Innovating Critical Thinking Development Across the Curriculum How Good Are We?

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Learning Outcomes

By the end of the session you will have started to

• Identify how critical thinking skills could be immersed within the curriculum and teaching activities

• Consider how critical thinking could be embedded within your own teaching
Session Structure

• What is critical thinking and why is it important?

• A blended approach to innovating critical thinking development
  • The Critical Thinking Skills Toolkit
  • The Spiral Curriculum
  • Process for embedding in the curriculum
  • CriTalk Community of Practice

• Case studies
Transforming our students by transforming our approach

Common Formulaic Approach
- Processing
- Accepting at face value
- Quick certainties

Enhancing metacognition and self awareness

Autonomous critical thinking
What is critical thinking?

- Information seeking – *finding it*
- Interpretation – *making sense of it*
- Analysis – *examining it in detail*
- Inference – *reading between the lines*
- Evaluation – *assessing its quality*
- Explanation – *making sure you and other understand it*
- Deduction, logic, assumptions

To be meaningful these need to be immersed in disciplinary teaching NOT taught as a separate module (Abrami *et. al.*, 2015)
Why is Critical Thinking Important?

• Helps students develop skills, knowledge and attributes for life

• Employers view critical thinking as a necessary attribute for graduates

• Embedded in our Academic Framework Design Principles, the principles of the Inclusive Curriculum, learning outcomes and in the language of assessment and feedback

• Developing critical thinking in undergraduates is ‘defining concept of the modern university’ (Barnett, 1997, p.2)
Why is critical thinking important?
The Critical Thinking Skills Toolkit

• Explicit teaching, immersive approach (Abrami et al., 2015)

• To create and implement a *practical* toolkit of critical thinking skills activities which will

  • Develop a common language of critical thinking in the classroom and in assessment
  • Build academic self-efficacy
  • enable students to demonstrate exceptional scholarship
  • become critical and reflective thinkers
  • acquire key skills for the workplace.
  • Holistic, progressive and scaffolded approach
  • Underpinned by Active learning (O’Doody and Condon 2012)
The Critical Thinking Skills Toolkit

Wason (2016)
<table>
<thead>
<tr>
<th>Spiral Curriculum</th>
<th>Skills Development</th>
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| **Level 6**       | Students should consolidate use of all skills in level 4 and 5 as appropriate.  
Focus on **explanation** using **The Critical Reflection** and **CriticallyWrite** |
| **Level 5**       | Students should feel more confident with **information seeking, analysis, interpretation** – continue to consolidate and practise using the above tools.  
Focus on **evaluation** and **inference** using **The Critique** initially then the **Thematic Analysis Grid** and **The Argument Map**. |
| **Level 4**       | Introduce **all skills** using **The Argument** and **The Advert** to build awareness and understanding of skills needed upon graduation (**The Case** as appropriate to discipline)  
Focus on **information seeking** (**The Source**), **analysis, interpretation** and **evaluation** (**Read Right/Practitioner Insights**) |
How to Embed in the curriculum

Audit
• Review your programme specifications, module learning outcomes and assessment criteria. Identify which critical thinking skills and behaviours your students should exhibit and which tools can provide support.

Map
• Map which tool can be used where in your module structure

Link
• Collaborate with colleagues to ensure links are made between modules to avoid duplication or overloading of tools and help students make connections with their learning across the programme

Design
• Design teaching and assessment activities which use the critical thinking tools to support students’ learning

Evaluate
• Reflect on experiences of using the tools and the impact on students’ skills development
Welcome to Support for Academic Staff

Resources and guides in Academic Practice  Academic Framework  Teaching Management  FT5  Canvas

Resources for Supporting Academic Staff

Here you will find links to various resources and guides for Academics at Kingston University.

Key Topics

Here you will find links to Kingston University’s resources for Academic Staff Development, as well as guides on the Personal Tutor Scheme, Teaching Management and the Academic Framework. A guide on how to use Canvas is also available.

Resources and Guides in Academic Practice

Academic Framework  Teaching Management Guide

Supporting the Annual Monitoring and Enhancement Process

Personal Tutor Scheme  Canvas at Kingston University

https://canvas.kingston.ac.uk/courses/311/pages/welcome-to-the-critical-thinking-skills-toolkit
Community of Practice

Interdisciplinary partnership: academic staff, skills advisors, information specialists, employers and students across three institutions

- Sharing Purpose
- Sharing Resources
- Sharing Practice
- Sharing Knowledge
Critical Thinking Skills Toolkit – An Example of Immersion in the International Business Curricula

Level 4
- International Marketing Economics
- Organisations and Entrepreneurship Business and Statistics
- Business Readiness

Level 4
- International Business Operations
- Business Readiness
- HRM in an International Context

Level 5
- Culture and International Business
- Financial Management and Accounting Consultancy in Practice

Level 5
- Strategic Management International Business Practice

Level 6
- Entrepreneurship in an International Context
- Corporate Social Responsibility
Pharm sci- each statistics lecture was linked to the CT booklet in some way

Week 1 Lecture 1: Fakery- Available after the lecture [IDENTIFYING TRUTH AND FAKERY.ppt](#)

Lecture 2: Hypothesis Testing, Null Hypotheses [SCIENTIFIC BASICS.ppt](#)

Lecture 3: Accuracy: Standard Deviations (Correlation vs Causation) [INTERPRETING DATA.ppt](#)

Lecture 4: Precision [ESSENTIALS FOR EXPERIMENTAL DESIGN.pptx](#)

Lecture 5: Outliers: [EXPRESSING DATA.pptx](#)

Lecture 6: Confidence Intervals: [BUILDING YOUR ARGUMENT.ppt](#)

Lecture 7: Comparing the means of 2 populations: [BUILDING YOUR ARGUMENT II.pptx](#)

Lecture 8: t-tests introduced: [APPLYING STATISTICAL TESTS PAIRED TTEST.pptx](#)

Lecture 9: revisiting unpaired t tests & Paired t-tests: [APPLYING STATISTICAL TESTS II UNPAIRED TTEST.ppt](#)

Lecture 10: Chi squared tests of categorical data: [APPLYING STATISTICAL TESTS-CH_ISQUARED.ppt](#)
Student cohorts In Pharmacy and Chemistry

- Pharmacy: Key 1 hour tutorials at levels 4-6 discussing the interpretations of a piece. Piece had to be relevant and a prime example of misinformation (this is getting easier and easier to find in science)
- In third year Pharmacy this was linked to the essay they were writing in PY6010
- In second year Pharmacy this was linked with the essay in PY5040
- Pharmaceutical Sciences: Year 1. Same tutorial- but in a larger group- following 10 weeks of a critical thinking course
Chemistry – Third Year Project Module

• Two exercises, a critique (where we asked students effectively to critique one journal article) and then a short critical review (of a small set e.g. three) closely-related journal articles

• We provided relevant excerpts (copyright free) from the CT Toolkit.

• The students were free to choose the journal articles (related to their project) but could ask for advice from their supervisor if in doubt.

• We also embedded engagement in these in the ‘logbook’ mark as a very small percentage to try to get all of the students to engage.
Impact on Students

- Increased confidence through recognition of how they are learning
- Empowerment to challenge themselves within a structured context
- Common language between student and tutors
- Relevant links to module content and assignment production
- Tangibility of skills booklet plus online support provides security
- Incremental approach provides sense of progression and achievement
- Improved understanding of grading criteria
- Feeling of ownership through collaboration and partnership with staff
Impact on Staff

Compendium of good practice to aid delivery of toolkit

Collaboration across schools and faculties

Common language amongst staff and between student and tutors

Flexibility to tailor to different disciplines

Empowerment: challenge yourself and your teaching practice

Incremental approach to skills building

Encourages careful consideration of assignment requirements

Design allows embedding at different stages of the curriculum
External Endorsements


Critical Thinking Publications and conferences


