New Economic Teaching - Bridging Four Gaps

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When the Curriculum Open-access Resources in Economics (CORE) project launched on 11 November 2013 at Her Majesty's Treasury in London, we promised that we would be 'teaching economics as if the last three decades had happened'. The last six months have shown us that this is challenging but we are well on our way to doing it. In 2014-2015, we will be test teaching the materials for a new Introduction to Economics course in five universities (including University College London) in four continents.

We will close three gaps that have widened in those three decades. Most obvious to academics is a gap between what economists now know and what we teach undergraduates. To the public, there is a gap between the questions they ask, including the questions that bring our students into the classroom, and the often unrelated content of the standard curriculum. There is also a gap between conventional text-and-lecture methods used in university economics teaching and low-cost interactive learning technology. Finally, there is the gap between the marginal cost of making great curricular materials available and the price charged by publishers for the now dominant texts.

Gap #1 What economists now know and what they teach

Some say that the abstractions taught in introductory economics are essential to provide students with the analytical tools they need to achieve deeper insights in economics later on. But what if these are the wrong abstractions? What should the student make of the interesting-looking chapters now, at best, relegated to the back of the book – chapters on 'Information economics', 'Behavioural economics' or 'Bubbles and crises'?

Most students have had a job, and many have thought about getting a loan. To take the labour market as an example, their experience makes a model in which the employment contract cannot specify their effort easier to understand than a model in which we hypothesise a fictional auctioneer in a hiring hall for workers, and an employer who somehow is able to purchase their effort rather than renting their time. The now-standard labour discipline model that we teach in the CORE Intro course immediately gives students an explanation for another phenomenon they experience in their lives – involuntary unemployment. The hiring hall, complete contracts, and a clearing

labour market cannot deliver that—and will eventually be discarded by the small fraction of students who make it to postgraduate studies in economics.

From the beginning we can teach models to students that are rooted in the facts of the real world. Labour and credit markets are different from the market for bread or shirts, and incomplete contracts and information problems are inherent in them. Bubbles occur in housing and financial asset markets. Concerns about fairness affect how firms respond to recessions; and experiments help explain why.

Economics is a deeply empirical discipline and, with advances in data collection, economic history, econometrics and in experimental methods over recent decades, it has become more so. Instead of teaching a tool-oriented axiomatic curriculum that is largely independent of empirical reference points, we use evidence to inform our teaching from the start.

Gap #2 What students want to know and what is in the curriculum

Students come to economics with questions to which they want answers. During the past five or six years, they have frequently arrived in class wanting to find a coherent way of understanding the causes of the financial crisis, and why policymakers reacted the way they did. Others want an economics training to provide them with the means to assess the implications of global warming for human well-being. Rising inequality is a fact of life: they think economics can help them understand the big question of why it is happening, and the narrower one of where they might end up in the income distribution. Many, probably most, economics teachers share their students' concerns, but this is a well-kept secret. We disappoint our students by teaching a curriculum that is remote from these issues.

A question-oriented rather than a tool-oriented curriculum can deliver: students will learn the tools to analyse facts about their economy, and find answers to their questions. When Paul Anand and Jonathan Leape surveyed members of the UK Government Economic Service in January 2012 (http://eprints.lse.ac.uk/48698/), and asked 'Are there any changes in your university economics training that would better prepare you as a professional economist?' the single most common response was to wish they had greater focus on practical application of the principles they learned: more examples from real life and more emphasis on real-world topics. As one respondent replied, it was the difference between being taught how to build a car, and how to drive one.

Nobody can brush away the question-oriented approach by claiming that the outside world is simply too complicated to explain. For example Paul Seabright, (http://www.project-syndicate.org/commentary/paul-seabright-criticizes-the-poverty-of-the-undergraduate-microeconomics-curriculum) has demonstrated that the 'messy' but realistic parts of applied microeconomics such as those that preoccupy competition authorities can be explained using basic concepts and tools. Undergraduate students – fascinated by cases concerning Apple or Microsoft or Google – are rarely taught how to use their

tools to understand cases like these. Around the world, economics departments can change this if they have the will to do so, and have the kinds of teaching materials that we are producing.

Gap #3 Jug-and-mug versus interactive learning

The standard economics teaching method is that the student is the mug into which the teacher (the jug) can empty precious knowledge. Students used to take notes sitting in large lecture theatres; now they sit and watch slides instead. Later in the week they watch a graduate student write the solutions to a problem set on a whiteboard. According to Professor Martha Olney of Berkeley, recommended to the project as 'the best teacher of Intro to Economics' and winner of numerous teaching awards, students need to be using their hands or their mouths to be learning. Watching slides or a whiteboard involves neither.

We can use new technology to make learning economics more engaging and effective. Having motivated students with data and questions, we teach them models to frame the question at hand, and to provide a causal structure for answering it. Modelling in introductory courses uses diagrams and some maths but can be taught without calculus. Interactive technology makes the presentation of models using diagrams more accessible to students, who can replay the steps (shifting curves for example and looking at the results) until they understand them. It is also possible to include simulations to bring models to life.

By designing course materials using e-book technology from scratch, we build in the interactivity and the possibility for individualized learning. In the CORE course material, students can click on an ‘Einstein’ to get help with mathematical aspects of the text, on a ‘Surprise me’ to learn curious facts about past economists or features of the economy, and on interactive charts to find out more about data and context (to see, for example, what were the technological and institutional changes happening as real wages rose and fell from the 13th century until the 21st). The learning experience can improve simply by animating a model, or by letting students take tests as they learn.

Videos of economists in action help students understand how new knowledge in economics is created. They see economists talking about their research and how it feeds into the topics they are studying in class, the facts they are working on and the models that are helping them to understand the facts.

The demand for engagement with the outside world has been led by students. In the UK, organised groups such as Rethinking Economics (http://www.rethinkecon.co.uk/), and the Post-Crash Economics Society (http://www.post-crasheconomics.com/), continue to ensure that curriculum reform makes the national news, which would have been unthinkable only a few years ago. But the interest from students goes well beyond the UK.

When I was interviewed on the BBC World Service on 6 December 2013 to debate curriculum reform, within hours almost 100 students had contributed

their opinions and ideas to the World Service Facebook page (http://on.fb.me/1bldati). A Reddit conversation (http://bit.ly/1bldl7Z) posted in response to an op-ed article I wrote in the Financial Times (http://core-econ.org/comment-in-the-ft/) attracted 1,214 student responses in 48 hours. The dominant theme for both sets of students: why has economics teaching become detached from our experience of the world? It's not just students who are interested in curriculum reform: my Vox.eu article on teaching macroeconomics (http://bit.ly/1pIMhI1) after the crisis has attracted more than 20,000 reads.

Gap # 4 Teaching materials as public goods

A new copy of one of the globally dominant texts in introductory economics, Mankiw's *Principles of Economics,* costs $261.19 on Amazon.com. A student majoring in economics may expect to spend more than $1,000 on the required texts over three years. This is a hardship for most students in Europe and North America and impossible for students in poorer nations, even if export editions are sold at a discount. Thanks to INET's support for our small project team and the entirely voluntary contributions of the authors of our curriculum units and associated materials (such as videos), our e-book units will be public goods, available free on-line to anyone, anywhere, who has internet access.

Economics students around the world are asking more of their universities and many of their teachers would like to respond. We are part of the response. This is an important moment for economics teaching, not just for economics teachers. When we introduce the first iteration of the CORE curriculum in September 2014, we will discover from the most important participants – the students who use the material – how well we have bridged the gaps. Our intensive review and revise process over the year to follow will address our own gaps.

The INET CORE project is a group of 25 economists from around the world working with writers, experts on innovations in teaching, and a team of designers and computer programmers in Bangalore.

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