

The skills productivity disconnect: Aotearoa New Zealand Industry Training policy post 2008 election

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This article describes the key public policy changes in New Zealand industry training since the election of the National-led government in 2008, including the main outcomes of the 2012 Industry Training Review which led to the creation of new policy in 2013 and 2014. This paper briefly highlights: the depiction of Industry Training Organisations in the media as poor performers in comparison to other sectors of the tertiary education system; the creation of policy to performance manage these organisations 2009-2010; the review itself; the launch of New Zealand Apprenticeships in 2013; and the Amendments to the Industry Training Act in 2014. Based on the ways in which industry training has been represented and how their functions have been altered since 2008, we argue that the likely policy trajectory for industry training could be one of two scenarios: one which resembles the benign neglect of the 1990s; or one where industry training is undermined through the continued withdrawal of government funding and support. Based on international research on the productivity skills connection, we conclude that regardless of scenario, the post-2008 changes to industry training policy framework greatly reduce the capacity of skill levels to augment productivity within the New Zealand economy. Furthermore, we argue that the loss of the policy emphasis on and specific funding for information collection, co-ordination and consensus making at the sector and industry levels means that industry training has the potential to disconnect and, therefore, lessen its capacity to contribute to social and economic outcomes.

Introduction

Productivity in Aotearoa New Zealand is well below the OECD average (McCann, 2009). In a similar fashion to other nations, New Zealand has looked to skills acquisition as a potential solution to improve productivity since the late 1980s (Ashton & Sung, 2011). Industry training in particular has undergone a raft of policy changes over this time in order to improve New Zealand's international competitiveness and productivity levels (Cochrane, Law & Piercy, 2008; Deeks, Parker & Ryan, 1994; Piercy, 1999; 2011, Rasmussen, 2009). However, these policy changes have not led to the anticipated growth in productivity (McCann, 2009). This has not been a problem solely in New Zealand. Since the early 2000s a number of changes have occurred in academic arguments regarding industry training and productivity policy (Thelen, 2006; Powell, 2005). These new arguments have attempted to account for the failure of industry training policy to effect long term positive impacts on productivity levels and international competitiveness. The arguments focus on: the different types of institutional settings that are needed to create high skill societies; co-ordination failure associated with low skill equilibriums; and the policy

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emphasis on counting qualification stocks pushing supply side solutions rather than demand or use (Finegold & Soskice, 1988; Brown, 2001; Thelen, 2006; Warhurst & Finlay, 2012; Dalziel, 2012; Thompson & Smith, 2010). The solutions put forward as part of these arguments advocate a more holistic approach to skill formation that examines the complex web of factors that contribute to skill formation (Scottish Government Social Research, 2008). This includes development of skill formation policy which emphasises a form of economic development which can take account of and respond to regional and sector differences within and between industries. By conceptualising skills development as a dynamic ecosystem that gathers information from all relevant stakeholders at these levels can ensure that industry training can respond to dynamic changes, including the different types of product markets. It also pushes policy makers to consider solutions that seek to effect change in four areas of skill formation: development, supply, demand and deployment (Anderson & Warhurst, 2012; Ashton & Sung, 2011; Buchanan et al., 2001). Currently, the role of government tends to facilitate the development and supply of skills through the Vocational Education and Training system (VET); an approach which is understandable because most VET systems are publically funded and organised. It is the neglect of the demand and deployment or utilisation of skills in policy formation that has created the different types of coordination failure which have limited the capacity of skill formation to contribute to productivity levels. Instead of policy development that maximises the skills, productivity nexus policy has often created a disconnection between skills and productivity. Warhurst and Findlay (2012) and Ashton and Sung (2011) argue that there is a role for government not just in the development and supply, but in facilitating the engagement of all relevant stakeholders in the provision of market information (demand and information coordination); supporting small to medium sized businesses to develop their organisation's capacity to use training to create innovation and lead to productivity increases (deployment). This second goal is particularly challenging because it involves intervention at the level of the workplace, but lifting the skills of middle management, and supporting better decision-making at the firm level will address the types of coordination failure that beset skill formation systems.

The purpose of this article is to outline the policy changes to industry training implemented since the election of the National-led government in 2008, and to discuss the implications of these reforms. In particular, the paper draws on the skill formation discussion articulated above to argue that the current policy direction is actively undermining the ability of industry training policy to contribute to the growth of the New Zealand knowledge economy and society; a skills productivity disconnect. The paper will first briefly outline the historical context of Aotearoa New Zealand industry training policy. Second, the paper will critically discuss the post-2008 policy reforms including: (1) the depiction of Industry Training Organisations in the media as poor performers in comparison to other sectors of the tertiary education system; (2) the creation of policy to performance manage these organisations in 2009-2010; (3) the Industry Training Review (ITR); and (4) its outcomes which include the creation of New Zealand Apprenticeships in 2014 and the Industry Training and Apprenticeships Amendment Act 2014. The third section of the paper considers the concepts in the policy approach to a high skills society (Brown, 2001; Thompson & Smith, 2010) and the skill ecosystems approach (Finegold, 1999; Buchanan et al, 2001) and the relationship between skills and productivity (Ashton & Sung, 2011; Harris & Harvey, 2008). The paper concludes by outlining the reasons why we think that the post-2008 policy reforms to industry training may not represent sufficient enough change in order to ensure

that skills development can lift productivity levels and contribute more proactively to the New Zealand economy.

Industry Training in Aotearoa New Zealand

In the 1980s, New Zealand followed international trends in re-examining its apprenticeship and industry training system driven by both social and economic arguments (Piercy, 1999; Murray, 2001; Brown, 2001; Raddon & Sung, 2005). The social arguments were based on the rhetoric of lifelong learning and the desire to extend access to industry training and higher education to women and other minority groups, such as Māori. The economic arguments were driven by human capital theory and the need to adapt training systems to new technology, broader workplace change and the growth of new occupations in the service sector. These arguments have been maintained in international policy debates since this time period, however, the emphasis on what is meant by the social and economic arguments has changed. For example, the social focus is now on individuals investing in skills development in order to increase their employability; providing social inclusion via employment, thus the social goal is hampered when unemployment levels are high (Brown, 2001; Ashton & Sung, 2011; Piercy, 2011). Furthermore, this change in policy emphasis has shifted the risk of investing in skills from the State predominately to employees and to a lesser extent, employers (Thompson & Smith, 2010).

These arguments were put into practice in New Zealand through the Industry Training Act 1992. This legislation facilitated the creation of a demand based system focussed on drawing out and responding to employers' needs. Industry Training Organisations (ITOs) were created and given the tasks of developing qualifications and placing trainees in these qualifications through workplace assessment or a tertiary education organisation (TEO), such as a private training establishment (PTE). Funding was allocated to ITOs on a contestable basis in order to create a competitive market (Green, Hipkins, Williams & Murdoch, 2003). Market dynamics created an ad hoc system with inconsistent provision across industries, leaving employers to deal with multiple ITOs or none. Market failure became apparent by the end of the 1990s due to acute skill shortages (Doyle, 1999; Cochrane et al., 2008).

In 1999, the New Zealand Labour Party campaigned on revitalising industry training and addressing market failure. Once elected, the Labour-led government (1999-2008) grafted the Modern Apprenticeships (MA) policy onto the existing ITO system with the addition of a coordinator role. Those receiving coordinator funding would help employers deal with the complexity of the industry training system and help apprentices by checking on their progress a minimum of three times a year. This scheme was designed to entice young people back into industry training, and to provide support in order to mitigate some of the risks of employing young people that employers experienced (Murray & Piercy, 2003; Dalziel, 2013). Increased monitoring occurred to lift ITOs' accountability for public investment and address the excesses of the market, such as the proliferation and inconsistent provision of ITOs across industries, but intervention was gentle (Piercy, 2005). An industry training review, conducted as part of a wider review of Tertiary Education in 2000-2001, resulted in the renewal of social partnership between unions, ITOs and the Industry Training Federation (a lobby group set up by ITOs in 1998 to secure more funding) (Green et al, 2003). This partnership was driven by the strategy and

leadership role for ITOs established by the 2003 amendments to the Industry Training Act and reinforced by other legislation also emphasising partnership and subsidiarity, such as the Employment Relations Act 2000 and Health and Safety in Employment Act 2002 (Cochrane et al., 2008; Piercy, 2005; 2011; Batters, 2010). In 2008, the partners produced a Skills Action Plan to deal with systemic issues within industry training, particularly the shortage of middle management skills (Department of Labour, 2008), but it was not implemented as the Labour-led government lost the 2008 election (Batters, 2010).

Post-2008 election reforms

While the Skills Action Plan and the Skill New Zealand partnership were abandoned following the election of the National-led government in 2008, the industry training framework was initially argued to be a key part of the government's response to the global economic recession. This was particularly true for under-25 year olds and the unemployed, a policy message made clear at the Jobs summit in February 2009 and exemplified in the 2008 Tertiary Education Strategy (Whitham, 2012). However, as 2009 progressed, a different discourse regarding industry training began to emerge, and the policy settings began to be subject to further change (Batters, 2010; Whitham, 2012). For example, in 2009, the data collated by the funding body for tertiary education, the Tertiary Education Commission (TEC), came under increased scrutiny and a number of discrepancies were found in trainee statistics collected from ITOs. It was pointed out that some ITOs were claiming Standard Training Measurement (STM) funding for trainees inappropriately: either for trainees who had ceased studying or for trainees enrolling in multiple qualifications (Ministry of Education, 2011). The Ministry of Education also used aggregate data to argue that completion rates of 35 per cent or less by trainees represent a poor return on investment for government funding, relative to other parts of the Tertiary Education system and overall (Mahoney, 2010).

In response to the criticism of ITO performance, the government made a number of changes to industry training policy in 2010, which included the introduction of performance-linked funding and minimum credit achievement requirements for trainees to maintain eligibility for funding. Two other policy changes of significance were the clear signalling to ITOs that, instead of only discussing merging, they must begin the process of merging, and the establishment of Trades Academies in secondary schools, polytechnics and private training establishments. Dalziel (2013) argues that the Trades Academies have been an effective part of the new industry training policy landscape, providing better linkages between young people and the industry training system. The mergers between ITOs have also been favourably received. Throughout the 1990s, there were as many as 50 ITOs (Piercy, 1999) and their numbers fell in the early 2000s to around 40 (Piercy, 2011). The mergers which occurred in 2013-2014 were designed to decrease the numbers of ITOs which as of 2014 were down to 12. Many of these mergers are based on sector and industry characteristics and have very large coverage, for example the Building and Construction ITO and the Primary ITO. This kind of ITO has the capacity to provide sector and sub-sector leadership by capitalising on skills clusters. In contrast, other ITOs are either small, such as the NZ Marine Industry Training, or comprise coverage that speaks more to historical relationships within the ITO system than industry characteristics for example Competenz and the Skills ITO (<http://www.itf.org.nz/itos/>).

Another significant change was the removal of government funding for short limited credit programmes, compliance and health and safety training (Ministry of Education, 2011). The decision to remove this funding was based on the belief, reinforced by claims in academic literature, that compliance based training is what employers are most likely to fund (Ashton, Sung, Raddon & Riordan, 2008). It was also argued that short courses serve the needs of employers rather than employees and, as such, the government should not be investing in limited credit programmes (Ministry of Education, 2011).

Industry Training Review

The focus of the review was on the investment made by the government in Modern Apprenticeship Coordinators and in the ITOs themselves, based on the issues identified by the Ministry of Education and the policy changes put in place post-2009. The scope of the review was to consider:

- how industry training has developed in New Zealand
- international approaches to vocational education and training
- the purpose of industry training, and the respective roles of government, employers and employees in achieving the purpose
- the strengths and weaknesses of different elements of industry training, including developing relevant skills, funding, accountability mechanisms, and governance
- the role of industry training within the wider vocational education and training system, including Youth Guarantee provision (Ministry of Education, 2011: 3).

Government officials were asked to prepare four reports as part of this process: (1) the *History of industry training*; (2) *Comparisons with industry training systems in other jurisdictions*¹; (3) *Rationale for government investment in industry training*; and (4) *Performance of the industry training system – data*. The first two reports are available on the Ministry of Education's website. However, the latter two were never published. Instead, the review went forward into the consultation phase, which consisted of two parts. The first consultation document: *Industry training review: Discussion Paper: Key roles in industry training systems* called for submissions concerning the industry training system and the roles of the government, ITOs and co-ordinators (Ministry of Education, 2012b). Further interviews and a survey were completed only with employers as part of this process; the lack of unions further demonstrating the removal of social partnership (Ministry of Education, 2012a).

This was followed by a second round of consultation in the following year on the *Proposal to improve the performance of the Government's investment in industry training* released in August 2012 (Ministry of Education, 2012c). The outcomes of this submission process were put to cabinet in late 2012, and the key initiative of rebooting apprenticeships as 'New Zealand Apprenticeships' was announced in January 2013 and launched in March 2013 (Ministry of Education, 2013). The cabinet paper, released by the Minister in March 2013, detailed the

¹ This report was held back until after the first phase of consultation.

outcomes of the Industry Training Review, including the policy changes for the industry training sector, such as the reforms to Modern Apprenticeship and traineeships (Ministry of Education, 2013). These reforms were then passed into legislation in April 2014 through amendments to the Industry Training Act 1992, 2003 and the repeal of the Modern Apprenticeship Act 2000.

The main policy objectives of the Amendments are to:

- establish a comprehensive apprenticeship system that provides the same level of support to all apprentices, regardless of age
- focus ITOs on two key functions – setting skill standards for their industries and arranging training
- clarify the functions and powers of the New Zealand Qualifications Authority (NZQA) in relation to ITOs
- include criteria relating to quality assurance in the process by which the responsible Minister recognises an organisation as an ITO (ITF, 2013).

New Zealand Apprenticeships

The first area of change was the creation of New Zealand Apprenticeships (NZA). This new programme required that all level four qualifications regardless of industry categorisation (MA or traineeship) should be combined under the NZA scheme. This was to ensure that trainees enrolled in these level four qualifications (NZA) would be provided with the coordinator funding and functions received by trainees enrolled in Modern Apprenticeship, effectively increasing the funding levels of traineeships. The intention of this change is to increase the completion rates of industry trainees based on the assumption that the coordinator support role is the reason why modern apprentices have high levels of completion rates. However, the MA programme was only offered in certain industries, so it is difficult to tease out whether the higher completion rates are the result of the pastoral care provided by coordinators, or the specific characteristics of the industry. Another change is that the theoretical component of this type of training be improved by stating that all level four qualifications must have at least 120 credits. This increase in the number of credits is to ensure that the apprenticeship system is more academically robust, however, it also increases the threshold of criteria training qualifications need to meet in order to qualify for public funding.

In the cabinet paper, Associate Minister for Tertiary Education, Skills and Employment, Steven Joyce, argued that the creation of NZA would be reinforced through an increased emphasis on quality assurance for ITOs, building on the review and reduction of qualifications work undertaken by NZQA (Ministry of Education, 2013). The aim of increasing the performance of ITOs is to improve the current poor return on investment for the government and also contribute to the Building Better Public Services² strategy of lifting the number of level four qualifications attained by those who are under 25 years.

² This is a reference group run out of the State Services Commission set up in mid 2011 to provide advice to the government on state sector reform. In 2013, the work of this group was augmented by 10 targets which the state sector must try and meet. Target 6 in relation to boosting skills and employment is: “Increase the proportion of 25 to 34-year-olds with advanced trade qualifications, diplomas and degrees (at level 4 or above)” (SSC, 2013).

Prior to the passing of the 2014 Act and as part of the introduction of NZA, the 'Apprenticeship Re-boot' initiative was implemented in March 2013. This programme was designed to provide an increased level of public funding for qualifications that meet the specifications of the New Zealand apprenticeship programme. It also includes specific funding for apprenticeships in relation to the trade-based needs of the Canterbury re-build. Further, in addition to the standard training subsidy (STM), this initiative will provide scholarships of up to \$1000 to eligible apprentices for tools. The cabinet paper argued that these measures would meet the skills needs for the Canterbury re-build; help individual apprentices deal with the private costs associated with apprenticeship training; and, most importantly, encourage more employers to take apprentices on as employees. It is too soon to tell if the apprenticeship reboot has had a positive impact, but in the parliamentary debates, the argument was made by National that it had led to an increase in the uptake of apprenticeship training (House of Representatives, 2013).

The changes associated with NZA have great potential, especially the provision of pastoral care to all those enrolled in industry training qualifications regardless of age. However, the loss of limited credit programmes and the requirement to meet the criteria for 120 credits at level four in conjunction with the emphasis on under 25 year olds has the potential to shift the emphasis of industry training in New Zealand onto youth. This could recast industry training into a system that is about labour market entry or front-end training rather than up-skilling for those already in the labour market. Thus, depending on how the programme is implemented, the capacity of the industry training system to meet the needs of unqualified workers already in the labour market will lessen. For example, retail, an industry dominated by women, is one of the few modern apprenticeship training programmes that does not meet the threshold of level four or the 120 credit minimum and, as such, retail training programmes may not qualify to be included in NZA.

It should be noted that Dalziel (2013; 2014) argues the focus on youth access to industry training is a strength of the reforms, and one that could be strengthened by improving the networking capability of careers advisors at a regional level. His focus on the plight of youth not in education, employment and training demonstrates that the government should not take their policy focus away from the under 25s. However, nor should the potential numeracy and literacy benefits to low skill workers associated with participation in even very short industry training programmes be neglected (Cochrane et al., 2008).

The focus on completions embedded into the NZA and ITO performance includes a high risk element for trainees, even if they do manage to end up in employment. Many industry trainees get their first opportunity as adults to lift their literacy and numeracy levels in ways that have relevance to them personally. However, if ITOs need to ensure that their trainees complete credits each year, they are more likely to give opportunities to workers who they know are capable of achieving industry standards easily. International evidence already suggests that industry training tends to go most often to those who have already received some training (Misko, 2008). This potential inequity of access to training was highlighted as an issue in the review documents, but it was not dealt with specifically in the proposed reforms.

The most serious consequence of the creation of NZA is the lack of flexibility embedded within the policy, and the earlier policy changes that involved the removal of limited credit programmes and compliance and health and safety training courses. This focus is likely to lead to an industry

training infrastructure that takes a one-size-fits-all approach. This kind of rigidity may well prevent industry training from genuinely responding to different industry sectors' unique requirements.

The role of ITOs and other government agencies

A key part of the legislative changes were focussed on increasing the performance and accountability of ITOs, by setting clearer roles and expectations for them and, by doing so, improves the coordination issues in the wider vocational education and training system. In particular, the requirement for ITOs to focus on qualification completion rates was designed to address the weaknesses in the system. It also included provisions on the role of NZQA in the development of accreditation criteria and the maintenance of quality assurance, which includes the right to impose sanctions (after several warnings) if ITOs should fail to meet accreditation criteria. In line with the NZA, the changes also included placing the coordinator role within ITOs, despite a number of submissions during the review process suggesting that ITOs were not the best suited to provide this service (Ministry of Education, 2013). This concern is understandable given the variable size and coverage of the 12 merged ITOs in terms of the different organisations' capacities to provide pastoral care.

But the most significant of all the changes was the removal of the statutory leadership and strategy role from ITOs. The cabinet paper stated that TEC and the Ministry of Business, Innovation and Employment (MBIE) would step up and take on this role (Dalziel, 2013; Ministry of Education, 2013). In the first reading of the Bill, Stephen Joyce also made the point that removing the role from ITOs would incentivise industry groups to take on the role (House of Representatives, 2013). Given cuts to the state sector, the capacity of MBIE and TEC to provide specific industry-based information and build direct relationships with employers in order to provide industry-based strategy is, at this stage, unclear. In addition, while it may be an improvement for industry bodies to take greater responsibility in providing leadership around skill formation, this will only occur if such groups are given the capacity to deliver on this need. The parliamentary debates in Committee were particularly fierce in relation to the removal of the leadership function, where numerous MPs repeated the statement that all those who made a submission to the select committee had stated their opposition to this change in the role of ITOs. This was highlighted as the most serious problem with the Bill by Labour, New Zealand First and the Greens when they withdrew their support at the third reading (House of Representatives, 2014b).

The other reason given for the withdrawal of support was the proposal to make a contestable fund available for employers and private MA coordinators to access in order to provide training within enterprises. All submitters to the select committee except Business NZ spoke out in opposition to this policy (House of Representatives, 2014a). The Minister for Tertiary Education, Skills and Employment, Steven Joyce, argued in the cabinet paper that this initiative, in part, acknowledged the excellent work of some private modern apprenticeship coordinators as well as employer complaints about difficulties associated with dealing with ITOs. The rationale given for this move in the cabinet paper (Ministry of Education, 2013) and in the select committee (House of Representatives, 2014a) was the need to place further competitive pressures on ITOs.

This move to withdraw direct government funding and support for the development strategies for skill formation is a serious weakness of the reforms, and could very well lead to a disconnection between industry and the training system. Our rationale for arguing that there will be a greater likelihood of coordination failure issues is outlined in the following section.

Skill formation and productivity

Throughout the 2000s, industry training systems, internationally, have come under scrutiny in relation to their ability to meet the skill needs of economies, increase productivity and to improve the employability of citizens (Whitham, 2012; Piercy, 2011; Thelen, 2004; Ashton & Sung, 2011; Warhurst & Findlay, 2012). Amongst theorists, a consensus arose that concentrating on the industry training system alone was inadequate. Rather, a broader focus on the skills formation system as a whole was required if questions such as “why was the promise of human capital theory not being realised?” were to be addressed and coordination failure be identified and responded to (Buchanan et al, 2001; Thelen, 2004; Keep & Mayhew, 2010).

Finegold and Soskice (1988) provided insights into why some skill formation systems seemed to be more successful than others when they classified different skill formation systems as being high or low skill equilibriums. They used this model to argue that the United Kingdom’s skill formation system was trapped in a low skill equilibrium, whilst Germany was in a high skill equilibrium. This assertion stemmed from an analysis of the countries’ economies and systems of capitalism, labour market dynamics, industrial relations frameworks, as well as the industry training systems, demonstrating the need to focus not just on industry training but the institutions by which it is framed (Finegold & Soskice, 1988; Thelen, 2004). Their analysis prompted a number of studies into the characteristics and qualities of skills and, in particular, what characterises a high skills approach to skill formation. The findings of this research are well represented in Brown’s (2001) seven Cs of high skills. These are: Consensus, Competitive Capacity; Capability; Co-ordination; Circulation; Co-operation; and Closure. These seven elements speak to the attitudes and resources that countries need to develop and deploy if they want to move to a model of high skills formation. ‘Consensus’ is the need to ensure that all relevant stakeholders are consulted and involved in decision making regarding skills development. Many societies which are viewed as having a high skills equilibrium provide government funded but devolved decision making structures which involve unions, employer groups and government (Powell, 2005; Brown, 2001). This form of subsidiarity allows for the development of ‘Co-operation’ between and within industry groups, something that does not tend to occur in market-based approaches that are predicated on the importance of competition (Ashton & Sung, 2011). Co-operation is required for effective skills development if it is to be of the kind that provides workers with portable and relevant skills, an outcome that is vital, given that government funding is focussing on securing economic and social goals. This connects to ‘Closure’ which is the use of skills formation in ensuring that social mobility is afforded to all by ensuring that both the compulsory schooling sector and industry training operate on a meritocratic basis. This approach will ensure that the social goals of inclusion and equality are delivered on by the education system. Competitive capacity is about ensuring that those involved in innovation have the skills and resources to capitalise on new developments. This is not just about encouraging greater investment in research and development. It is about ensuring

that organisations can move swiftly to respond to and operationalise changes in technology or systems. Capability is an important feature that connects to competitive capacity and it speaks to reconceptualising workers as lifelong learners. Consequently, the education and training systems need to meet this need of promoting not content, but instead the capacity to learn and to provide opportunities for workers to engage in upskilling throughout their lifetime. This requirement is not to be taken lightly, as workers can become responsible for taking on the risk of ensuring their employability (Thompson & Smith, 2010). If ‘closure’ is also to be delivered on, the State must play a leadership role in lifelong learning. The arguments on the concept of ‘co-ordination’ highlight that market-based models tend to emphasise supply side issues, such as qualification stocks and employability and that, instead, what is needed is better linkages between matching supply and demand for skills (Dalziel, 2014; Brown, 2001). Brown (2001) argues that the State is best placed to provide the kinds of leadership that will help establish what a country ‘needs’ in terms of skill development by coordinating stakeholders and information gathering. Circulation connects to this point, but refers to the diffusion of skill within and between industries and individuals. This diffusion of skill is a requirement that will be delivered on if capability, cooperation and coordination are addressed adequately within a skill formation system.

This wide-ranging and industry linked thinking about high skills development has been operationalised to a greater extent by a concept developed by Finegold, and refined by the work of Buchanan et al (2001) called skill ecosystems. Skill ecosystems is a more expansive model of skill needs within industries which encourages policy makers, employers, communities and individuals to conceptualise skill needs in four different areas:

- “the development of skills
- the supply of skills
- the demand for skills
- the deployment of skills” (Anderson & Warhurst, 2012: 117).

This slightly different way of thinking retained aspects of the skill equilibrium concept in terms of the emphasis on institutions, but the model emphasises not just “skills supply but also its development, demand and use...[and] the system’s *dynamism and continual evolution*” (Anderson & Warhurst, 2012: 113, emphasis added). This model recognises that skill development, demand and use are in a constant state of change, thus the skill formation system also needs to capture this dynamism. The information networks required to identify, understand and respond to these changes are challenging to develop, but can provide great improvements to the quality of training as well as to the quality of work (Windsor & Alcorso, 2008). Alongside the dynamism, the skill ecosystem concept pushes out the understanding of coordination failure beyond matching the supply and demand of skill. This allows for the development of approaches that place equal emphasis on understanding business strategies, employment practices and job design as well as industry training systems (Buchanan et al, 2001).

We argue that the current approach in New Zealand focusses on the ‘demand’ for skills through a market approach and, to some extent, the ‘development’ through NZA, but the supply and, most importantly, the deployment of skills is not addressed specifically. Dalziel (2012) offers a solution to the supply issue by advocating better matches between the demand and supply of labour through regionally based networks of careers advisors. This solution still does not deal

with the needs of deployment as it retains a focus on the VET system and does not address the issue of organisational development. Skills and economic development policy must be linked if training is to augment productivity levels (ILO, 2008). The reason why New Zealand's productivity must be addressed, alongside industry training policy, is because the productivity of its workforce is central to the country's ability to improve living standards. As Krugman (1997: 11) observes "Productivity isn't everything, but in the long run it is almost everything. A country's ability to improve its standard of living over time depends almost entirely on its ability to raise its output per worker". For New Zealand, this bodes ill as its productivity performance over the previous several decades has been poor, with the growth rate of GDP per hour worked in the 2000s being amongst the lowest in the OECD. This is despite a prolonged period of restructuring which, if conventional wisdom is to be believed, should have seen New Zealand's economy grow strongly (de Serres, Yashiro, & Boulhol, 2014).

Furthermore, we argue that Buchanan et al.'s (2001) addition of three levels of competencies (skills) is also very significant because it means that the skill formation system can be re-conceptualised in relation to the need to develop, supply and deploy skills at a high, intermediate and routine level. Ashton and Sung (2013) argue that productivity gains can only be secured if senior management makes the right kinds of decisions for the sector and product markets, and that, in turn, middle management have the skills to implement the new technology and training systems. Managerial capacity is particularly challenging for SMEs, as such it is vital and the industry training system can deliver skills development and deployment at all three levels.

This argument is based on the understanding that most industries have interconnected and interlocking clusters of skills at the high, intermediate, and routine levels. For instance, while the aerospace industry requires advanced levels of skill in general, there is considerable heterogeneity in skills levels within the industry more broadly with the range of occupations being required; managers, engineers, technicians, machine operators, fabricators, assemblers, support staff and general labourers/warehouse persons and so on (Kraemer-Mbula, 2009). Moreover, many of these occupations perform similar activities in a number of different industries (Christinger, Fowler & Kleit, 2012). Altering the skill formation system in order to capture the benefits of clustering facilitates an industry/sector or regional approach to skills demand and deployment that Ashton and Sung (2013) recommend to strengthen the skills productivity connection. This kind of approach pushes policy makers to look beyond higher education as a site for developing skills because, as Finegold (1999) and Buchanan et al. (2001) argue, industry training systems are often not where the coordination issues are emerging from. For example, investment in technology alone, or research and development alone, will not necessarily deliver on productivity gains, in fact, it could lead to decreases in productivity. Instead, companies need to ensure that managerial capacity, alongside technology/research and development and training are connected to deliver on specific product market needs (Ashton & Sung, 2013).

Conclusion

Some of the changes proposed could improve the provision of industry training. For example, greater levels of accountability for the work of ITOs have been required since the development

of the model in the 1990s. As such, these measures could provide sufficient motivation for ITOs to address the coordination issues that have plagued the system. The emphasis on completions could also serve to improve the return on the government's investment in industry training. However, it is the provision of pastoral care to all workers enrolled in apprenticeship qualifications through the extension of the coordinator role that is likely to provide the most positive outcomes. Providing additional support to apprentices could make a vast difference to older workers choosing to take on apprenticeship training and for those already enrolled who are struggling to complete.

We argue that, in terms of the connection between productivity and skills, the current reforms provide little capacity for improving New Zealand's economy. Leaving skills development to market dynamics will lead us back to the extensive coordination failure of the 1990s with skills shortages, mis-matches and under-utilisation all likely to occur. Such failures do not rest on the administrative inadequacies of a particular market-led regime alone, but rather speak to basic weaknesses in an approach to skill formation that only focusses on the stocks of qualifications (Keep, 2006; Anderson & Warhurst, 2012). This is where skill ecosystems can provide the most use as this approach encourages policy development that allows differences to be identified at the regional, industry, sector and product market level. In the review documents and other Ministry of Education reports, a point made consistently is that the statistics in industry training in terms of participation numbers, participant type, and completions vary extensively across industry – a point ignored in the Cabinet Paper and media items as the sector was damned as a whole by the negative discourse. However, it is this issue of industry variation that is of the most serious concern. This is because the reforms have moved forward on a “one-size-fits-all” approach glossing over this significant issue of industry variation in terms of training needs, skill acquisition, capacity for deployment and utilisation of skill. The work of the Skills Action Plan developed in 2008 indicated that industry differences mattered and need to be taken into account. If this is not considered, then it is likely that coordination issues will continue to be a problem. Furthermore, we argue that these policy reforms do not address coordination problems that stem from the variation of skill needs between and within industry.

Providing such finely calibrated information can be achieved if all social partners are called to the table because organisations like unions and ITOs, especially when they have high industry coverage, are aware of the sectoral, sub-sectoral and product market related differences that need to be taken into account (Raddon and Sung, 2005). Dalziel (2014), in his work on skill ecosystems, also identifies another group who could provide additional insights, especially on the supply side, which are careers advisors. As such, we argue strongly that if the industry training system is to move forward towards achieving optimal conditions for skill development, then social partnerships need to be strengthened again and more stakeholders introduced, such as career advisors and educational institutions (Dalziel, 2014; Warhurst & Findlay, 2012).

The skills leadership role and the development of strategy, regardless of who completes the task, need to be funded by the State and industry partners to a level that will facilitate coordination across sector bodies, ITOs, unions and educational institutions. Social dialogue or consensus is a vital part of making skill formation systems more effective in developed economies (ILO, 2008; Powell, 2005). This is particularly important for sectors with low employer engagement, such as the service sector, because skills development and deployment is at the routine and intermediate

level, and not well connected to labour market mobility and remuneration. In these sectors, government leadership is required because the sectors lack the capacity and drivers for engagement in skill formation. For example, sectors which have low skill needs are likely to be locked out of skill development attached to qualifications by the introduction of NZA. This is very serious as it is workers in sectors with low skill needs that require the most assistance in improving their employability and, thereby, their social inclusion. This potential exclusion represents a waste of human potential and will keep a large proportion of the population locked into low wage sectors. Thus, the social as well as the economic goals of skill formation are at stake if the skills productivity disconnect is not addressed. Policy makers need to consider solutions that seek to effect change at four areas of skill formation: development, supply, demand and deployment. In order to do this, skill formation in New Zealand needs to be reconceptualised as policy process that can gather information from all relevant stakeholders in order to ensure that industry training can respond to dynamic changes at a sector and sub-sector level including the different types of product markets.

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