2019-03-21

Preliminary Findings of a phenomenographic research study into academic conceptions of the term professional skills

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CREATE Seminar
PhD Candidate: Una Beagon

Preliminary Findings of a phenomenographic research study into academic conceptions of the term professional skills

Supervisor: Prof. Brian Bowe

21st March 2019
Outline

1) Aims of research
2) Overall Methodological Approach
3) Methods
4) Findings to date
5) Next steps
6) Issues arising
Aims of Research

Better prepare students for the workplace

More opportunities to develop professional skills

Curriculum Reform

Convince Academics

Better understand Academics
Overall Methodological Approach

Better understand Academics

Conceptions of Professional Skills

The “What”
What do academics mean by “professional skills”?

The “How”
How do academics think “professional skills” are taught?
My approach

Phenomenography

First proposed by Marton (1981)

“Phenomenography is a research method adapted for mapping the qualitatively different ways in which people experience, conceptualise, perceive, and understand various aspects of, and phenomena in, the world around them” (Marton, 1986, p.31)

Examples:

• Surface and deep learning (Marton & Säljö, 1976)
• Approaches to Teaching Inventory (Trigwell et al., 2005)
• Academics Conceptions of Lecturing (Daniel, 2015)
Phenomenology v's Phenomenography

Similarities v's Differences
Phenomenography in relation to other research approaches (Trigwell, 1999)
Research Questions

What are the qualitatively different ways that academics experience the teaching of professional skills in engineering programmes in Ireland?

Sub Questions

What are the qualitatively different ways that academics;

• conceptualise teaching and learning (generally)
• approach teaching and learning (generally)

• conceptualise what is meant by professional skills
• approach teaching professional skills
Methodology

Phase 1: Online Survey - complete

Purpose: To gather general information, provide data for triangulation and to provide a purposeful sample for Phase 2 interviews.

Phase 2: Phenomenographic interviews – Pilot interviews underway

Purpose: To collect the varied ways in which academics conceptualise and experience the teaching of professional skills.

Phase 3: Phenomenographic Analysis

Purpose: To create outcome spaces to describe the varied ways in which academics conceptualise and experience the teaching of professional skills in engineering programmes in Ireland.
Survey content

- Gender
- Educational Qualifications
- Industry Experience
- Academic Experience
- Engineers Ireland Accreditation
- Approaches to Teaching Inventory (Trigwell and Prosser, 1996)
- Importance of specific skills *
- Provocative statements

(n=273)

<table>
<thead>
<tr>
<th></th>
<th>Male: 72%</th>
<th>Other: 6%</th>
<th>Female: 22%</th>
</tr>
</thead>
</table>
Findings to date – survey result

Average score of importance of skills by gender

<table>
<thead>
<tr>
<th>Character and Interpersonal Skills</th>
<th>Teamwork &amp; Collaboration Skills</th>
<th>Communication</th>
<th>Excellence in Technical Skills</th>
<th>Problem Solving</th>
<th>Self Direction</th>
<th>Project Management</th>
<th>Leadership</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female Average</td>
<td>3.60</td>
<td>3.71</td>
<td>3.71</td>
<td>3.17</td>
<td>3.78</td>
<td>3.62</td>
<td>3.22</td>
</tr>
<tr>
<td>Male Average</td>
<td>3.27</td>
<td>3.41</td>
<td>3.59</td>
<td>3.23</td>
<td>3.71</td>
<td>3.44</td>
<td>3.07</td>
</tr>
</tbody>
</table>
Selection criteria for interviews

Each respondent was given a Priority Tag if they fell into the following categories;

• Female
• No industry experience OR > 20 years industry experience
• Recruited, trained or worked with graduate engineers
• Above the threshold for the Approaches to Teaching Inventory
  • > 26 score for Conceptual Change / Student Focused OR
  • > 26 score for Information Transfer / Teacher Focused
• Qualifications
  • PhD/DEd OR no PhD/DEd
  • Educational qualification OR no Educational Qualification
• Academic Experience
  • < 5 years OR > 20 years
  • Mainly Lecturing OR Mainly Researcher
Selection criteria for interviews

- Chartered Engineer OR not a member of Eng Ireland
- Involved in accreditation OR not involved in accreditation
- Outlier opinion on Provocative Statements
- Outlier opinion on importance of relevant skills

<table>
<thead>
<tr>
<th>Respondent ID</th>
<th>P1 (Female)</th>
<th>P2 (No Industrial Experience)</th>
<th>P3 (&gt;20 yrs industry)</th>
<th>P4 (Worked with graduates)</th>
<th>P5 (Outlier ATI results)</th>
<th>P6 (PhD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>6546217763</td>
<td></td>
<td></td>
<td>P3 (&gt;20 yrs industry)</td>
<td>P4 (Worked with graduates)</td>
<td>P5 (Outlier CCSF)</td>
<td></td>
</tr>
<tr>
<td>6487080580</td>
<td>P1 (Female)</td>
<td></td>
<td></td>
<td></td>
<td>P5 (Outlier ITTF and CCSF)</td>
<td></td>
</tr>
<tr>
<td>6551935959</td>
<td>P1 (Female)</td>
<td></td>
<td></td>
<td></td>
<td>P5 (Outlier CCSF)</td>
<td></td>
</tr>
<tr>
<td>6545611312</td>
<td>P1 (Female)</td>
<td>P3 (&gt;20 yrs industry)</td>
<td>P4 (Worked with graduates)</td>
<td></td>
<td>P5 (Outlier CCSF)</td>
<td></td>
</tr>
<tr>
<td>6536058873</td>
<td>P1 (Female)</td>
<td>P3 (&gt;20 yrs industry)</td>
<td>P4 (Worked with graduates)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6532813430</td>
<td>P1 (Female)</td>
<td>P3 (&gt;20 yrs industry)</td>
<td>P4 (Worked with graduates)</td>
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<td>P5 (Outlier CCSF)</td>
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<td>6530132268</td>
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<td>P2 (No Industrial Experience)</td>
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<tr>
<td>6528339966</td>
<td>P1 (Female)</td>
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<tr>
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<td>P2 (No Industrial Experience)</td>
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<td></td>
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<td>P6 (PhD or DEd)</td>
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<tr>
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<td>P6 (PhD or DEd)</td>
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<td>P4 (Worked with graduates)</td>
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<td>P5 (Outlier CCSF)</td>
<td>P6 (PhD or DEd)</td>
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<tr>
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<td></td>
<td>P4 (Worked with graduates)</td>
<td>P6 (PhD or DEd)</td>
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<td></td>
<td>P4 (Worked with graduates)</td>
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<tr>
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<td>P2 (No Industrial Experience)</td>
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</tbody>
</table>
Check on minimum criteria

Respondents selected for interview based on highest no of priority tags
Extremities used to identify outliers with opinions on skills requirements

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Range</th>
<th>Initial suggestion of min number to be selected</th>
<th>Actual number included within sample of 33 respondents</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>Male</td>
<td>8</td>
<td>16</td>
<td>Not appropriate to include all respondents (16no) who selected ‘Other/Prefer not to say@</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>8</td>
<td>16</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Other /Prefer not to say</td>
<td>8 all</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td>Less than 25</td>
<td>1</td>
<td>0</td>
<td>No respondents indicated an age of less than 25 years old.</td>
</tr>
<tr>
<td></td>
<td>25 to 34</td>
<td>2</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td></td>
<td>35 to 44</td>
<td>2</td>
<td>7</td>
<td></td>
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<tr>
<td></td>
<td>45 to 54</td>
<td>2</td>
<td>13</td>
<td></td>
</tr>
<tr>
<td></td>
<td>55 or older</td>
<td>2</td>
<td>8</td>
<td></td>
</tr>
</tbody>
</table>

Refer to handout
Findings to date (2 interviews)

• RQ1: (The “what”)

What are the qualitatively different ways that academics conceptualise “professional skills” in engineering graduates?

- Professional skills as being independent of technical skills
- Professional skills as being a combination of technical skills and soft skills
- Professional skills as being a subset of technical skills, an enabler to carry out technical skills
Next steps

• Confirmation report (Easter)
• Confirmation Exam (May/June)
• Interviews (March – June)
• Analysis (Ongoing - December)
• Write up - ongoing

Issues arising

• Time
CREATE Seminar

PhD Candidate: Una Beagon

Supervisor: Prof. Brian Bowe

21st March 2019