

Engaged Universities, Mode 3 Knowledge Production and the Impact Agendas of the REF

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Over the past decades, there has been an increase in discourse around the comparative appropriateness of various research methodologies for benefitting the real life problems of society including interdisciplinary/transdisciplinary methodological considerations; fragmentation of knowledge domains in ever-expanding fields; practice-as-research and the creative practitioner; big, co-owned and open data; and non-linear collaborative methods for producing knowledge. Some of the latest debates look at the way universities interface with communities outside of academia whilst producing knowledge that has real impact. These discourses and their related methodologies have been given a new momentum with the impact agendas of the last REF. Simultaneously, the last REF could be seen as a collection of quality assessment methods that, collectively, have an inbuilt tension between, on the one hand, a more traditional, linear knowledge production culture (mode 1 knowledge production model), and on the other, an impact driven, non-linear mode that values socially-distributed knowledge more than discovery (mode 2 knowledge production model). This tension points towards a shift that some authors believe is already happening, and others suggest it certainly should be. In (too) simplistically expressed terms these tensions could be understood as the ivory tower vs the engaged university. However, at the basis of this tension stand different models for producing knowledge and with it comes the need, certainly for countries that engage in research assessment exercises, to consider how to assess the value of this produced knowledge.

'Mode 1' and 'Mode 2' are knowledge production models put forward by Gibbons back in 1994, and several authors of the past decade have picked up and further developed his concepts with relevance for the current impact agendas. These include Etzkowitz's *The Triple Helix* (2008), Watson's *The Engaged University* (2011), Carayannis' *Mode 3 Knowledge Production* (2012) and Watson's *The Question of Conscience* (2014).

Gibbons conjectured that Mode 1 knowledge production was a more 'elderly linear concept of innovation', in which there is a focus on basic research 'discoveries' within a discipline, and where the main interest is derived out of delivering comprehensive explanations of the world. These knowledge production models are usually not concerned with application or problem solving for society, and quality is controlled through disciplinary peers or peer reviews. Success in this model is defined as quality of research, or "research excellence" and both Watson (2014) and Carayannis (2012) suggest that our western academic cultures still predominantly support the Mode 1 knowledge production model. The REF's focus on scholarly publication and its re-branding to include the term 'research excellence' could be considered as emerging from a culture surrounding the traditional Mode 1 knowledge production.

But Gibbons already put forward a different way of producing knowledge - in which problem solving is organized around a particular application. Characteristics of this mode he suggests to be more inter-, trans-, multi-disciplinary, often demanding social accountability and reflexivity. The exploitation of knowledge in this model demands participation of the knowledge production process and the different phases of research are non-linear, e.g. discovery, application, & fabrication overlap. In this model, knowledge production becomes

diffused throughout society e.g. a 'socially distributed knowledge' and within this, tacit knowledge is as valid/relevant as codified knowledge (Gibbons 1994:3). Quality control is exercised by a community of practitioners 'that do not follow the structure of an institutional logic of academic disciplines' (Gibbons 1994:33) and success is defined in terms of efficiency/usefulness, and contribution to overall solution of problems (Carayannis 2012:37).

Obviously both modes currently exist simultaneously in various research communities, and have done so for a long time. Various terms emphasize the different nuances around the ongoing impact debate, from applied research, to knowledge exchange, to definitions of research impact. However, as Watson (2011) contends, there is a succinct southern/northern hemisphere divide in how academia tends to see itself and its role in relation to society; and embedded in this is how research value is conceptualized.

In the northern hemisphere academia generally comes from a Mode 1 trajectory, e.g. Mode 1 knowledge production is more often than not considered to be the highest form of research. This is reinforced by publicly funded research that creates a sense of entitlement (Watson 240-248). For universities in the southern hemisphere, civic engagement is an imperative, not an optional extra. With it come different value systems for the role of research, and a Mode 2 knowledge production model prevails (248).

In 2012 Carayannis expanded the Mode1/2 concept to include a Mode 3 Knowledge Production Model, defined as working simultaneously across mode 1 and 2. Adaptive to current problem contexts, it allows the co-evolution of different knowledge and innovation modes. He called it a "Mode 3 Innovation Ecosystem" which allowed "GloCal" (local meaning but global reach) multilevel knowledge and innovation systems. This values individual scholarly contributions less, but rather emphasises the value of clusters and networks which often stand in "co-opetition", defined as a balance of both cooperation and competition.

Partnership models for thus producing new knowledge have been covered by Etzkowitz in 2008. His book *The Triple Helix* provided a conceptual framework for capturing, analyzing, devising and making explicit various aspects of project partnerships, "managing interactions among universities, business and government on common projects" (2008). And it is this model that Carayannis expanded in 2012, now to include the third sector, and with it universities' own civic engagements.

Watson (2009, 2011 and 2014) foregrounded this latter role within his concept of the "engaged university" (2011), advocating for social enterprise and the not-for-profit sector to be considered within the helix model. His international comparison of the way universities engage with their respective communities provides a strong expression for academia to consider new knowledge production models that allow a greater interaction between universities on the one hand, and both the public and industry on the other, e.g. for universities to become (even?) more engaged.

With Mode 3 knowledge production cultures, or a high civic engagement by universities, or a system that values research impact on society, there is an emphasis on partnerships between universities, industry, government and the civic sector (not-for-profit and voluntary sector). And they will allow innovation to happen in a non-linear, collaborative manner with overlapping processes of basic research, application and development. In this model research is not the sole concern of universities, and technology exploitation might not be the sole concern of industry, creating what has been called a "socially distributed knowledge" (Gibbons 1994) or a (Mode 3) "Innovation Ecosystem" (Carayannis 2012).

Thus for a research assessment exercise, or a measurement of research excellence to include impact agendas, as the last REF has done, affords universities to shift their

behaviour towards a Mode 2 or 3 knowledge production, and this I would contend is a good thing. The late Watson advocated this with even stronger terms, suggesting that

“(...) in universities around the world, something extraordinary is underway. Mobilizing their human and intellectual resources, institutions of higher education are directly tackling community problems – combating poverty, improving public health, and restoring environmental quality. Brick by brick around the world, the engaged university is replacing the ivory tower.” (Watson, 2011)

(1170 words)

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Biography

Carola Boehm is Associate Dean and Head of Contemporary Arts at the Cheshire Campus of Manchester Metropolitan University. She holds degrees in music, computer science and electrical engineering. She has held positions at the University of Glasgow, the University of Mainz, the Conservatory of Music Hanover and Den Haag,

