

# THE LEADERSHIP ROLE OF INDUSTRY TRAINING ORGANISATIONS: FROM POLICY TO PRACTICE

## Nicky Murray

CareerForce, Christchurch

#### Lucie Wenmakers

Aviation, Tourism & Travel Training Organisation, Wellington

#### Toni Fraser

Industry Training Federation, Wellington





#### Abstract

Industry training is designed and driven by industry, and concentrates on workplace learning that raises skills and boosts competitive advantage for business. The 41 Industry Training Organisations (ITOs) are charged with setting skill standards for their industries, and with developing and making arrangements for the delivery of training, and its monitoring and assessing, in order that trainees attain the required skill standards. The increasing maturity and success of the industry training system is reflected in a recent addition to the Industry Training Act. This requires Industry Training Organisations to provide 'leadership within the industry on matters relating to skill and training needs by; identifying current and future skill needs; developing strategic training plans to assist the industry to meet those needs; and promoting training that will meet those needs to employees and employees'. In order to assist ITOs to develop the capability to meet these requirements, funding was made available from the Tertiary Education Commission's Innovation and Development Fund for participating ITOs to develop an Industry Skills Strategy. This paper presents the approaches that two ITOs have taken in fulfilling their future skill needs strategic planning.

#### Introduction

The Industry Training Strategy was introduced in the early 1990s in response to a low level of systemic training, which was seen to impede economic growth. Industry Training Organisations (ITOs) were set up to develop and arrange workplace training for industry by:

- · setting skill standards for industry, and
- arranging for the delivery of training programmes and qualifications for industry.

Industry Training has grown substantially from 16,711 trainees in June 1992 to 161,697 trainees in 2005. In 2001, the Industry Training system was reviewed, and

while ITOs were seen to have good connections with industries and businesses, the review highlighted the limited ability of firms to anticipate economy-wide skill shortages and the need for clearer pathways throughout the education and training system. This led to the introduction of legislation in 2002, which gave the mandate for an additional role for ITOs, that of providing industry skills leadership.

Information gathering, analysis and prediction of future trends were seen as an important part of this role from the start, as were connections with a broader range of business and economic development organisations and tertiary education organisations. The details, however, of just how TEC would assess ITOs' fulfilment of these new responsibilities, and how the role would be funded, were

slow to eventuate. Many ITOs began interpreting the role and working on implementing it in their own ways, building on their existing connections with industry.

In this paper, we examine the ITO leadership role, setting the discussion within the broader context of the role of education in economic development, in both New Zealand and in the wider international perspective. We then discuss more fully the ITO leadership role and the impact of that role on the way that ITOs work. We then present, in the form of case studies, the approaches that two ITOs have taken in fulfilling their future skill needs strategic planning, and end with some thoughts on how the leadership role could be enhanced.

## Education, Skill Formation and Economic Development

Education performs an economic and social function, preparing citizens for their roles as workers and members of society. An important policy driver for many developed countries has been the notion of moving to a post-industrial age where knowledge and skills are a key force for change in the economy. The relationship between education and the economy, however, is complex, and increasing the skill levels of individuals on its own may not be enough to bring about change. New ways of bringing education and business development closer together are needed for increased levels of skills to be used effectively in the economy.

The New Zealand government has introduced reforms to the tertiary education system with the aim of better aligning it with economic and social development goals. In this context, ITOs have inherited a new role involving skills leadership. The skills leadership role is about identifying skill needs, developing strategic training plans and promoting training to employers and employees. In order to fulfil this role, ITOs need to understand how skill development interacts with economic, employment and business developments to bring about productivity and other performance-related improvements. They also need to know how to fully utilise the different levels of influence they have over skill development and use in their industries.

## Australia and the United Kingdom

For developed countries to continue to grow their economies in the face of trends such as globalisation, governments argue there is a need to focus on the production and commercialisation of knowledge that increases the quality and value of exports and domestic products and services. In order to bring about this transformation, increasing numbers of the population need to be educated to higher levels and work needs to be organised in ways which encourage innovation and quality. Governments are investing in increasing the numbers of adults completing qualifications, and exhorting the education system, particularly the vocational education and training sector, to become more responsive to the needs of the economy. But is this enough?

Knowing just how education contributes to economic growth and how this can be measured is not straight forward. There is a growing body of research in the UK that argues policy makers are overstating the relationship between education and economic performance. Keep and Mayhew (1998) have found that features of the English economy (such as a lack of labour market regulation and shareholder driven firms) result in a dominant strategy of cost-cutting and pursuit of short-term profits, which works against a focus on moving to a high skills economy. Bringing about a change requires more than lifting skill levels as "skills are but one element within wider systems and interactions that combine to produce different levels of organisational development" (Keep & Mayhew, 1998: 1). Research has also shown that while there is more demand for more highly skilled people, there is also growth in low skill jobs and non-standard forms of employment (Keep, 2005).

So what will bring about the changes needed for a knowledge economy? Keep (2000) argues that a culture change is required in England so that consumers, firms and government are all focused on building the resources and knowledge necessary to develop and use skills, and produce and consume high quality products and services.

On a small scale, the Australian and UK governments are starting to explore the complexity involved in meeting long term economic objectives through education and training. Examples of developments include:

#### In Australia,

- adding to the role of Industry Skills Councils: since 2003 required to provide industry intelligence to the Vocational Education and Training sector on current and future skill needs and training requirements, and
- skill ecosystem demonstration projects: education and training planned in the context of business productivity and growth in a particular industry or region; and

#### In the UK,

 the establishment of the Skills for Business Network with 25 Sector Skill Councils, to help shape the supply of relevant training and skills and to raise employer commitment to skills through Sector Skills Agreements.

While evaluations of these initiatives have found that developing relationships between businesses and the education sector is not easy, the Australian and UK governments have recognised how important they are for ensuring the benefits of education can be realised in the economy.

#### New Zealand

In New Zealand, an ever increasing number of government strategies and frameworks that include the aim of contributing to economic development have been

released: from the Growth and Innovation Framework (now the Economic Transformation agenda), through to strategies for productivity, small business, scientific research, management and regional development. Not all of these strategies have been well received, and there have been criticisms of the government taking an active approach to economic development from business circles, who feel the focus should be on lowering taxes and reducing compliance.

The Tertiary Education Strategy, released in 2002, places tertiary education at the centre of economic change:

"New Zealand's continued prosperity and social wellbeing will rely on the skills and knowledge of its people and how these skills and knowledge are applied to generate economic growth" (Ministry of Education, 2002: 44).

While it highlighted the need for improvements in the quality and relevance of teaching, learning and research, the Strategy does not explicitly discuss how skill development will bring about economic growth, nor how education is expected to interact with wider economic and business developments. Since the release of the Strategy, significant growth in provision in areas which have been questioned as being of little value to the economy (ILO & OECD, 2005) have led the government to undertake further reform to better align tertiary funding with the strategic shifts it set out the achieve.

# How is the Leadership Role Changing the Way ITOs Work?

The leadership role involves ITOs working in a number of directions. As a voice of industry coupled with training expertise, ITOs are in a position where they have the potential to know:

- their industry(ie)s' education and training needs, now and in the future
- how education and training interacts with other organisational initiatives to increase productivity.

Therefore, ITOs can influence the *supply* of skills through participation in and interaction with the education system and the *demand* for skills through contact with employers. For some ITOs, leadership is about confirming work that they have already been doing to better meet industry needs. For others, it is an opportunity to re-examine the way training is configured in their industries.

The differences between ITOs provide unique challenges. These differences include:

- Size of the industry
- · Profile and role of ITO in the industry

- Coverage of a relatively homogonous/discrete industry, or a range of sectors
- Amount of collaboration/competition amongst the sector(s) represented
- · How active industry associations are
- How connected the ITO is to industry association(s)
- How active tertiary education providers are in providing for the industry(ies)
- The level and type of engagement between the ITO and tertiary education providers
- Level of union involvement/union coverage
- Level of involvement of industry specific government departments
- Whether the industry is the focus of reform/regulatory change
- Whether the industry is seen as a priority for development/seen as where the future lies
- Whether the industry is predicted to grow/ decline/stay stable.<sup>3</sup>

Across all ITOs, there are also common issues which make meeting their legislated leadership role challenging.

In addition to industry training organisations, industry and employer associations, chambers of commerce, unions, careers advice agencies, recruitment agencies, government agencies and tertiary education providers all contribute in one way or another to the functioning of the labour market. Having a clear idea about the respective responsibilities of various organisations is needed in order to reduce the possibility of duplication or gaps in services.

In some instances, ITOs may need to advise on the way work is organised so that the skills developed through Industry Training are used effectively in the workplace (for example, recruitment and performance management policies). Defining the boundaries of their role in this context can be challenging.

Since the leadership role was legislated, the level of funding and guidance provided by government for the role has been found by ITOs to be inadequate. They have not clearly articulated how broadly or narrowly ITOs are to define their role, or how extensive ITOs' influence will be. While this gives ITOs flexibility to define the role in a way that suits their industries, it can be problematic in light of differences between ITOs, and the relationship between skills development and wider business development. The lack of ongoing funding limits ITOs' ability to meet additional expectations associated with the leadership role.

The official place of industry skills strategies and strategic training plans has not been articulated by government to the wider tertiary education sector, so there is a lack of explicit accountability for the rest of the sector to align its provision with the objectives outlined in ITOs' strategic training plans. The question that remains unanswered is, where does ITO leadership fit within the range of regulatory and accountability mechanisms in the tertiary education system?

Having access to accurate, up-to-date, and meaningful data is important for ITOs in determining current and future industry skill needs. There are issues with official data on both the demand (labour market) and supply (tertiary education enrolments and completions) sides.

# How are ITOs Responding to the Challenge of Leadership?

Many ITOs already have an understanding of what drives their industries. Leadership is about formalising and sharing this, so research in various forms is important. Many ITOs have undertaken some kind of research to inform their leadership plans.

For research to be effective it needs to inform the activities of ITOs, as well as industry and the wider tertiary education sector. An important concept within this is influencing. ITOs do not have direct control over most of the elements that need changing in order for businesses in their industries to improve their productivity. However, through leadership they can have a say on how to best ensure the skills employees acquire are used in the workplace.

As well as research, ITOs are exploring ways of extending the reach of training in workplaces.

One of the ways that ITOs are demonstrating leadership is by aligning their training activities with changes in the workplace. This may involve activities that support the introduction of new regulations or new technologies, or responding to changes brought about by globalisation.

Lifting workplace productivity requires a range of business improvement practices, including training. For ITOs, effective leadership is not something they do on their own, but involves collaboration with other ITOs, industry associations, and government agencies.

ITOs may not have direct influence over workplace conditions, but they can have a role in illustrating good practice and supporting employers to attract and retain high quality staff.

ITOs are becoming more involved in facilitating training at higher levels and are helping their industries to focus on career development. This involves working with tertiary education providers on meeting industry requirements and ensuring smooth transitions for industry trainees into higher level learning.

#### **Case Studies**

Two case studies will be used to illustrate the leadership role of industry training organisations: one draws from community support services and the other from the aviation industry.

CareerForce (Community Support Services ITO)

CareerForce (Community Support Services ITO) is the industry training organisation (ITO) with the legislated training responsibility for the health and disability non-regulated workforce. This workforce is described as:

"workers/people who interact with clients, patients or consumers within the health and disability sector, that are not subject to regulatory requirements under legislation or by any other means. The workforce includes family/whanau carers (unpaid), volunteers, inpatient hospital services (e.g. healthcare assistants and orderlies), residential care workers, community based workers and workers in the needs assessment and service coordination field" (DHBNZ, 2006: 4).

Estimates of the size of this workforce vary from 75,000 to 100,000 workers, 'however due to no coordination of planning, development, research or review of this workforce, it is difficult to give accurate workforce numbers' (DHBNZ, 2006: 13).

CareerForce develops, promotes and monitors learning and assessment and sets standards for residential and home-based support work, across the Older Persons' Health, Disability and Mental Health sectors. CareerForce also covers other roles in the workforce including frontline managers, coordinators and supervisors The nature of the health and disability sector, and of the workforce that CareerForce serves, means that planning for future skill needs in this sector has significant differences from many other industries.

The skill requirements of the sector are linked closely to government policies and strategies. These overarching strategies, which result in the need for rapid development of new service delivery models and accompanying sets of competencies, act as key drivers for CareerForce and include the:

- Health of Older People Strategy Health Sector Action to 2010 to Support Positive Aging (2002),
- New Zealand Disability Strategy Making a World of Difference (2001),
- Primary Health Care Strategy (2001),
- Te Tahuhu Second Mental Health Plan (2005), and

He Korowai Oranga – Maori Health Strategy (2002).

The growing importance of workforce issues in the health and disability sector is highlighted by the Workforce Development planning that accompanies each strategy. A recent selection of such plans includes the:

- Pacific Health and Disability Workforce Development Plan, Ministry of Health (MoH), December 2004,
- Future Workforce 2005-2010, DHBNZ, August 2005,
- Public Health Workforce Development Plan, MoH, October 2005,
- Tauawhita te Wero, Embracing the Challenge: National mental health and addiction workforce development plan 2006-2009, December 2005,
- Kia Puawai Te Ararau, Maori Mental Health Workforce Development Strategic Plan 2006-2010, January 2006,
- Asian Mental Health Workforce Development Phase One: Feasibility Project, March 2006,
- Raranga Tupuake, Maori Health Workforce Development Plan 2006, April 2006,
- Health Workforce Development: An Overview, MoH, April 2006,
- Health and Disability Sector NGO Workforce Development, June 2006,
- Te Awhiti, National Mental Health and Addictions Workforce Development Plan for, and in support of, NGOs 2006-2009, July 2006.
- The Non-regulated Workforce in the Health and Disability Sector, DHBNZ, September 2006.
- Care and Support in the Community Setting, HWAC, October 2006.

Each of the 21 District Health Boards also has its own workforce development plan.

As can be seen by the plethora of reports, there is no shortage of workforce development activity within the sector. The ITO has been an integral part of this activity and is increasingly taking a leadership role in workforce development initiatives, in partnership with (for example) the Ministry of Health and District Health Boards New Zealand (DHBNZ). The ITO has been involved in a number of reviews of the current workforce, including forecasting, and is currently undertaking several projects examining the skill sets required now and into the future.

The sector does not have the cyclic business nature of many other industries, where training may wax and wane, requiring interventions to 'correct' under- or over-supply. In fact, the sector is experiencing a huge and ongoing growth in training needs. Given current shortages and

predicted demographic changes (both for the workforce and the general population), there is every indication of significant increases in demand for health and disability support workers in the foreseeable future (NZIER, 2004). The relationship that exists in many industries between training and increased pay levels is not always found in the health and disability support sector.

A large proportion of the workforce in this sector is transitory. High churn levels (up to 50 percent) mean that the emphasis has to be on training for the workforce, rather than on training for the individual. This does not detract from the need to support the individual – a 'one size fits all' approach is not an option for this workforce. The notion of ensuring an adequate and appropriate 'supply' of trained workers ready for employment, as is required in some other industries, is generally not relevant to this sector. Training can usually only occur once the individual is in the workforce.

The nature of the workforce (part time, often casualised, low levels of previous qualifications, significant literacy and ESOL issues, etc), combined with rapidly changing skill requirements, means that training must be responsive, flexible, customised and delivered in innovative ways.

The characteristics of CareerForce's trainees are unique, reflecting the nature of the workforce. In 2005:

- 95.6 percent were women, compared with the combined ITO figure of 27.8 percent
- 70.1 percent were over the age of 40 compared with the combined ITO figure of 33.8 percent
- 43.9 percent had no educational qualifications compared with the combined ITO figure of 17.1 percent.

(Source: TEC statistics, 2005).

As a result of demographic pressures and changes in the way that health and disability services are delivered, the challenges and importance of this workforce have received increased attention. A significant amount of this attention has been devoted to the future workforce skill needs and the related roles and training needs of frontline health and disability support workers. For example, in close consultation with the sector, CareerForce has reviewed and realigned its qualifications, resulting in a comprehensive suite of qualifications that are branded as Career Pathway Qualifications (CPQs). The CPQs allow workers to start with an induction/orientation level 2 foundations qualification and move both up and across subsequent qualification levels. There is a strong future workforce demand that requires Health and Disability support workers to be able to move rapidly and with flexibility across the sectors.

CareerForce recognises that future skill needs planning must incorporate the following:

- Meaningful partnership models that reflect and respond to the needs of funders, health providers, trainees and consumers.
- Recognition that the workplace is the site of learning for the future.
- The need to develop mixed mode delivery resources that reflect the learning characteristics of this workforce.
- The need to manage training that is volume, place and size independent.
- Moving the focus from assessment to achieving learning outcomes.

The main focus of CareerForce's future skill needs planning in the next 18 months will be on supporting employers to develop the workplace infrastructure that is required to support learning and assessment. Other activities will focus on:

Roles and competencies: Engagement with employers, providers, Government agencies and DHBs, on a sectoral basis, to set out roles and competencies as they evolve from new service delivery models and service specifications.

Employers and productivity: Engagement with employers to identify productivity drivers within the sector.

Cross-agency collaboration: Maintaining a high level of awareness of Workforce Development activity across a wide range of organisations and engagement with organisations about specific initiatives.

# Aviation, Tourism & Travel Training Organisation ATTTO

ATTTO is the industry training organisation mandated to look after the skill and training needs of the aviation, tourism, travel and museum sectors. ATTTO develops national qualifications for its industries that are used in high schools, polytechnics and private providers as well as in the workplace. ATTTO is responsible for moderating the delivery of its qualifications in all these settings. Facilitation of training in the workplace is a key role for ITOs and ATTTO currently looks after approximately 4000 trainees. In addition ATTTO administers 200 Modern Apprenticeships for Tourism and Aeronautical Engineering.

The skill requirements of ATTTO's industries are closely linked with those of related industries such as Hospitality, Sport, Fitness & Recreation and Retail. In 2001, the New Zealand Tourism Strategy 2010 identified human resource issues as one of the key challenges facing the tourism and hospitality sectors. When in 2002 the mandated role of industry training organisations was extended to include the provision of leadership on matters relating to skills and training needs, ATTTO became more proactive in this area.

In 2004 the Tourism Workforce and Skills Projections Report was completed (Business and Economic Research Limited, 2004). This was a collaborative project with the Tourism Industry Association, Ministry of Tourism, Hospitality Association of New Zealand and Hospitality Standards Institute.

This study uses a general equilibrium model to provide a projection of the tourism workforce requirements over the medium term. The model is in essence an attempt to mimic the market processes, the behaviour of market participants and their responses to a proposed event or combination of events. The employment projections provided by economic modelling were complemented through interviews with representative major operators in the tourism sector and by a web based survey of smaller tourism operators. Discussions with the funding partners and a number of external advisors were held throughout the project.

The Tourism Workforce and Skills Projections Report pointed out a number of serious issues the tourism industry will face in the coming years:

- The tourism industry is going to need about 17,000 new people each year until 2010. This includes new staff for expansion as well as replacements for staff leaving the industry. (Only 4,500 of these each year are to cater for expansion, the others are replacement staff)
- Turnover of staff is a significant issue for the tourism industry
- Skill requirements of the sector are focused around personal attributes like interpersonal communication, work ethic and personal presentation.

After the Tourism Workforce and Skills Projection Report was completed, ATTTO produced projection reports for the Travel Industry (Aviation, Tourism & Travel Training Organisation, 2005) and the Aviation Industry (Polson Higgs, January 2005) to provide a more detailed view of these sectors than was provided in the Tourism Report. These were completed early in 2005. The projection reports are reviewed annually.

Following on from the Tourism, Travel and Aviation Workforce and Skill Projection Reports a number of areas were identified as requiring further research.

- High turn-over of up to 30% of staff across the ATTTO industries is costing employers in recruitment costs and downtime
- Large numbers are studying for qualifications in the ATTTO industries but some do not choose to pursue a career in these industries.

Surveys were commissioned by ATTTO amongst students of ATTTO tourism, travel and aviation courses in secondary schools and tertiary institutions, graduates of ATTTO courses and industry employees. This resulted in the Student, Graduate and Employee Surveys: Overview Report (Polson Higgs, July 2005), which was available later in 2005. The results of the surveys were fed back to industry at the 2005 aviation and tourism industry conferences, through media releases and the ATTTO newsletter Going Places. The training providers were informed of the survey outcomes through the 2005 ATTTO provider forums, media releases and the ATTTO newsletter Update.

At the same time (in 2005) a group of concerned tourism industry players (the Leadership Group) saw the need to develop a strategic response to the identified issues from the Tourism Workforce and Skills Projections report and a consultant was tasked with investigating the issues with employers, government agencies and training providers. The membership of the Leadership Group is fluid and currently consists of:

- Industry Training Organisations: Aviation, Tourism & Travel Training Organisation (ATTTO), Hospitality Standards Institute (HSI), Sport, Fitness and Recreation Industry Training Organisation (SFRITO)
- Industry Associations: Tourism Industry Association, Hospitality Association of New Zealand, New Zealand Hotel Council, New Zealand Maori Tourism Council, Bus and Coach Association
- Government organisations: Ministry of Tourism, Department of Labour.

The investigation resulted in the Tourism & Hospitality Workforce Strategy (The Leadership Group, 2005), which was released in July 2006 and includes a list of initiatives and a lead agency for each. Many of the initiatives will be led by one or more Industry Training Organisations.

One of the initiatives ATTTO has started recently is a joint project with HSI, SFRITO and Retail Industry Training Organisation. The aim is to jointly promote careers in the service sectors to potential employees. This will provide our industries with a good pool of potential employees to choose from. The first step of the project is research into current perceptions of the service industries and the messages that could be used in a future campaign. The results of the research are expected by the end of the year.

Projects planned for the rest of the year and 2007 include:

 A detailed training needs analysis for the aviation, museums, tourism and travel sectors. This analysis will draw on information from ATTTO's annual workplace survey, the current Tourism and Travel qualification review process, regional data, government data, Tourism Satellite Accounts, Business Statistics and the 2006 Census to update the Skills Projections Reports and provide information on what training packages are needed and where, how the packages need to be delivered to suit the needs of trainees and workplaces and what additional support is needed from ATTTO

- Research into the literacy and numeracy needs of the workplaces in ATTTO's industries
- Research into workplace productivity in ATTTO's industries. The focus will be on the effect of skill levels and training on workplace productivity.

## Conclusion

The examples above show how ITOs are rethinking how they operate in order to help their industries to be better prepared for the future. When it comes down to it, effective skills leadership is about having the right people with the right information helping industry to make decisions about what the future holds, and on how skills development can help in response:

In order for industry leadership to continue to gain traction, ITOs, government, and others involved in skill development need to focus on:

- Research and evaluation that is an ongoing and integral part of ITOs' leadership planning and guides decisions
- Building on and expanding the ways that ITOs collaborate with each other, the tertiary sector, and industry players.
- Bringing industry together to agree on future skill needs
- Funding arrangements that are better aligned with a vision for a more integrated and responsive tertiary education sector.

#### **Future Research**

Two areas of future research are suggested by this paper: research relating specifically to the case studies and research relating to the broader leadership role of ITOs. Both case studies illustrate the need for a research agenda examining the notion of productivity in the service sector. Under this umbrella falls many aspects of productivity that are crucial for both case studies - recruitment and retention, organisational infrastructure and literacy and numeracy, for example.

Regarding the broader role of ITOs, further research could usefully focus on ITO leadership in the context of the current reforms to tertiary education, particularly in light of the increased emphasis on ITOs, through their leadership role, influencing other tertiary education providers and TEC decision making. It may also be useful to have more focused case studies that explore how the research that ITOs are undertaking as part of their leadership role is translated into action and how it is received by the industries or sectors they serve.

#### Notes

1 Tertiray Education Commission. Online: http://www.tec.govt.nz/education\_and\_training /industry\_training/extended\_overview.htm

. .

- In addition, the Strategy focuses on social development, including strategies for Maori and Pacific people's development and improving adult literacy and numeracy.
- 3 Derived from interviews with ITO CEOs; ITO Profile analysis.

#### References

- Aviation, Tourism and Travel Training Organisation (ATTTO) (January 2005). Travel Workforce and Skills Projections Report. Wellington: ATTTO.
- Business and Economic Research Limited (BERL) in association with Horwath Asia Pacific Limited (2004). Tourism Workforce and Skill Projections. Wellington: BERL.
- Blandy, R and Freeland, B. (2000). Is the Stock of VET Skills Adequate? Assessment Methodologies. Australia: National Centre for Vocational Education Research.
- DHBNZ (2006). The Non Regulated Workforce in the Health and Disability Sector. Wellington: DHBNZ.
- ILO and OECD (2005). Economic Survey of New Zealand 2005: Human Capital and Labour Utilisation (Summary). Paris: ILO & OECD.
- Keep, E. and Mayhew, K. (1998). Was Ratner Right? UK: T Magazine. Online: www.tmag.co.uk.
- **Keep, E.** (2000). Creating a Knowledge Driven Economy: Definitions, Challenges and Opportunities. Coventry: ESRC Centre on Skills, Knowledge and Organisational Performance (SKOPE).

- Keep, E. (2005). Skill Shortages in the UK: Issues, Problems and Ways Forward. Wellington: Power point presentation, www.itf.org.nz
- Ministry of Education (2002). Tertiary Education Strategy 2002-07. Wellington: Ministry of Education.
- NZIER (2004). Ageing New Zealand and Health and Disability Services: Demand Projections and Workforce Implications, 2001 2021. Wellington: NZIER.
- Polson Higgs (2005). Aviation Workforce and Skill Projections Report. Dunedin: Polson Higgs.
- Polson Higgs (2005). Student, Graduate and Employee Surveys: Overview Report. Dunedin: Polson Higgs.
- The Leadership Group (2006). Tourism & Hospitality Workforce Strategy. Wellington: The Leadership Group.

#### Authors

Nicky Murray Workforce Development and Research CareerForce 354 Armagh Street Christchurch NickyM@cssito.org.nz

Lucie Wenmakers
Business Development Manager
Aviation, Tourism & Travel Organisation
P.O. Box 6466
Wellington
Lucie.Wenmakers@attto.org.nz

Toni Fraser Research Manager Industry Training Federation P.O. Box 24 194 Wellington Toni@itf.org.nz