Enquiry-based learning

A socially just approach to Higher Education

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Information is changing

• Information was
  • Hierarchical
  • Prescribed
  • Known (finite)

• Impact ......
  • Places of learning
  • Organized
  • Taught in sequence

• Information is
  • Chaotic
  • Random
  • Infinite

• Impact ......
  • Information is democratized
  • Ubiquitously available
  • Cannot be taught in sequence

Our challenge is to develop educational programs that deal with this complexity and information access
Students are changing

• Shift in gender and demography
• Passive to active learners
• No longer isolated but connected
• Single to multiple focus
• Different backgrounds
• Different levels of preparation
• Not insular but global citizens

Our challenge is to develop educational approaches and activities that reflect these shifts
Employment is changing

• Vital skills sets
• Communication skills
• Entrepreneurial skills
• Professional skills
• Team work skills
• Appraisal skills

Our challenge is to develop educational approaches that trains process not content
World is changing

Increase in access

Increase in diversity

Little change in our pedagogy

Our challenge is to provide value for money, employability skills and recognize diversity and different levels of preparation
Enquiry-based learning

Innovation that is socially just and accommodates diversity

Addresses business demands for a work-ready workforce

Focuses on process not content

Improve educational outcomes

Addresses student concerns for relevance
Methodology for enquiry-based learning

- Small group classes
  - Nine students per group
  - One facilitator
  - Meets twice a week for 1.5 hours

- First session
  - Presented with a “scenario”
  - Identify learning needed
  - Focus on process not content

- Second session
  - Share learning issues
  - Integrate into the “scenario”
Scenario

What do I know?

What do I not know?

What I need to find out?

Independent research

Share information

Group discussion

Group discussion

“Closed loop re-iterative enquiry-based learning”

GROUP PROCESSING
Research on outcomes

- Academic performance
  - Grade level per (term) semester

- Access to information
  - Use of resources

- Self and peer-assessment
  - Written feedback

- External opinion
  - Formal and informal reviews
Accessing original articles

How often do you use original source material?

Five-point Lickert scale

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<th>Frequency</th>
<th>Never</th>
<th>Rare</th>
<th>Sometimes</th>
<th>Frequent</th>
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<td>0</td>
<td>2</td>
<td>6</td>
<td>8</td>
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Before course  | After course
**Student self-appraisal**

The skills that I took ..... have been at the heart of my success at University.

I learned how to think for myself, how to be independent, how to manage my time, and to have confidence in my abilities........
I learned a subtle awareness of the difference between information and knowledge.

**Impact on faculty**

This was a challenge but I learned so much and it has re-ignited my passion for teaching.

A remarkable experience to understand that students will not only engage but at a very high level. Seeing the same students in their final year is exhilarating – learning what they have done, seeing how empowered they are – just amazing. I am sorry I wasted my time before.
Summary of overall impact

- Better academic performance – transferable skills
  - Greater impact on students with lower entering averages

- Effective and critical access to information
  - Use and practice of formal operational cognitive skills

- Improved self and skill assessment
  - More effective and accurate self assessment

- Improved employability skills – preferential access to jobs
  - Greater confidence and ability to articulate skills accurately

- Improved community engagement
  - Greater participation and retention

- Improved faculty experience
Experiment in socially just education

- Undergraduate student population in a University in South Africa
  - Grown considerably over the last decade
  - Two types of students
    - Traditional – mostly Afrikans
    - New – mostly from townships (Soweto – Eastern Cape)

- The problem
  - Drop out rate among the “new” students very high
  - Don’t do well in their first semester
  - ~50% of these students will fail semester 2
The experiment ...

Based on the premise that enquiry-based learning improves grades

Could we offer a course and change outcomes

Developed 8 new scenarios—related to South Africa

~80 students participated in the course

Remarkable results – 86% success rate