

## **TECHNICAL AND VOCATIONAL EDUCATION THROUGH OPEN LEARNING TRENDS, DEVELOPMENTS & ISSUES FROM A LOCAL PERSPECTIVE**

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### **Abstract**

As we move from the industrial era into the knowledge age, the shape of the world of work is changing dramatically. In the emerging knowledge driven economy, the ability to learn and to process information effectively becomes the determining factor of prosperity. This paper examines trends, developments and issues in vocational education and training from a New Zealand perspective. Changing work patterns have been reflected in the diverse products and services provided by vocational education providers. New markets, business and partnerships have been established and participation has increased dramatically. Open learning in vocational education has much to offer the world of work because it is responsive, flexible, promotes independent learning, can be set up in a way that fosters teamwork as well as individual achievement and the immediate transfer of skills in the work setting. Open learning also reinforces qualities of self-reliance, mobility and rapid adjustment to change needed for survival in tomorrow's world. That level of quality can only be met if the objectives are very clear, and both the process of learning and the system requirements for supporting that process are well understood.

### **The context of vocational education and training: the changing world of work**

As we move from the industrial era into the knowledge age, the shape of the world of work is changing dramatically. Globalisation, the information revolution and the new technologies have transformed industry. High value knowledge/information and technology based enterprises are emerging. The wealth generated by traditional commodity based industries and manufacturing is declining. New Zealand remains primarily an agricultural nation but it is starting to move away from commodity supply to the production of knowledge-based, value-added innovative products sought by world markets. Its ability to make this shift will determine its competitive advantage and future economic well-being.

Employment patterns are also changing. There is a decrease in non and low skilled industrial jobs. The reduction in manufacturing has been balanced by an increase in employment in the service sector. Jobs for life are increasingly a thing of the past. More will be self-employed. The concept of a job is likely to be replaced by variations of project work. Individuals need to be more self-reliant taking responsibility for maintaining their own employability through upskilling or reskilling.

Gaps between those with knowledge and skill and those without equate to the increasing gaps between rich and poor. In the emerging knowledge driven economy, the ability to learn and to process information effectively becomes the determining factor of prosperity.

Young people appear to be accepting of this changed reality. Having watched their parents suffer redundancies, after a life-time of loyalty to one company, they are increasingly taking control of their own employment. American studies show that the so-called slacker Generation X is the most entrepreneurial generation in American history, responsible for 70% of all new start up business.

### **Trends in distance vocational and technical education and training**

#### Changing patterns in the vocational education market

Changing work patterns are reflected in course portfolios of institutions. At The Open Polytechnic of New Zealand (TOPNZ), trends appear to mirror international trends with marked decreases in many traditional trade-related courses and a steady expansion in courses in the service sector and social sciences. There has been a marked 'credential creep' in courses for para-professionals, with many now requiring undergraduate degrees for entry. Changes in content are also being required for professional courses such as accountancy and nursing, to reflect international trends in those disciplines.

The vocational market is characterised by the variety of responses to meet different needs - preparation for work, updating, upskilling, preparation for career change, recognition of current competence, credentialling - which come into its ambit. Because the world of work is changing so rapidly, there is a constant need for upskilling and retraining.

While pre-employment trade and technical education, along with the undergraduate degree courses required for entry to the professions remain an important plank in the vocational portfolio, the characteristic flexibility of open learning is particularly well geared to the needs of the modern workplace and workers.

The demand is insatiable and the growth of new providers in the sector is witness to that. Research in Europe has shown that the vocational training market is the largest part of the distance education market and is at least 70% of the EU market in terms of the number of people involved.

### Increased participation

Most governments are concerned with finding cost-effective ways of human resource development and within that are focusing particularly on skills requirements for jobs that will boost their economies.

New Zealand is no exception and in the 1990s has undergone significant reforms which have dramatically changed the shape of vocational education and training. The government's industry training strategy aims to upskill a workforce to respond quickly and effectively to a changing international marketplace.

New Zealand has moved from a system where government fully funded traditional trade, technical and vocational courses irrespective of the numbers of students enrolled, to one where courses are provided only if it is economically feasible for a provider to do so, and where the users pay a growing portion of the price of their education and training.

In line with an overall move to introduce market forces into areas previously controlled by the State, competition has been injected into the education system with providers tendering annually for industry training, and attracting government subsidy for approved tertiary courses on the basis of actual enrolments. Participation in post-compulsory education and training has increased significantly.

Open learning, in New Zealand and elsewhere, has played a prominent role in making vocational education more accessible. With its lower cost structures for high volume courses than on-campus education, it is a key component of governments' bids to increase participation while containing expenditure. The University for Industry (Ufi) in Britain is an example of a focused strategy for vocational education based on this premise of affordable access for all.

### Addressing the skills gap

New Zealand, like many other countries, has specific and generic skill shortages at all levels of the workforce.

Employers and opinion leaders responding to a recent survey in New Zealand were remarkably consistent in stressing the inadequacy of generic skills that they believed were a necessary base for entry to work and the demand for this gap to be addressed in vocational education. These generic skills included literacy and numeracy, communication and interpersonal skills, the ability to work in teams, values and technological literacy. Other surveys have also stressed the ability to team as a key skill and suggest that graduates are more often hired for their learning skills than their specific knowledge

Providers have been concerned about the low standard of education students have when they start courses. While a massive increase in participation in higher education and training is seen as economically and socially desirable, greater diversity in the quality of students is inevitable. Levels of attainment in literacy and numeracy are of paramount concern in the workplace and vocational education providers must have effective strategies in place to address this.

A key issue in New Zealand in terms of national human resource development is the increasing training gap in small businesses - more people are expected to work in this sector but firms cannot afford the time or financial cost of training. Additionally, attitudinal changes are required to instil a culture of life long learning.

Problems emerge for educational institutions when the courses which industry wants are not supported by those in the field, mainly because there is no legal requirement for such study, and workers in the industry are too busy or not interested in paying fees for a course they don't perceive as necessary. For example; adventure tourism is a fast growing industry in New Zealand and one where industry sees training as essential for safety reasons. A very good course, developed jointly with a Canadian provider was offered to meet this demand. It became a casualty after three years when the course was dropped through lack of student enrolments.

### Qualifications

There has been a significant increase in the range of qualifications and a trend to proliferation of narrowly based diploma and degree programmes in vocational education. We now see qualifications in everything from retailing to rugby administration, from marine engineering to media studies. The 'shelf life' of these courses is not as durable as some of the more traditional courses and student numbers in each are more limited than in more generic courses. This has major implications for the financial viability of some of these courses if offered through a resource based approach to open learning.

### Public perceptions of distance vocational education

There have been significant shifts in public attitudes towards the funding and quality of vocational education. The traditional values of tertiary education are being challenged. There is much greater emphasis on vocational education to meet perceived skills gaps which hinder economic growth.

Perceptions of the funding responsibilities of the state, the individual and employer have changed with greater recognition of the private benefits higher education bestows. Funding responsibility has moved accordingly. While employers also benefit, they tend not to support education beyond the immediate needs of the workplace.

The perception that distance education is a second-rate option also appears to be slowly changing and the endorsement of governments around the world (most notably in Britain and Australia) for this type of approach is helpful. Distance learning in New Zealand, fortunately, has not suffered from this misconception. What has been valued is the quality of the learning experience and the credibility of the qualification, not the mode of learning. Whether they are accounting, engineering, psychology or information systems graduates - or plumbers, pharmacy assistants or electricians, our graduates are accepted by employers as having equivalent qualifications to those from the more traditional institutions. Indeed, some employers have begun to recognise the superiority of our graduates as independent learners who use their competence in learning to cope and assist with change in the workplace.

### Changing staff patterns

The shift from a supply to client-driven process and from a teacher focus to a learner needs focus has had a big impact on staff and internal management processes. Managing the interfaces between different parts of the institution to ensure the student gets a seamless service has many challenges. Integrative processes that are accepted and understood by all staff are critical.

The emphasis on quality teaching has required academics to take on new roles in learning support and assessment. At the same time, in vocational education in particular, teachers must maintain their credibility in their own trade or profession. Add to that the necessity for academics in open learning to use technologies effectively in teaching, the requirement for significant and ongoing staff development is clear.

Another issue is the need to increase the flexibility of academic staff to respond to changing student demand. In some areas where contracts to provide industry training are contested annually, institutions have moved to short term appointments. There continues to be major problems in attracting good academic staff in some disciplines where remuneration cannot match the industry market, or there is under-supply in the market itself.

### Changing student pattern

We are seeing a decline in male participation, much more diverse levels of educational ability, and a significant increase in older students in vocational education. Another feature is increasing litigation. Students in New Zealand now pay high fees and where their access to a job or career is on the line the stakes can be high. All of these issues have implications for the way we present and teach our courses.

## **Developments**

### Partnerships

Expertise in vocational education and training means being able to effectively meet any kind of vocational learning need either independently or in combination with other partners. The latter is particularly important where workplace training is part of the open learning system for trade qualifications, and where supervised experiential placements are necessary as part of professional preparation - as for teachers or nurses. Laboratory or workshop requirements may also cause the open learning provider to find partner institutions with whom they can work. For us, this has led to considerable development of our expertise in setting and monitoring performance standards in contracts for service so we can assure the quality of the student experience. We have also improved our understanding of the relative costs and benefits in the different ways we can choose to design our courses while still providing quality learning opportunities.

### A business orientation

Many new private providers are entering the vocational training sector because of perceived business opportunities. With reducing government subsidy in New Zealand, established providers need to develop a flexible and entrepreneurial culture to diversify the customer base and revenue streams.

While the traditional mass provision of courses and programmes to individual students continues to be a significant part of the business of distance vocational education, there are many opportunities to expand, utilising the foundations of the traditional core expertise. This involves developing new products, services and markets.

### New products and services

The 'unbundling' of services is a practical response to market requirements to increase training undertaken directly in the workplace. This allows clients to purchase each element of training or learning support - learning needs analysis, course design, on-job assessment, examination management, and so on - separately or in whatever combination clients require. Consultancy services in vocational open learning provide another revenue stream.

At TOPNZ, staff expertise in course design and learning resource development is projected to be a significant contributor to the strategy of diversifying revenue. It is exciting, and enables the education provider to work in new ways with industry and the corporate sector both nationally and internationally. Students benefit as this experience is brought back into their courses.

New markets are also emerging in electronic assessment - especially for recognition of current competence. Electronic assessment banks are moving far beyond their traditional focus on multi-choice questions as virtual simulations and software capable of sophisticated content analysis are being developed. These are able to be used for testing and or revision purposes, increasing flexibility for students and teachers.

The Internet has enabled the development of on-line courses whereby potential users can browse resources in product catalogues and make quick purchase decisions through 'shopping trolley' facilities. In vocational education - where the credential has direct relevance for employment and earning power - students, providers, businesses and industry organisations are likely to be high users of such responsive service.

### **Issues**

#### Shortening life of knowledge

Students do not want to spend years doing a particular qualification and then find by the time they graduate there are no jobs. There is pressure for shorter vocational qualifications. In some disciplines the knowledge base changes so rapidly that it is difficult in a small country like New Zealand to get sufficient volume to justify investing in resource development to achieve the income required to break even. Our response is to move into a variety of open learning approaches, with mixed modes becoming much more common. Another issue is timeliness. In vocational education two years is too long to develop resources for a course, content is simply not that stable. Open learning providers in this sector must develop course design and production systems that can produce resources within tight time frames - or shift to a 'classroom' model using technology while bearing in mind that the economies of scale are then reduced.

#### Technology

Technology is an important strategic issue for most organisations today, but open learning providers face very specific challenges. The Internet and other emerging or potential information delivery systems will have a huge impact on the vocational market. This presents tremendous opportunities, but there are also complex issues to address.

What is critical is that we manage information technology in a way that adds value to the learning process for students in their context. Research is still required to establish what actual and potential value technology adds to the learning process, and on the benefits and costs of different approaches. These will vary significantly depending on the technology infrastructure of the country where the students reside.

In New Zealand we have excellent postal and telephone services with virtually universal access to them. This enables us to build our open learning system on these with confidence that students will get mail from us within 3 days and that all students can access tutorial assistance via freephone. For us, broadcast television is prohibitive in terms of cost, as there is no Government funding for this and students will not pay a higher fee when they prefer to get videotapes anyway.

While there will now always be a demand for on-line study, the growth in this area may not be as fast as has been anticipated. Amongst TOPNZ students, access to the Internet increased dramatically between 1995 and 1997. In the past year usage has plummeted. While there is not yet concrete evidence to explain this, it is believed that the drop is related to employers stopping private use of the Internet.

Given limited resources, balancing the choices, timing and scale of investment in technology alongside other business priorities will be a key management issue in the years ahead.

#### Quality assurance in vocational education

In focusing first on the learner and learning outcomes, open learning can play a critical role in setting quality standards that apply for all education. For too long, external quality assurance has focused on input

measures that relate to traditional campus based education. When the focus is on outputs, good open learning providers can often demonstrate superior quality in the provision of learning opportunities for students.

Quality assurance is an important issue in our sector and too big a subject to be able to more than skim the surface in this paper. As providers face increased competition and globalisation impacts on the labour market, with multinational firms increasingly seeking employees internationally, externally verified assertions of quality are more and more important. Professions jealously guard entry through specific accreditation of a provider before its graduates can apply to be registered. Systems of reciprocity allow (or refuse) entry from abroad. In 1996, (the most recent figures attainable) 25 professions in 15 countries had begun development of transnational certification and it seems likely this could put yet another layer of accreditation on vocational providers.

Many countries are developing qualifications frameworks which are proving more portable than older systems. Often however it is trade agreements that are driving the prospect of regional and global accreditation. Certainly that was part of the push for the Mutual Recognition (of qualifications) Act between New Zealand and Australia. But even in Europe where the motivation for such arrangements is high, the issue is difficult. A study by the European Centre for the Development of Vocational Training showed 12 countries surveyed were all concerned with parity issues but were all attempting to address the issue in different ways and no infrastructure had been developed to advise on mobility issues.

As well as academic quality assurance systems, there is increasing pressure particularly on vocational education institutions to match the quality systems of the world of work. The system needs to be understood by those in industry and for that reason systems like ISO, the UK Investors in People accreditation (which is now being piloted in New Zealand) and the new BAOL Quality Mark are increasingly important. The key message is that quality must be fit for purpose and meet the needs of various stakeholders from students to governments. A key issue is managing the institution for future sustainability in a way that satisfied these various requirements without adding cost that does not bring real benefit.

#### The role and impact of government policies

Government has an important role in providing a policy framework and ensuring that appropriate messages and incentives are established to create desired results. Around the world, we have seen many successful initiatives which are the direct result of government policy.

However, international trends show a decline in formal part-time study, mainly due to increasing time and money constraints. In New Zealand, Government policy provides inadequate incentives for part-time study, which particularly makes the vocational sector financially disadvantaged in comparison to full-time study because there is less government subsidy available. There is also little, if any, understanding amongst policy makers about the different cost structures underpinning quality open learning. Too many seem to think that simply broadcasting or putting courses on the Internet will suddenly enable thousands of students to access vocational education. The complex infrastructure required to support students to use that information, to assess them, provide credible qualifications etc, is not acknowledged in policy development.

In New Zealand, government cutbacks and increasing costs to students could be seen as one of the greatest threats facing the sector, placing increasing pressure on providers to really add value. It has become imperative that institutions control their costs in order to control the fees charged to students.

This has been a useful discipline. Being forced to focus on how resources are spent has led to the examination of issues of educational quality. When funding was automatically available for courses, there was little need to think about the student. The change from a supply driven system to a client driven system has helped our organisation focus on delivering 'fit for purpose' solutions for customers. Our teaming packages, teaching support, assessment and the timeliness of our distribution systems are all giving students significantly higher quality than in the past.

#### Co-operation and competition

One of the benefits of the drive for increased participation is that it allows entry to those who traditionally have had greater difficulty accessing post compulsory education and training. In addition, the new client driven, flexible, product diverse environment allows new relationships to be established.

In New Zealand work with Maori has been interesting and exciting. Two years ago the Open Polytechnic signed a Memorandum of Understanding with Te Whanau o Waipareira Trust, a large Auckland Maori trust established to represent urban Maori who had lost traditional tribal connections.

Maori have been consistently over-represented in unemployment statistics in New Zealand and under-represented in tertiary education enrolments. The aims of the partnership range from providing pathways of learning into tertiary courses for Trust employees and students in their pre-tertiary programmes, to developing

resources to meet Maori needs. Students gain our qualifications by studying with our learning packages in a culturally supportive environment. Maori success rates at our institution are very good.

Since competition entered the sector in the nineties, it can be argued that there has been more effective co-operation between institutions. The old system seemed to allow more good will and openness amongst academics but it is debatable whether that sharing added any more real value to learning outcomes for students than is achieved today when cost and accountability require a benefit to be demonstrable.

The key to co-operation is that there must be mutual benefit for the interacting parties. Interestingly, competition has led to more joint ventures and partnerships and such arrangements have often brokered more effective bids in tendering situations as well as providing better options for students. Whatever the form of co-operation, ownership of intellectual property is an area that requires specific attention beyond the scope of this paper.

### **Conclusion**

Open learning in vocational and technical education has a tremendous amount to offer the new world of work because it is responsive, flexible, fosters independent learning, can be set up in a way that fosters teamwork and allows the immediate transfer of skills with workplace based learning. Open learning also reinforces qualities of self-reliance, mobility and rapid adjustment to change needed for survival in today's world. That level of quality can only be met if the objectives are very clear, and both process of learning and the system requirements for supporting that process are well understood.

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