‘Education, Knowledge and Innovation in the Global Economy: Challenges and Future Directions’

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1. Introduction

Arguably the most significant political and policy development over the past decade—the current financial crisis aside—is the emergence, globally, of a new, very powerful, discursive imaginary; the assertion that we now live in, or are moving toward, a knowledge-based economy, and that the recalibration of institutions (mergers), and their desirable geographies (e.g. regions/cities), are crucial to enable this to be realized.

This focus on knowledge, as the key motor for the economy, on how to create, distribute and manage it, has placed education at the centre of policy and politics. Among policymakers, there is now intense interest in:

- nurturing ‘creativity’ and ‘entrepreneurship’ as a basis for innovation and invention;
- the idea that new, more active, learner-centered pedagogies are desirable;
- that learning spaces can be architecturally manipulated to generate ideas that in turn generate inventions;
- that digital technologies can transform learning; and
- that we can ‘hothouse talent’ and ‘incubate’ ideas to generate value.

Earlier versions of human capital theory have been invigorated by new growth theorists who argue that it is not just more education that matters, but the kinds of education experiences that foster active learning (Arrow, 1962) and innovative aptitudes (Romer, 2007), whilst popular intellectuals, such as Richard Florida (2005), have promoted concepts like the ‘creative class’ as the basis for producing competitive economies. We have also seen intense focus on research and evidence, and how this might inform evidence-based, or evidence-informed, policymaking.

It is against this backdrop that the ideas: ‘education’, ‘knowledge’ and ‘innovation’, are being promoted as central to the development of a globally-competitive knowledge-based economy (OECD, 2006). However in this lecture today I want to raise a number of questions about the knowledge economy narrative in ways that talk to the important research work that the Centres might engage with theoretically, empirically, and as a politico-ethical touchstone.

2. My Argument

I want to suggest that as it currently stands, KBE talk offers us a limited way of thinking about knowledge, the nature of research, what counts as innovation, and what kinds of knowledges our communities need in order to generate both economic security and solidarity. Here I will base my observations on two research projects that I am currently working on; (a) one on the role of national governments and supranational and international organisations, such as the EU, OECD and World Bank, in seeking to ‘give birth to’ (in their words) knowledge-based economies; and (b), the role of higher education institutions in city-regional development/regeneration to secure competitive and cohesive knowledge societies.

Specifically, I will be suggesting that the dominance of ‘knowledge economy’ talk has eclipsed ‘knowledge society’ talk, and that the KBE narrative offers us a very particular window on societies and knowledges. Second, that innovation, and therefore education, has tended to be shaped by this narrative, in turn limiting how we think about innovation
in our institutions and communities. Third, these ways of thinking about education, knowledge and innovation advance the interests, not only of particular sectors of society, but its current formulation—as a struggle for talent, brains, and so on—depends to a significant degree on recruiting ‘knowledge’ workers/brain power from developing and transition countries – or ‘the south’ – where loss of talent represents a significant loss of knowledge for development. Finally, and following from these previous points, I would like to suggest that the research/knowledge Centres, which I am honored to have been invited to help open today, are not only potentially well placed to engage with, and open up, these thorny questions in ways that widen our understanding of knowledge, innovation and economy – but I see it as a social justice issue. I will return to what I mean by social justice at the conclusion of this presentation.

3. Knowledge – a Slippery Idea

Now the first thing to note about the KBE narrative is that the idea of ‘knowledge’ plays a very particular role here largely as it is particularly slippery. Not only is the concept of ‘knowledge’ so utterly familiar and ‘good for us’ so that it is hard to be against, but it brings together, and absorb, all kinds of potentially competing views and place them all under the one umbrella. Effective meta-narratives, for instance ‘quality’, all work that way.

And, when linked to it being the basis of an economy, as in the idea of it being knowledge-based economy, we are also at this point invited to accept that something new is afoot. However, scratch the surface, and it is clear to most of us that knowledge has always been central to our labour, and therefore to the economy (indeed this is precisely what the battle between the famous Frederick Winslow Taylor, the architect of greater worker efficiency, and the workers in the steel mills was over – the appropriation of key craft knowledge by managers).

Yet policy statements from the multilateral agencies, firms and national governments of all persuasions assert that ‘we now live in a knowledge-based economy’ (cf. OECD, 1996; World Bank, 2003; EC, 2000; Blair, 2000), that if we are not there yet, we should be aiming to arrive soon, because our economic security, and place in the world, is dependent on it. Increasingly China and India, as threats to our economic security, are also being mobilized to ensure we understand the centrality of the task. Here I draw your attention to many European Commission documents around the reform of higher education in this regard.

4. The Genealogy of the KBE Narrative – Interests and Politics

The idea of a knowledge-based economy has its roots in work developed by a group of 1960s intellectuals, futurologists and information economists, including Fritz Machlup (1962), Peter Drucker (1969) and Daniel Bell (1973). These writers argued that societies were in transition to becoming knowledge-based; in other words, that ‘muscle-based’ work was being replaced by ‘mind-based’ work. Their thesis at the time was regarded as highly speculative. Two decades later, it was added to by urban sociologist, Manuel Castells (1996, 2000), and his theory of the emergence of a network society. A core argument too in this body of work is that information/knowledge is now a new factor in production, and that digital technologies offer, for the first time, the potential to annihilate the barriers of time and space because of the ways in which we can generate
feedback in real time, making our capacity to respond to this feedback significantly different and potentially effective for product and service development.

International organisations, like the OECD, have been heavily influenced by these arguments. During the 1970s, they took on board the idea of an ‘information society’ (Mattelart, 2003: 113), enlisting the expertise of a range of economists concerned with mapping and measuring information. By the 1990s, the concept of a knowledge-based economy was eventually reflecting the contribution of economists such Foray (2000), Lundvall (1996), and Romer (2007).

At the heart of the OECD’s version of the ‘knowledge economy’ is the idea that knowledge has value. As Bell put it:

Knowledge is that which is objectively known, an intellectual property, attached to a name or group of names and certified by copyright, or some other form of social recognition (e.g. publication). …It is subject to a judgment by the market, by administrative or political decisions of superiors, or by the peers as the worth of the result, and as to its claim on social resources, where such claims are made. In this sense, knowledge is part of the social overhead investment of society, it is a coherent statement, presented in a book, article, or even a computer program, written down or recorded at some point for transmission, and subject to some rough count (Bell, 1973: 176).

The OECD then moved toward developing sets of indicators to both measure and guide national state’s development toward a knowledge-based economy. The effect of producing statistics to measure a KBE in turn stabilized the idea of a knowledge-based economy around four pillars: ‘innovation’, ‘new technologies’, ‘human capital’ and ‘enterprise dynamics’ (see Robertson, 2007 for a fuller explanation).

The World Bank’s foray into the ‘knowledge’ arena began in the early 1990s. The World Bank was the first cooperation agency to explore the implications of ‘knowledge’ both for its own activities as an organisation, and also for its clients (King’s, 2003). This ambitious work began in 1996 under the leadership of World Bank President, James Wolfensohn, where it reinvented itself as ‘the Knowledge Bank’. Its 1998 World Development Report (WDR), Knowledge for Development, laid the foundations for much of the Bank’s work over the next decade. The WDR placed knowledge at the centre of the work of the Bank’s activities – so that in the education sector the focus was now shifted to include higher education.

There was, nevertheless, a very particular set of ‘knowledges’ being privileged in this K4D programme: Western science and technology, enabled by ICTs and the institutional structures that supported a liberal market economy based on value realized from intellectual property. As King argues (2002), this was pretty much business as usual for the Bank.

Like the OECD, the World Bank’s K4D programme is based on four pillars:

1. An economic and institutional regime that provides incentives for the efficient use of existing and new knowledge and the flourishing of entrepreneurship.
2. An educated and skilled population that can create, share, and use knowledge well.
3. An *efficient innovation system* of firms, research centres, universities, think-tanks, consultants, and other organizations who can tap into the growing stock of global knowledge, assimilate and adapt it to local needs, and create new technology.

4. *Information and Communication Technologies (ICT)* that can facilitate the effective communication, dissemination, and processing of information.

We can get a good sense of the World Bank’s strategic framing of what it means to be a knowledge economy, as well as the tools used by the Bank to help shape a country’s strategies, by looking at the content of the *Knowledge Assessment Methodology (KAM)*.

The KAM is the centrepiece and underpinning architecture of the Bank’s K4D programme. It is an interactive, diagnostic and benchmarking tool that provides a preliminary assessment of countries and regions ‘readiness for the knowledge economy’ (World Bank, 2007). The KAM enables countries from around the world to benchmark themselves with neighbours, competitors, or other countries they wish to learn from on the four pillars of the knowledge economy. It is therefore a tool aimed at promoting ‘learning’ amongst both developing and developed countries about the elements that constitute the Bank’s version of a knowledge economy.

Since its launch, the KAM has undergone a series of refinements. In 2004, 121 countries were included in its KAM database and 76 structural and qualitative variables were available as measures of knowledge-based economies. In 2006 the KAM was relaunched, this time with 128 countries and 80 variables. By 2007, four further countries were added. The KAM currently consists of 81 structural and qualitative variables for 132 countries to measure their performance on the four Knowledge Economy (KE) pillars: Economic Incentive and Institutional Regime, Education, Innovation, and Information and Communications Technologies. Variables are normalized on a scale of zero to ten relative to other countries in the comparison group. The KAM also derives a country’s overall *Knowledge Economy Index (KEI)* and *Knowledge Index (KI)* based on an aggregation of the 14 key variables.

The European Commission offers a similar way of looking at knowledge and innovation—the basis for stimulating the realisation of the Lisbon Agenda—to be the most competitive, knowledge-based economy in the world. And whilst a social cohesion agenda has been a hallmark of what marks out the European strategy as different from those such as the USA or the UK, it is fair to say that this agenda plays second fiddle to the more powerful narrative of jobs, growth and innovation.

5. **Whose Interests Are Advanced in this Vision of an Economy?**

The important question at this point is what it is that this vision—of how an economy might reconstruct itself—is a response to? My own view on this question is that any satisfactory answer must take into account the deep crisis of capitalism which confronted the big, developed western in the early 1970s (following the deindustrialisation that took place in the heartlands of the developed economies) and which informed their subsequent search for a solution to underpin the a new, long wave of economic development.

Through the 1990s, with steerage from dominant nations, regions and agencies, such as the US, EC, WTO, OECD and World Bank, the idea of a ‘knowledge-based economy’
was promoted so that it eventually emerged as a powerful master economic narrative in economic development strategies around the world. This project has been significantly buoyed by the idea that the services sectors could be developed and be the basis for generating a competitive advantage for the developed economies. Both Europe and the USA claim for themselves a competitive edge at the high value-added end of the commodity chain. This has prompted a concerted effort to widen and deepen the services sectors (e.g., education, health, finance, transport, and so on), to extend intellectual property rights (e.g., on pharmaceutical products, cultural products, and put into place the means to protect those rights internationally so as to return value across borders. These ideas have contributed to the formation of the World Trade Organisation (WTO), and the creation of new agreements, such as the Trade Related Intellectual Property Services Agreement (TRIPS) and General Agreement on Trade in Services (GATS) which materialised in 1995 (Robertson, Bonal and Dale, 2002).

The GATS Agreement, bilateral agreements between third world countries and EU Member States (e.g., Erasmus Mundus), the extension of the Bologna Process to include not only the official 46 Member States but its global take-up, are all directed toward opening up education as a services sector so that it can contribute directly to the economy. Movements of students are seen, not in cosmopolitan, but commodity terms, raising important issues around the movement of knowledge and brain drain, and the trade-offs between aid for development and trade for development. These initiatives have been highly controversial in those countries around the world where there has been a history of state-subsidy and a generous view about global mobility and global community.

5. Innovation and its Narrow Framing: The Importance of Re/Framings

It is important we now address how innovation is framed within the KBE discourse, and from there what this framing means for how we think about knowledge, research and development. Whilst recognizing that innovation, and invention are vital to all societies and their economies, and that higher education institutions have historically, and indeed more crucially now, been asked to play an important role in this regard, what is clear is that we continue to work with the narrow framing of innovation coming from the KBE narrative outlined above. In other words, innovation is viewed in high tech science and technology terms. Hidden in this framing are all kinds of social and other innovations – often referred to as ‘soft’ and ‘process’. For instance, larger sectors, such as the cultural and creative industries, the public sector, the professions such as education, health, law, the retail sector, the medical world, and so on are largely absent. Yet all offer remarkable insights into innovations, and indeed innovation in these sectors is critical if they are to not only engage with the possibilities of new technologies, but to offer better quality services. Missing, too, are ways of talking about innovation in those services that will become more and more important over the next decade, such as recycling, aging, transport and so on (NESTA, 2006). These are hidden, but they are innovations none-the-less.

There are other problems here too. Typical indexes of innovation, such as the Innovation Scoreboard (EC, 2008), measure outputs, or start-ups, spin-out companies, and patents, the latter of course chiefly relevant to high and medium high technology areas. In other words, the measures of what constitutes innovation, and what motivates innovative behaviour (such as commercial success), are also very narrow. This is
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important because it limits institutions access to funding for highly relevant knowledge transfer funding activity. Institutions might also put into place the wrong, or at best a limited, set of incentives and rewards for innovative research activity.

A major challenge, then, for knowledge/research centres whose research activities operate predominantly in this 'hidden innovation' zone is to enter into a debate about the importance of reframing innovative activity so that it is sufficiently broad-based and broad-minded to take our current real (and local) economies into account, and value and reward them, rather than some imagined one.

One effect of a broader conception of innovation is that we may then be better placed to think in new ways about how innovation occurs. For researchers like Lundvall (2005), this includes openness to the role of 'learning' in innovation, such as the contribution of interactions with clients as partners, along with the importance of imagination, analysis, problem-solving, and so on. Being more open and broad-minded may end up being more challenging for traditional higher education institutions, many (though not all) of whom have often worked at a distance from their local communities, their private and public sectors. My own research in the UK suggests that much of the former College sector have a history more firmly grounded in knowledge networks in the local and regional economy and can they can use these to their own advantage. They might also use this knowledge as a basis of establishing knowledge-exchange relationships with other similarly placed city/regions around the world facing similar kinds of issues. This would be a platform from which a global cosmopolitan relationship can emerge; one that is anchored not exclusively in commodity relations, but where we are open to exchange and other kinds of relations.

6. Knowledge and Innovation in City/Regions: When the ‘Out-There-Globally-Competitive’ trumps the ‘In-Here-Community-Cohesion’

Higher education institutions embedded in close local and regional networks are particularly well placed to participate in the development of ‘knowledge regions’—currently the preferred model for economic development for governments, largely because of knowledge transfer reasons (Reichert, 2006). Several lines of research feed into this model of best practice for how education, knowledge and innovation might contribute to economic and social development (where the city-region is regarded as the most efficient and effective because of access to local political decision-making, the value of proximity for generating spillovers, the activation of networks for trust, and so on). Key influences have been Etzkowitz and Leydersonff’s (1997) ‘triple helix’ (state-university-industry), Porter’s (1985) work on clusters as a means of realizing a ‘competitive’, ‘comparative’ and ‘constructed’ advantage (cf. Singapore), and Richard Florida’s (2002) work on what he refers to as the ‘creative class’ (talented and creative individuals, and their role in generating creative cities).

At the same time, there is also a pull outward, toward the global, in part through (i) the way discourses around global cities, globally-competitive regions, and world class higher education institutions work; (ii) student populations, who rightly see their own credentials in terms of the value/return it has in a wider labour market (hence seek knowledge and skills that have some wider cache); and (iii) the concerns of teaching faculty who seek promotion, and increasingly importantly, need to play the publication game.
This sets up a tension between the centripetal (*inward* oriented nature of knowledge regions) and the centrifugal (*outward* nature of academic economy) dynamics of the higher education/city-region relation which, in combination, are likely to create uneven networks of cooperation. The ‘Out-There-Globally-Competitive’ might well work against the ‘In-Here-Community-Cohesion’ in important ways, for instance, what is viewed as valued research and research-based knowledge, how this knowledge circulates, and to whom? How do local and globalising dynamics talk with each other in ways that are additive rather than canceling each other out? It is important not only that institutions understand the causes and effects of these dynamics, but also work toward working with them in new and innovative ways.

Here, it would seem, it is important research centres generate spaces that enable them to think in more innovative ways; of how to produce knowledge and activate networks where the local and the global, the insider and the outsider, the newcomer and the old-timer – to use Jean Lave’s (2008) terms with regard to ‘communities of practice’—come together so that social relations can be re/negotiated despite the inevitable barriers of time, space and culturally-mediated socialities.

I recognize that a challenge here is also thinking in innovative ways about how to build epistemic communities, for instance by drawing upon new digital tools, such as social networking, blogging, wikis and so on. In other words, how might we work with individuals and communities across time-space, and across cultural barriers? How might we set up new learning relationships?

7. Why it Matters: Opening up Knowledge/Research/Development Agendas to an Insurgent Cosmopolitanism

The Portuguese sociologist, Boaventura de Sousa Santos (2006), talks at great length about economic, political and social processes and practices that are being globalised, like the KBE, which currently sits *inside* a field that in turn privileges some social groups, some states, some interests and selected ideologies. How, he asks, might we bring to the centre the concerns of those who risk being marginalised? Viewed from the point of view of city/regions, and their role in generating knowledge, one question we might consider is *how* might we widen our framings of innovation and learning, so that new centres can be built from previous margins? For Santos, this process might be described as insurgent cosmopolitanism; a way in which absent visions and positions can engage with those of the centre or the hegemon. I am sure there are many examples of emerging centres at the moment that we can draw upon to illustrate this point. However what if each centre tried to map these innovations, produce a register, then began to ask process questions such as what were the conditions that enabled these to happen, what can we learn from them, can we scale them up, or transfer them, under what conditions, and so on.

This is not simply an academic question, of how we represent something. I see this very much in Nancy Fraser’s (2009) terms. Fraser of course, is fundamentally concerned with social justice; and ‘mis-framing’ as one of the three (redistribution and recognition) key dimensions that contributes to creating in-justice. Seeing it this way not only enables us to make visible knowledge/power and reframe them in social justice terms, but this also provides us with a strategy of how to challenge and re-represent those things that are important to building confident, cohesive and knowledgeable communities and societies.
This is important knowledge work, and one these research/knowledge centres are well placed to engage with. They have energy, imagination, and institutional support. They have the capacity to draw on local community knowledges and build partnerships that will contribute, not only to building knowledge but knowledge that will make a difference. The challenge is, I hope clear. How to develop a dialogue within and across the centres that involves local and global players; how best to assert, and insert, a wider array of social relations and social justice issues into current knowledge economy narratives that generate genuine social value. Through this important work, your centres can breathe life back into what it means to talk, not just about a knowledge economy, but a knowledgeable society.

References
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