

Tackling Interdisciplinarity Early

Transforming Scientific Expertise into Global Citizenship

Imperial College, London, UK

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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

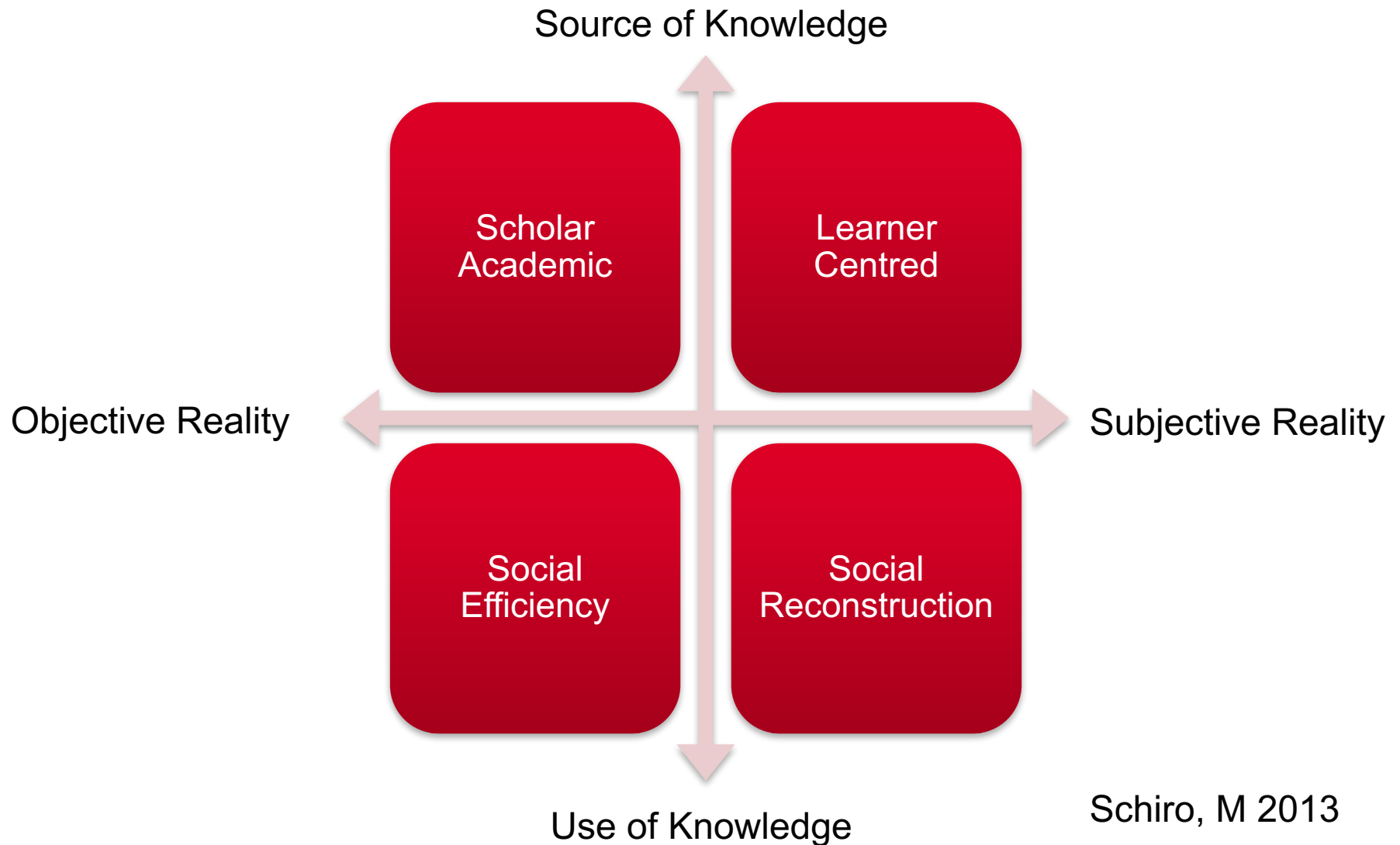
Learn a new language and gain insights into other cultures



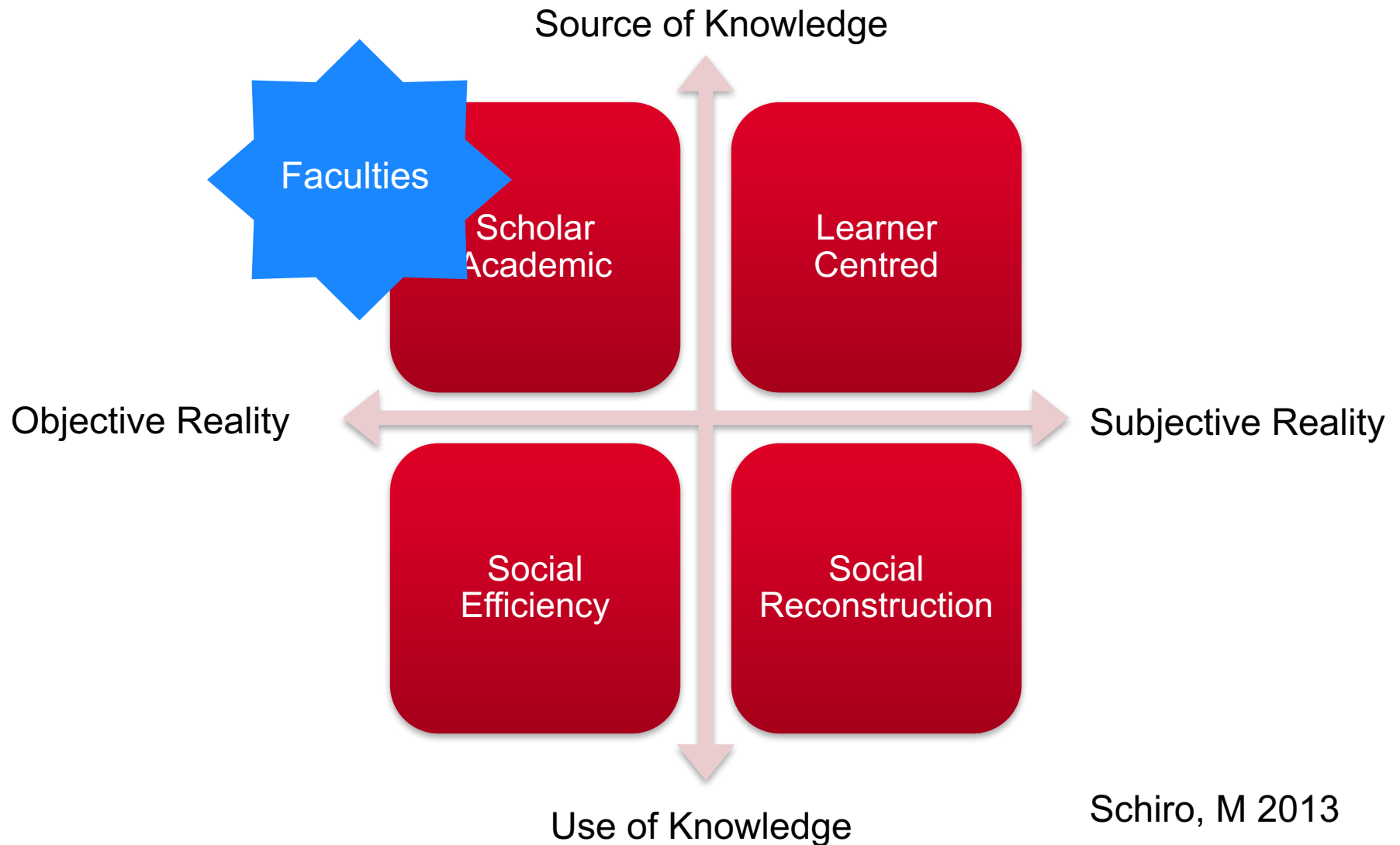
Science, Culture and Society

Enrich your studies with the humanities and social sciences

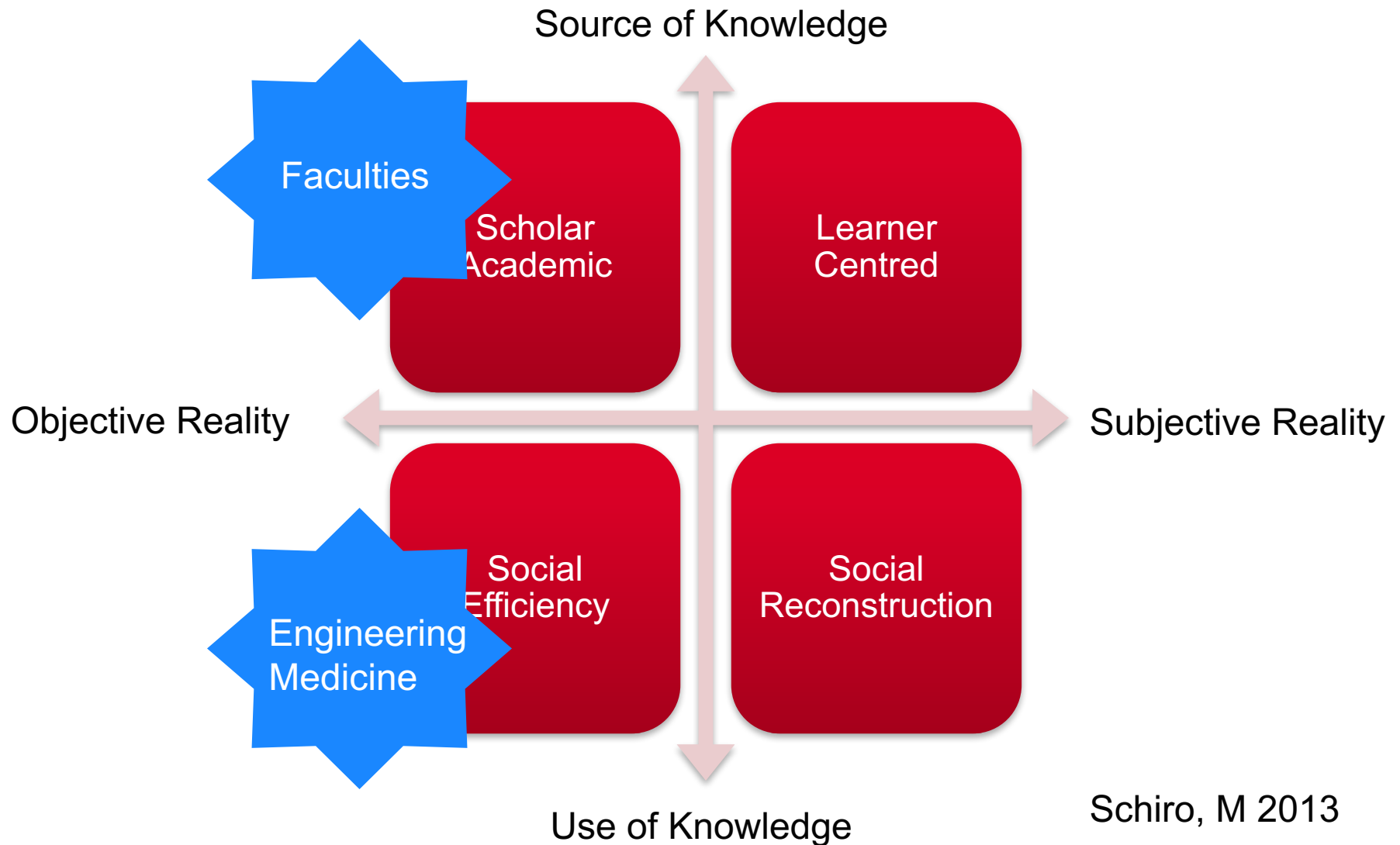
HE Ideologies In Operation



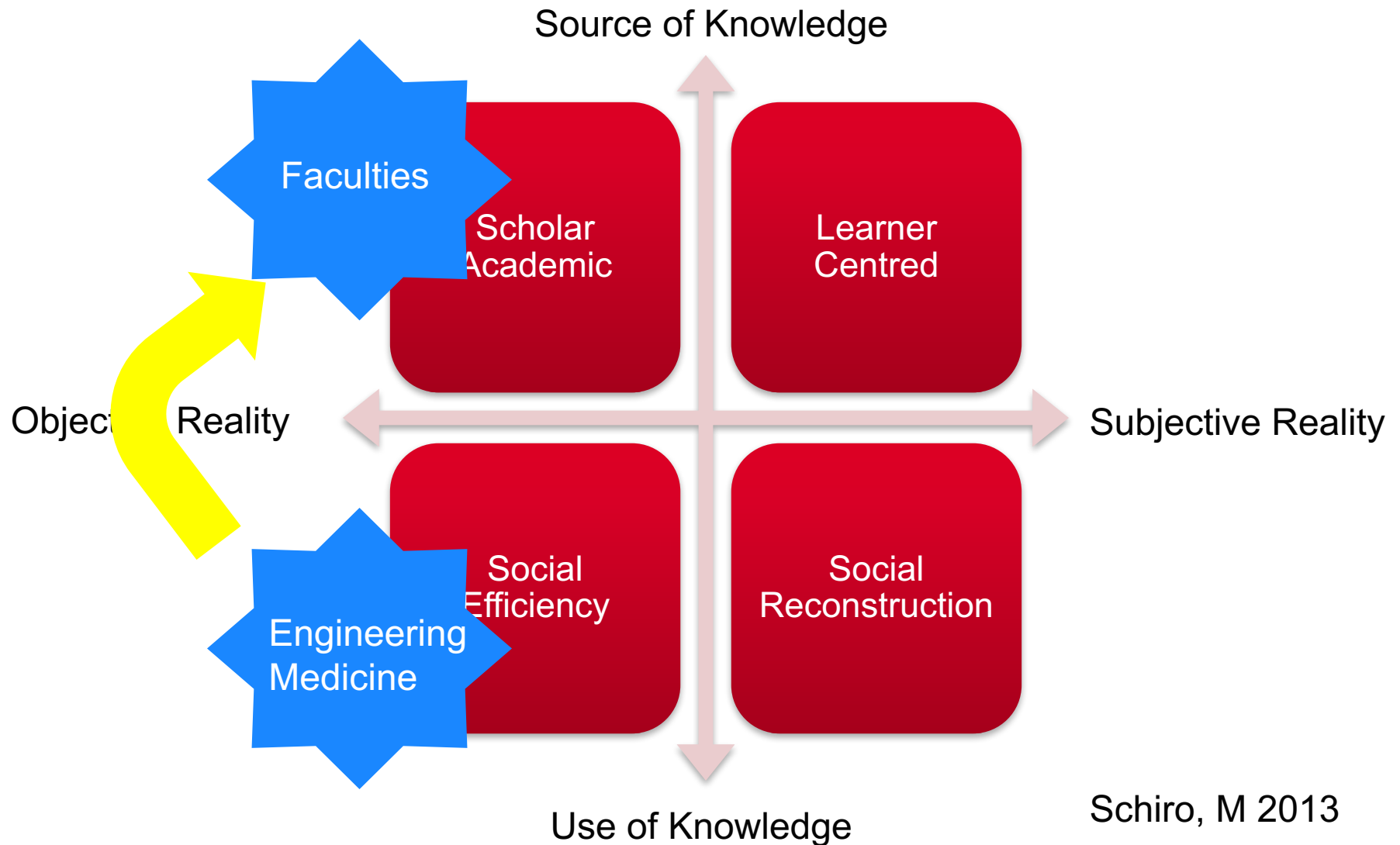
HE Ideologies In Operation



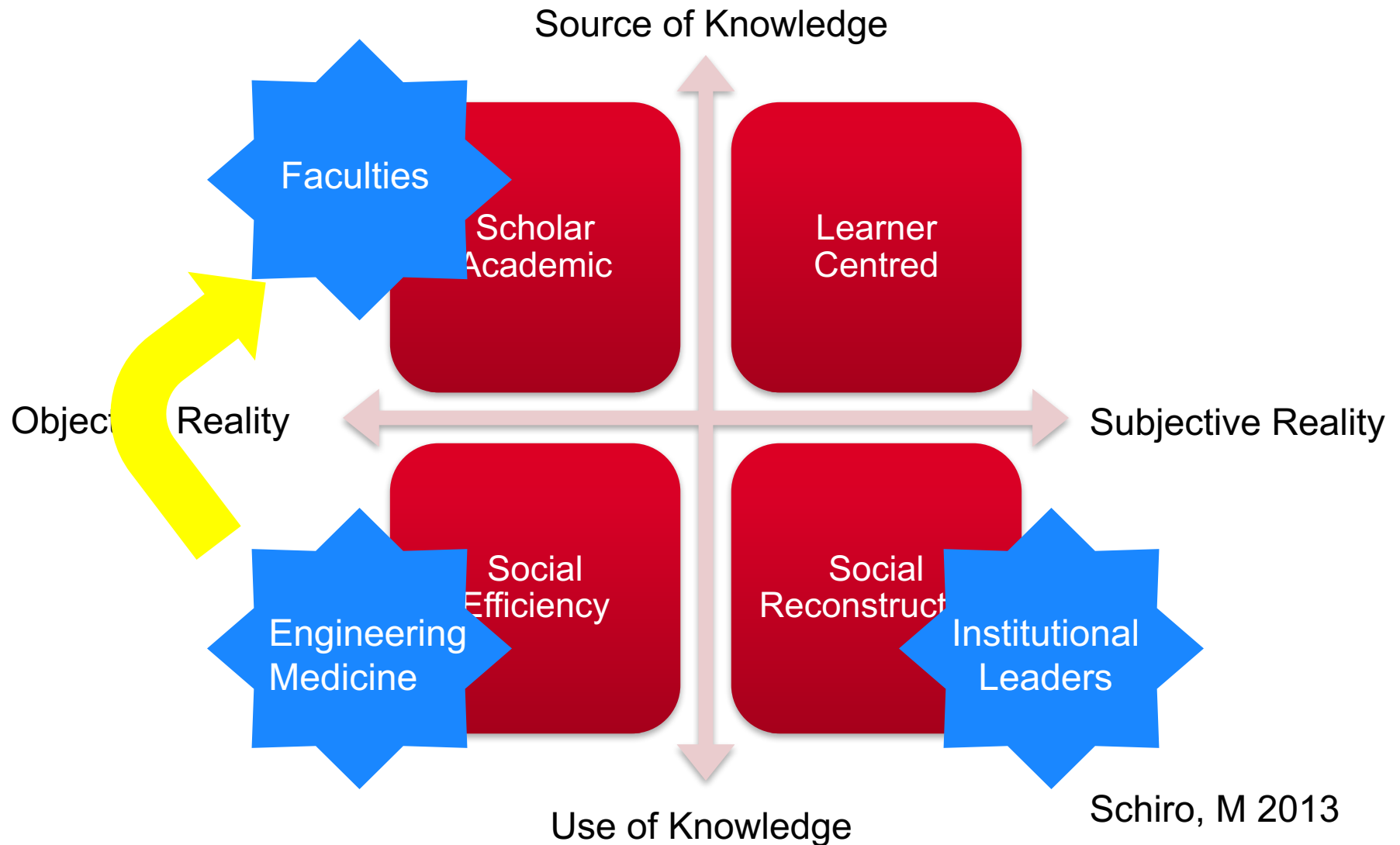
HE Ideologies In Operation



HE Ideologies In Operation



HE Ideologies In Operation



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



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

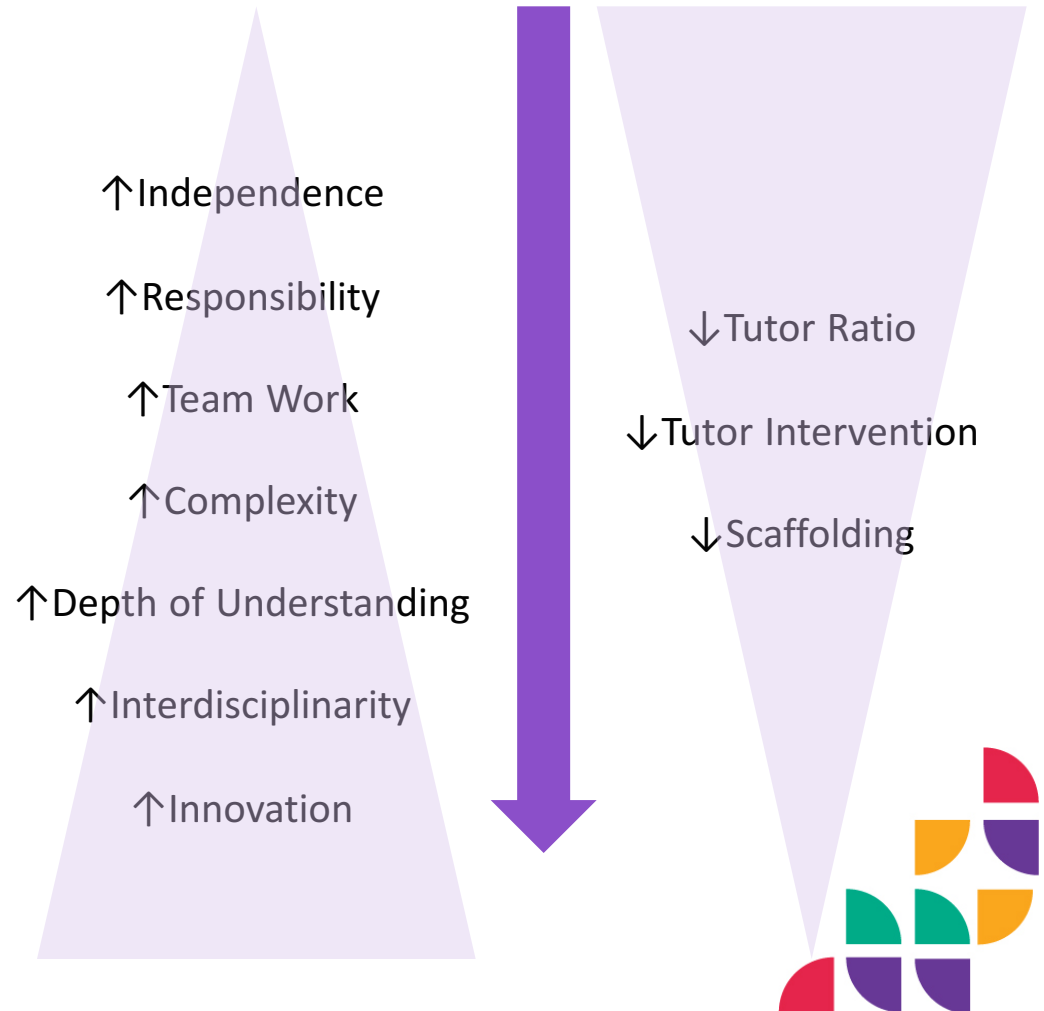


Global Challenges – Course Portfolio

Course	Length	Core Competencies
1 st Year Courses		
The World Today	8 weeks	Independent and collaborative learning; interdisciplinary research, synthesis and knowledge building
Sustaining Our Future	8 weeks	
2 nd 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	
3 rd /4 th Year Courses		
Lessons From History	20 weeks	Evidence-based practice; evaluation and analysis
Independent Project	20 weeks	

Coherence and Progression

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



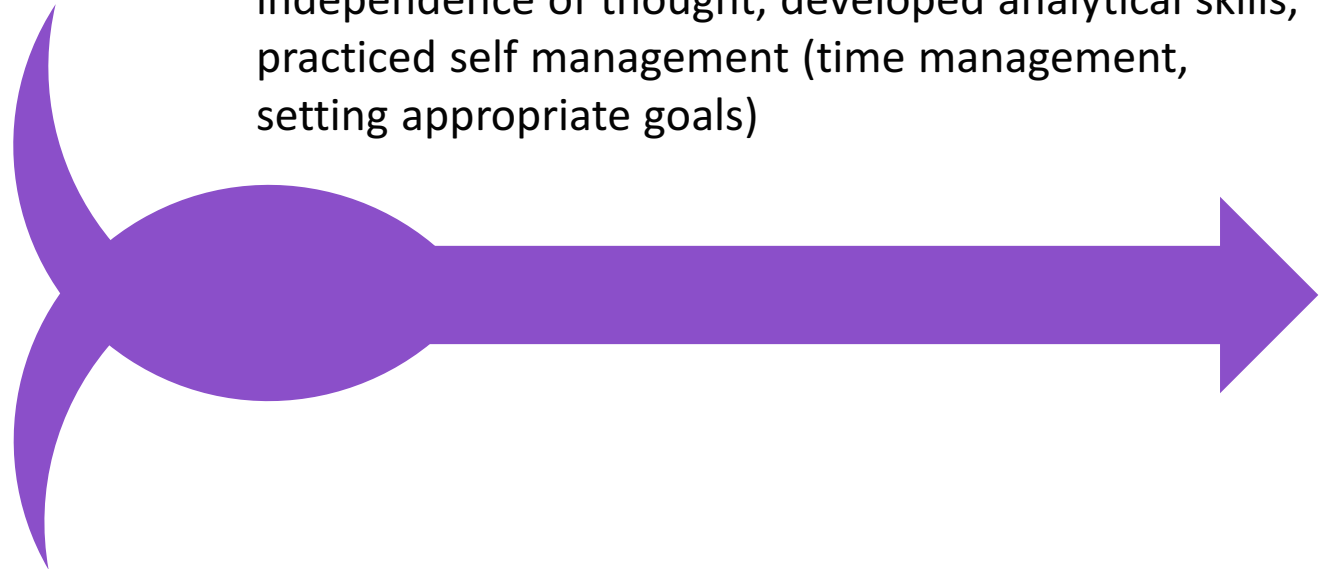
Learning Environment

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



Assessment

1 st Year Courses	2 nd Year Courses	3 rd /4 th 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%)	

Disciplinary Study



The Non-Disciplinary World



1st year Undergraduate Model

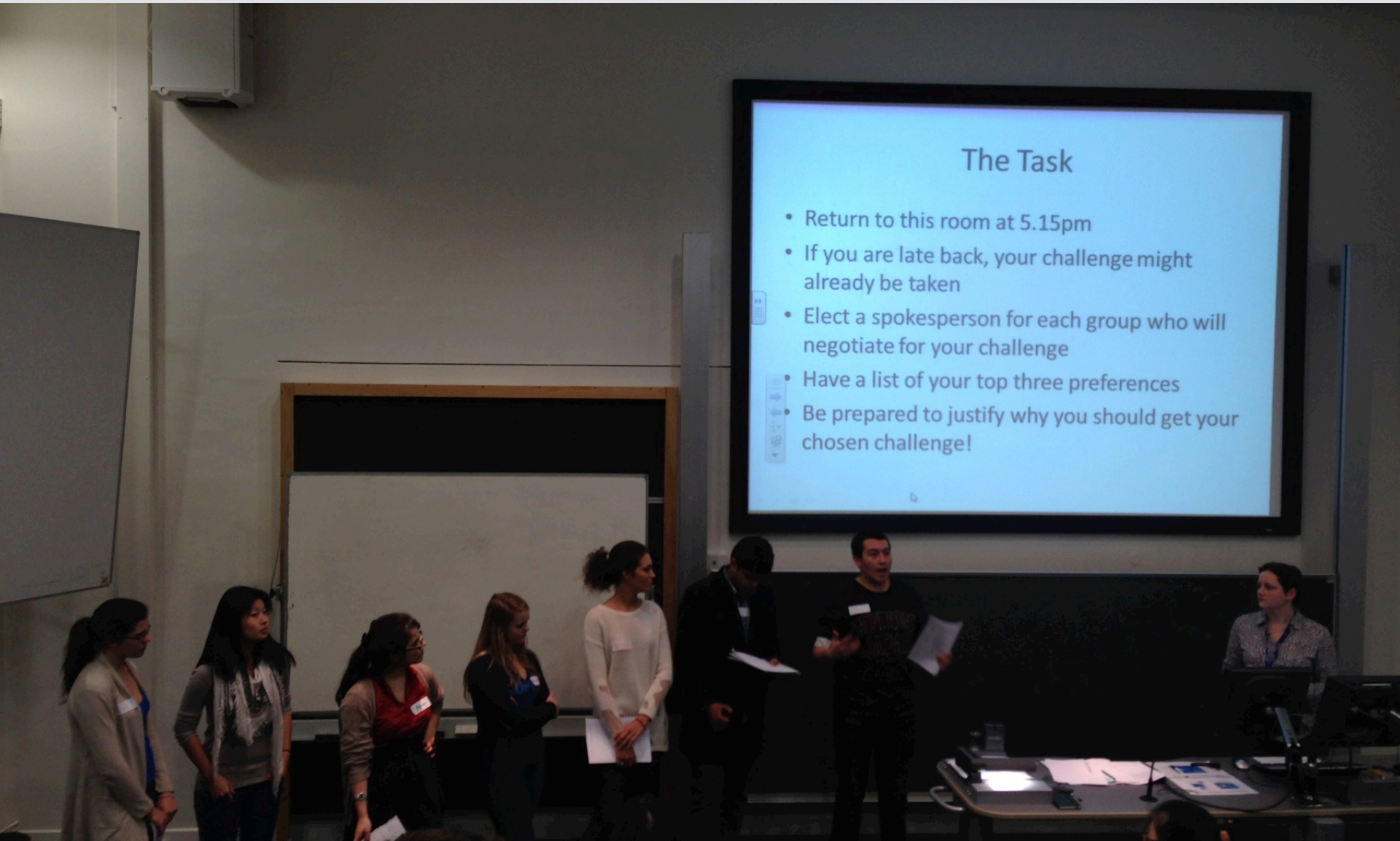
- Class of 150 students, working in groups of 10 with a postgraduate mentor
- Collaborative/Partnership/Praxis curriculum

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.”

1st Year Undergraduate Model



The Task

- Return to this room at 5.15pm
- If you are late back, your challenge might already be taken
- Elect a spokesperson for each group who will negotiate for your challenge
- Have a list of your top three preferences
- Be prepared to justify why you should get your chosen challenge!

Team analysis

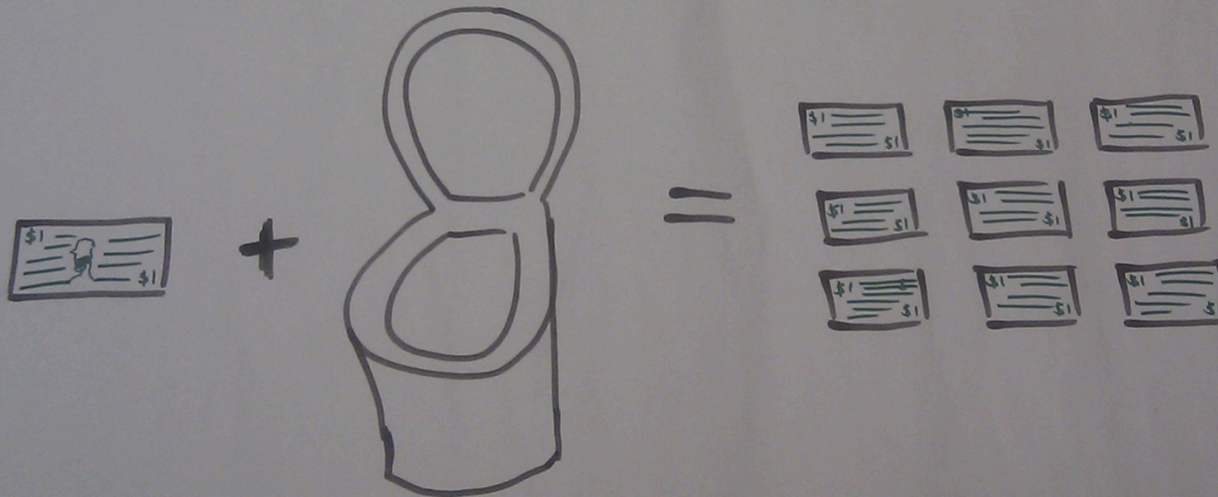


Spontaneous Activity

By 2015 it is estimated that $\frac{4}{10}$ people will not have access to basic sanitation



Every US dollar invested in improved sanitation, translates into an average return of 9 USD.



Using the wiki function

Imperial College
London

Resources

Course Feedback

Groups

The World Today Wikis

Help

My Groups

COURSE MANAGEMENT

Control Panel

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My Blackboard Courses

Name	Type	Student Access	Student Comment Access	Last Modified Date
Comments and Questions	Group	Open to Editing	Open to Commenting	26/11/13 01:36
Cyber Security – You Are Exposed!	Group	Open to Editing	Open to Commenting	26/11/13 01:20
Diseases – Ignored Global Killers	Group	Open to Editing	Open to Commenting	26/11/13 15:48
Education	Group	Open to Editing	Open to Commenting	04/12/13 12:29
Energy	Group	Open to Editing	Open to Commenting	04/12/13 12:59
Gender Inequality	Group	Open to Editing	Open to Commenting	04/12/13 12:36
Hyper-Industrialisation	Group	Open to Editing	Open to Commenting	01/12/13 16:21
Poverty	Group	Open to Editing	Open to Commenting	26/11/13 14:50
Resource Management	Group	Open to Editing	Open to Commenting	09/12/13 12:49
War, Conflict and Terrorism	Group	Open to Editing	Open to Commenting	09/12/13 12:51

Team identity

bb.imperial.ac.uk/webapps/portal/frameset.jsp?tab_tab_group_id=_2_1&url=%2Fwebapps%2Fblackboard%2Fexecute%2Flauncher%3Ftype%3DCourse%26id%3D_2504_1%26url%3C Reader



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My Blackboard Courses


Hyper-Industrialisation

Create Wiki Page Participation Summary

About Our Group

Created By  Ozioma Kamalu on Wednesday, 23 October 2013 11:24:20 o'clock BST
Last Modified by  Fu Quah on Tuesday, 5 November 2013 23:27:53 o'clock GMT

Edit Wiki Content



Hi! I'm **Ozi**, I'm studying Medicine and I'm really looking forward to next few weeks :)

Hey, I'm **Jenny**, I'm studying Geology. I'm from Coventry, England and am looking forward to getting to know you guys who all seem to have really interesting backgrounds!

Hi, I'm **Alina**, I'm doing Electrical Engineering. I'm from Germany, and last year I spent 1 year abroad in Chile.. I really like our intercultural group and I'm sure we will all find out many great new things in the next couple of weeks!!

HYPER-INDUSTRIALISATION

- About Our Group
 - Assessing the Current Situation: Industrialisation Today - Week 2
 - Comments and Questions
 - Communicating Uncertainty - The Occupy Movement - Week 4
 - Measuring Hyper-Industrialisation on a Global Scale - Week 3
 - Photo Gallery
 - Practice presentation feedback
 - Predicting the future - Week 5
 - Prediscussions & Feedback
 - Useful Resources

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

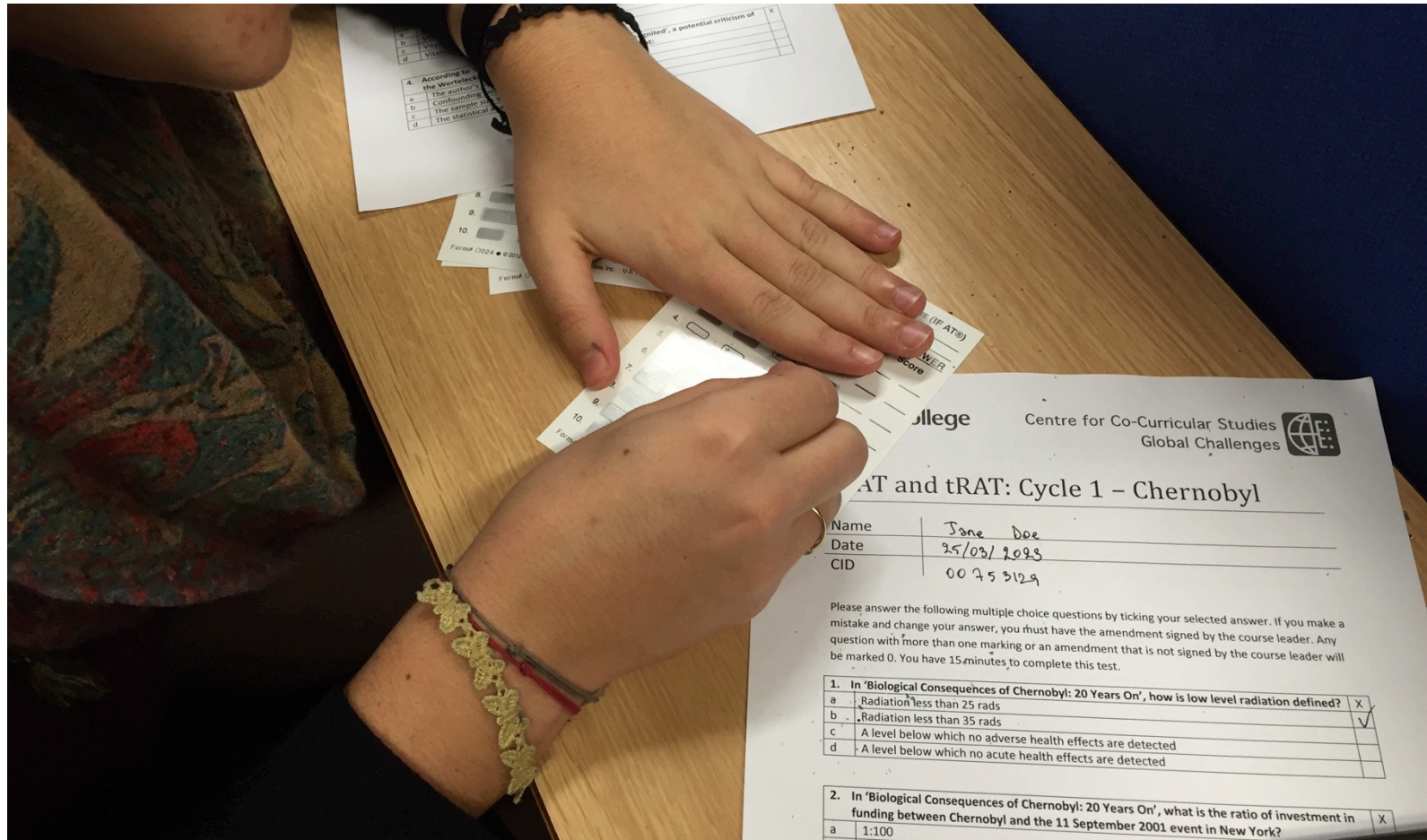
2nd Year Model



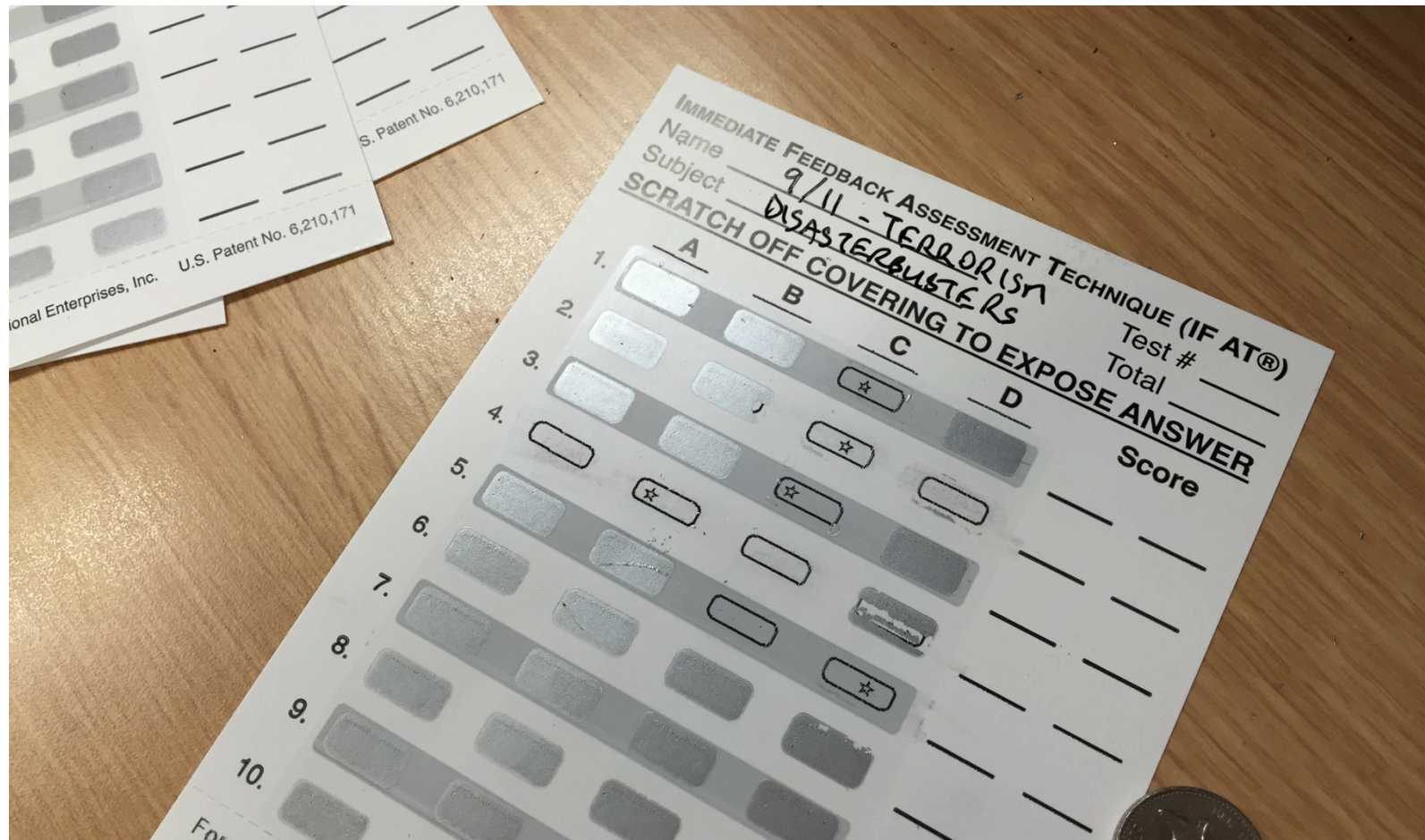
3rd Year Undergraduate Model

- 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

3rd Year Undergraduate Model



3rd Year Undergraduate Model



Evaluation

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

Thank you

