowledge necessary to develop?

Real-World-Practice: Do you have the opportunity to practice new skills at work?

Accountability: What internal and external mechanisms will you use to hold yourself accountable? What will be the consequences if you don't meet the goals set for each step of the development journey?

How aware are you of the area(s) or behavior(s) that you need to develop?

Part I: What? Who? How?

- As a class: What is leadership?
- Individuals: Think of 3 people whom you consider a leader...in your hometown?...in a peer group at Elon?...among Elon staff/faculty? How do they "show up" as leaders?
- As a class: What, if any, themes emerge?

How aware are you of the area(s) or behavior(s) that you need to develop?

Part II: What are your strengths and preferences?

- Complete the following self-assessments: MBTI, Work Styles Inventory, and Index of Learning Styles
- Prepare a summary report of self-assessment results.
- Reflect on leadership history – past and missed opportunities plus alignment with 3 leaders identified.

How motivated are you to develop the area(s) identified?

- Intrinsic: What makes you do what you do? Complete the Value Mapping activity.
- Extrinsic: Career readiness (National Association of Colleges and Employers, NACE)

Do you have the skills, abilities, and knowledge necessary to develop? **YES!**

## Leadership Portfolio – Demonstrate the skills, abilities, and knowledge developed

- NACE-inspired goal: Recognize and capitalize on personal and team strengths to achieve design team goals.
- **Parts I – IV**: Previous assignments (self-assessments, summary report of self-assessments, reflection on leadership history, value mapping)

Do you have the skills, abilities, and knowledge necessary to develop? **YES!**

**Leadership Portfolio – Demonstrate the skills, abilities, and knowledge developed**

- **Part V**: Development plan – identify 2 SMART goals (personal and team) for each of the *Relational Leadership Model* components
- **Part IV**: Provide evidence
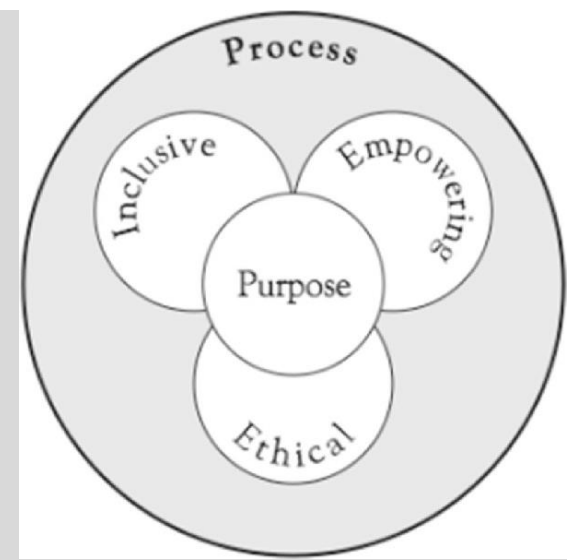
EGR 2210 Engineering Design for Service

*Do you have the opportunity to practice new skills at work?* **YES!**

Insight — Motivation — Capabilities — Real-World Practice — **Accountability**
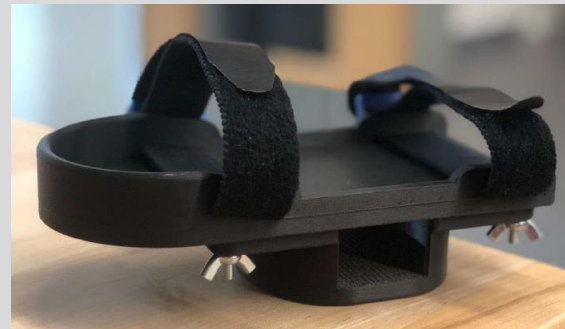
What internal and external mechanisms will you use to hold yourself accountable?

Peer Coaching

Students will work in pairs and serve as each other's leadership coach
- Meet a minimum of 3 times
- Work together to establish leadership development plans
- **Part V** in the **Leadership Portfolio**
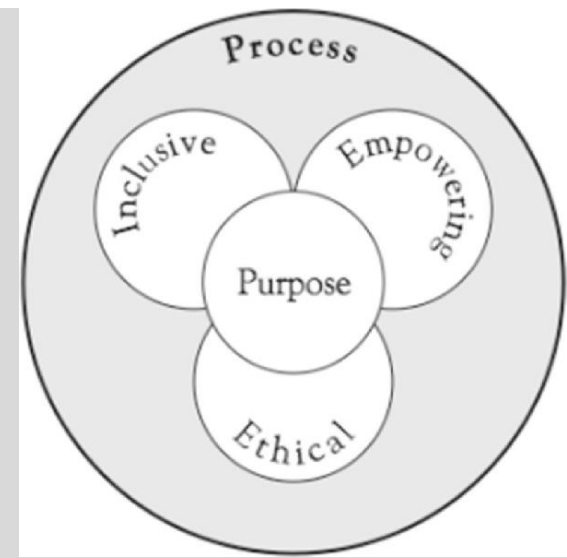
Thank you for listening!
I welcome your feedback and questions.

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