Developing an Enabling Pedagogy for Fostering Engineering Undergraduates’ Entrepreneurial Orientation

NALEDI KAEANE, TEBOHO PITSO & MALEFANE LEBUSA
VAAL UNIVERSITY OF TECHNOLOGY
OVERVIEW OF THE PRESENTATION

- BACKGROUND TO THE STUDY
  - Engineering Essence
  - Entrepreneurial Orientation
- PURPOSE OF THE STUDY
- PEDAGOGIC MODALITIES
- ADUMBRATING AN ENABLING PEDAGOGY
Background to the Study

- Part of my Master’s study
- Engineering Essence - each of its activity has to meet the following conditions:
  - Result in human benefit, that is, lead to development of new or improved things (ingenium)
  - Use and lead to generation of new, useable knowledge that leads to new possibilities (scientia)
  - Result in the development of new made things and search for higher designs of existing things (techne’)
  - Create new ways of doing and working (praxis)
Entrepreneurial Orientation – based on these conditions for an engineering activity, it becomes vital that students get orientated on the following entrepreneurship behaviours:

- Initiative-taking
- Innovation – taking a unique idea to tangible results
- Effectuation – taking decisions under conditions of uncertainty and complexity
- Taking calculated risks
## Pedagogic Modalities

1. **Invisible Progressive Pedagogy**
   - **Key Characteristics**
     - Competence-oriented (acquisition)
     - Intra-individual
   - **Key Theorists**
     - Piaget, Chomsky
   - **Curriculum and Knowledge**
     - Weakly framed – content, sequencing, pacing flexible
     - Strong evaluation (fixed norms of achievement)
     - Weak knowledge classification
   - **Agency** – active, choosing student, facilitating teacher

2. **Visible Conservative Pedagogy**
   - **Key Characteristics**
     - Performance-oriented
     - Intra-individual
   - **Key Theorists**
     - Behaviourists such as Pavlov, Skinner
   - **Curriculum and Knowledge**
     - Strongly framed – content, sequencing and pacing rigid
     - Strong evaluation (fixed norms of evaluation)
     - Strong boundary maintenance, formal sites appropriation
   - **Agency** – passive student, teacher as sage

3. **Invisible Radical Pedagogy**
   - **Key Characteristics**
     - Competence-oriented
     - Intergroup
   - **Key Theorists**
     - Freire, McLaren (eliminates socially-empty trainability)
   - **Curriculum and Knowledge**
     - Weakly framed – content, sequencing, pacing relaxed and flexible
     - Evaluation based on emancipation from oppression
     - Knowledge - very weak boundary
   - **Agency** – active, choosing student, facilitating teacher

4. **Visible Radical Pedagogy**
   - **Key Characteristics**
     - Performance-oriented
     - Intergroup
   - **Key Theorists**
     - Social Psychologists such as Bandura
   - **Curriculum and Knowledge**
     - Flexibly framed, collective access to and participation in experiences of a community of practice (peripheral to full)
     - Knowledge – boundary maintenance moderate
   - **Agency** – active student, negotiating teacher
Adumbrating an Enabling Pedagogy

- Competence – (gain in ability) rather performance (gain in knowledge)
- Intergroup – students’ teams generate new ideas and test them out in real situations using the principle of affordable loss.
- Flexible framing of content knowledge (selection, sequencing, pacing, pitching)
- Weak classification of knowledge (exposure to multiple sites of knowledge appropriation)
- Showcasing prototypes as evaluation strategy