Critical thinking across the disciplines

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Critical Thinking - Background

- General agreement that Critical Thinking (CT) skills are important in HE
  - the development of these skills may be viewed as the most important objective of university life (Moore 2011: 261)

- Many University courses will include in their prospectus a specific objective that the course will develop the critical skills of their students

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What is CT?

Some Views on CT thinking

- There are many different approaches to CT

- Paul (1992)

- McPeck (1981) / Ennis (1985) and others – subject specificity debate

    (All from a philosophical approach)

- Sternberg (1986) –cognitive psychological approach

- Bloom – educational approach

- Moore (2013) conducted a series of interviews with academics in three disciplines

  - History
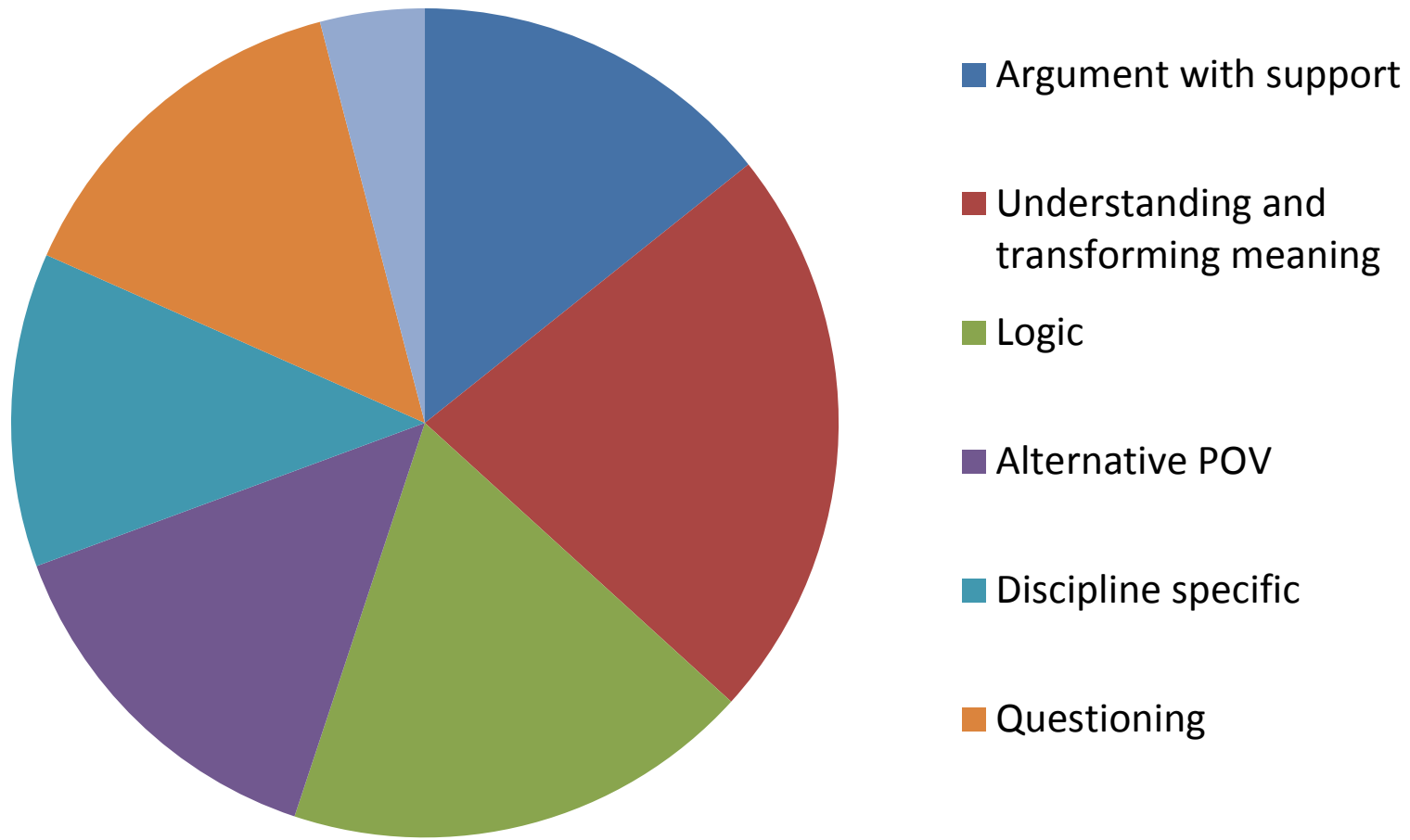
  - Philosophy

  - Cultural Studies

CT in practice

- Interviews with lecturers identified seven definitional strands
  - Judgement
  - Skepticism
  - Originality
  - Sensitive readings
  - Rationality
  - Activist engagement with knowledge
  - Self reflection

  - Influenced by ideas of Wittgenstein to observe use to determine meaning 'Don't think, but look'

In-sessional Context

- In sessional teaching context - CT in a second language
  - 'Double challenge' (Floyd 2011)
- Initial concerns from Lecturers on CT of International Students

- Tutor perspectives of CT
  - Wide variety of interpretations
  - BUT linked to discipline

Results – What is CT in the EAP context

Legend:
- Argument with support
- Understanding and transforming meaning
- Logic
- Alternative POV
- Discipline specific
- Questioning

In sessional Context

- In sessional teaching
    - Opportunity to examine coursework briefs from many disciplines
    - Identify where CT was called for (frequently)
    - How was the demand for CT elicited - key words

Process

- Examine course assignment briefs
- Record occurrences of CT related vocabulary in instructions
- Use of 'Action verbs' associated with Bloom taxonomy levels
- Identify whether there are some CT associated words that are common to ALL / many disciplines
- Identify whether some are specific to subject areas

Findings so far

- Wide variety of instruction verbs

- Many fit into Moore's (2013) categories

- Physical Sciences and Engineering Management appear to use a wide range of verbs, with critical discussion / application of theories to practical case study, whereas Arts more reflective (see examples)

- PM example of lecturer perspective?

- Next stage – examination of assignments – with actual feedback

- Insight into challenges faced by International students and in sessional teaching

Action verbs

Business & Finance

Apply
Describe
Identify
Discuss
Write
Define
Explain
Identify
Compute
Conclude
Count
Demonstrate
Interpret
Report
Illustrate
Tell
Draw
Review
Summarize

Media & Design

Demonstrate
Analyze
Apply
Discuss
Interpret
Define
Analysis
Assess
Choose
Comprehension
Conclude
Critic
Describe
Develop
Evaluate
Examine
Explain
Review
Select
Show
Summarize
Use

Marketing

Critic
Discuss
Evaluate
Analyze
Describe
Produce
Recommend
Review
Analysis
Conclude
Demonstrate
Design
Develop
Distinguish
Explain
Identify
Investigate
Prepare
Write

Engineering & Management

Analyze	Summarize
Apply	Synthesis
Evaluate	Argue
Assess	Change
Recommend	Compare
Research	Contrast
Choose	Decide
Critic	Develop
Discuss	Discriminate
Justify	Evaluation
Appraise	Explain
Choose	Formulate
Conclude	Identify
Demonstrate	Identify
Describe	Illustrate
Examine	Prioritize
Explore	Propose
Interpret	Relate
Investigate	Select
	Solve

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Overall

Apply	Choose	Change
Discuss	Report	Compare
Analyze	Review	Comprehension
Describe	Summarize	Contrast
Demonstrate	Develop	Decide
Identify	Examine	Design
Evaluate	Illustrate	Discriminate
Explain	Investigate	Distinguish
Define	Justify	Draw
Write	Analysis	Evaluation
Interpret	Appraise	Formulate
Critic	Choose	Prepare
Identify	Conclude	Prioritize
Recommend	Explore	Propose
Assess	Produce	Relate
Conclude	Select	Show
Compute	Synthesis	Solve
Count	Tell	Use
Research	Argue	

References

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References

For Bloom's taxonomy action verbs, the following sites were used to identify verbs corresponding to levels of the taxonomy

- http://www.teach-nology.com/worksheets/time_savers/bloom/

- http://chiron.valdosta.edu/whuitt/col/cogsys/bloom.htm

- http://www.nadn.navy.mil/CTL/bloom.htm

- www.au.af.mil/au/awc/awcgate/edref/bloom.htm

- www.cte.cornell.edu/documents/Assessment%20-%20Blooms%20Taxonomy%20Action%20Verbs.pdf

- https://uit.no/Content/229450/BloomsTaxonomyVerbs.pdf

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46 Modules were examined across 4 departments each with 1 – 3 assignment briefs.

Discuss	2 Comprehension
Explain	2 Comprehension
Identify	2 Comprehension
Illustrate	2 Comprehension
Interpret	2 Comprehension
Report	2 Comprehension
Review	2 Comprehension
Summarize	2 Comprehension
Tell	2 Comprehension
Apply	3 Application
Change	3 Application
Choose	3 Application
Compute	3 Application
Prepare	3 Application
Produce	3 Application
Select	3 Application
Show	3 Application
Solve	3 Application
Use	3 Application
Analysis	4 Analysis
Analyze	4 Analysis
Compare	4 Analysis
Contrast	4 Analysis
Correlate	4 Analysis
Debate	4 Analysis
Derive	4 Analysis
Discriminate	4 Analysis
Distinguish	4 Analysis
Examine	4 Analysis
Explore	4 Analysis
Investigate	4 Analysis
Question	4 Analysis
Relate	4 Analysis
Research	4 Analysis
Construct	5 Synthesis
Create	5 Synthesis
Design	5 Synthesis
Develop	5 Synthesis
Formulate	5 Synthesis
Organize	5 Synthesis
Plan	5 Synthesis
Propose	5 Synthesis
Synthesis	5 Synthesis
Appraise	6 Evaluation
Argue	6 Evaluation
Assess	6 Evaluation
Choose	6 Evaluation
Conclude	6 Evaluation
Consider	6 Evaluation