

Global policy developments towards industrial policy and skills: skills for competitiveness and growth

Francesca Froy, OECD LEED Programme

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Abstract: There is a rising interest in both skills policy and industrial policy in OECD countries following the economic downturn. But how can skills policy best support industrial growth? In the UK, the coalition government is arguing for an industrial policy which is bottom-up, supporting networks of employers and helping to build productive local supply chains. There is simultaneous investment in a more ‘employer-orientated’ and ‘employer-owned’ skills policy, in order to better tackle skills shortages and gaps. But is an employer-led skills policy the best way of boosting industrial growth in all UK regions? Are there potential market failures in employer-led policies which the public sector should be aware of? This chapter warns against taking an overly simplistic approach to skills development, arguing that while skills policies should be flexible to the needs of employers, there is still justification for investing in a broad educational curricula at the local level. Further, policy makers may need to proactively help employers to better utilise skills in some regions in order to boost productivity and growth.

Following the economic downturn there has been a renewed interest in industrial policy across OECD countries. In a context of declining consumer demand once strong national industries have been in danger of shrinking or disappearing. The crisis demonstrated that the private sector does not always get it right in terms of maximising productivity and upgrading management practices. At the same time governments are seeking mechanisms to prove to voters that they are not merely passive victims of the crisis but are putting in place strategies to recreate growth.

The renewed interest in industrial policy is matched by an enthusiasm for investing in skills, which the OECD has described as ‘the new global currency’. While the economic downturn hit both low and high skilled workers alike, it is the low-skilled who are now most at risk of long-term unemployment (OECD 2012a), and future job projections reflect a continuing trend of higher skilled jobs replacing lower skilled jobs (OECD 2012b). Higher skills levels are argued to have an important link with higher GDP levels (OECD 2010a). In addition, industries have surprised policy makers by continuing to declare skills shortages despite high unemployment, which suggests a mismatch between skills supply and demand.

This chapter will explore how skills policy and industrial policy can best reinforce each other, looking in particular at how both are implemented at the local level. Drawing on policies and practices in countries such as Australia, Canada, Italy and the United States I will argue against a narrow focus on meeting immediate employer skills needs, stressing the importance of continued public investment in a broad education and training curricula. The value of working with employers to improve skills utilisation and work

organisation will also be highlighted in local economies which suffer from low incomes and low levels of productivity. The chapter concludes by exploring the governance arrangements which are necessary to deliver effective skills policies on the ground.

The new 'bottom up' industrial policy – how might education and training fit in?

The UK Government is currently backing an industrial policy which is broad and 'bottom up'. In a series of speeches in 2011-12¹, the Business Secretary, Vince Cable identified the importance of developing a new type of policy which is not about 'investing in winners' but rather provides the leadership necessary to build trust and support long-term investment by firms across a range of sectors. Cable focuses on providing support not to individual firms but to networks of firms, with a desire to better embed industries in more productive local supply chains. Cable's concern to rebalance the economy towards manufacturing reflects the need to reduce the UK's visible trade deficit following a long period of transition to services and a decline in export of goods. His rhetoric follows the broadly neo-liberal stance taken by the coalition government by emphasising the need to 'work with the grain of markets'. However he also commits to a new public-private partnership at the local level. Subsequently, Lord Heseltine's review of industrial policy, 'No Stone Unturned' (2012) also advocated a major shift of power and money from Whitehall departments to Local Enterprise Partnerships (LEPs), to support a return to growth.

So how might skills policy fit into this? Is it a question of simply making skills policy more flexible in order to meet local employer needs? As industrial policy rises in importance, UK policy makers are calling for education and training which better responds to the demands of particular industries. Lord Heseltine's review urges that business should have a much stronger role in feeding into and planning skills policies at the local level. This would build on reforms already put in place by the coalition government to give employers more of a voice. The 2011 Plan for Growth (Treasury and BIS 2011:37) discusses how the government has "radically reformed every stage of education and skills provision, moving away from a culture of bureaucratic central planning towards a system which responds better to the needs of employers and repays the efforts of learners". An example of how this has been put into practice is the Employer Ownership Pilot, which encourages employers to bid for up to 250 million pounds in funding over 2 years. The idea is for firms to not only identify their skills needs but also help design and deliver the relevant training, through matched funding from the state, often as part of broader sectoral networks. A stated aim of the fund is that "employers are better able to secure the training they need by having the influence they require over quality and content and can shape training provision to meet their needs" (BIS, DOE et al. 2012:4).

The recent UK interest in employer ownership is consistent with a broader trend towards 'employer-led' skills policies in OECD countries, with governments expressing dissatisfaction with 'supply-side' approaches where training curricula are set according to

¹ See for example, the speeches made on 26 Oct 2011 at The Ideas Space, Policy Exchange, 27 Feb 2012 at the IPPR, London, and 18 Jun 2012 at the CentreForum Think Tank, The Guildhall.

the demands of students, academic standards and government dictates, without significant reference to employer needs. Some countries are relatively advanced in delivering such policies at the local level. In the United States, community colleges are frequently seen as playing a ‘catalytic’ role in gearing education more to the needs of local employers, and many have developed corporate training arms to better cater for employer needs, providing ‘just in time training’ to both current businesses and potential inward investors. In the field of employment policy, the Workforce Investment Act established under the Clinton administration encouraged employment agencies to meet the human resource needs of local companies, with business taking a leadership role on local and state workforce boards. This demand-focus was reinforced under George W. Bush, with new policies that encouraged local policy makers to focus their work on high growth industries. Today when local workforce boards are asked ‘who is their customer’ they are as likely to say ‘employers’ as ‘job seekers’ despite the fact that the public funds they are utilising also have a primary aim to address disadvantage.

Workforce boards in the United States have succeeded in coalescing broad local partnerships in order to identify and meet employer needs – for example in Michigan, the Workforce Intelligence Network (WIN) involves eight community colleges, seven workforce boards and economic development partners to gather intelligence on workforce demands for skills and ‘provide employers with the talent they need for success’². In many cases such approaches focus on particular industry sectors or clusters. In California, for example, local workforce boards have been encouraged to identify ‘clusters of opportunity’ and develop collaboration with local colleges and economic development agencies to ensure that these sectors have the workforce they will need to succeed (Hamilton 2012). Key to making such an approach work in the US is a flexible employment and training system where colleges are able to quickly adapt to new training needs. This flexibility is made possible by the fact that there is no countrywide training curricula, and only a small percentage of the funding for what is known as Career and Technical Education (CTE) comes from the federal level, with the remainder coming from state and local funds (Froy and Giguere 2010b). This means that training is often locally managed.

But is employer-led training the best way of boosting industrial growth?

However, employer-led skills policy is not without its critics. Some would argue that it is an inappropriate use of public funds to pay for training geared directly towards the needs of employers, when they could also fund this training themselves. In analysing a move towards demand-led training in Queensland, Australia, for example, Keep (2006) identifies that there is a danger of creating a model of ‘business welfare’, as businesses become reliant on the public sector funding for training. Further there is a risk of ‘dead-weight’ as public funds are used to support training that industry would have funded anyway. In addition, OECD LEED research points to a potential series of potential market failures associated with employer-led training which mean that it should not be allowed to dominate education and training policy.

² See <http://win-semich.org/>

One problem identified in research by the OECD LEED programme is that employers often appear to have a particularly short-term approach to skills. This is highlighted by recent drives to increase the number of apprenticeships in OECD countries. Apprenticeships are a form of training that has traditionally seen a significant involvement of employers in curriculum design and delivery, and that usually take several years to complete. There has been a rising interest in apprenticeships since the economic downturn, with many governments turning to Germany for ideas on how to replicate a training system which is seen as integral to their continuing strong industrial performance. However it is not always easy to implement apprenticeships in practice.

In the Italian region of Trento, a complex system of apprenticeships has been developed in consultation with employers and unions, that offers longer-term training, well adapted to local industry needs while also investing in the broader transferable skills of young people. However Trento officials have been having a hard time increasing apprenticeship numbers as employers cut back during the current crisis, and are more likely to employ people on temporary contracts than to invest in their long-term development. In the Ile-de-France region around Paris, policy makers report similar difficulties. In Queensland in Australia, attempts to increase apprenticeships have been accompanied in the past by an increase in non-completion rates in the absence of employer commitment to helping trainees to succeed (Eddington 2012). Attempts to raise the number of apprenticeships in the UK have also met with the criticism that many employers have adopted the term apprenticeship to refer to shorter-term training courses which meet immediate business needs without supporting the longer-term development of individuals or firms. This has been seen to potentially devalue the apprenticeship 'brand' as a whole (Evans and Bosch 2012).

A further potential problem associated with employer-led training is that employers often fail to invest in generic or 'soft' skills such as communication skills, time keeping, politeness, presentation, entrepreneurship and creativity, despite the fact that it is often for these skills that they cry out the most. This can be associated with the limited incentive for firms to invest in 'common public goods' which will be of equal value to other firms and institutions in a local area. Training people in generic skills usually has high 'externalities', or benefits to others who do not directly invest in such training. Helping firms to come together to fund training courses which will be of common interest may be one option. However, generic or soft skills cannot easily be delivered in short bite-size courses which will quickly meet employer needs – indeed it is increasingly recognized that they are most effectively learnt as early as possible in life. Local workforce boards in Michigan and California, for example, report frustration that while they can meet current business need for technical skills through fast-track community college courses, they find it difficult to address a lack of basic skills in the wider workforce, particularly amongst the most disadvantaged in the labour market. This is a problem projected by local policy makers to have a high impact in the longer-term, as demographic change, and a reduced cohort of workers, brings new pressures to ensure that all members of the labour force contribute their skills to the labour market.

Evidence shows that in order to tackle deficits in basic skills it is necessary to think beyond simply improving the education and training system. Children with parents who work long hours do not always receive the parental investment needed to develop these basic skills. Many policy makers are expressing new interest in early years education, and the OECD PISA survey has found that the enrolment of both advantaged and disadvantaged children in pre-school education can have a significant impact on their educational performance later at aged 16-17, through building the generic skills necessary for learning. Research by the Upjohn Institute for Employment Research in the United States shows however that relative gains for children from disadvantaged backgrounds at age 3 can be quickly lost if they do not also receive support at home during the remainder of the primary school years (Bartik 2011)³. While school policy can be responsive to the needs of the most disadvantaged, a broader effort to tackle the root causes of exclusion is also required in order to significantly enhance basic skills outcomes. This requires strategic planning at the local level.

A broad and diverse education curricula maintains important

It is not just basic soft skills which require continued public investment but also higher-level skills such as the ability to be innovative, creative, entrepreneurial. These skills are increasingly important to industrial productivity in OECD countries. Coyle (2001) points to the collapsing boundary between services and manufacturing. While the services sector has long valued communication skills and the ability to adapt to customer needs, comparative advantage in manufacturing is increasingly found in good design, creativity and the ability to customise products to reflect consumer preference. More recently Toner (2011) has identified how growth in per capita incomes in OECD countries has given rise to demand for higher quality and more customized goods and services, greater emphasis on variety and more novelty; what he calls “diversified quality production”. Toner points out that such production requires the workforce to possess both technical competence and broader problem solving, creativity, team work and communication skills. Such skills allow innovation to occur on the shop-floor, as workers adapt goods and services to meet the needs of both existing and potential customers, and provide feedback to other parts of the firm. In the UK, the Work Foundation have identified the particular combination of technical and generic skills required in today’s economy as ‘T’ shaped skills - where the spine of the T represents subject knowledge and the cross bar represents leadership and communication skills to work across disciplines and teams (Levi 2012).

Arguably, innovation and creativity are not skills which can be trained for separately, but rather emerge from the engagement of young people in a broad education and training curricula. In fact, people are often most innovative and creative when they are pursuing a subject and a career that is of interest to them. Employer-led skills policy sometimes risks falling into the trap of thinking that human beings are ‘passive’ recipients of skills training, however Robinson (2009) and others argue that it is more important to focus on recognizing and building on the particular talents which individuals can contribute to the world of work. Robinson, for example, differentiates between incentives and motivation

³ Source to be checked.

in encouraging productivity – whereas employers can create incentives to work through providing salaries, they can gain more from employees who are already motivated because of pursuing something which is of personal interest. Creating motivation and aspiration is also important for people who are in danger of being excluded from the labour market. A review of local initiatives in OECD countries focusing on ethnic minority youth, for example, found that schemes were particularly effective when they linked young people with role models and mentors who had achieved success in sectors that they particularly aspired towards (Froy and Pyne 2011). The passion a young person has for a particular vocation can help them to overcome the institutional and societal barriers that they may experience to success.

Supporting skills training which builds on a broad range of talents and aptitudes, as opposed to routing people into particular industries, is also important in preserving local economic diversity. Another risk associated with employer-led skills policies is that they lead to a concentration of training on a few local sectors – normally those where employers ‘shout the loudest’. The fact that economic change often happens so unpredictably means that overly-rigid strategies which work towards the needs of a few particular industries are not always helpful, and can risk creating ‘regional lock-in’, leading to a ‘progressive narrowing of education and training around economic activities that become obsolete’ (James 2011). Past experience indicates that future growth is likely to come ‘sideways’ from a type of product or market which no one could currently predict. Economic diversity has also been shown to be particularly important in helping local economies to survive economic shocks (such as the current downturn), while generating a cross-sectoral fertilization of ideas which can be important for innovation (Jacobs 1969). Glaeser et al (1992), for example, analysed 300 cities in the United States to show that those which were performing the best in terms of population and income growth were those with the most diverse economies. It is therefore important that local training curricula are broad enough to allow people to develop skills which will generate new growth sectors and to adapt to change as it occurs.

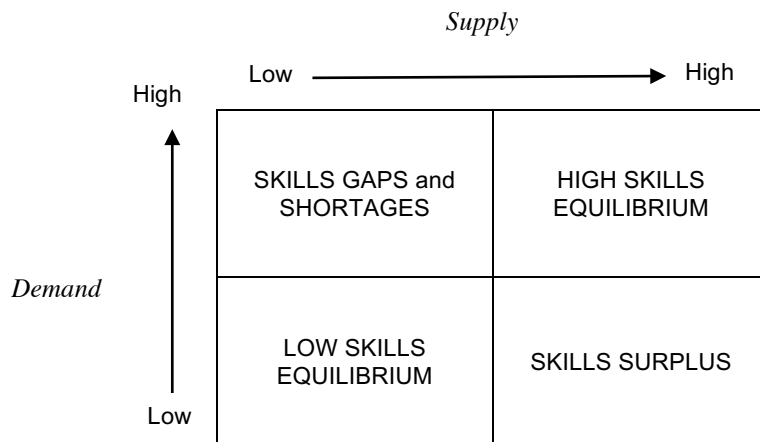
Of course it is still important that people are able to match their skills and talents to current local labour market needs, and for this good careers advice systems are essential. OECD research has identified a lack of clear adult careers guidance at the local level in many countries. However a useful approach which has been developed in the United States and Canada is that of ‘career clusters’. In 2000 the federal Department of Education in the United States launched a national ‘career cluster’ scheme which mapped the skills required across 16 different areas of employment, including manufacturing; and transport, distribution and logistics. The scheme was discontinued under the Bush administration, but has been adopted and adapted by a number of states (see Hamilton 2012). While in some cases this approach has been used to create a narrow focus on creating ‘skills pipelines’ to certain industries, in others it has been used more broadly as a way of informing potential workers of the breadth of different opportunities available within the local labour market that might be relevant to them. It also offers possibilities (and advises on available training) for transferring between different careers at different points in a person’s life.

Helping employers to better utilise skills to boost productivity

While the above analysis would suggest that employer-led approaches need to be embedded within a broad skills policy at the local level, there is also a case for going further in some regions to actively help employers to *use* the skills of their workforce more effectively. It is increasingly recognised that it is not sufficient to simply respond to employer demand for skills in order to boost productivity, but also to ensure that skills are utilised well (see Payne and Keep 2011).

OECD research indicates that this is particularly important for some local economies and regions. There is strong variation amongst local economies in OECD countries not only in terms of the supply of skills (the number of people with skills and qualifications) but also the demand for skills (the degree to which skills are sought and utilised by employers) (Froy, Giguere et al. 2012). Green et al (2003) propose a useful typology which categorises local economies into four different categories: those experiencing a high-skills equilibrium; those experiencing skills gaps and shortages; those experiencing a skills surplus; and, lastly, those experiencing a low-skills equilibrium (see Figure 1 below).

Figure 1: Moving from a low to high skilled equilibrium (adapted from Green et al, 2003)



Source: adapted from Green et al (2003)

While many local economies find themselves in a situation where the skills of the local population do not meet employer demand (the top left quadrant of the diagram), in some regions a low supply of skills is matched by a low demand for skills amongst local employers – what is known as the ‘low-skills equilibrium’ (Finegold and Soskice 1988). Not all businesses and not all communities progress as fast as others in terms of adopting new technologies and adapting to changing markets. Coyle (2001) identifies a lag time of roughly 50 years between the development of new technologies and the ability of

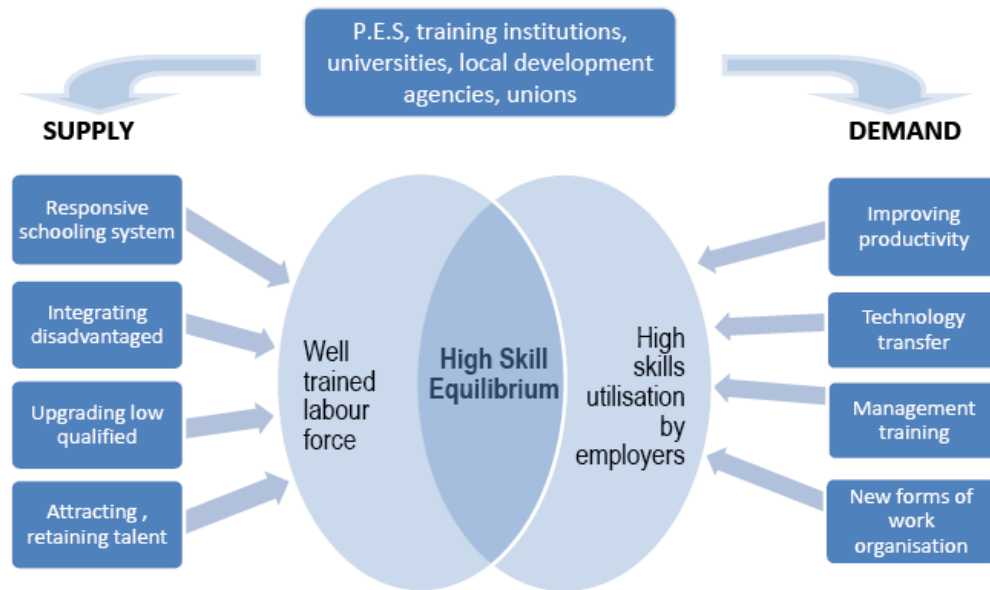
societies and economies to fully take advantage of the potential they offer to improve productivity. In the meantime, employers can also achieve competitive advantage through keeping skills levels, and therefore salaries, at a minimum (Froy and Giguere 2010a). This situation particularly affects rural areas which host employers that offer low skilled and low income employment, and few educational institutions to keep young people in the area once they have graduated from school. Where young people do stay on in such regions it can create a situation of 'skills surplus' as people carry out work for which they are overqualified or remain unemployed. This is a particular problem facing regions with low labour mobility such as the South of Italy (Destefanis 2012). In both low-skills equilibrium and skills surplus regions employers still complain about skills shortages, but very often these are in fact labour shortages as employers are unable to find people who are willing to accept the work available at a given level of wages and working conditions⁴.

Low-skills equilibrium and skills surplus regions represent a dilemma for policy makers. Employer-led training will contribute little to building productivity in local industries if employers are only seeking low-level skills. As Crouch et al identified back in 1999 (p.220), 'where firms are not themselves enterprising the more responsive and firm sensitive an agency is, the less capable it is of being proactive and strategic. This is of little use to a goal of maximising national skill creation and utilisation'. The use of public money to subsidise businesses operating in such markets appears to be a poor use of funds, particularly as the type of training delivered is unlikely to raise productivity or living standards locally.

OECD research indicates that in order to create productivity growth in such regions policy makers need to embed skills policy within a much broader economic development approach, which looks towards boosting both skills supply and skills demand (see Figure 2 below). This means taking a more active role with local employers, helping those that are willing to raise their game in terms of how they utilise and manage their human resources to produce innovation in their production processes – Jacobs (1969:215) referred to as 'buying progress' in 'fields that are ready to progress'.

⁴ The OECD LEED (Local Economic and Employment Development) Programme has carried out analysis to see where local economies (in this case territorial level 3 regions, or NUTS 3 regions in European terminology) fall within the above quadrants, in a number of countries including Australia, Belgium, Canada, Czech Republic, Denmark, Italy, Korea, Netherlands, Norway, Sweden, the United Kingdom and the United States (Froy, Giguere et al. 2012) .

Figure 2: Balancing investment in the supply and demand for skills at the local level



Source: Froy and Giguere 2010a

There a number of ways in which local policy makers can help to increase employer demand for, and utilisation of, skills. In some cases it will mean drawing on traditional economic development approaches to encourage diversification and inward investment by more knowledge-intensive firms. However it is also possible to help existing firms to better utilise the skills of their workforce and move towards more knowledge-intensive production processes. A key area of importance here is the degree to which workers have discretion in the work that they carry out, and have the scope to both improve their work over time and problem-solve where necessary. Whatever the level of their skills and talents, workers will have more opportunity to actively improve company performance when they are allocated sufficient flexibility to ‘learn by doing’ in the workplace, and when dealing with and responding to customer needs. Even in today’s knowledge economy, in many firms, people on the shop floor, or in front line services are still involved in ‘Fordist’ repetitive tasks, working to a ‘blue-print’ devised by higher management which they have little ability to influence or evolve (see Sennett 2009).

The OECD Innovation Strategy (OECD 2010b) has identified that where workers are able to use discretion in how they carry out their job tasks, this offers an important opportunity for innovation. Maskell and Malmberg (1999) argued that, ‘most new knowledge emerges from problem-solving, often on a trial and error basis and as such it is normally arrived at incrementally’. It is not just higher skilled people who can create value by engaging in problem solving but all parts of the workforce. Indeed, while the UK government is currently placing strong emphasis on the need for investing in higher level ‘HRST’ – human resources for science and technology, workers with intermediate skills may be just as important to producing innovation and industrial transformation when they are managed effectively. As Jacobs again identified back in 1969, ‘when humble people, doing lowly work are not also solving problems, nobody is apt to solve

humble problems'. Such humble solutions can transform industries and be extremely profitable. Local stakeholders in Niagara, Canada, for example, emphasize that in many of the industries important to their local region (tourism, hospitality, food processing, farming and light manufacturing) adding more value to products involved incremental innovation in processes as opposed to giant leaps driven by high technology. They did not feel that this was fully reflected in policy making (Verma 2012).

Toner (2011) argues that to support incremental innovation, it is not only important that people have discretion in job tasks but that there are good communication mechanisms within firms to harness new innovations as they develop (what he describes as 'the absorptive capacity' of the workforce). He also highlights the fact that problem-solving skills are enabled by workers having a broader understanding of the work process that goes beyond their own individual jobs. Small to medium enterprises may be in a particular good position to take advantage of incremental innovation and shift production towards new types of activity and new types of customer. Jacobs (1969) found that larger firms were often caught in a drive towards what she termed 'terrible efficiency', leaving little ground for more general experimentation and innovation to produce new products and exploit new markets. Smaller firms, embedded in a rich and diverse supply chain, with sufficient access to finance and cheap workshop space, were more likely to quickly transform innovative ideas into new spin offs and new products.

Where small firms come together in networks this can help a whole region to 'raise their game' in terms of moving towards more knowledge-intensive production. One local economy in which local SMEs have worked together to both raise skills supply, and upgrade to product market strategies which better utilise these skills, is the Riviera del Brenta industrial district in Northern Italy. Firms in the footwear sector in this region have collaborated to pool investment in training provision while also collectively upgrading product market strategies in order to engage in high quality international markets (Destefanis 2012). Not far from Venice, the region traditionally hosted cottage-based shoe making firms. However the area has now become a global centre for the production of high quality ladies footwear (supplying to Giorgio Armani, Louis Vuitton, Chanel, Prada, Christian Dior), through the development of an international brand by the local employers association, ACRIB. The region has seen a growing share of high-skilled employees in design, R&D, management and marketing. Before the 1993-1994 repositioning almost all workers in shoe manufacturing were blue collar workers, nowadays this proportion is around 40% (with roughly 50% of designers and 10% of commercial staff).

An important role has been played in the economic development of the district by the privately-run local polytechnic, *Politecnico Calzaturiero*, which employs firm managers to train local workers and job seekers after hours, while also offering management training, and investing in research, innovation and technology transfer. The polytechnic therefore invests in skills supply whilst also optimising skills utilisation through new product development and improved human resource management. The fact that firms are members of the ACRIB employers association means that they are less worried about pooling training, technology and new innovations - investment in local human capital

will not only improve prospects for individual firms but also for the global brand as a whole. There is thus a shared incentive to invest in training with high externalities. Collaboration between firms was also helped by the fact that most aspects of the supply chain are now located in or around the Riviera del Brenta region.

How can public sector get in engaged in this area?

In the Riviera del Brenta, European Social Funds have been important in supporting the research and innovation carried out by the polytechnic, and their collaborative work with local employers. But outside of providing seed-funding, how can policy makers help support such transformational processes in local economies? OECD research has identified a number of different types of local policy which may be relevant (see Box 1 below). This includes providing guidance and technical assistance, funding management training, creating incentives for collaboration, helping to establish regional quality brands, ensuring access to ‘patient capital’ and supporting a quality driven supply chain through public procurement. It is important to recognize that not all firms will be ready or willing to evolve, and this may be particularly the case in the current economic climate where expanding product markets is difficult in the face of sluggish economic growth in many parts of the world, and constraints on credit supply (especially to small and medium-size enterprises). In order to promote bottom-up growth under such conditions it will be necessary to embed work on skills issues in a broader range of public support, not least an increased access to business finance.

Box 1: Tools to raise the quality of local jobs and improve skills utilization

Guidance, facilitation and training

Providing technical assistance to improve work organization so that worker skills are more effectively harnessed and technology fully utilised.

Creating incentives for collaboration, helping firms to collaborate, for example by developing shared regional brands, providing funding for joint firm initiatives.

Providing and subsidising training and skills development for both managers and workers:

Setting a good example, finance and procurement

Ensuring that the public sector operates good human resource management practices which can serve as a role model to the private sector e.g by ensuring that public sector jobs make best use of peoples skills, allow for flexibility and discretion in carrying out work tasks, and provide opportunities for progression.

Ensuring the availability of patient capital: in order to invest fully in their staff and upgrade their production processes, companies need long-term investment security and access to long-term loans.

Developing a quality-driven supply chain: public procurement can be used to help local firms think longer term and therefore invest in increased productivity. Given that social enterprises can avoid some of the short-term pressures associated with satisfying private shareholders, they can in some cases take a longer-term perspective to developing and training their staff.

Work in partnership

Ensuring that skills policies are embedded in economic development policies: local collaboration is needed between policy makers in the sphere of economic development, education and employment, in order to ensure that skills policies are understood in the context of broader economic development. Such collaboration can be both formal and informal, strategic and operational.

Working with intermediaries: brokers and intermediary bodies can be particularly useful when working with employers on productivity issues, particularly as this is not a traditional domain for public policy. Colleges and universities are increasingly working with firms not just on the provision of skills but the utilisation of skills, and the evolution of business strategies through research and innovation. Unions can also be natural partners in improving the utilisation of skills and the quality of employment at the local level.

Source: adapted from Froy and Giguere 2010a

The Riveria del Brenta example illustrates that it may be most effective to work with networks of firms as opposed to individual firms when helping to create a step change in the way skills are utilised in particular industries and regions (see also Green and Martinez-Solano 2011). Buchanan et al (2001) discuss the need for skills policies to be targeted at networks, systems, supply chains and regions as opposed to either 'individuals' or 'industry'. Rather than focusing on the ways in which individual firms use and demand skills, he stresses the importance of assessing how skills are used across networks of production, supply chains and outsourcing arrangements within 'skills local ecosystems'

(a term first used by Finegold (1999) when analysing Silicon Valley in California⁵). In helping to support the further development of such ecosystems, Buchanan et al argues that the public sector should not support investment in skills alone but rather support bundles of innovative practices (such as R&D, intellectual property, information technology) to help firms generate ‘a new performance dynamic’. The skills ecosystem approach envisaged by Buchanan has been piloted in Australia since 2003 in the states of Queensland and New South Wales. Instead of understanding skills shortages as a problem to be fixed through additional training places, the skills equilibria approach seems them as potentially symptomatic of wider failures in management practices and working conditions. The response involves groups of employers accepting joint responsibility for tackling both supply and utilisation, with the support of brokers or facilitators capable of dealing with issues of business development. Queensland has implemented over 60 skills formation strategies in 20 different industry sectors (see Eddington 2012) .

How should all this be governed?

From the above discussion, it is apparent that investing in skills for industrial development ‘from the bottom up’ is a complicated process. While responding to immediate employer need is important, policy makers need to be developing broader skills strategies, which help people to build their basic and generic skills, and support the diversity needed for longer-term economic growth and productivity. At the same time, more could be done to help employers to better utilise skills, and in certain regions this may require a broader economic development approach that helps firms to evolve their product market strategies. Indeed the approach advocated by Buchanan back in 2001 to help local employer networks to simultaneously invest in skills and innovation would seem to be particularly relevant to enabling the bottom-up style industrial growth in UK regions foreseen by Cable today.

But how should all this be implemented? The governance of such approaches is not simple, particularly as many different agencies have a potential to be involved (see Box 2 below).

⁵ When defining the local skills ecosystem, Finegold (1999:61) described it as ‘a geographical cluster of organisations (both firms and research institutions) employing staff with advanced, specialised skills in a particular industry and/or technology’. However Buchanan et al (2001:11) prefer to use the concept more broadly to refer to ‘clusters of high, intermediate or low-level competences in a particular region or industry shaped by interlocking networks of firms, markets and institutions’.

Box 2: The types of organisation that can contribute to local skills development

Many different local agencies can be involved in developing and better utilising skills:

Schools obviously play a key role in providing the education and training for future workers. Additional support may be important for some school children to ensure that they develop the generic skills that are becoming increasingly valued by employers. While in the United States, many schools are trying to link their curricula to their local economy through focusing education on local economic clusters (Hamilton 2012), a more effective longer term strategy may be to continue to provide a broad curricula that supports mobility and that supports economic diversity.

Universities and colleges can be instrumental in helping local industries to better access and better utilise skills when they are fully embedded in local economies. In areas of traditional low-skills low-wage employment, the role played by colleges in stimulating innovation in the local economy would seem to be particularly important. In Niagara College in Ontario, Canada for example, curricula are geared at best matching local industrial demands in horticulture and wine making (an example being the Winery and Viticulture Technician programme which is hosted in a Teaching Winery). At the same time the local college hosts an applied research unit which helps local firms to upgrade their products and business strategies - in 2011, there were 64 applied research projects in progress with more than 50 industry partners (Verma 2012).

Unions have shown themselves to be valuable partners in working alongside firms in tripartite agreements to raise labour productivity and skills utilization while also improving wage levels and working conditions. In Germany the apprenticeship system is embedded in a strong tri-partite system and there are also examples of unions working with firms to improve product quality in a bid to also drive up working conditions. An example is the “Better not cheaper” campaign in the metalworking industry in North-Rhine Westphalia. Here unions promoted new forms of production that actively used the skills of the workers and which produced new and innovative products with high standards of quality (Haipeter 2011).

The value of working with **employer and trade associations** in this area is particularly clear when it comes to helping SMEs to share the costs of training and investments in innovation and technological development (see Green and Martinez-Solano 2011). In helping to create effective firm networks, an important dimension is building trust, for example through created a shared regional brand which is effective in global markets (as the Riviera del Brenta example). As the European Commission IDELE (2004:8)⁶ project identified, "Trust-based behaviours can go on to foster higher levels of intellectual interaction and experimentation and the ethos of combined and shared learning that is essential for commercial success of knowledge-based activities".

Local authorities and municipal governments often have an overview role which makes them natural brokers and catalysts for bring together those involved in both skills supply and skills demand in a local economy. In addition to galvanising a local community approach, it is also important that they make use of their capacity to better train and utilize skills within their own workforce, while influencing change as a local purchaser of services. Awarding ‘patient capital’ and providing longer contracting periods can be a useful way of developing a quality driven supply chain and encouraging sub-contractors to invest in the skills of their staff and upgrade their production processes in the context of longer-term investment security.

Economic development agencies clearly have a key role to play in improving local productivity and competitiveness. However it is not always clear that they fully take into account the importance of human resources and skills to that growth in the context of the knowledge economy. While economic development agencies are often encouraged to think in terms of ‘job outcomes’, they do not always consider the degree to which productivity improvements bring real impacts in terms of salaries and living conditions. At the

⁶ IDELE was a 3-year project of the European Commission Directorate General for Employment, Social Affairs and Equal Opportunities to identify and disseminate good practice in local employment development.

same time, economic development strategies often focus on ‘winning sectors’ which may bring high added value and highly skilled employment, but often constitute only a small percentage of local employment. Work to help employers to improve productivity and job quality in lower skilled sectors is also important.

Voluntary and third sector organisations can play an important role in helping to create training and skills development for individuals and local populations with low levels of basic skill, particularly where they support skills development outside of the classroom, help to identify talents and aptitudes and build aspirations. It is important that these agencies have a strong understanding of the local ‘opportunity’ structure of the local economy (Kloosterman and Rath 2003) in which they are working to ensure that people are effectively networked into more mainstream training and employment.

Finally, **employment services** (both public, not-for-profit and private) can also play a role. The province of New Brunswick in Canada, which was suffering a problem of low-skilled employment locally, has taken a particularly ambitious approach to this issue (Wood 2010). The Department of Post Secondary Education, Training and Labour (PETL) employed a series of ‘labour market development officers’ based in local enterprise agencies, whose task included working with companies to improve human resource management. At the same time, the province worked with the federal government to develop a definition of ‘underemployment’, with the possibility of advising people who fall within this definition to quit their current employment if returning to publically funded training would improve their overall career prospects. Such actions encourage local employers (who have traditionally always had a large pool of willing workers) to improve their employment conditions and think harder about how they utilise local skills.

Source: adapted from Froy, Giguere et al. 2012

As skills are an inherently cross-sector issue, it is important that such institutions and agencies collaborate together which can be challenging, given that employment, skills and economic development policies are often delivered in ‘silos’ and local agencies do not talk regularly to each other (Froy and Giguere 2010b). In some cases building informal relationships and networks can be as important as formal partnerships, in building common objectives and promoting joint solutions to problems. Such collaboration can reduce duplication, speed up implementation and also maximize economies of scale.

Involving business in decision-making around skills at the local level is important. In the UK, getting the Local Enterprise Partnerships, industry councils and chambers of commerce more involved in skills issues, as advocated by Lord Heseltine, will help ensure that employer needs are more clearly expressed. However in order to create longer-term thinking around skills, strategic boards and partnerships also need the involvement of policy makers in the education, employment and economic development field, working together to plan public investments for the future. Such partnerships need to make strategic decisions about the priority to be given to different types of resource investment – what proportion of funding should be going to schools, to basic skills training for adults, to early years education, to responding more effectively to employer skills shortages or to working with firms on raising the game in terms of the management of human resources.

Further, in order to actually implement their decisions, the individual agencies around the table need to have sufficient autonomy and flexibility in the development and management of their respective services (see Froy and Giguere 2010b; Giguere and Froy 2009). This means taking into consideration the way in which curricula are developed,

the way budgets are managed and the way in which teaching is planned and delivered to create more effective and adaptable 'life-long learning' systems at the local level.

Conclusion

In conclusion, skills policies can make an important contribution to industrial policy, helping firms to access the skills they need while also stimulating the broader 'human resource rich' economic development which is increasingly important in today's knowledge-based economy. Increasing skills levels, while also helping firms to improve the way in which they utilise and manage skills, will be an important tool for stimulating greater creativity and innovation in industry.

While skills policies should aim to meet industrial need and economic development priorities, it is important to remember that learners are not just passive recipients of education and training but active agents with specific interests and aptitudes. Helping people to build upon their existing talents, better match them with local opportunity, and ensure that their skills are effectively used in the workplace may be as important as increasing training supply in supporting innovation and creativity. In helping to create more productive and innovative industries, all skills levels will be important, from the highest skilled working in management to people in lower-skilled jobs on the shop-floor. And at all levels it is important that workers have the discretion to learn as they work and evolve production processes towards new ways of doing things.

While sector-based approaches have proved effective, ultimately building diversity at the local level will be important for future resilience and innovation. Policy makers should work at the level of local economies and local supply chains to 'buy progress in fields that are ready to progress' whilst also promoting more diverse economic development and the flourishing of supply chains. It is important that training policies are broad and flexible and that governments support the development of both strategic partnerships and networks of informal collaboration at the level of local labour markets. If the right types of investments are made now, the UK, and other OECD countries, may indeed be able to rebuild industries bottom-up through both nurturing and harnessing talent.

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