

**ISEE Conference**

**University College Cork, 1-2<sup>nd</sup> July 2010**

**How Do We Find What We're Looking For?  
Critical Thinking in the University Curriculum**

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2009-2011**

# Our Group Project

## Aim:

- To explore the understandings and realisation of critical thinking in the university curriculum

## Objectives:

- To elicit and explore academics' understanding of critical thinking as a generic graduate attribute
- To elicit and explore academics' understandings of critical thinking within the context of their discipline or subject area
- To examine how academics' understandings of critical thinking are realised in curriculum design and assessment



# Rationale, significance, relevance

- We cannot facilitate its acquisition if we do not have a clear understanding of what critical thinking comprises and entails for us and our students
- Need to elicit academics' understandings of critical thinking as not only as a generic graduate attribute but also within their disciplinary contexts
- Need to explicate the often implicit ways in which critical thinking is dealt with in curriculum and pedagogy
- Need to challenge tokenism, lip-service and rhetoric
- Need to identify best practice and disseminate it
- Need to consider implications of findings for our curriculum and for teaching and learning with regard to:
  - Programme design and structure
  - Module design and structure
  - Teaching and learning strategies
  - Assessment strategies



# UCD Strategic Plan to 2014 'Forming Global Minds'

The UCD Graduate and Critical Thinking:

As well as producing students with a high level of expertise in their own disciplines, UCD will focus on fostering wider capacities essential for employability, innovation, entrepreneurship and active citizenship. These wider capacities include creativity, **critical thinking** and the skills to communicate effectively, solve problems and work in and lead teams ( *Forming Global Minds*, UCD Strategic Plan to 2014, p. 16)

With an in-depth knowledge of his or her chosen discipline and an understanding of how knowledge in that discipline is advanced, underpinned with well developed skills of **critical thinking**, analysis and reflection ( *Forming Global Minds*, UCD Strategic Plan to 2014, p. 15)



# Graduate Attributes

- Qualities, capacities and understandings gained as a result of a university education
- Transcend disciplinary or subject boundaries
- Prepare graduate not only for employment but as agents for social good and social change



# Graduate Attributes: Debates and Tensions

- Irreducible to sets of skills or behaviours
- Generic or discipline, subject-specific
- Visibility in curriculum as an explicit learning outcome
- Taught in a decontextualised, bolt-on way or embedded in, threaded through and integrated into curriculum

(Bowden et al 2000, Barrie 2006, 2007, Davies 2006, Jones 2009)



# Critical Thinking: *The Graduate Attribute?*

- Contested, elusive, fugitive concept
- Linked variously to logic, problem solving, scepticism regarding evidence, exploring contradictions/complexities, argumentation, open mindedness, discerning patterns and connections, able to rise above the concrete to think in abstract way (semantic gravity)
- 3-tier model (Barnett 1997)
  - Critical thinking (learning generally to problem solve)
  - Critical thought (using this skill to interrogate a body of knowledge)
  - Critique (meta-criticism, critique one discipline from the perspective of another, situate own discipline in wider contexts)



# The Project

- Multi-method qualitative study, involving disciplines from all five UCD Colleges, as follows:
  - English, Drama and Film
  - History and Archives
  - Business
  - Law
  - Architecture
  - Civil Engineering
  - Computer Science & Informatics
  - Economics
  - Social Justice
  - Biology and Environmental Science
  - Chemistry and Chemical Biology
  - Public Health, Physiotherapy and Population Science



# Project Phases

- **Phase 1**

Semi-structured interviews with 13 subject experts nominated by Heads of School (Jan–May 2010)

- **Phase 2**

Analysis of 2 modules chosen by each subject expert using MDF and related documentation (Jun–Sep 2010)

- **Phase 3**

Semi-structured interviews with module co-ordinators (Sep–Oct 2010)

- **Phase 4**

Analysis of 3 pieces of student work per module (Jun-Oct 2010)

- **Phase 5**

The employer's perspective (individual projects)



# Phase 1

- Semi-structured interviews with 13 subject experts nominated by Heads of School (Jan–May 2010)
- Consent forms signed
- Interviews digitally audio-recorded and transcribed
- Guided by topic guide comprising 3 broad areas:
  - Definitions, personal, disciplinary, school. Is it a specific attribute or a cluster or constellation? Importance for students? Relevance for other stakeholders? Extent to which a 'live' or 'hot' topic within field?
  - How is critical thinking represented in curriculum? Explicit or implicit? Are students aware that they are being educated to be critical thinkers? Barriers and facilitators to critical thinking at micro-, meso-, macro levels?
  - What teaching and learning, and assessment strategies promote critical thinking? Does awareness of its importance influence processes, culture and environment



# Preliminary findings

- Definitions of critical thinking
- Importance of critical thinking
- Critical thinking in the curriculum
- Barriers and facilitators



# Definitions of critical thinking

- Awareness of alternative standpoints
- Ability to defend own stance through debate and argument
- Assessment of extent to which the evidence supports the conclusions drawn and to what extent debate is informed by people's own prejudices and their own social, cultural, historical location
- Ability to surface underlying assumptions or arguments
- Critiquing the role of own profession/discipline in society
- Reflexivity, reflection
- To identify relationships among abstract concepts, to discern patterns, themes and trends



# Definitions of critical thinking

- Ability to abstract and stand back from a situation
- Constant questioning and interrogation of evidence and conclusions
- Ability to take known knowledge and skills and apply these to unknown situations
- Ability to make choices and decisions, clinical reasoning, clinical judgement and decision-making based on integration of objective and subjective cues
- Ability to problem solve and to communicate solutions effectively
- Ability to recognise and fill gaps in knowledge
- Ability to reason using experience and evidence from the literature and to be able to marry the two



# Definitions of critical thinking

- Mastery of threshold concepts
- Reading between the modules to make overarching connections,; the ability to cement the modular bricks
- Independent thinking and analysis and engagement
- Interpretative analysis
- Cross-disciplinary thinking
- Ability to reflect on studies in a comprehensive way
- Lateral thinking
- Valuing difference and diversity
- Tolerating uncertainty and ambiguity



# Importance of Critical Thinking, CT in the curriculum

- Differences in opinion – the importance of CT:
  - Absolutely essential
  - Only important to some graduates
  - Only important to students at postgraduate level
- Differences in opinion – CT in the curriculum:
  - Spiral curriculum
  - Only to graduates
  - Explicitly/Implicitly



# Barriers and Facilitators

- Barriers to creating critical thinkers included:
  - The Second Level education system
  - Large class sizes
  - Lack of basic skills in students
  - Time restraints
- Facilitators to creating critical thinkers included:
  - Rewards for innovative teaching
  - Less emphasis on end of year examinations and more on continuous assessment
  - Involvement of industry



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