

# **Symposium: Innovation, Skills and Training**

The skills policies of the late 1980s and early 1990s that underlay the national training reform agenda and the unified national higher education system were predicated on the quest for a ‘clever country’, competing in global markets through high value added exports. In the past decade, the focus of government policy has shifted to the promotion of innovation, based on the creation of intangible intellectual capital in the quest for participation in a ‘global knowledge economy’. Innovation is more than novelty or even invention: it involves change that results in improvement in products, processes, methods, systems and working relationships.

The focus in this symposium is the role of workers in innovation. Dent, Fenwick and Newitt draw a distinction between the technological development that can be captured in intellectual property (patents, copyright, plant breeders’ rights and so on) and the more nebulous, but equally important concept of ‘know-how’, based on complex, non-linear patterns of development and diffusion. The authors approach the question of how best to encourage worker innovation by drawing together scholarship from the fields of employment law, intellectual property law and equity. Arguing the incompleteness of existing approaches, which they classify as based either on economic or fairness perspectives, they advance a new framework, based on practices central to the relationship between employers and workers. Such practices include inventive activities, improvements to repetitive actions, creative insights, and attitudes or perceptions. Drawing on psychological contract theory to identify non-financial incentives, Dent, Fenwick and Newitt suggest that an important motivator of innovation is the allocation of control over its uses and outcomes.

Drawing on his research on the contribution of worker skills to an industry’s or a nation’s potential for innovation, Fraser provides an empirically based re-examination of the deskilling thesis — a thesis which sees the underlying tendency of capitalist work organisation as a fragmentation of tasks in order to allow the pace of work to be intensified. Without rejecting this thesis as an underlying historical trend, Fraser investigates recent short-term shifts in the aggregate skill content of jobs in order to identify dynamic aspects of skill change. To the familiar skill criteria of job complexity and worker autonomy/control, he adds a third dimension of change — skill-intensity. This is extent to which a job exercises, challenges and develops the skills of the person doing it. The analysis is applied across the spectrum of jobs at all qualification levels and organised to take account of different levels of control over the pace of work. Two sub-dimensions of skill-intensity — stretch and learning — provide insight into the psychology of workplace innovation.

The distinction between radical and incremental innovation is highlighted in the article by Toner. Radical innovation is more focused on science and engineering, takes longer and requires further innovations in the process of take-up.

It is likely eventually to generate Schumpeter's 'creative destruction' of existing techniques, skills, products and markets. By contrast, Toner emphasises the importance of investing in the cumulative productivity benefits of incremental innovation, based on small changes introduced by workers or required by consumers. He critiques the policy risks of placing too much emphasis on research, rather than development, in R&D, and emphasises the critical importance of diffusion in the development process. Stressing the importance of skilled production workers, particularly tradespersons and technicians, he argues that it has been a mistake not to include the Vocational Education and Training (VET) system in national innovation policy, programs and advisory structures. Contrasting the German and Anglophone models of skill development, Toner identifies ways in which Australia's recent under-resourcing of the VET system is likely to inhibit innovation.

If vocational training does indeed facilitate the diffusion of innovation, the new Australian industrial relations system, introduced with the *Fair Work Act 2009*, appears to be reinforcing the barriers created by neglect of the VET system. Oliver argues that the VET and industrial relations systems are inherently linked, citing research indicating the link between job-related factors and completion rates among apprentices and trainees. The new system of modern awards does not appear to be contributing to the Federal Government's stated aim of increasing the number of workers with VET qualifications. Oliver's analysis of a cross-section of relevant modern awards suggests that award modernisation has actually had a small negative impact on the wage arrangements for apprenticeships, whilst non-recognition continues for some categories of workers who have undertaken VET qualifications through traineeships.

The term 'skill ecosystems' was originally coined to refer to the dynamism of clusters of high technology firms such as those in Silicon Valley. Its early policy application was an investigation of the conditions for technological innovation that would foster the development of new high-skill industries and improve the competitiveness of firms, localities and regions. The concept was subsequently extended in Australia to encompass innovation in mature and low technology industries. Cooney, Jerrard, Donohue and Kimberley outline how it was applied in a practical distinction between high and low skill ecosystems. The former contribute to the development of a virtuous circle between high value added production and the provision of training and career paths, while the latter involve a vicious cycle of competitive cost-cutting in low value added production with little training investment. Applying this analysis to the abattoir sector of the Australian meat processing industry, Cooney and co-authors highlight the role of regional coordination agents such as the union in maintaining a flow of new entrants into the sector, and in creating a shared understanding about skill development among stakeholders. They show how industrial relations deregulation has tended to disrupt both training and the role of networks in fostering the sharing of knowledge about new techniques, new technologies and the state of the labour market.

The relationship between economic and social aspects of innovation is further developed in the final article. Adams and Hess introduce the concept of social innovation, exploring it as a process that has distinctive preconditions and stages that are open to public policy intervention. The concept of social innovation integrates aspects of theories of social capital, community strengthening and regional development. Enhanced community participation has been linked to social and economic indicators such as physical and mental health; higher educational achievement; better employment outcomes, and safer families and communities. The link to innovation lies in the role of community networks in enhancing knowledge flows, with strong communities based on local identity and leadership, institutional capacity and trust relations creating platforms for regional development. This is a vision that reconceptualises 'welfare' as a form of social investment.

Taken together, the articles in this symposium challenge expectations of innovation as a *deus ex machina* cure-all, and substitute a vision of the incremental growth of creative practices and their diffusion through networks and communities. Legal, vocational education and industrial relations institutions are shown to place a vital role in fostering the diffusion of innovative practice.

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**Anne Junor**  
*Symposium Editor*