

**Skills in context: what can the UK learn from Australia's skill
ecosystem projects?**

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Editor's Foreword

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ABSTRACT

Over the past twenty five years, UK skills policy has focused primarily on boosting the supply of skilled or qualified labour. Despite significant progress on this front, British productivity continues to lag behind that of our major competitors, while policy makers increasingly confront the challenge of ensuring that skills are utilised effectively in the workplace. With policy in this area relatively under-developed in the UK, the paper considers the lessons that might be drawn from Australia's recent experiment with skill ecosystem projects. These represent an attempt to integrate skills policy within a broader business and economic development agenda and are explicitly aimed at helping organisations, in a particular sector or region, to enhance their capacity to develop and deploy skills. The paper explores the origins of the 'skill ecosystem' concept, the factors that led to it being adopted in the Australian context and the results of early project evaluations, before considering whether the UK might benefit from a similar approach. While a skill ecosystem programme can go some way towards addressing the challenge of skill utilisation, there are nevertheless limits to what can be achieved given the current neo-liberal growth model.

Competing on the basis of low wage costs is not an option. We must compete on the basis of our capability for innovation, enterprise, quality, and adding greater value through our products and services. All that is dependent upon raising our skills game. (DfES et al 2003:11)

...where skills were once *a* key driver of prosperity and fairness, they are now *the* key driver. Achieving world class skills is *the* key to achieving economic success and social justice in the new global economy. (Leitch Review of Skills Final Report, 2006:9)

...we understand the need for supply-side investment. But we have also taken up the more complex challenges involved in creating healthy skill 'ecosystems' capable of sustaining skill formation and *use*...The Skill Ecosystem approach is exciting work – because we're taking theory to practice and because we're tapping in to a rich and promising vein. If we get it right, we just might have a policy and a process that will serve true lifetime learning – the mix of skills and jobs, productivity and prosperity that mark a sustainable skill ecosystem. (Leslie Loble, 2005a, p.6 and 9, Deputy Director General, Strategic Planning and Regulation, New South Wales Department of Education and Training, Australia)

Introduction

For the past quarter of a century, UK policy makers have sought to bring about a 'skills revolution' aimed at enabling Britain to compete successfully as a high skills, high productivity economy in the global marketplace (see Mansfield 2000). Under successive Conservative governments in the 1980s and 1990s, a powerful policy consensus developed, purporting that the roots of the UK's 'skills problem', together with perceived deficiencies in productivity and competitiveness, could be attributed, in large measure, to weaknesses in the *supply* of skills (MSC 1981, ED 1988, DTI 1994). Attention was focused on the need to improve the UK's standing in international league tables of national skill stocks (as proxied by qualifications) and closing what was seen to be a damaging 'skills gap' with major competitors, such as France and Germany. With the election of a New Labour government in 1997, this view has not fundamentally altered, the main difference being that education and training are now expected to address a wide range of social inclusion objectives in addition to the prevailing economic agenda (see Keep 1999, DfES et al 2003, DfES 2006, Leitch 2006).

Considerable investment has been (and continues to be) made in terms of boosting the supply of qualified labour, through an expanded post-compulsory and higher education system and, to a lesser extent, government-funded training interventions. Between 1994 and 2005, the proportion of working age adults qualified to degree-level (level 4 or above) increased from 21% to 29% (Leitch 2006: 10). There has been a marked reduction in the share of adults with no qualifications, dropping from 22% in the mid-1990s to 13% in 2005. The proportion of adults who lack a qualification at level 2 (five 'good' GCSEs or their vocational equivalent) also fell over the same period from two fifths to around a third (Leitch 2006).

Despite progress on the skills front however, policy makers continue to confront a persistent and well-documented 'productivity gap' relative to competitors such as France, Germany and the US (see O'Mahoney and de Boer 2002, HMT et al 2004, Broadberry and O'Mahoney 2005, Leitch 2006). While there has been some improvement in the UK's productivity growth and a narrowing of the gap in the 1990s, the 'productivity miracle' that policy makers hope for remains elusive. Given the emphasis that the Labour government has placed on skills as a critical, if not *the* critical, driver of productivity, it begs the question of why Britain has not witnessed a more dramatic improvement in its economic performance (for a recent discussion, see Keep et al 2006)?

One possible explanation is that many UK employers may be failing to make effective *use* of the skills that are already available to them. According to the 2004 Workplace Employment Relations Survey (WERS), over half of employees surveyed considered that the skills they possessed were higher than those required to do their current job (see Kersley et al 2005: 86). Another sign is the growing trend towards over-qualification. The 2001 Skills Survey noted that, among 20-60 year olds, the proportions holding qualifications at levels higher than needed to obtain their present job grew from 33% in 1997 to 37% in 2001 (Felstead et al 2002: 48, also Green 2006: 40-41). Current labour market trends also reveal an economy that is becoming increasingly polarised between 'good jobs' (high skill, high wage professional and managerial occupations) and 'bad jobs' affording low pay, little training and few progression opportunities, matched by rising wage and income inequality (Goos and Manning 2003). While investment in education and training is clearly important in terms of the UK's ability to compete as a

high skills economy in the future, ensuring that skills once created are effectively utilised at work and harnessed to improved economic performance is certainly no less vital.

Despite the continued emphasis on skills supply initiatives, policy makers are aware that skill utilisation matters. Back in 2001, David Blunkett, the then Secretary of State for Education and Employment, remarked that, ‘we must have workforce development strategies that improve the ways skills are used. Too many people say their skills and talents are not being used fully in their jobs’ (DfEE 2001: 7). In the same year, the Cabinet Office Performance and Innovation Unit’s project on workforce development (see PIU 2001a&b), argued that skills were a ‘derived demand’, driven by business need, such that ‘workforce development needs to be addressed in the wider context of Government and business strategies towards product strategy, innovation, market position, IT, HR policies and so on’ (PIU 2001b: 74). More recently, the Leitch Review has acknowledged that, ‘Skills must be effectively used for their benefits to be fully realised’ (see Leitch 2006: 22, also 52, 89-92). However, beyond calling for improvements in management and leadership skills, it has relatively little to say about how policy makers might seek to address this challenge.

The \$64,000 question, then, is what can policy makers do to help firms and organisations make better and more effective use of employees’ skills? Part of the answer appears to lie in finding new ways of linking up skills policy to a wider business and economic development agenda aimed at stimulating employer demand for higher levels of skill across the workforce. The paper seeks to contribute to such a discussion by considering the recent attempts made by Australian policy makers to develop a more holistic and integrated approach to skills policy in the form of ‘skill ecosystem projects’. Rather than simply supplying skills or training to industry, these projects redefine the focus of vocational educational and training (VET) policy and practice by helping firms, in a particular sector or region, to rethink their business and organisational approaches in ways that can support both the development and utilisation of skill (for a recent review from an Australian perspective, see Hall and Lansbury 2006).

The paper is structured as follows. Section one outlines the origins of the skill ecosystem concept and the factors that led to it being adopted in the Australian context. Section two examines the early experience of the Australian skill ecosystem programme

and the key findings to emerge from initial evaluations of pilot projects, before highlighting some additional challenges that such a programme is likely to face in the context of a liberal market economy. Section three then considers the lessons that the UK might learn from the Australian example and sketches a future comparative research agenda involving both countries. The paper concludes with a discussion of the merits and limitations of a skill ecosystem programme, and asks whether the UK might benefit from a similar type of approach.

I. Australian VET policy: problems, challenges and the search for a new way forward

Australian policy makers have recently launched two pilot programmes designed to test new approaches to workforce development which locate skill formation within a broader context of labour market and economic development issues. One is a national project, funded by the Australian government and managed by the New South Wales Department of Education and Training (NSW DET), and operates under the banner of ‘Skill Ecosystem Projects’. The other, funded by the Queensland Department of Employment and Training, is known as ‘Skill Formation Strategies’. The paper begins by examining the historical background to these new initiatives, before moving on to consider the intellectual ideas that have informed them.

The current policy experimentation with skill ecosystems reflects an attempt to come terms with, and address, a series of problems and challenges remaining after two decades of reform to Australia’s VET system. Broadly speaking, this is the tale of how a ‘skill-centred left productivist strategy to modernise the skill regime’, faced with opposition from employers, ultimately gave way to the development of a neo-liberal ‘training market’, the net effect of which has been to weaken Australia’s system of skill formation (see Buchanan et al 2004). It is a story which has several parallels with policy developments in the UK. Here, we concentrate on the broad outlines and refer readers seeking a more detailed account to the extensive commentaries that are currently available (see Curtain 1994, Hampson 2004, Buchanan et al 2004, Cooney 2004, Mansfield 2004, Schofield 2004).

From the mid 1980s, the trade union movement and, in particular, the Australian Metal Workers Union (AMWU), began to pressure for changes to Australia's training system. At this time, the system was built mainly around traditional apprenticeships in recognised skilled trades, supported by publicly-funded Technical and Further Education (TAFE) colleges, established in the 1970s. However, there were concerns that the apprenticeship model was male dominated, that it lacked flexibility and that there were insufficient structured training opportunities available to those in new service sector occupations (see Mansfield 2004). In 1985-6, a new system of 'Traineeships' was introduced, alongside existing apprenticeships, to cater for these occupational areas.

Using their links with the Australian Labor government (1983-1996), the unions pushed for a National Training Reform Agenda (NTRA) as a central component of a broader industrial relations 'accord' aimed at supporting the development of a high skill, high wage economy (Ewer et al 1991, Cooney 2004). The NTRA had several elements but essentially centred around a process of 'award restructuring' aimed at developing skill-based career paths and linking pay grades to skill acquisition (see Hampson 2004: 76, Buchanan et al 2004: 192-195). This, in turn, would be facilitated by the development of competence-based skill standards to underpin industry training programmes and awards which would be linked together through an Australian Standards Framework (ASF) with eight levels of competence. The expectation was that unions would also play a central role in the restructuring of work and training opportunities through the negotiation of partnership agreements with management at enterprise level, aimed at developing high skill work designs and extending industrial democracy at the workplace (see Cooney 2004).

However, the ambitions of the reformers were never fully realised. As Hall and Lansbury (2006: 580-81) note, against the backdrop of a deregulated labour market and the move from industry to enterprise-level bargaining, employers pursued their own version of economic restructuring and labour flexibility. Research conducted by the Australian Centre for Industrial Relations Research and Training (ACCIRT) at the University of Sydney has highlighted how many employers, faced with intensifying competition, short-term shareholder pressure and fiscal austerity measures, resorted to downsizing, outsourcing, labour intensification and the increased use of "non-standard"

employment including casuals, contractors and labour hire workers (see Buchanan et al 2001: 15-17, Watson et al 2003, also Buchanan et al 2004). In this context, management showed little interest in the development of high skill work designs or skill-based career ladders, and moved instead to re-affirm managerial prerogative over training decisions (Cooney 2004: 71). An attempt to compel employers to train through the introduction of a Training Guarantee Levy in 1990 met fierce opposition from employers and was subsequently withdrawn four years later. After 1992, the NTRA rapidly gave way to a new direction in skills policy aimed at the development of a 'training market' more responsive to employer needs (Hampson 2004, Buchanan et al 2004).

The election of a conservative Liberal government in 1996 accelerated and deepened the process of marketisation begun under Labor (see Hampson 2004: 82-5). Both public and private Registered Training Organisations (RTOs) would henceforth compete alongside one another for public training funds. Apprenticeships and traineeships were merged into 'New Apprenticeships' to be funded through wage subsidies to employers. The late 1990s also witnessed the introduction of 'training packages', developed by Industry Training Advisory Bodies (ITABs) which specify the competency standards, forms of assessment and outcomes required for industry qualifications. These packages were designed to be flexible, allowing 'enterprises and individuals the greatest possible scope to combine standards towards a qualification' (Hampson 2004: 84). In 1997, the ASF was replaced by an Australian Qualifications Framework, comprised of six levels, but excluding university degrees. From the following year, RTOs were also permitted to self-manage training recognition and to assess their own trainees.

What, then, has been the impact of these reforms on Australia's skill formation system? One clear consequence has been to massively increase the number of those engaged in vocational training. In the mid-1990s, there were about 130,000 apprentices and trainees. By 2005 this figure had grown to around 400,000 'new apprentices' (see Buchanan 2006, page 39 fn 1, also Loble 2005a). It is also pointed out that many more employees, including many more women, have been able to secure access to accredited vocational training where hitherto few such opportunities existed (see Mansfield 2004).

However, it is clear that these gains have to be weighed alongside a number of other concerns, problems and challenges.

There is evidence that employers' training efforts have declined over time. The average level of training provided by employers, measured in terms of training hours per employee, fell from 5.7 hours in 1989 to 4.9 in 1996, and has since stagnated (ABS 1997, Watson et al 2003, Buchanan et al 2004).¹ At the same time, employers have been able to shift an increasing proportion of the cost of training onto both the state and the individual (see Buchanan et al 2001: 7, Buchanan 2006). Between 1997 and 2001, for example, individuals boosted their spending on work-related courses by as much as 40% (ANTA 2004, Loble 2005a).

Furthermore, while there has certainly been a rapid growth in the number of new apprentices, most of these are trainees taking a below trades level qualification, with much of the expansion concentrated in clerical, retail and other service trades. These 'New Apprenticeships' comprise significantly fewer training hours than traditional apprenticeships (see Mansfield 2004), and 'could, in many cases, be completed entirely on-the-job' (Hall and Lansbury 2006: 581). At the same time, many of the larger manufacturing firms that traditionally provided quality apprenticeships have cut back their programs, as have public sector organisations that have been privatised (Cooney 2004). More generally, the bulk of employer-funded training is delivered on the job and aimed at the development of low level, task specific skills (see Cooney 2004: 70, Buchanan et al 2004: 196).

There are also concerns that funding arrangements have undermined the quality of much of the training that is currently on offer. Under the new arrangements, employers are provided with a financial incentive in the form of a wage subsidy to assist in the training of 'new apprentices' at levels 2 and 3. Evidence suggests, however, that some employers are taking on trainees and then offering little or no training, aided by unscrupulous training providers who would rather issue 'bodgy qualifications' than risk losing business to their competitors (see Mansfield 2004: 27, Hampson 2004: 85). As

¹ There was a slight increase in the early 1990s following the introduction of a Training Guarantee Levy (involving 1% of payroll) by the Labor government in 1990. However, this proved short-lived and was subsequently suspended in 1994 following employer opposition.

Hampson (2004: 85) notes, the result has been a ‘mix of incentives lethal for quality training.’

At the same time, the pursuit of short-term productivity gains on the part of many organisations may also be undermining the long-term capacity of the productive system to renew itself and develop the skills needed to improve the production of goods and services. According to Banks (2003), much of Australia’s productivity growth in the 1990s can be explained not in terms of rising levels of skill or qualification but an increase in the pace, intensity and hours of work. In sectors as varied as engineering, banking, food production, metal, IT and family support services, problems of understaffing and work intensification are found to be adversely affecting opportunities for skill development on the job as experienced staff find that they have less time available to train or coach fellow employees (see Buchanan et al 2001: 17-18).

Like the UK and the US, Australia is also confronted with an increasingly bifurcated labour market, with growth in high end jobs being outpaced by the rapid expansion of low wage, part-time and casual employment. The proportion of part-time employment in Australia has doubled since 1983, with nearly 30% of the workforce now in part-time casual jobs (Loble 2005a, Borland et al 2001: 4). According to one study (ABS 2004), Australia had the highest rate of part-time employment of five developed countries, including Britain and America, in 2002. In many cases, these are jobs which offer little or no training, limited security, and few career prospects. At the end of the 1990s, it was still the case that over half of casual employees in Australia received no training, compared with 30% of those employed on permanent contracts (ABS 2000, Buchanan et al 2004: 197).

Despite the strengthening of employer prerogatives over training decisions as well as policy makers’ efforts to develop a ‘demand-led’ VET system more responsive to employer needs, many employers continue to complain of ‘skill shortages’ and/or recruitment difficulties (see Ai Group 2004, ACCI 2005, Productivity Commission 2005). In parts of manufacturing, there is evidence that many employers have been forced to rely upon skilled migrants from overseas (see Cooney 2004: 76). Yet, at the same time, an increasing number of employees also report that their skills are not being fully utilised at work (see Considine 2000). Nearly half (45%) of Australians are said to work in ‘low

skill jobs' (ABS 2004, Loble 2005b). There is also evidence of a significant skills mismatch with many employees 'over-qualified' for the work they do. In 2005, 16% of workers with a bachelor degree and 32% of workers with a diploma or advanced diploma were employed in jobs that required only a level 2 qualification or less (see Hall and Lansbury 2006: 582, ABS 2005). Buchanan et al (2004: 196) sum it up very neatly when they observe that, 'The legacy of two decades of third-way and neo-liberal "reforms" has been deepening market inequality, an increase in low skill employment and a new skills regime whose sustainability is highly questionable.'

Skill ecosystems as a new approach to VET policy

It is against this background that some Australian policy makers have been open to new approaches to VET aimed, in part, at reinvigorating industry responsibility for skill development and utilisation. The initial stimulus was provided by a research report, entitled *Beyond Flexibility: Skills and Work in the Future* (Buchanan et al 2001), produced by academics at ACCIRT, and commissioned by the NSW Board of Vocational Education and Training (BVET). The report argued that VET policy also needed to address wider economic development, labour market and employee relations/job design issues, and put forward the notion of 'skill ecosystems' as a new approach to tackling Australia's skills problem.

In reaching these conclusions, Buchanan et al (2001: 21) were heavily influenced by a group of VET researchers in the UK whom they referred to as the 'Oxford School'². In the late 1980s, Finegold and Soskice (1988: 22) had famously described the UK as being locked into a 'low-skills/low quality equilibrium', whereby a set of socio-political and institutional factors combined to produce a situation where 'the majority of enterprises staffed by poorly trained managers and workers produce low-quality goods and services'³. Rather than the UK's skills problem being essentially one of weak or inadequate education and training, their analysis pointed to a much deeper and more systemic problem embracing the supply of, demand for, and usage of skills.

² The term 'Oxford School' reflected the fact that many of these commentators were, or had been, based at the University of Oxford, with seminal publications appearing in *The Oxford Review of Economic Policy*.

³ These factors included 'the organisation of industry, firms and the work process, the industrial relations system, financial markets, state and political structure, as well as the ET (education and training) system' (Finegold and Soskice 1988: 22).

A decade later, Keep and Mayhew (1998, 1999) argued that this problem had not gone away, and that many UK firms were still competing on the basis of relatively low spec, low value added production approaches which did not require high levels of skill from the bulk of their workforce. Substantive progress towards a more inclusive high skills economy, they argued, could only be achieved if policy efforts to boost the supply of skills were combined with a broader range of interventions designed to impact on the ‘demand-side’ of the skills equation. As Keep and Mayhew (1999: 12) put it, ‘Unless and until first-order questions, such as choice of product market and competitive strategy, and consequent second order decisions about work organisation and job design, are confronted, the underlying causes of Britain’s skills problem will continue to be ignored’ (cited in Buchanan et al 2001: 21).

Buchanan et al (2001: 21-22) also drew on the later work of one of the original authors of the ‘low skills equilibrium’ thesis. Finegold (1999) used the term, ‘high skill ecosystems’(HSEs), to capture the range of mutually reinforcing factors that helped to nurture and sustain the ‘cluster’ of high-tech bio-medical and software firms found in California’s Silicon Valley. These included:

- An external catalyst such as government demand or investment;
- Fuel to sustain initial growth including leading-edge research-based universities supplying high quality graduates and access to venture capital;
- A supportive environment (telecommunications, international airports, technology parks), a regulatory regime which encourages risk-taking, and a living environment attractive to knowledge workers; and
- Collaboration between firms to aid learning, adaptation and development.

By focusing upon particular regions or clusters, the ecosystem approach was seen by Finegold as more flexible than that of national ‘skills equilibria’ and able to capture the diversity of high and low skill trajectories found within any given national capitalist model. Finegold (1999: 75) also noted that, ‘The UK has many of the elements necessary for the generation of HSEs’, including a supply of high-quality graduates, a set of world class research universities and a ‘culture of free-market policies that is generally supportive of new enterprises.’ The downside was that HSEs would only provide employment for a small minority of the population, and could not, in themselves, offer a

solution to the problems presented by low skill jobs and rising wage and income inequality, both in the UK and the US (see also Crouch et al 1999).

In their report, Buchanan et al (2001) argued that Finegold's concept of HSEs could be applied more broadly to a diverse range of skill ecosystems. These included not only high-tech clusters but also areas of high social value, such as family support services, as well as low value added service labour (e.g. cleaning). Skill ecosystems were defined as 'clusters of high, intermediate or low level competencies in a particular region or industry shaped by interlocking networks of firms, markets or institutions' (Buchanan et al 2001: 21). The core insight was the same however: the need to analyse the interconnected web of contextual factors that shape approaches to skill formation within a particular ecosystem, including:

- Business settings (e.g. the type of product market, competitive strategies, business organisation/networks, financial system);
- Institutional and policy frameworks (VET and non-VET);
- Modes of engaging labour (e.g. labour hire);
- Structure of jobs (e.g. job design and work organisation);
- Level and type of skill formation (e.g. apprenticeships, informal on-the-job training) (Buchanan et al 2001: 22).

The extension of the skill ecosystem concept to include low value added, low skill sectors or clusters reflected the concern of the research team at ACCIRT to come to terms with the problems presented by Australia's recent experiment with a broadly neo-liberal growth model (as illustrated in the report's title, *Beyond Flexibility*). Indeed, Buchanan and colleagues were especially concerned to stress the need to develop 'better jobs' and improve the quality of life for those trapped in low skill, low wage occupations. Distinguishing between notions of 'work' (as a form of personal development and self-actualisation) and 'labour' (as toil and pain), they noted:

Given that many vacancies in the labour market offer opportunities to labour rather than work it is vital that a policy environment is created where all workers get rates of pay and hours of employment that are consistent with standards rising for citizens living in a civilised society...It also goes to their rights to live beyond paid employment – especially rights to career breaks and sabbaticals (Buchanan et al 2001: 26).

Skill formation, in and of itself, the report argued, could not provide a ‘solution to Australia’s global competitiveness nor to growing inequality’ and had to be viewed as an ‘essential dimension of macro policies to maintain growth and full employment and minimum wage and labour market policies that directly support wages in the lower part of the wage distribution’ (Buchanan et al 2001: 27). However, ‘while skills are not “the answer” to the problems of work in the future, there can be “no answer” without skills...the challenge is to create a new mindset and policy regime – one which values work over labour and promotes the use as well as the development of high level cognitive, technical and behavioural skills’ (Buchanan et al 2001: 33). The report called, therefore, for a fundamental rethink of policy designed to:

- Encourage investment not in skills alone but in bundles of innovative practice that help develop, utilise and retain a skilled workforce, rewarding jobs and help businesses compete;
- Ameliorate the adverse effects of industry restructuring;
- Harness the full capacity of government, community and industry to open up new possibilities for skill, innovation, productivity, earnings and security;
- Develop a ‘whole-of-government’ approach to skill formation’ that sees skills development and usage influenced by other policy domains (e.g. employment, welfare, industrial relations, state and regional development, industry, science and technology) both at the level of the state and Commonwealth Government (see Buchanan et al 2001: 28-29).

Among its key policy recommendations was that BVET should trial a new ‘work, skills and innovation initiative’, in the form of a limited number of ‘demonstration projects’, explicitly designed to target business performance, skill development and usage, and the promotion of quality jobs. The Skill Ecosystem National Programme was subsequently launched in 2003, with funding from the Australian Government Department of Education, Science and Training (DEST) and the NSW BVET. Nine demonstration projects have been conducted across Australia over a three-year period. The Queensland Department of Employment and Training has also sponsored 23 similar projects under the heading of ‘Skill Formation Strategies’ designed to support a process of change within an industry or community which encourages participants – with the assistance of Government – to take ownership of, and be responsible for, skills acquisition, development, utilisation and retention (see Eddington 2005).

II. The skill ecosystem national programme

The projects developed under the umbrella of the national programme fall into four categories (see Windsor 2006: 43, for an overview of the nine projects, details can also be found on the skill ecosystem programme website at www.skillecosystem.net):

1. **Reshaping work and labour markets** – projects that address the structural issues in organisations and labour markets that inhibit skill development.

Example: *The Racing Industry Labour Market Change Project in New South Wales.*

Around 60,000 people work in the thoroughbred racing industry in NSW, many of them on casual contracts (track work riders, stable hands and attendants). For track work riders, the job involves exercising horses during the early morning, with most paid for only part of the day on a piece-rate (or pay-per-ride) basis, in an industry where pay is low, health and safety issues arise frequently, little training exists for entry level workers, and there are no clear career pathways. Not surprisingly, employers complained of a shortage of reliable work riders, with many forced to use temporary migrants from England and Ireland. As part of the pilot project, Clarence River Jockey Club revised their contractual arrangements by offering permanent part-time positions for track riders, in accordance with a ‘club-as-employer’ model. An industry HR and training expert was brought in to help with the development of better recruitment approaches, induction training, career development and mentoring practices. The club also negotiated a new flexible pay structure with the union allowing trainers to pay for riders’ services as and when they needed them.

2. **VET as an innovation partner** – projects that reposition VET to better support the development of emerging industries and the diffusion of new technology or processes.

Example: *The Water Innovation Network (WIN) Project* in South Australia, led by United Water, has created a network of researchers, industry participants and VET providers to help identify and meet skill development challenges in the water industry as well as enhance the role of VET within the innovation process. Project activities have included information exchanges between WIN partners, universities,

government and industry, VET-industry forums to explore barriers to the take up of innovative processes and technologies, and the development of a database mapping industry R&D activities to TAFE SA training capability. As a result, TAFE SA has become engaged in various collaborative ventures with industry, adopting a more developmental role that seeks to anticipate and manage industry skill needs.

3. **Quality improvement** – projects that address the new market place, regulatory or consumer requirements for quality in products or services, particularly across supply chains and networks.

Example: The Community Services and Health Industry Skills Council Mental Health Service Network Project. The project has sought to improve collaboration and coordination among mental health services in the NSW Central Coast. This is a complex industry, where a range of specialist institutional and community-based agencies, with different funding sources and lines of accountability, provide care and assistance. The project builds upon an existing collaborative network, the Mental Health Consultative Committee (MHCCC), and has sought to identify barriers to effective collaboration. A number of workforce development strategies have been trialled aimed at delivering more streamlined, easily understood and better coordinated services for users.

4. **Skill and labour shortages** – projects that address current or potential skill shortages that result from skill gaps in the existing workforce, inadequate supply, demography, industry structure, or retention and recruitment issues.

Example: The Defence Support Skills Network Project in Australia's Northern Territory has sought to help tackle the problem of skills shortages experienced by the region's expanding defence support industries. In addition to mapping the industry's current and future skill needs, the project has trialled a number of strategies which include labour sharing, drawing upon the skills of partners of defence force personnel, offering prime contractors support with skills development, and inter-state marketing to attract skilled workers.

Official evaluation

A mid-term evaluation of the national project was conducted in 2005, drawing upon discussions with NSW DET project managers and group interviews with a total of 25 participants involved in six of the demonstration projects (see Windsor 2006: 59). The report is generally positive, noting that, ‘In a short time, the projects have achieved some remarkable outcomes...’ (Windsor 2006: 8). Nevertheless, it goes on to highlight a range of issues, challenges and problems.

The report accepts that some projects ‘found it difficult to move beyond supply-side or more traditional VET design and delivery strategies’, while others ‘became captive to industry development agendas and failed to actively consider how workforce capacity could facilitate achievement of these agendas’ (Windsor 2006: 15). It emphasises, in particular, the complexity and demanding nature of establishing effective and sustainable ecosystems which depend upon building trust among a broad range of industry stakeholders and the commitment to explore new and relevant approaches to the problems they face. In some cases, there was evidence of only limited ‘buy-in’ from industry, one project participant noting, for example, that, ‘No-one was really dedicated to the project – it was always a “bolt-on” to an existing workload’ (cited in Windsor 2006: 28).

The report stresses therefore the role of effective ‘project managers’ who can help balance conflicts of interest within the network, ensure that the views of all stakeholder groups are taken into account, and push participants to go beyond training interventions and examine skill needs in the wider context of industry culture and practices (Windsor 2006: 22-23). Although projects typically make use of external consultants or experts, the report points out that such an approach can also represent ‘an enormous lost opportunity for the stakeholders to actively engage and learn about their own issues first hand’ (Windsor 2006: 33). Little reference is made to the role of trade unions however, amid suggestions that their involvement in the programme has so far been limited (Alcorso 2007).

Consideration is also given to the ‘value added’ of public policy programmes aimed at supporting networking arrangements and whether some of these initiatives might have taken place even in the absence of project funding (Windsor 2006: 20).

However, it notes that a publicly-funded programme can help to galvanise industry into action, not least in areas, such as public health, where budgetary constraints might otherwise prevent new approaches being attempted. The report argues that funding criteria should nevertheless be tightened so that public money is directed towards those projects which address *both* supply and demand-side issues as well as stimulate participants to go beyond current practice. Projects which focus mainly on relationship building in a particular sector or region may produce some interesting outcomes but it is recommended that they be funded from an alternative source (see Windsor 2006: 21). In order to deepen employer engagement, Buchanan (2006: 26) has also indicated that ‘preference should...be given to employers, especially groups of employers, who commit to making their own financial contribution to the development of the new networking arrangements.’

A further challenge identified by the mid-term evaluation concerns the need to develop robust forms of reporting, monitoring and evaluation (see Windsor 2006: 34-36). It highlights a positive bias in project reports which ‘tend to highlight achievements and gloss over difficulties and problems...[something that] seriously limits potential to learn from experience to improve the program’ (Windsor 2006: 34). While the report cautions against the use of crude, quantifiable measures of changes taking place within an ecosystem (e.g. number of horses ridden on track in the NSW Racing project), it recommends that broader ‘macro-level indicators’ be developed to assess whether sustainable strategies have been put in place to manage skill and workforce development needs. This is to avoid funding being ‘provided to address the same problem over and over’ (Windsor 2006: 36).

Buchanan (2006: 28), outlining the core characteristics for a new skill ecosystem programme to follow on from the initial pilots, also calls for broader performance measures to be developed, such as ‘change in the percentage of workers using skills held within the locality of the network’ and ‘change in the balance of skills supply and vacancies within the locality, controlling for demand conditions.’ Nevertheless, while policy makers will often insist on rigorous impact measures, the most effective and insightful way of evaluating, and learning from, these projects is likely to be through in-

depth case studies conducted by independent researchers focusing upon the views of managers, unions and employees involved with them.

Another of the main challenges facing projects is that many of the problems they confront stem from factors operating beyond their control and outside the scope of the actual project itself (see Windsor 2006: 38-39). Sometimes these concern the way in which VET is funded and managed, but they may also relate to other policy areas such as industrial relations, health and safety, labour market policy, regional development and innovation policy. Perhaps one of the most important conclusions from the interim evaluation concerns the need to find mechanisms by which project participants can interact with policy makers who are also 'able to listen to and respond to the issues raised' (Windsor 2006: 39). The Queensland *SmartVET* Skill Formation Strategies seek to facilitate this process by ensuring that each industry or regional ecosystem has a management committee which brings together key industry stakeholders and governmental representatives (see Eddington 2005). Yet, it remains unclear how far these projects are able to induce coordinated change across wider policy areas and develop the kind of 'whole-of-government approach', or broader 'policy mix', alluded to by Buchanan et al (2001).

It is clear that development work of the kind attempted by these projects is time and effort intensive, and that it is still too early to judge the programme's contribution and achievements. Much, however, would seem to depend upon its ability to go beyond a small handful of pilot projects and promote, what the evaluation report calls, 'desirable skill ecosystems'⁴ on a wider scale. This will remain the case even allowing for an expanded programme, with funding made available for an additional tranche of projects. The issue of how to achieve effective diffusion of results and lessons that emerge through such initiatives is one that has also figured prominently in recent discussions of publicly-supported workplace development programmes in Scandinavia (see Gustavsen et al 2001, Payne and Keep 2003, Payne 2004, Alasoini 2006). The interim evaluation report has relatively little to say on this score, beyond recommending the establishment of a small, national expert panel, with representatives from the VET sector, industry, employee

⁴ Desirable skill ecosystems are defined as those that address both skills supply and demand and where participants are challenged to go beyond current practice.

organisations and government, to support project work as well as promote and publicise the skill ecosystem model (see Windsor 2006: 37-39). With only a small proportion of the pilot projects explicitly grappling with issues of job design, employment conditions and career ladders however, the real question is *to what extent* an expanded programme of this sort will be able to make a significant and powerful contribution to the job improvement agenda outlined by Buchanan and colleagues.

Further challenges

There are further challenges (not alluded to in the mid-term evaluation) that a skill ecosystem programme confronts within the context of Australia's deregulated labour market and neo-liberal growth model. Given that the projects rely upon voluntary 'buy in' from industry, there is still the problem of what to do about those firms that remain content to rely upon low skill, low value added production approaches based upon cost-cutting and work intensification. As a recent report into the UK's low skills equilibrium (Wilson and Hogarth 2003: xvi) concludes, where firms continue to compete *successfully* through low cost, low skill approaches:

...there may be some scope for micro-level interventions, [but] much more radical changes, such as raising the level of the minimum wage, may be needed if employers are to be shocked into following product and skills strategies that place a greater emphasis on higher level skills.

The authors of *Beyond Flexibility* are clearly aware of such challenges. Indeed, Buchanan (2006: 29) has recently noted that, '[while] new approaches to skill and networking arrangements are important,...they are unlikely to result in lasting change' unless the 'key forces retarding development or underutilising skill levels can be changed...Change on a voluntary basis would be ideal, but as realists we must prepare ourselves for something more decisive.' However, it is not clear whether 'something more decisive' is meant to refer, in this context, simply to a new skill ecosystem approach to VET or to a wider and more ambitious programme of reform designed to tackle 'problems [that] are inscribed in the flow of funds and resources – flows driven by intensifying competition..., preoccupation with maximising shareholder value in the short run, and public sector policies preoccupied with fiscal austerity.'

This raises a fundamental question, namely what progress can a skill ecosystem programme make in the face of the wider constraints imposed by a neo-liberal growth model? Or, to put it slightly differently, what progress can be made in the absence of strong trade unions, a well regulated labour market, an active industrial policy and robust welfare state arrangements that have characterised the efforts of the more socially progressive Nordic countries for example to advance a decent work and pay agenda? There is no denying that a skill ecosystem programme can make some progress on a job improvement/skill utilisation agenda, as several of the demonstration projects have already indicated. The concern, however, is that such a programme fails to generate significant changes across wider policy domains and becomes simply an isolated and corrective measure for problems that lie outside its scope and which call for a more robust regulatory response from government (see Lloyd and Payne 2002).

III. Lessons for the UK and some avenues for further research

While it is important to recognise the limits of what skill ecosystems projects are likely to achieve on their own, the approach clearly has value and could provide policy makers in the four UK nations (England, Scotland, Wales and Northern Ireland) with a practical means of moving beyond the traditional diet of skills supply measures. With regard to the situation in England, a skill ecosystem programme could help to bring about progress in two key areas. First, by stimulating a much needed public debate around the role and responsibilities of employers within the VET system, and, second, by helping to move skills policy beyond a crude, target-driven approach centred on qualifications stockpiling.

Opening up the debate on employer responsibilities within VET

In England, as in Australia, employers have, in recent years, been able to push an increasing burden of responsibility onto the state and the education system in terms of upskilling the workforce (see Gleeson and Keep 2004). In part, this has been achieved through an expanded post-compulsory and higher education system, funded mainly by the taxpayer and individuals. At the same time, the current Labour government has increasingly shown itself willing to use the leverage of the public purse to ‘commit’ employers to its own training targets. Thus, the new Employer Training Programme, or

Train to Gain, offers heavy subsidies to employers who allow members of their adult workforce paid time off to train for a first level 2 qualification (normally a National Vocational Qualification) – what the government considers to be the minimum platform for employability. Research suggests, however, that while the holders of such an award are less likely to be unemployed, many level 2 vocational qualifications fail to attract any wage premium (see Dearden et al 2004), symptomatic of a labour market where there exists a substantial reservoir of low-skill, low-paid jobs that require little in the way of formalised training (see Felstead et al 2002, Lloyd and Payne 2002).

Official evaluations of the Employer Training Pilots (ETPs)⁵, the precursor to Train to Gain, also estimate that these generated levels of ‘deadweight’ of between 60-100%, effectively paying for training that employers would have undertaken anyway (see Abramovsky et al 2005). To a large extent, this reflects the failure of the pilots to be taken up by their main target audience – hard-to-reach, non-training employers. Instead, what has happened is that the state has effectively signalled its willingness to ‘step-in’ and fund elements of other firms’ own training activity where there is perceived to be a problem of ‘market failure’. The result is a situation where employers learn to sit back, let the market fail and then wait for government to pick up the tab (see Keep 2006).

One advantage of a skill ecosystem approach is that it focuses greater attention on employer responsibilities by helping industry to take ownership of skill/training issues, while also insisting that many firms may need access to support, expertise and encouragement if they are to rethink their business and organisational strategies and move towards more skill-intensive forms of production. As argued below, such an approach, by focusing on the *specific* needs of particular firms and sectors, would, if adopted in England, represent a fairly radical departure in terms of the way policy has tended to be conceived in the past.

⁵ The Employer Training Pilots (ETPs) were launched in England in September 2002 to provide low skilled workers with free, or heavily subsidised, training to achieve a first level 2 qualification. Employers who gave staff paid time off to train were provided with wage compensation (of varying degrees depending on pilot area). In 2004, ETPs were rolled out across England in the form of the Train to Gain programme. This broadly follows the ETP model by offering heavily subsidised training to level 2. Three level 3 Train to Gain pilots have also been launched to test the willingness of employers to contribute to the cost of training at level 3.

Moving beyond 'one-size-fits-all' targets

In recent years, skills policy in England has been dominated by two broad approaches that are extremely difficult to reconcile and which can often be in tension with one another. The *first* has been aimed at developing a VET system that is 'demand-led' in terms of tying skill supply more closely to employer needs. In part, this has involved the development of a complex, multi-level planning system, superintended by the Learning and Skills Council (LSC), which seeks to ensure that VET providers tailor their programmes and courses to existing and projected employer demand at national, sectoral, regional and local levels (see Keep 2002). Employers are expected to feed information on their particular skill needs into this system via Sector Skills Councils (SSCs) which have responsibility for developing new Sector Skills Agreements. This approach confronts many problems, not least the ability of employers with different, and often contradictory, skill needs to communicate a coherent message to providers in a country where the weakness of employer collectives has traditionally made such mediation difficult.

The *second*, and by far the more dominant, approach involves the setting of public service agreement (PSA) targets for the proportion of the workforce holding qualifications at various levels, in particular level 2. These targets are formed independently of employers and, as noted above, are based on the government's view of what constitutes a minimum platform for employability, together with the desire to achieve internationally benchmarked skills leadership. Thus, the recent Treasury-sponsored Leitch Review of Skills recommends ambitious new targets for 2020 which, if achieved, would place Britain in the upper quartile of the OECD 'league tables' of qualification stocks *at every level* (Leitch 2006).

The underlying assumption is that the country which amasses the largest stockpile of qualifications will ultimately triumph in terms of economic competition. This view effectively discounts the example of other countries, such as Canada and New Zealand, who already outperform the UK in terms of their national stock of qualifications, yet still lag behind on many of the Treasury's preferred economic performance indicators. Furthermore, by adopting a crude 'more is better' approach to qualifications, it ignores a fundamental question, namely which skills at what level for which workers in what particular sectors can, in combination with other elements, help drive up performance.

Instead, the tendency is to treat the economy as a more or less undifferentiated unit of analysis, producing blanket prescriptions for publicly-funded ‘upskilling’ which pay little to the underlying structure of employer demand, the specific needs of particular firms and sectors, and the fundamental issue that skills must be utilised if they are to deliver economic gains (for a more detailed discussion, see Keep et al 2006: 552).

By contrast, a skill ecosystem programme offers the opportunity to move beyond ‘one-size-fits-all’ targets in favour a more *tailored* approach to workforce up-skilling that starts from the skill requirements of particular sectors and sub-sectors, and how they relate to broader challenges around business and economic development. As Hall and Lansbury (2006: 589) note, one of the advantages of skill ecosystems approach is that it can help ‘create an environment where more accurate information on skill demand and supply can be easily communicated between stakeholders facilitating a better matching of skill supply and skill demand.’

Towards a future research agenda

One can, of course, ask to what extent the UK is *already* engaged in developing a skill ecosystems approach, even if it is not explicitly labelled as such in policy terms. The public sector has already witnessed something similar in the form of the National Health Service’s (NHS) ‘Skills Escalator’ initiative and Changing Workforce Programme (CWP). The former links training explicitly into career development, while the CWP was aimed at redesigning actual job roles in order to improve patient care and expand the skills and autonomy of workers (see McBride et al 2005). However, the 13 CWP projects ended in April 2006 and it is not clear whether any follow-up is planned, while major cuts in NHS training budgets have been reported as a result of current financial pressures (HSC 2006). It would be interesting, however, to compare the experience of the CWP pilot projects with, for example, the Queensland Community Services and Health Industry Training Council project, funded through the National Skill Ecosystem Programme, which sought to redesign the job of allied health aides with a view to improving both their autonomy at work and career development opportunities (see skillsecosystem.net).

In England, the Regional Development Agencies (RDAs), in operation since 1999, are also expected to integrate skills within a wider business development agenda through their Regional Economies Strategies (RES) and Regional Skills Partnerships (RSPs). The latter explicitly seek to link together the work of RDAs, SSCs, local Learning and Skills Councils and other agencies. While government policy in this area has been criticised for focusing excessive attention on the development of high-tech, knowledge intensive clusters which may be inappropriate for certain regions, it is clear that some RDAs have begun to address the development of more traditional sectors and the challenges involved in moving up the value chain. The respective RDAs for the North West, North East, East Midlands, and West Midlands have all included 'mature industries' and firms as part of their Regional Economic Strategies for example (see Berkeley et al 2005).

The question is how effective are RDAs in this role given that they rely mainly on 'soft interventions', such as advisory support and the encouragement of networks, clusters and strategic partnerships (see Webb and Collis 2000)? Are 'skill ecosystem projects' any more or less effective in this respect? Are there any discernible differences in approach or emphasis? Do skill ecosystems for example focus more attention on issues of job design and employment practices? One interesting area for future research, therefore, would be to compare the experience of one or two English RDAs that are seeking to help firms diversify away from low value added production with a similar number of Australian skill ecosystem projects that are also grappling with the same problem. Do they come up against similar, or different, kinds of problems and challenges and do they have sufficient resources, power and levers at their disposal to address them?

Although one can find examples of similar approaches in the UK that could be framed within a skill ecosystem approach, what is perhaps *most significant* about the Australian programme is that it emerged through the research commissioned by the New South Wales Board of Vocational Education and Training and is funded by the Australian Government's Department of Education, Science and Training. In other words, it reflected *the willingness of policy makers concerned primarily with skills and training issues to rethink and reframe the problem that they were attempting to grapple with*. To their credit, some Australian policy makers have taken on board the research findings,

being prepared to look beyond traditional skills supply measures and confront the more complex challenges that arise when adopting a more holistic and grounded view of the skills problem. In doing so, those involved with the delivery of VET policy have avoided the temptation simply to give another tug on the skills supply lever.

The real value of a skill ecosystem approach, then, is that it provides policy makers with a new conceptual framework for thinking about skill formation that focuses greater attention on the key drivers of skill demand and utilisation. Moreover, by inserting skills policy within a broader business and economic development agenda, and fashioning a practical way of doing so, it places policy makers on a different learning curve that, in time, may serve to deepen their understanding of the ‘skills problem’ and the range of policy levers necessary to address it. Whether policy makers within the UK can learn from the Australian example, however, and be persuaded to experiment with a similar type of skill ecosystem programme is another matter.

Conclusion

The paper has examined the recent attempts in Australia to develop a new approach to VET policy using the concept of ‘skill ecosystems’ and has considered whether such an approach might be of value within the UK. Policy makers in both countries are confronted with the growth of low skill, low wage work in an increasingly polarised labour market, together with problems of skill under-utilisation and the tendency for employers to move more of the cost of up-skilling the workforce onto both the state and the individual. These problems, or challenges, are not amenable to traditional skills supply measures and call for a wider ranging and more integrative approach that nests skills policy within broader business and economic development measures.

Skill ecosystems provide a useful conceptual and theoretical framework for achieving such policy advances by focusing attention on the broader contextual factors that shape the development and deployment of skill, both in terms of the organisational and competitive strategy of the firm and the wider policy and institutional environment which shape firms’ choices and behaviour. Adopting a skill ecosystem approach is challenging and confronts policy makers dealing with education and training issues with a level of complexity to which they are not normally accustomed. It challenges crude

policy assumptions about any simple or direct relationship between national skill stocks and economic performance, highlighting instead the complexity of such linkages and emphasising the essential point that skills only make a difference if they are put into productive use.

Getting English policy makers, however, to move beyond traditional skills supply measures and to see skills in their wider context is certainly no easy task. The prevailing policy narrative around skills, informed by theories of human capital, and honed through endless repetition over the past twenty five years, constitutes a form of deeply-ingrained conservatism that is extremely difficult to budge. But the value and benefits of a more tailored and integrative approach to skills policy, informed by the concept of skill ecosystems, as well as the limitations of a blanket, ‘one-size-fits-all’ approach to up-skilling, are becoming increasingly clear. Policy needs to find new ways of providing tailored assistance to firms and organisations which encourages them to see skill development as a function of broader changes to their product market strategy, work organisation and management approaches. Without this broader and more integrative approach, there is a danger that policy efforts to boost our national stock of human capital/qualifications will fail to engage with the skill needs of particular firms and sectors and that the critical issue of skill utilisation will once more be neglected.

As the Australian example illustrates however, developing a successful skill ecosystem programme faces many challenges. Programmes of this kind are extremely difficult to evaluate in terms of their impact, are likely to need considerable lead time to take root and become established, and require high levels of trust and cooperation among network members. Participants need to be convinced that particular projects are relevant and worthwhile, that they are capable of addressing key problems and challenges, and that there are benefits that can be shared among all stakeholders. Where such conditions are met, there are some early indications that projects can make a difference by aligning skill formation with business goals and encouraging organisations, firms and training providers to change their behaviour in ways that help to avoid the wastage and under-utilisation of workers’ skills and capabilities. However, with the Australian programme still in its infancy and many of the existing projects yet to be subject to rigorous independent assessment and evaluation, more research is needed to explore the detailed

outcomes of particular projects and their ability to link skills to a job improvement agenda. This suggests an important and exciting future research agenda which, as this paper has indicated, might be usefully explored through a comparison with the activities of English RDAs.

Finally, it should not be forgotten that a skill ecosystem programme offers only a starting point and is not a panacea for the problems generated by economic restructuring and labour market polarisation in a deregulated liberal market economy. In the long term, the success of such a programme is likely to depend on whether it can be linked with broader economic policy measures, encompassing industrial policy, minimum wage policies and labour market regulation. Whether Australia's experiment with skill ecosystems can stimulate such an expansive process of policy learning and a fundamental shift in current priorities remains to be seen.

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