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Tackling Interdisciplinarity Early

Transforming Scientific Expertise into Global Citizenship

Imperial College, London, UK
Dr Elizabeth Hauke, Senior Teaching Fellow

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Imperial Horizons

Business and Professional Skills
Explore the world of global business and economics

Global Challenges
Tackle sustainable human development issues and make an impact in the real world

Languages and Global Citizenship
Learn a new language and gain insights into other cultures

Science, Culture and Society
Enrich your studies with the humanities and social sciences

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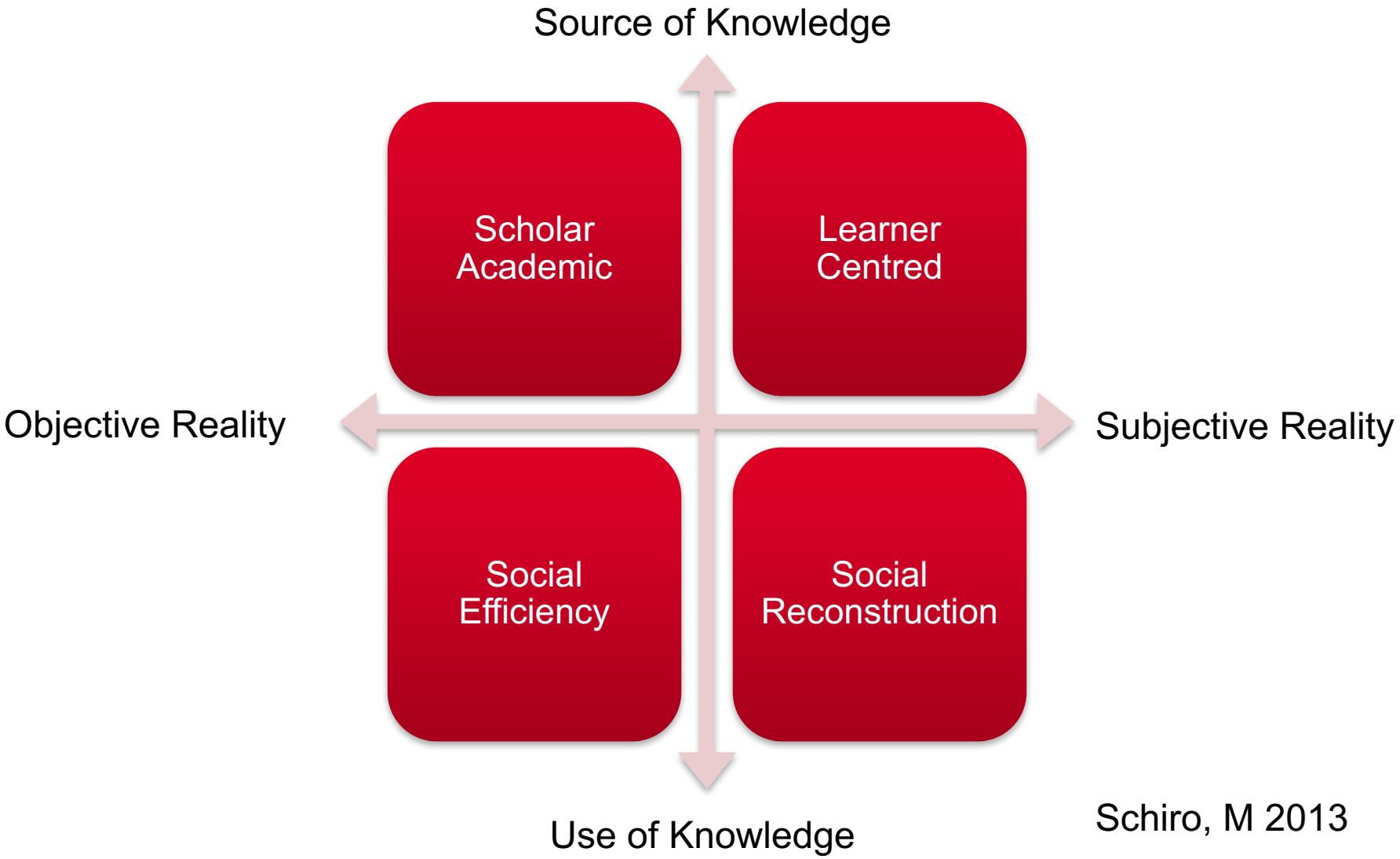
HE Ideologies In Operation



Schiro, M 2013

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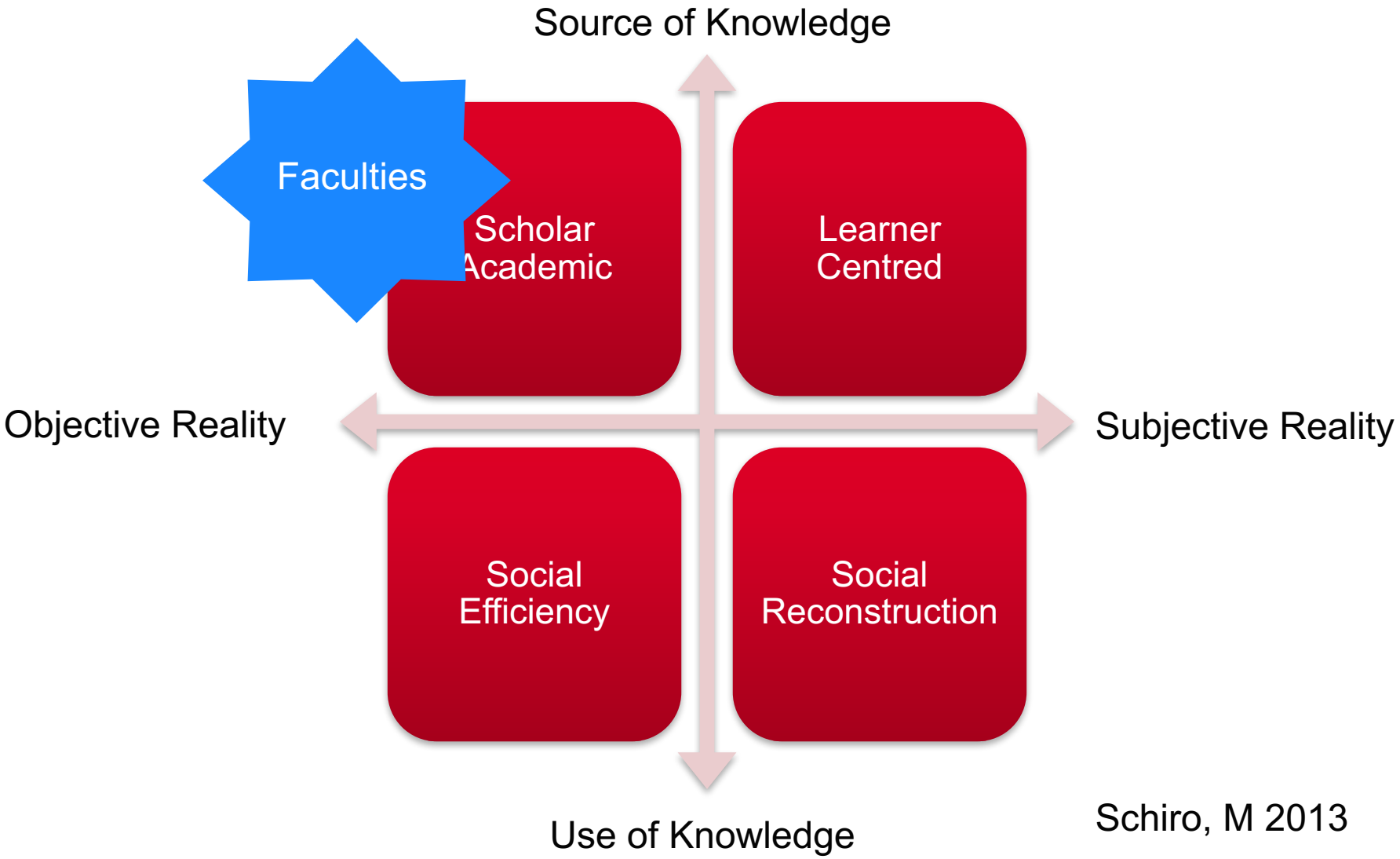
HE Ideologies In Operation



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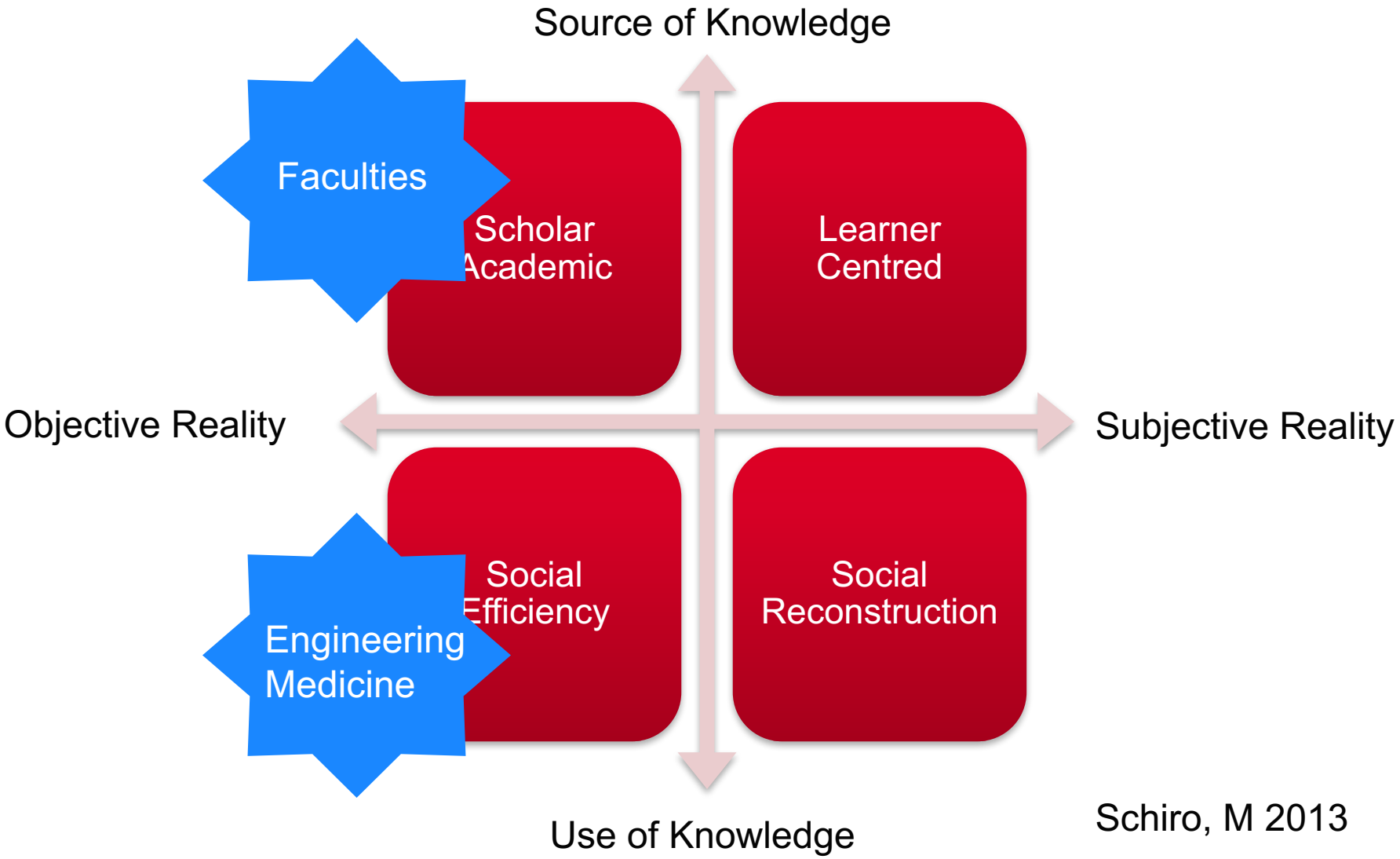

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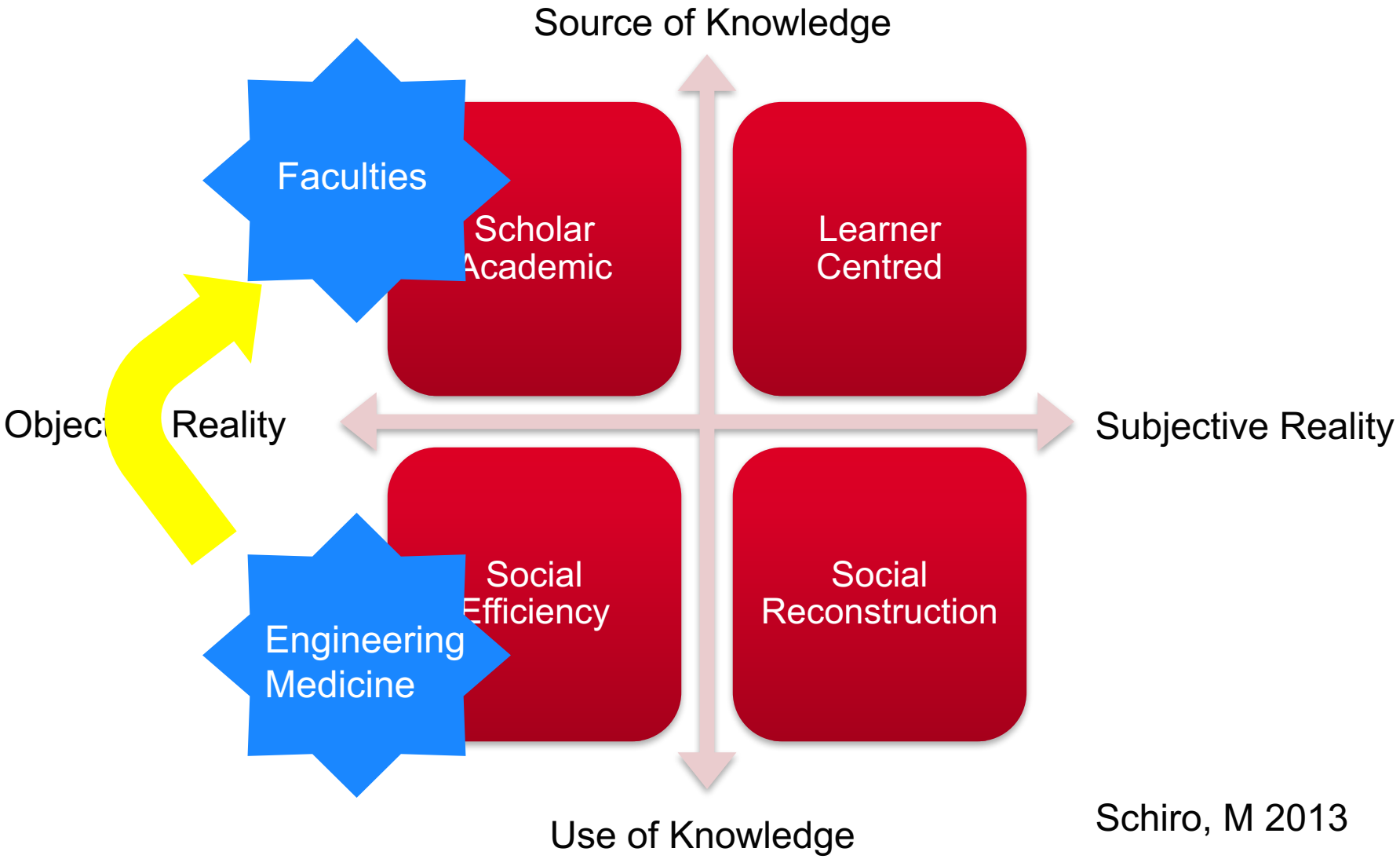

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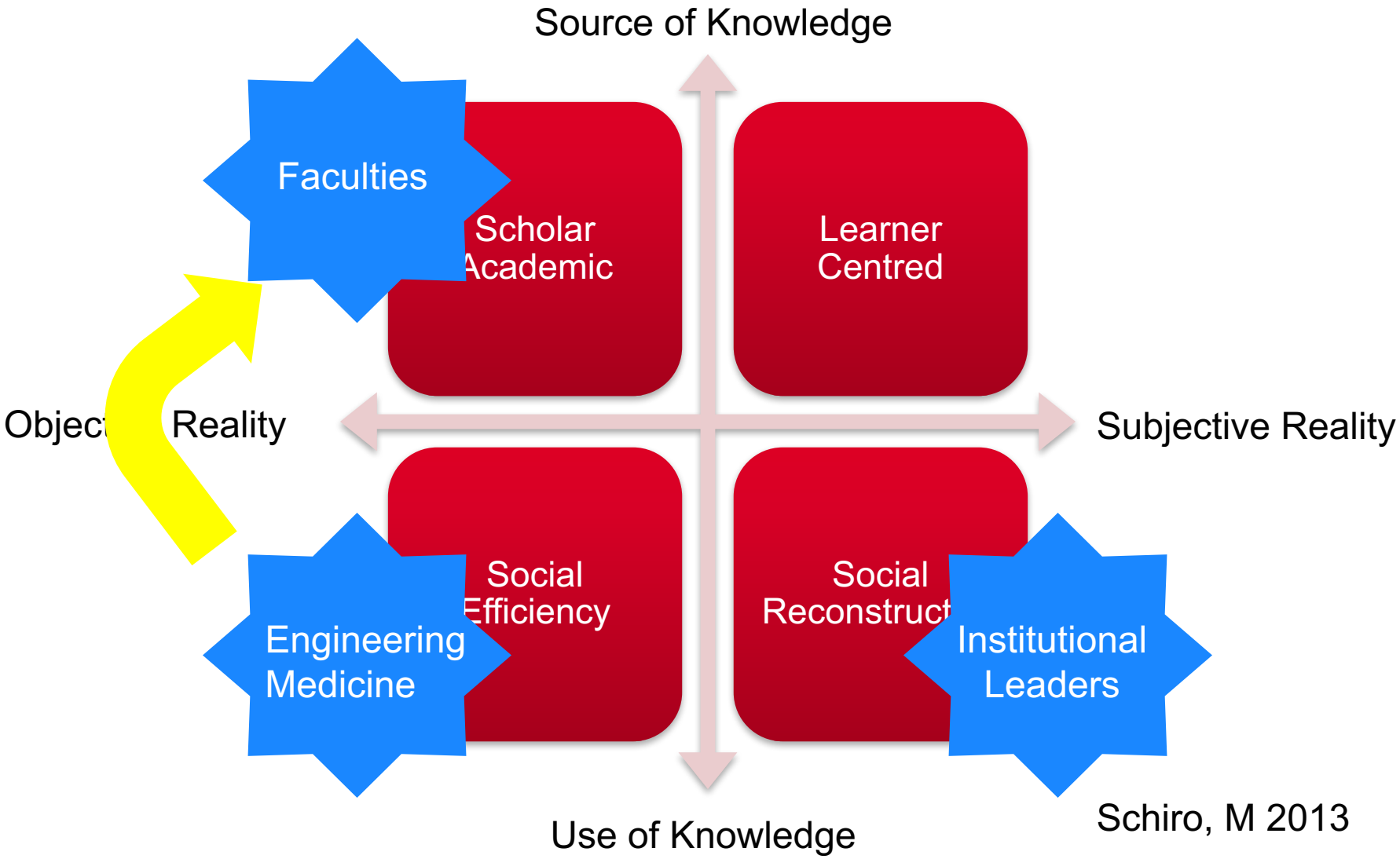

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Global Challenges

Global Challenges courses aim to:

- foster an appreciation of the value of interdisciplinary learning
- develop confidence in their ability to learn independently
- develop a realistic and evidence-based approach to 'global challenges'
- establish effective team working and collaborative practice
- explore communication practices and develop core skills

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Global Challenges

Engaged with key tenets of **multiple scholarly subject areas**, demonstrating knowledge and understanding at appropriate levels according to the National Qualification Framework for those areas

- Art and Design
- Earth Sciences, Environmental Sciences and Environmental Studies
- Economics
- Geography
- History
- Politics and International Relations

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Global Challenges – Course Portfolio

Course	Length	Core Competencies
1st Year Courses		
The World Today	8 weeks	Independent and collaborative learning; interdisciplinary research, synthesis and knowledge building
Sustaining Our Future	8 weeks	
2nd Year Courses		
Design for Economic Development	20 weeks	Interdisciplinary complex systems analysis; problem solving; public engagement; contextual exploration of cutting edge science; communication practices
Design for Local Sustainability	20 weeks	
Design for Sustainable Human Development	20 weeks	
Visualising Global Challenges	20 weeks	
3rd/4th Year Courses		
Lessons From History	20 weeks	Evidence-based practice; evaluation and analysis
Independent Project	20 weeks	

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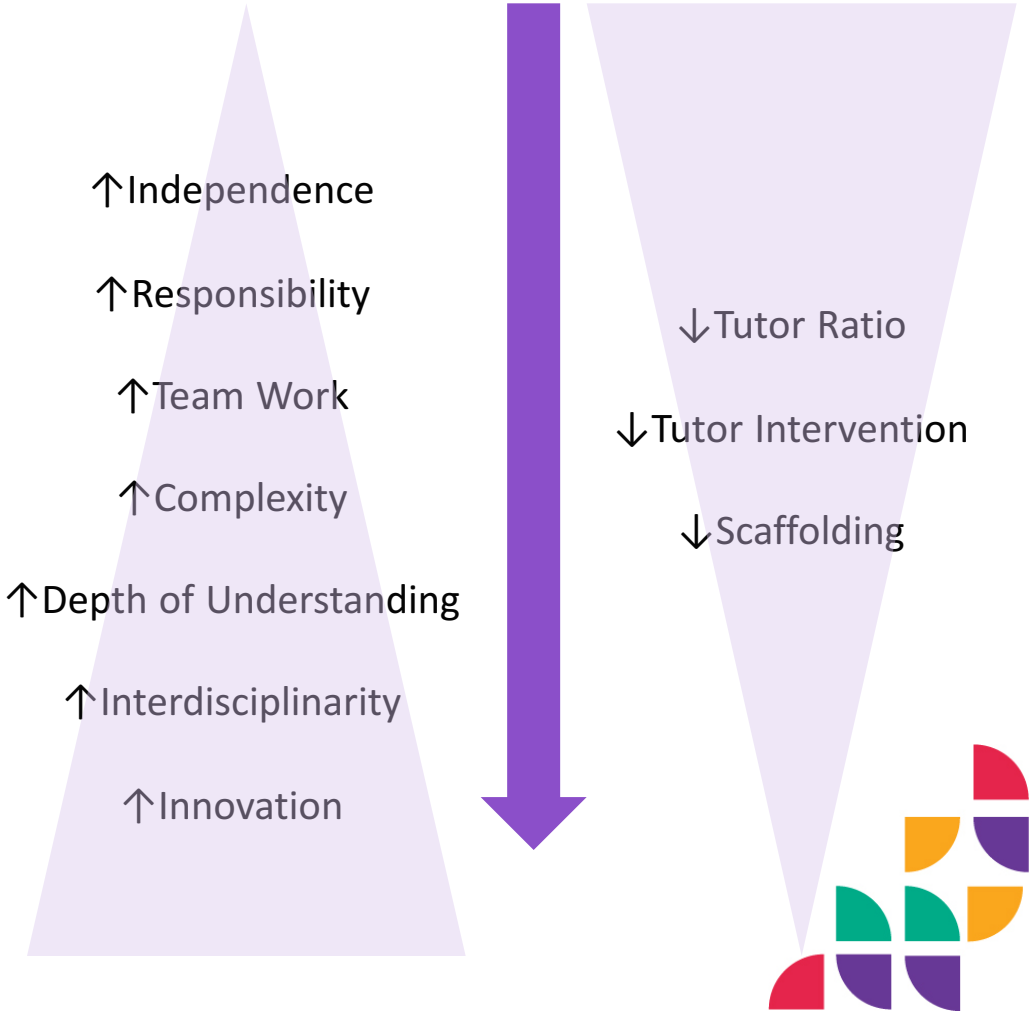
Coherence and Progression

Course
1st Year Courses
The World Today
Sustaining Our Future
2nd Year Courses
Design for Economic Development
Design for Local Sustainability
Design for Sustainable Human Dev.
Visualising Global Challenges
3rd/4th Year Courses
Lessons From History
Independent Project



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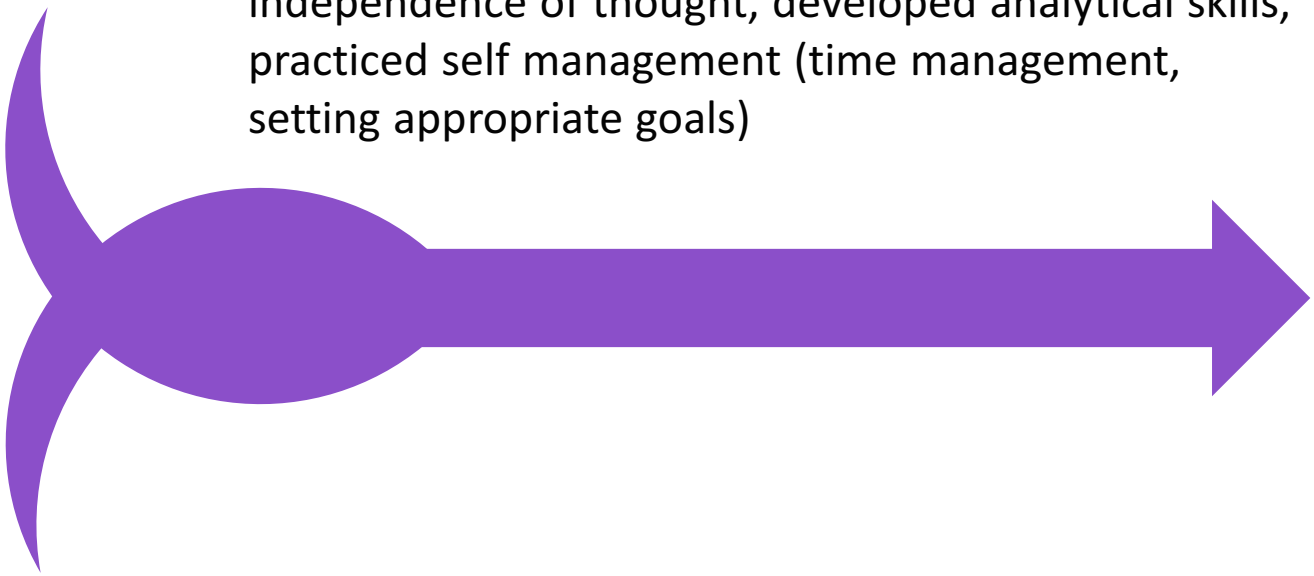
Learning Environment

Tutors

Intellectual curiosity, advanced enquiry skills, independence of thought, developed analytical skills, practiced self management (time management, setting appropriate goals)



Students

Interest in global issues, intelligence, ambition

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Assessment

1st Year Courses	2nd Year Courses	3rd/4th Year Courses
Course Performance (40%) – includes self and peer assessment as well as critical engagement with course	Case Study Analysis (20%)	Team-Based Learning (20%) – individual and team marks
Wiki (40%) – group wiki created in class	Conceptual Design Series (15%)	Application Exercises (40%) – peer and individual marks
Presentation (20%)	Design Specification (50%)	Essay (40%)
	Implementation Plan (15%)	

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Disciplinary Study

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The Non-Disciplinary World

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1st year Undergraduate Model

- Class of 150 students, working in groups of 10 with a postgraduate mentor
- Collaborative/Partnership/Praxis curriculum

Brundett and Silcock, 2002; Grundy, 1987; Rancière, 2010

"We have eight weeks on The World Today to work together to try to assess what we think are the key challenges that urgently need addressing in the world, and investigate how these challenges can be measured, monitored, communicated and evaluated.

We will work in teams, with each team focusing on a different challenge, and at the end of the term, we will come back together to share what we have learned."

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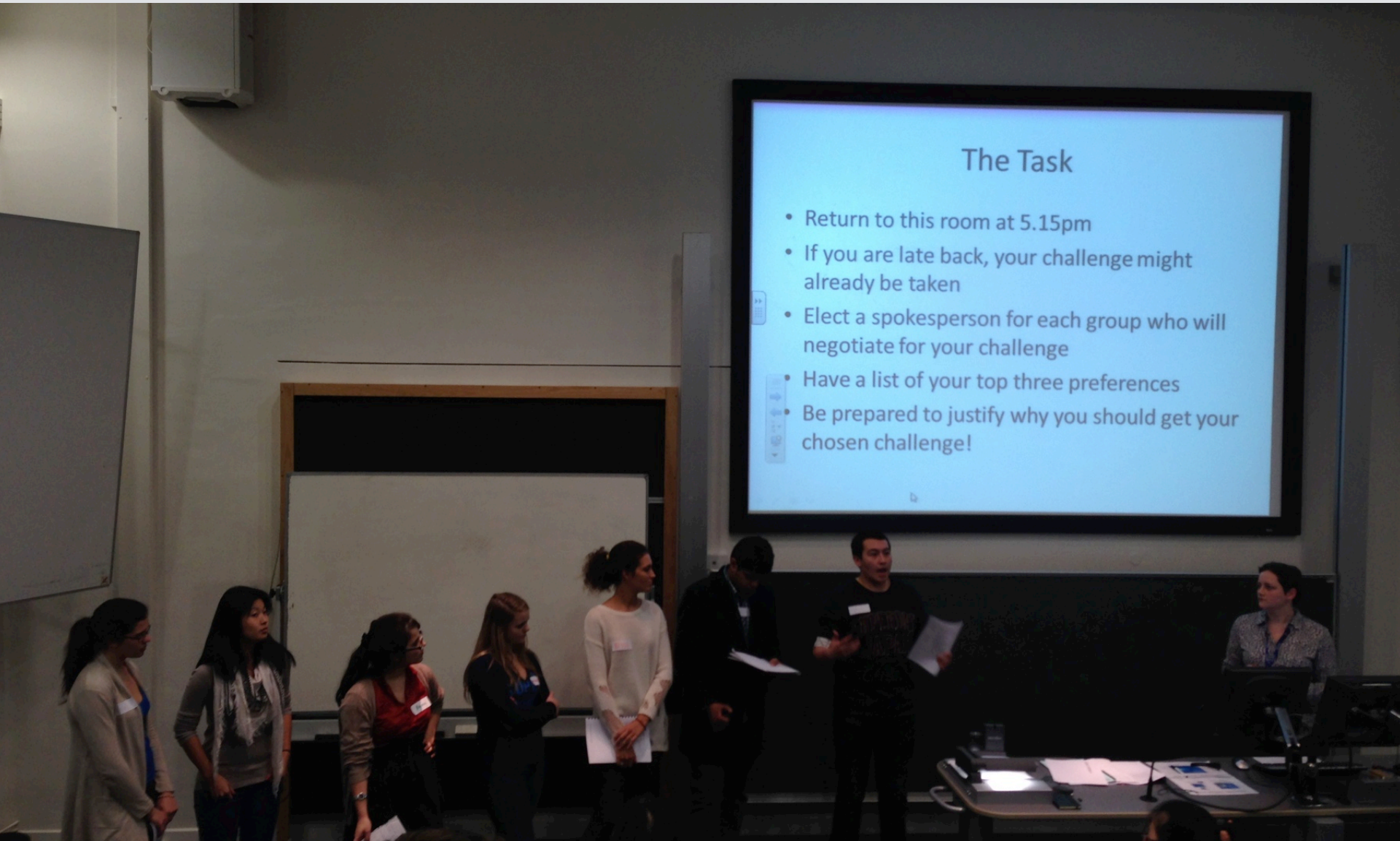
1st Year Undergraduate Model



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Team analysis

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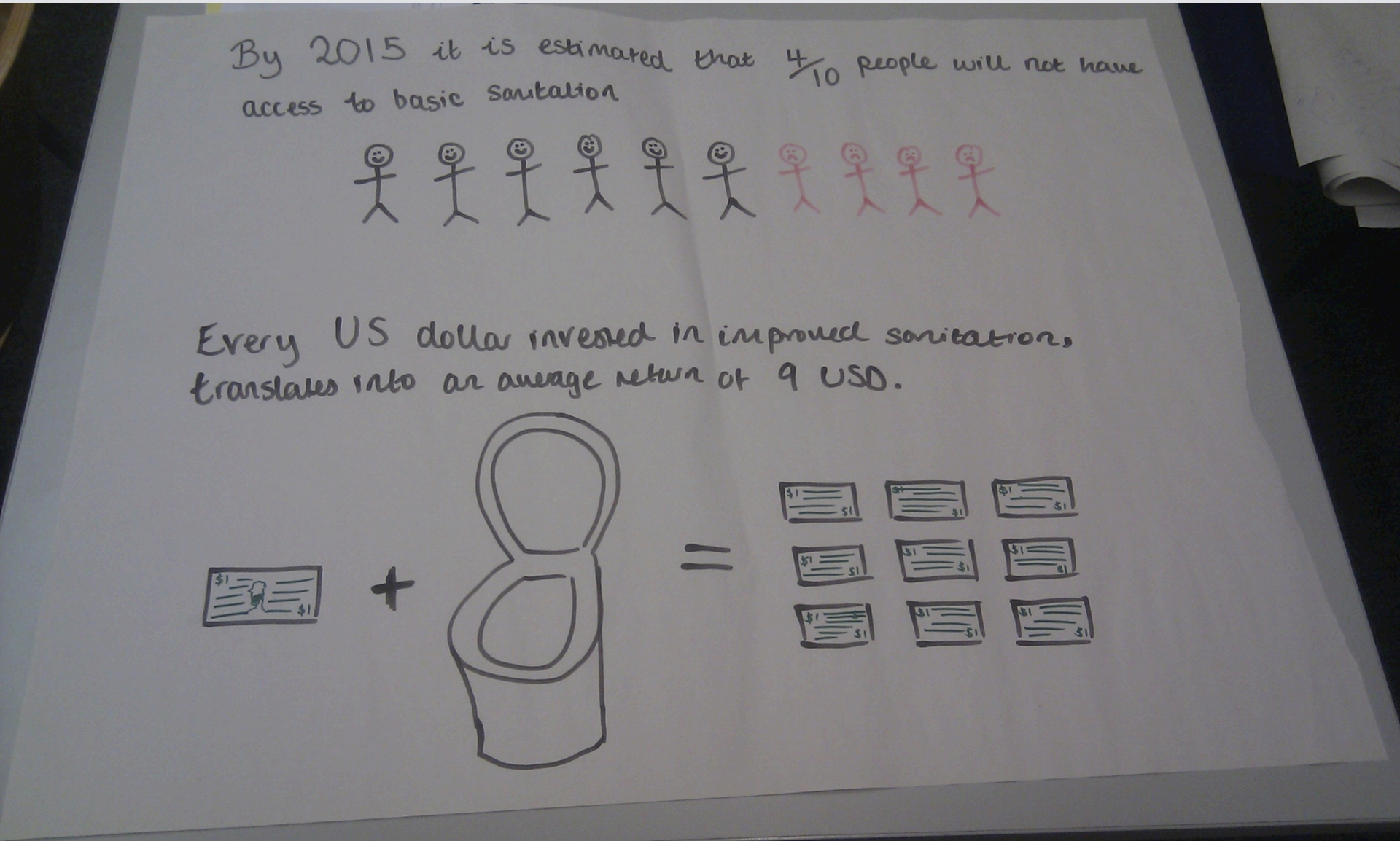
Spontaneous Activity



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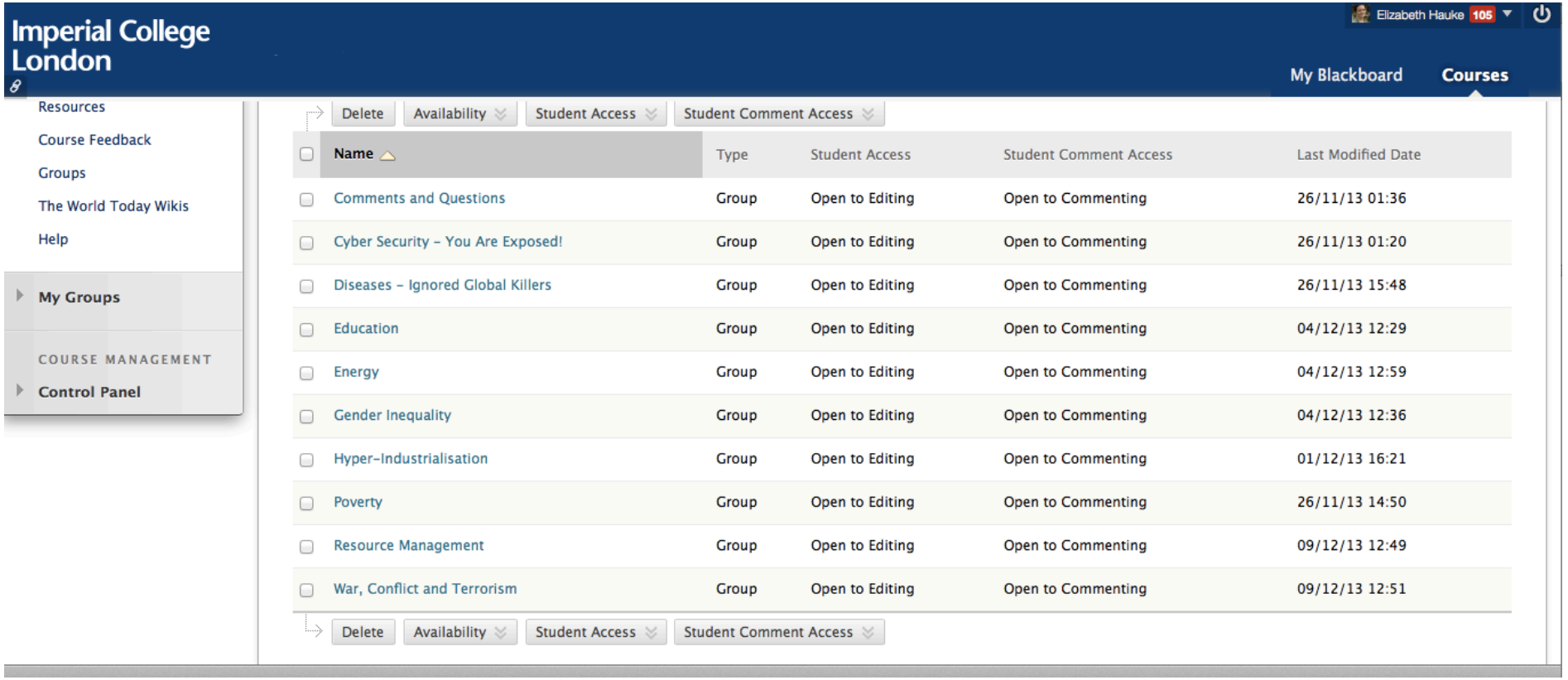
Using the wiki function



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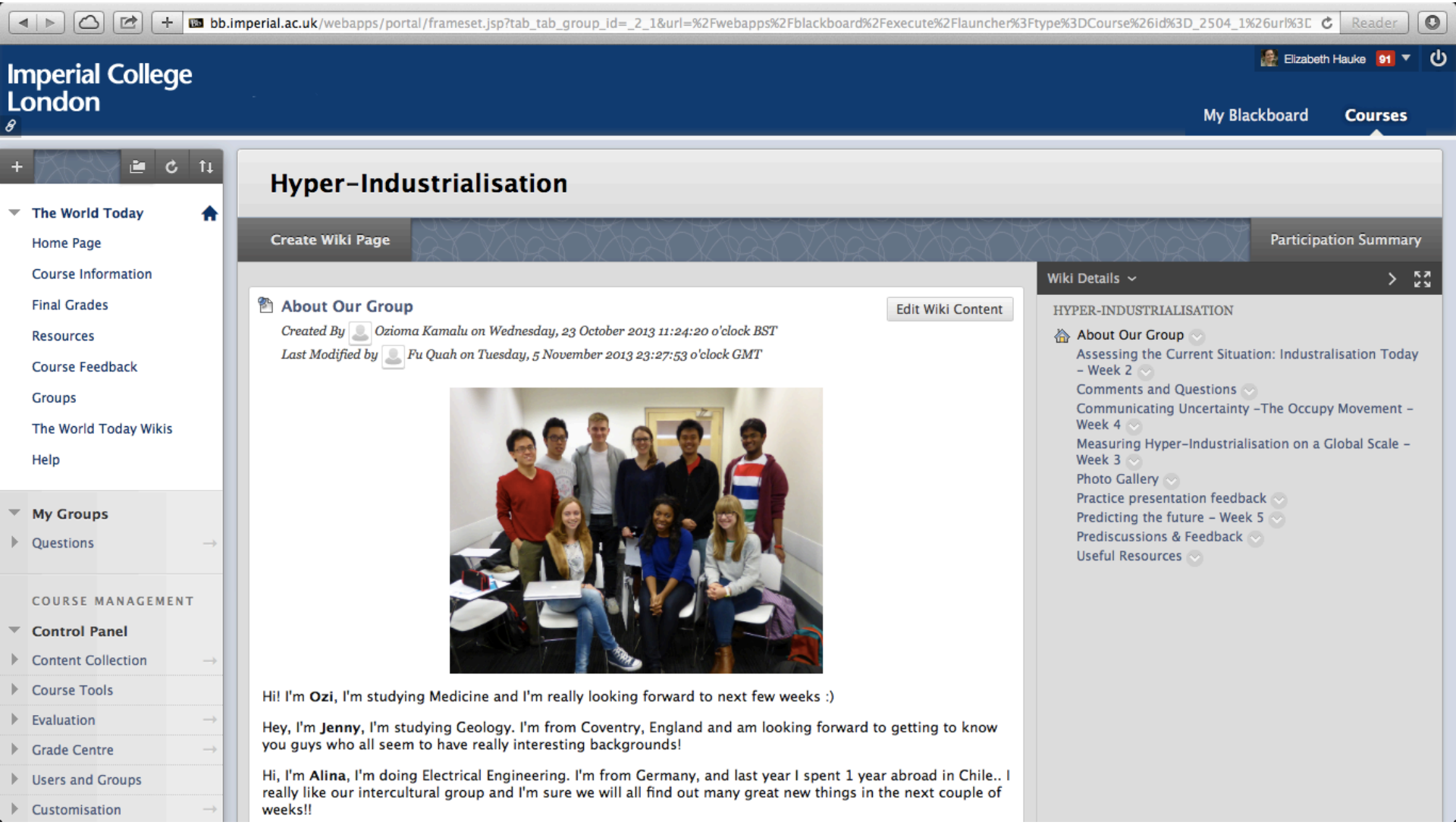
Team identity



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2nd Year Model

Design for Economic Development	Design for Local Development	Design for Sustainable Development	Visualising Global Challenges
Focus on poverty, uses real world case study	Focus on sustainability, uses case study of campus	Focus on international development, uses real world case study	Focus on communication, uses real world case study
Design of a 'business' solution	Design of a sustainability initiative	Design of a practical solution	Production of an exhibition
Communicates directly to community	Communicates with Estates and Facilities	Communicates directly to community	Communicates to the public

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2nd Year Model

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3rd Year Undergraduate Model

- Team-based learning model (Michaelsen, 15 Feb 2004)

- Course operates on a three week cycle:
  - Week 1: Preparation
  - Week 2: Individual and Team Assessment (Readiness Assurance Testing)
  - Week 3: Application Exercise
- Interrogation of historical disaster events using varied sources
  - Chernobyl; SE Asia Tsunami; Aral Sea Regression; Challenger Disaster; 1992 LA Riots; Somalian Civil War
- Application of knowledge from historical events to critically analyze current local and global policy

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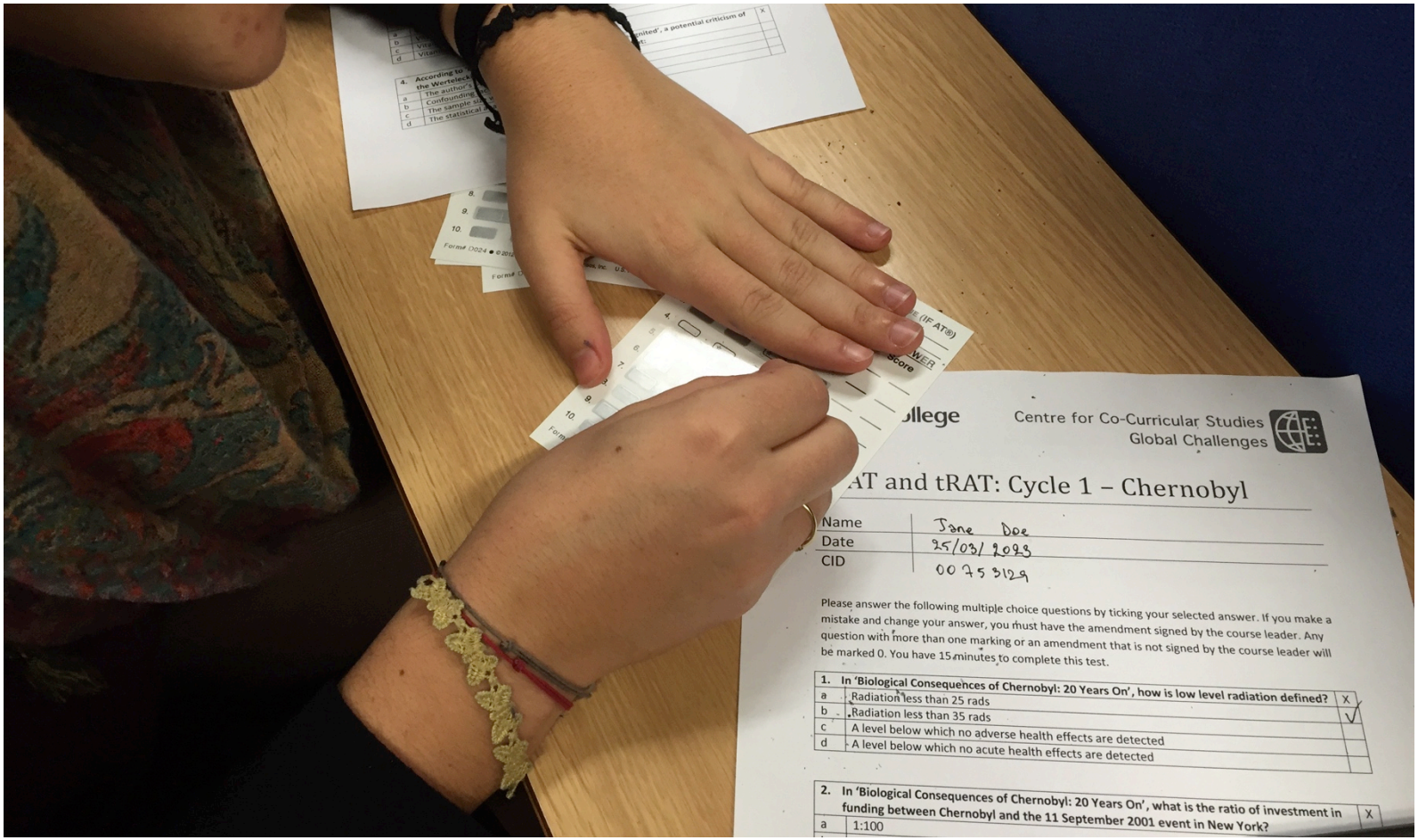
3rd Year Undergraduate Model



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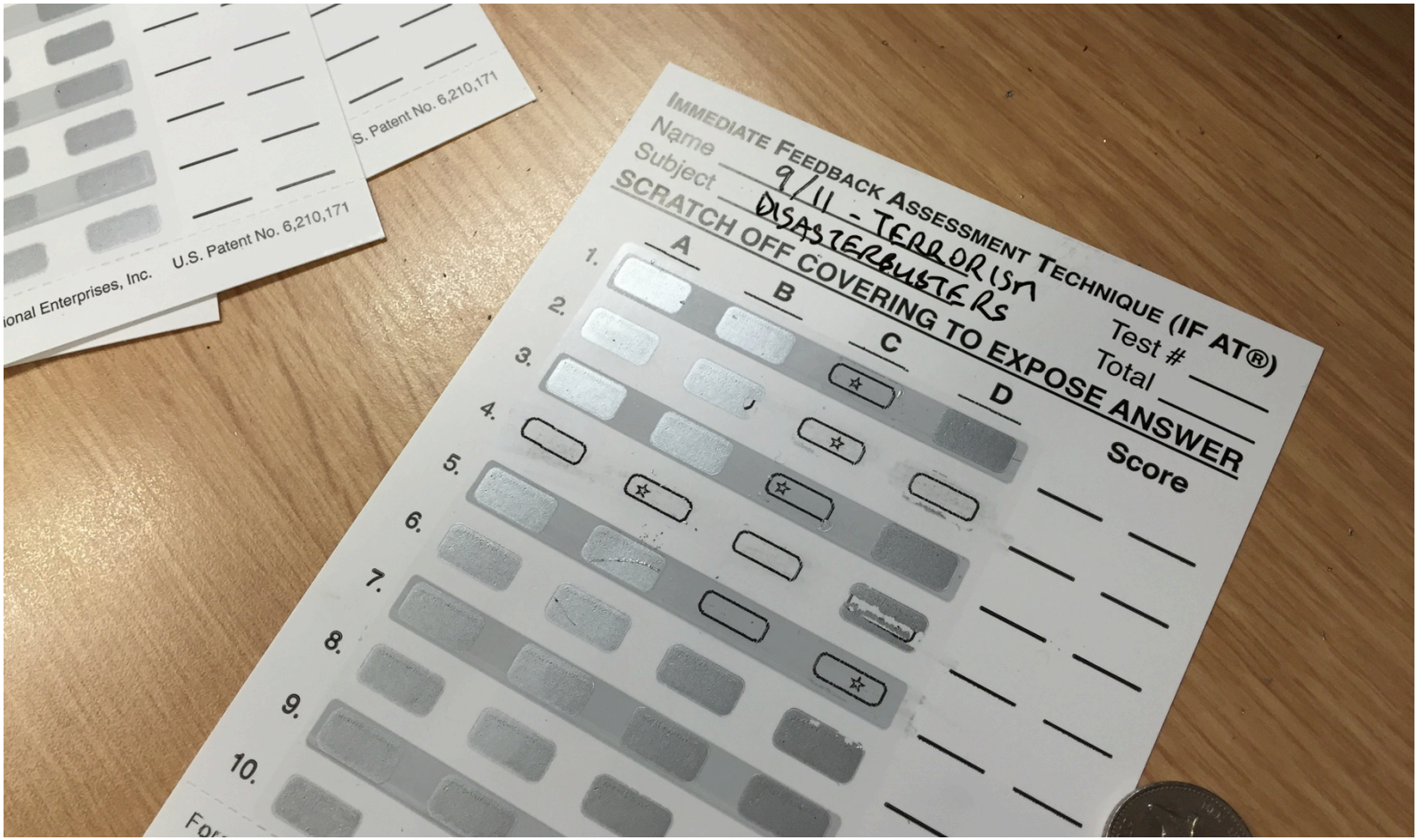
3rd Year Undergraduate Model



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Evaluation

- Standardised university evaluation methods do not capture student experience on these non-standard course
- Lots of live evaluation is used
- Student film

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Thank you