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Published online: 18 Feb 2020.

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EDITORIAL

Data, artificial intelligence and policy-making: hubris, hype and hope

A few years ago, the European Commission commissioned and published an influential report, reviewing what adult education policy-makers could learn from research – chiefly research funded by the Commission itself under successive Framework research programmes (now rebranded 'Horizon') (Federighi, 2013). The report covered a range of areas, including the aims of continuing vocational education and training and adult education, how adult education could contribute to reducing the number of low-skilled people, workplace learning, and training for innovation. Its final section addressed the governance of 'markets and systems of adult and continuing vocational *[sic]* and training': perhaps its major point here was the 'strongly fragmented nature' of what it called 'the adult and continuing education market' (p. 61).

One of its arguments was that, from a public policy perspective, we should think of adult education as a market (or a series of markets): 'relationships of exchange of goods, services and capitals between different economic subjects (companies, families, the state) operating on local, national and global levels'. Policy-makers should intervene on 'the existing circuit of production/distribution/exchange/consumption of services', and not limit themselves 'to interventions which affect only those who operate within sectors directly or indirectly dominated by public financing' (p. 67). However, although it argued public policy intervention in these markets was essential, it also saw them as difficult for a number of reasons. The most prominent was sheer complexity – the great 'variety of problems and . . . number of actors' – but it placed the strongest emphasis on problems of evidence. Policy-making 'relies on good-quality data' for a range of purposes: to 'support the decision-making process; inform the choice of the problems to be tackled; elaborate policy options; carry out impact analysis; compare possible options; and structure monitoring and evaluation' (p. 77). Few would dissent from this: accurate information is an essential base for policy debate.

At the same time, there was something just a bit too simple about the claims the report built on this need for evidence. A common theme of critical research in recent years has been that while accurate information is necessary for good policy, it by no means guarantees it. Importantly, of course, this is because policy (some might say, by definition) is the outcome of politics: assertions to the contrary (such as the European Commission's 1995 claim to have witnessed 'the demise of the major ideological disputes on the objectives of education' (European Commission, 1995, p. 23)) do not really stand the test of time. People do not all agree about what they want policies to achieve. So even when policies 'work', we may differ on what we want them to work for.

The intractable embeddedness of disagreement is not, of course, an easy position for civil service bureaucracies to adopt – any more, for instance, than it has been easy for employers to accept a deep difference of interest between their enterprise and those they employ (cf Fox, 1974). The rise of neoliberal ideology, and the eclipse of political and social alternatives to globalised markets and capitalism, has brought recurrent efforts to shape and regularise opinion. In adult education, we – and other authors in this journal and elsewhere – have long since noted a desire in elite policy circles to achieve, build or assert consensus over purpose. This has been necessary because, before anything else, people, businesses and countries have been seen as having to compete in global markets. Thus

over twenty years ago, Colin Griffin noted that even 'social democratic lifelong learning policy approaches' – though 'progressive and marginally redistributive in (global) market conditions'

> address the same set of issues [as more neoliberal polices], that is, of global economic competition, the knowledge or information revolution, the fragmentation of society and culture and threats to public order of the widening gap between rich and poor, increasingly defined as social inclusion and exclusion. (Griffin, 1999, p. 339)

Griffin's analysis has proved pretty accurate: the trend of policy over the last two decades has been to identify policies that can manage the deep tension – even contradiction – between responding to global capitalist competition and addressing the needs of people. One common element has been to frame policy as needing to operate through markets, and the generation of mechanisms that generate the impression of uniformity of purpose. A key instance is the ubiquity of measures, indicators, benchmarks and league tables – underpinned by ideological tropes ('transparency', 'choice', 'what works'), and information technology such as computerised spreadsheets and financial management software.

The widespread dissemination of information technology has had its ideological concomitants. In an age when smartphones are ubiquitous, when Amazon knows what you want to purchase next, Facebook knows who you might want to be friends with, Google knows what you want to know next, and governments monitor their citizens using face-recognition software, it is easy to believe that technology has all the answers – whatever the question might be. It was no doubt in this spirit that the European Commission paper called for research to 'produce an intelligent decision-support system that facilitates the impact analysis ex-ante of the policy measures for adult and continuing education by gathering and analysing evidence, identifying and diagnosing problems, proposing possible courses of action and evaluating the proposed actions'.

> Research carried out on a worldwide level has generated sufficient knowledge and know-how to foster policies of adult and continuing education which deliver the desired results. New devices, refined by research in the field of artificial intelligence, can give policy-makers easier access to available scientific knowledge and the possibility of foreseeing the impact of the policy measures that have been adopted. (Federighi, 2013, p. 89)

Such research would extend policy-making tools already used in 'various fields (from healthcare to managing the environment) . . . to the adult and continuing education field'. (Federighi, 2013, p. 82) Armed with Artificial Intelligence (AI), civil servants would be able to make effective interventions in adult education markets.

This was therefore the basis for a research initiative under the Horizon 2020 programme to 'investigate the feasibility [of] and possibly develop an Intelligent Decision Support System (policy making modelling) for simplifying the access to information and support policy making in the different phases of the policy cycle.' An Intelligent Decision Support System (IDSS) would, in the wording of the Commission's Call for Proposals,

> facilitate the access to scientific evidence for policy making so to support them in correcting the distortion of the adult education and continuing training market, show how to reduce barriers that hamper access to opportunities for various levels of population and locations, identify appropriate financial measures for supporting individuals and companies, ensuring an effective and fair distribution of resources, reduce mismanagement and corruption. The analysis of the past and current policies impact will be linked to forecasts for demand of skills in the future. (European Commission, 2014, p. 25)

After the usual bidding and evaluation process, two large research projects were supported: 'Adult Education as a Means to Active Participatory Citizenship' (EduMAP), a consortium led by the University of Tampere in Finland, and 'Encouraging Lifelong Learning for an Inclusive and Vibrant Europe' (ENLIVEN), a consortium led by the University of Nottingham in the UK.[1] While their aims were not identical, and this is not the place to review all their findings, they did both share the ambition of developing an IDSS; and the results of both – interestingly – suggest that an element of hubris influenced the high hopes of Federighi and the Commission's research planners.

One of the first challenges, confronted by both projects, was who exactly would use an IDSS. Who are the 'end-users'? What kinds of questions would they want to have answered? When would they need these answers? As one of the EduMAP partners put it in a blog, 'we have pondered who is the user that might benefit the most from using the IDSS? … Also, we have thought about the situations of decision making, what are they like?' (Andolin, 2018b) One of the difficulties lies, of course, in the confused nature of the answers different people – and in particular different social scientist and adult educator research team members – want to give.

For instance, is an IDSS to be used by international civil servants, such as those in the European Commission? By national civil servants, or local government planners? By programme and course designers in educational institutions? Is it to be a tool for private companies interested in making profits in the adult education market – and in so doing, perhaps making 'competitors', including public sector organisations, financially unstable? Is it for civil society organisations – NGOs, trade unions, community organisations, pressure groups, and so forth? Is it for ordinary citizens, to help them play an active part in democratic decision-making?

Both projects grappled with the deceptive simplicity of the term 'policy-maker'. Although scholars have long since pointed to the complexity of the policy process, and the variety of 'actors' involved in it, many of us continue to use 'policy-maker' in documents, articles and books. Of course, our lip-service is partly because portmanteau words like this are useful. But 'policy-maker' is useful partly because it enables us to elide important distinctions, to slide over issues that provide grounds for legitimate political debate. And that, in part, is why its use is in some ways disingenuous.

If we ask why and when an IDSS might be used, we find a similar variety of answers. Maybe it should be for improving national policies? Perhaps it should aim to identify what programmes are likely to be successful? (But what is a programme? Is it a national or international intervention, or a single course offered by a college?) Is it to shape the entire world of adult education provision, or should it be focussed on particular existing policy priorities? And of course, what the IDSS is to do determines what kind of information is needed in the database on which an IDSS relies. An early conclusion in both projects was the need for focus: EduMAP focussed on 16 to 30-year-olds; ENLIVEN on young people not in employment, education, or training.

Even Google, with all its wealth and near-infinite capacity to crawl though data, cannot answer every question; with little more than a million Euros between them (and to develop two IDSSs), the Horizon 2020 projects were considerably more stretched. They took different approaches. EduMAP began with data about individuals, hoping to use that to identify what kind of intervention would be best; ENLIVEN began with data about interventions, using an approach known as Case-Based Reasoning. For both, data proved a problem. EduMAP encountered radical cultural and legal differences in the collection and availability of data about individuals across Europe. Scandinavian countries have histories and systems of recording information about their individual citizens' lives and careers which would be regarded as unacceptable in some other countries – but even in Scandinavia, EduMAP encountered significant variation (Kuusipalo, 2018). How far could a prototype IDSS based on Finnish data be generalised? (Kuusipalo & Hyytiä, 2019)

ENLIVEN started at the programme level, partly on the basis that it could make use of the widespread practice (by the European Commission and many other agencies) of evaluating the success of interventions. It was quickly discovered, however, that evaluation of programme outcomes is not as widespread as had been supposed, and that even where it did take place, approaches were neither coherent nor consistent:

> Building and establishing a standard for data recording at the EU level is crucial if the rich knowledge is to be extracted from practitioners and policy makers and used in future decision making. … The current literature includes no framework, applicable across different countries and locations, incorporating clearly defined stages of the policy making process (associated with the corresponding policy makers and stakeholders). (Qu and Palmer (2018, p. 5); cf Mawn et al. (2017).)

All of this makes the development of a functioning prototype IDSS an achievement worth noting. While EduMAP's prototype IDSS is as yet available only to a limited audience (Andolin, 2018a), the ENLIVEN prototype was demonstrated at the project's final conference in Brussels in September 2019, and is available at http://enliven.cs.nott.ac.uk. Incorporating a unified template of 78 structured attributes and storing 222 cases of 'NEET' interventions, it can be extended as new cases are collected. It has user interfaces in English, French, Bulgarian and Chinese. The developers believe they have shown not only that this methodology is functional, but that the methodology could be used to development IDSSs applicable for other target groups in lifelong learning. (Qu, 2019) Yet having noted what has been achieved, it is perhaps worth reflecting briefly on the fate of hubris. In this case it is not – fortunately – nemesis (at least, not yet), but we can already see that reality is likely to fall short of the hype. The European Commission report we quoted from above rightly pointed out that the 'body of knowledge and know-how about adult and continuing education policy-making … is largely tacit, hidden inside institutions and only partially encoded and systemised' (Federighi, 2013, p. 80). How far tacit knowledge can be 'encoded and systematised' is, of course, a matter of continuing debate in AI – debate that is ethical and political, as well as technical and scientific. One issue is that AI inevitably incorporates value-laden assumptions and data. Weberian sociology taught us how important it is to analyse both the technical and the political dimensions of bureaucracy and organisation. As the significance of AI in policy processes increases – seemingly inexorably – social scientists must apply this phenomenon to similarly intense critical scholarship. (Mackenzie's work (2011, 2016), theoretical and empirical, on financial markets provides something of an exemplar.)

An IDSS can be a useful tool for sifting and analysing data, for pointing out options for the 'policy-maker' – whether bureaucrat, practitioner, professional or citizen. So, in their day, were card indices, report forms, 'clearing houses' and analyses of best practice. Each of those involved power as well as expertise: each technical advance embodied – and reconfigured – social relationships. So, in its design and operation, does an IDSS. Policies were once said to be shaped by bureaucrats' bias; will computer programmers' prejudices now rule us? Both, of course, are caricatures: but they point to an important area for empirical research and critical analysis. An IDSS, like a card index, can only tell us 'what works' if we know what 'working' means. That is unavoidably a normative – a political – matter.

Note

Disclosure statement

No potential conflict of interest was reported by the authors.

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