# NCVER

perspectives
quality indicators
vocational education
international training
quality indicators
international quality
perspectives
vocational education
training

# Quality indicators in vocational education and training

## International perspectives

*Kaaren Blom*

*David Meyers*

# Contents

# Tables and figures

## Tables

## Figures

# Executive summary

This study undertakes an exploration of the ways in which quality is defined and understood within vocational education and training (VET) systems, and the indicators that various systems have adopted. It considers the stakeholders in the quality process, various approaches to quality, how quality is defined for the purposes of measurement and reporting, the objectives of quality, and the varied nature of indicators of quality.

The study examines only countries that have well-established and documented VET systems, from which Australia might learn in its ongoing evaluation of its own system. Although mindful of the importance of context in considerations of each country's choice of indicators, it was determined that it was beyond the scope of this study to provide extensive background descriptions. The countries chosen were: Denmark, England, Germany, Ireland, New Zealand, Scotland, South Africa, Sweden, the Netherlands and the United States of America. These individual cases are prefaced by overviews of two systems that operate on a federated basis: the European Union and the United Kingdom.

After documenting the indicators of quality which are being used in the above-mentioned countries, this study proceeds to map the indicators in various ways before proceeding to analyse them and to pose some questions that are prompted by this analysis. The quality indicators identified in the study have also been brought together into an evaluative framework consisting of four main elements: background context, stakeholder expectations, the training process, and training outcomes. The application of process and outcome indicators is then plotted country by country in order to reveal regional preferences. Finally, the study indicates which groupings of quality indicators occur most frequently in the countries under consideration.

The countries included in the study employ a diverse range of quality indicators to monitor quality within their VET systems. Some quality indicators are fairly universally represented, such as attainment, participation, progression, retention, success and completion. The nature of the learner's experience and the human, physical, and financial resourcing which support it are also commonly measured.

Other quality indicators which occur frequently but less universally include employment and other labour market outcomes, representation of minorities, outreach, access and equal opportunity. Interestingly, it is in this middle frequency group that quality of training appears. That this fundamental quality is difficult to quantify is reflected in the following broad range of indicators that various systems have adopted in their efforts to measure it:

⬥ range, content and availability of courses provided

⬥ cost effectiveness and affordability of training

⬥ management of the training process

⬥ the location and duration of training

⬥ relevance, credibility and utility of training

⬥ assessment processes

⬥ competence of teachers delivering the programs.

Finally, there are those indicators which occur least frequently. These include such indicators as collaboration, innovation, and the conduct of research.

The perception of whether or not a VET system is effective can obviously vary from one stakeholder group to another. Ideally, all stakeholders must feel they have sufficient opportunity to influence the objectives that are set and also the selection of quality indicators used to measure the attainment of those objectives. VET systems that are disproportionately influenced by certain stakeholders at the expense of others may be regarded as less effective on the whole than those which are more inclusive, as this typically results in alienated stakeholders expressing dissatisfaction with the system.

Where VET quality systems are based on national qualifications frameworks and formalised standards for the registration of providers there is generally a higher degree of consistency in outcomes than in systems where certification of qualifications and accreditation of providers is less systematic.

One other important factor in ensuring that VET systems remain effective is to plan for them to be evaluated and revised in a timely manner. Like Australia, many of the countries included in this study have only recently introduced new or significantly revised national VET quality systems. It is imperative that these new systems be evaluated to check that they are producing the expected outcomes, that these outcomes are appropriate and that they are satisfying the expectations of all stakeholders.

The experiences of international VET systems which have begun to address a range of challenges provide models for VET in Australia. There is much being done very well in Australia, as such an international study shows, but there are lessons we can learn from others about accommodating the aspirations of learners in a changing society and better meeting broad community needs.

The report concludes by identifying some of the quality indicators that are used in other countries but are not currently part of the Australian system, and encourages the VET community to debate the merits of their inclusion into future revisions of Australian VET quality frameworks.

# Introduction

## Background

The quality of vocational education and training (VET) is a longstanding concern shared by all of those who may be considered to be its stakeholders. Thus it has historically been considered from pedagogical, economic, sociological, customer and management perspectives (Van den Berghe 1997b). In the past two decades there have been increased levels of interest in the development of more effective, systematic and scientific means of monitoring the performance and outcomes of education systems, with a particular emphasis on the effectiveness of teaching and learning processes, as well as educational outcomes for students (Irving 1992).

Schofield suggests that the following are 'indicators of overall quality': effectiveness, fitness for purpose, efficiency, accountability and ethical practice and fair dealing (Schofield 2000). This review attempts to discover how these and other indicators of quality are used to guide international VET policy and practice. In doing so, it seeks to provide a contemporary and international perspective on what is understood by 'quality' in VET systems throughout the world.

As this study is intended to be of assistance to current and future VET decision-makers and researchers, it aims to highlight similarities as well as differences between international systems and our own, with a view to discovering whether others have developed quality indicators that we could usefully adopt ourselves.

The concept of 'quality', however, is a multi-faceted one, and it should not be surprising that its meaning within the VET environment is as open to argument and negotiation as it is in other social, economic and political contexts. Throughout the world, various VET systems make choices as to which indicators they will use as their preferred means of measuring their efforts to achieve quality and what relative priority will be placed on the chosen indicators.

The reasons for developing and using those indicators are also many and varied. The two main driving forces for the application of quality indicators in VET, as anywhere else, are the need to have accurate data about the system for accountability purposes, and the desire to improve processes in order that the system becomes more effective. Not only is the accountability of individual institutions facilitated if indicators are used to make the reporting of results easier (Van den Berghe 1997b), their use also facilitates international comparison. Many governments also believe that there are advantages in the mere process of developing the indicators—that such activity is a prompt to reflection and discussion as to desired developments. Whatever the main drivers, the quality indicators chosen ought to reflect and accommodate the priorities of all VET stakeholders: government, industry, community and, of course, learners. Whether the priorities of all stakeholders are equally well addressed by the development and application of particular indicators is a moot point.

Indicators of quality may, of course, differ somewhat from area to area within the training environment. For example, the Organisation for Economic Co-operation and Development (OECD) identifies the following key success ingredients as fostering successful transition from education to work:

✧ healthy economy and labour market

✧ well-organised pathways from education to work and further study

✧ opportunities to combine study and workplace experience

✧ safety nets for those at risk

✧ effective information and guidance systems

✧ policy processes that involve government stakeholders.                    (OECD 2000b)

These contributing factors could also be assumed to impact on the quality of VET provision in other contexts than school to work alone. The investigation of quality indicators undertaken in this study reveals a much broader range of factors operating in the global VET environment. However, it must be remembered that whichever indicators are used, they remain embedded in, or supported by, broader national contexts, whose features may be more influential in determining the quality of the systems' performance than any local initiatives. When investigating international data, therefore, the appropriateness of making comparisons must be borne in mind. Although it is important that these types of comparative analyses be contextualised (Freeland 2000), it is beyond the scope of this study to provide extensive background to the description of each country's quality indicators.

This study focusses primarily on countries which have well-established and documented VET systems, from which Australia might learn in its ongoing evaluation of its own system. Some systems are more accessible to the international researcher than others, and where language poses a barrier it has been necessary to rely on secondary sources such as the meta-system analyses performed by the European Centre for the Development of Vocational Training (CEDEFOP).

In some systems there is a deal of overlap between the VET sector and one or more other educational sectors, in which case the study has also identified indicators in use in the other sectors such as schools and higher education. For the most part, however, the focus is on VET systems and the indicators of quality which they have identified and are using to measure performance. Many systems refer broadly to performance indicators without identifying those which they use to gauge quality, and in these instances it has been necessary to infer which quality objectives are being sought.

# Australian approaches to quality

Quality has been a stated consideration in the Australian VET system since the advent of the Australian National Training Authority (ANTA), the National Training Framework and the implementation of the national training reform agenda. Australia's National Strategy for Vocational Education and Training 1998–2003 (*A bridge to the future*) identifies a range of system level indicators in the form of seven key performance measures (KPMs) that relate to quality of outputs and outcomes:

✧ KPM 1: Skill outputs produced annually within the domain of formally recognised vocational education and training

✧ KPM 2: Stocks of vocational education and training skills against desired levels

✧ KPM 3: Employers' views on the relevance of skills acquired through vocational education and training

✧ KPM 4: Student employment outcomes and prospects before and after participation in vocational education and training

✧ KPM 5: Vocational education and training participation, outputs and outcomes achieved by client groups

✧ KPM 6: (Actual) public expenditure per publicly funded output

✧ KPM 7: (Actual) public expenditure per total recognised output.                    (ANTA 1998)

The national VET system has in place three key quality assurance mechanisms to support the key performance measures: the registration of training providers, the registration of training agreements and the endorsement of Training Packages.

Notwithstanding these initiatives, quality in Australian VET has recently been the subject of a Senate inquiry, and concerns about it have prompted influential investigations into apprenticeship and traineeship systems within several states. The Senate's report into the quality of VET in Australia recommended that quality be restored to the system by a variety of means, but primarily by strengthening its regulatory and quality framework. It proposed to do this by means of legislation (by making national standards legally enforceable) and funding (by restoring base level and growth funding to the states and territories) (Senate Employment 2000).

Today, the major set of legislated quality indicators in the VET system in Australia is embodied in the recently revised Australian Quality Training Framework whose key objective is to provide the basis for a nationally consistent, high quality VET system. The framework distinguishes between quality of management processes and the quality of training, and it aims to lift and broaden the scope of standards and evidence requirements for training and assessment (Schofield 2000). It consists of a set of 12 standards for registered training organisations and also standards for the state and territory registering/accrediting bodies. The standards for registered training organisations focus on: systems for quality training and assessment; compliance; financial management; administrative and records management; recognition; access, equity and client service; staff competence; registered training organisation assessments; learning and assessment strategies; issuing of qualifications; use of logos; and ethical marketing and advertising (ANTA 2001).

Apart from the quality indicators that are applied at the national level there is a range of other quality indicators that are used in the Australian VET system at the state and territory level and also at the training organisation level. Each state and territory has developed its own quality framework for VET. These frameworks, which are based on the Australian Business Excellence Framework, are used by training providers for self-assessment (Gibb 1999). The Australian Business Excellence Framework focusses on the following seven critical categories:

✧ leadership and innovation

✧ strategy and planning processes

✧ data, information and knowledge

✧ people

✧ customer and market focus

✧ processes, products and services

✧ business results. (Australian Quality Council 2001)

The increasing globalisation of the VET training market has also motivated some Australian training providers to opt for certification with the International Standards Organisation, an approach to the management of quality that is discussed in more detail in the following section of this report.

# Quality frameworks

Before we consider the indicators that various systems have adopted, it is necessary to consider the broader frameworks within which quality is articulated, and the ways in which quality is defined and understood within those frameworks. First, the stakeholders in the quality process ought to be identified, as their values will largely determine how quality itself is defined and measured. These values, which will differ to some extent from group to group, will in turn influence the approach or approaches that these stakeholders take to quality. This approach determines how quality is characterised; that is, how it is defined for the purposes of understanding what it is that is going to be measured. Next, the objectives of quality must be articulated in order to clarify the purpose of the pursuit. Finally, the indicators of quality may be described.

## Stakeholders in the quality process

The following stakeholder groups in tertiary education have been identified, but they could be read as being synonymous with those in VET, namely funders, purchasers, providers and users (Baker 1997).

Naturally, the different interests that motivate each of these groups will lead them to have differing perspectives on quality, and within each group there will be further idiosyncrasies as individual experiences and preferences impact on people's determinations of what they understand by 'quality'.

CEDEFOP suggests that VET provision can be thought of as occurring on several layers. As different stakeholders populate each of these layers, the indicators of quality proposed could be expected to differ:

✧ policy-makers and their supporting administration (which enables implementation)

✧ VET providers or institutions

✧ VET programs or courses

✧ teachers or trainers

✧ students or trainees.                          (Van den Berghe 1996; Van den Berghe 1997b)

Interestingly, Van den Berghe acknowledges that whereas the continuing vocational education and training provider might achieve success by careful customer orientation, the case is not so simple when initial vocational education and training is considered. Such social objectives as individuals' 'personal development' are thought to complicate what is assessed for quality purposes (Van den Berghe 1996).

It can be seen that these viewpoints may also differ according to which of the various user groups' values and aims are being considered. The interests of students, labour market purchasers and society as a whole may collide on any or all of these dimensions. For example, effective teaching as judged by a student (often entailing a low student–teacher ratio) may not be considered cost efficient in economic terms.

A major driver of the push to quality accreditation among education providers has been the proliferation of providers as markets were deregulated. In such a climate it is important not only for users but also for the providers themselves that some independent mechanisms be instituted that can give some guarantees as to the quality of what is provided (Van den Berghe 1996).

# Approaches to quality

Underpinning a particular country's or system's choice of quality indicators is the approach that it takes to establishing and implementing frameworks and processes intended to encourage quality. The approach may be primarily one of quality control, one of quality assurance, or one of quality improvement. Most systems adopt and adapt those approaches that seem to them to best fit their own context, and, indeed, to take different approaches to different areas within their own system. (See figure 1.)

*Quality control* measures are typically implemented at the state and institute levels. Initial vocational education and training provision tends to be controlled at the national level in most European countries, but the market ultimately controls much continuing vocational education and training provision. No matter how widely quality control is pursued within institutes or across entire states, Van den Berghe points out that within educational as opposed to industrial contexts, there is one dimension over which providers have no control: 'After all, training and education are intangible services, with the customers themselves being partially responsible for the result' (Van den Berghe 1996).

*Quality assurance* assumes greater importance as an organisation moves from focussing on product to focussing on process (Van den Berghe 1996). Quality assurance is itself a process that requires standards to be defined, procedures to be monitored, and non-conformance to be analysed and remedied. External processes are applied by external agencies such as auditors or accreditation agencies to determine the organisation's compliance with externally imposed quality criteria. A system of internal quality assurance is generally assumed to precede the application of an external one (Nielsen & Visser 1997).

*Quality improvement* is an organisational strategy and a management approach, underpinned by a philosophical commitment to continuous improvement. It requires the involvement of all employees, and is focussed on increasing the organisation's effectiveness in achieving customer satisfaction by working towards the improvement of those areas and processes which have been identified as needing to be improved.

*Total quality management* is the best known of the quality improvement approaches. Its five underlying concepts comprise: a clear customer focus; continuous improvement; quality assurance of internal processes; process orientation; and prevention instead of inspection (Van den Berghe 1997a). The European Foundation for Quality Management is a membership-based, not-for-profit organisation which has adopted the following total quality management principles:

✧ results orientation

✧ customer focus

✧ leadership and constancy of purpose

✧ management by processes and facts

✧ people development and involvement

✧ continuous learning, improvement and innovation

✧ partnership development

✧ public responsibility.                    (European Foundation for Quality Management 2001)

The ISO 9000 series of standards is not itself an approach to quality, but a system of certification that requires certain quality processes to be implemented. The standards are based on the following eight quality management principles: customer focus; leadership; involvement of people; process approach; system approach to management; continual improvement; factual approach to decision-making; and mutually beneficial supplier relationships (International Standards Organisation 2001).

Those who are critical of the ISO 9000 concept often characterise it as Tayloristic and mechanical, but those in favour of using ISO 9000 (or, more specifically, ISO 9001 2000) in pedagogical institutions respond by claiming that it is a neutral framework which defines specific requirements and assigns clear responsibility (Nielsen & Visser 1997).

Undoubtedly, many training organisations favour the pursuit of ISO 9001 2000 certification because of its status in international markets as a globally understood guarantee of 'quality'. The fact that it originated as a manufacturing and production standard does not appear to have harmed its cause.

# Quality characteristics

> Quality is not a new subject in education. Institutions, teachers, administrators and policy makers have always been concerned with quality. Even without adopting a formal 'quality' approach, VET providers have needed to develop methods, norms, procedures and standards that allowed them to ensure the quality of their provision. However, the notion of quality has often been ill-defined, defined in a narrow sense, or not defined at all. (Van den Berghe 1997b)

Quality can be defined as that which is:

◇ exceptional (i.e. special, excellent, exceeding particular standards)

◇ consistent (i.e. matching specifications, always right)

◇ fit for purpose (i.e. relevant to stated mission or to clients' needs)

◇ valuable (i.e. accountable, effective, efficient)

◇ transformative (i.e. enhancing or empowering by means of cognitive change).        (Baker 1997)

Visser describes quality in VET as being broadly comprised of not only output (that is, successful attainment of course objectives) but also the professional status of teachers, the nature of training institutions and the teaching and learning process, improvement and innovation processes and the attributes of incoming students (Visser 1994).

Seyfried categorises quality aspects in VET according to the quality of the training process itself, the objectives and contents of vocational training and the context and conditions within which the vocational training takes place. As quality is composed of quite different factors, depending on the point of view of the observer, he notes that possible quality indicators could focus on:

◇ qualifications of trainers

◇ equipment in class rooms

◇ participants' evaluation of the course

◇ usefulness of the course to participants (motivation/employment prospects)

◇ relevance of acquired qualification for the workplace (practical orientation, social skills, etc.).
(Seyfried, Kohlmeyer & Futh-Riedesser 1999)

Occasionally, quality is defined quite narrowly, as it is by the effective school movement in the Netherlands: 'quality should be demonstrated by results' (Nielsen & Visser 1997). Calder, who regards 'better student retention' as the key indicator of improved educational quality, agrees that 'quality and efficiency should be defined in student success terms'; that is, that students will persist

with their studies as long as they perceive that their college education is helping them achieve their personal and career goals (Calder & Gordon 1996).

# Quality objectives

There have been some factors that have precipitated the desire for quality improvement in the international VET sector, which include:

✧ the requirement that publicly funded services be bound by quality norms

✧ rising costs as resources become more scarce

✧ increased competition raising the quality stakes.        (Seyfried, Kohlmeyer & Futh-Riedesser 1999)

Quality indicators may be assumed to differ where education objectives differ. For example, the difference in focus between initial vocational education and training and continuing vocational education and training, as detailed by Van den Berghe, necessitates there being different program outcomes to match differing social purposes. Similarly, the different functions of the high school and the community college, as suggested by Rosenfeld, point to quite different criteria for assessing what quality means in each context. In both instances, one can be thought of as being responsive to the individual's needs, while the other is responsive to societal and labour market demands. The former perspective can be summed up as: '… the primary responsibility of secondary education is to the student, not the community' (Rosenfeld 1999). Community colleges, however, as their name suggests, are expected to respond to the training and business needs of their local region. Ultimately, political decisions determine whether and how these different political and social mandates are inscribed into quality frameworks and indicators.

When she reviewed the quality of Victoria's apprenticeship and traineeship system, Schofield developed a template to enable readers to assess the following objectives of quality:

✧ effectiveness

✧ fitness for purpose

✧ efficiency

✧ accountability

✧ ethical practice and fair dealing.

She then went on to distinguish between 'interdependent dimensions of quality': the management of training ('systemic quality') and the nature of the learning experience and its outcomes ('the quality of training and learning'). The two dimensions are interdependent because 'it is not possible to have systemic quality if the training and learning is deficient and, similarly, it is not possible to have quality training and learning if the system which underpins it is deficient' (Schofield 2000).

Vocational education and training systems may also be thought of as being comprised of four interacting subsystems, the performance of each of which is measured against its own quality criteria. There are four subsystems in which VET systems measure the quality of their performances, namely policies, administration, programs and learning experiences. Occasionally it may appear that subsystems have conflicting performance measures. A diagrammatic representation of these interacting subsystems is shown at figure 1.

**Figure 1: The four interacting subsystems of quality VET systems**

**Quality programs**
(institutional/provider)

- Developed in concert with, and responsive to feedback from, stakeholders such as industry and community
- Articulate into further educational pathways
- Clear economic and/or social benefits post-completion
- Training is structured, sequenced, assessed, quality assured, certified
- Qualifications are nationally, mutually recognised and portable

**Quality administration**
(local and institutional)

- Successfully interprets policy (national, state, local) to enable best possible program offerings
- Appropriately funded and well managed
- Accountable to stakeholders
- Bound by principles of equity and ethics
- Informed by quality principles such as continuous improvement and stakeholder feedback

**Quality learning experiences**
(individual users)

- Facilitated by excellent teaching/training
- Supported by appropriate physical and pedagogical facilities
- Encourage student achievement
- Enable participation
- Transform learners
- Culminate in work-readiness
- Tailored to individual needs
  – flexible
  – accessible
  – affordable
  – appropriate
- Enhanced by extra-curricular experiences, e.g. 'the campus experience'

**Quality policies**
(national and state)

- Internationally benchmarked
- Informed by political input from government (+ federally funded agencies such as ANTA, NCVER), unions, industry, community, students
- National, local and institutional policies are synchronised
- Legislation and regulation are appropriate, well-informed, easy to interpret and follow
- Informed by research and flexible enough to be responsive
- Govern teacher training and practice

Two of these subsystems (policies and administration) may be thought of as being synonymous with Schofield's dimension of *systemic quality*, while the remaining two (programs and learning experiences) coincide with Schofield's dimension of *quality of training and learning*, as depicted in table 1.

**Table 1: Dimensions and subsystems of quality**

| Schofield's interdependent dimensions | Four interacting subsystems |
|---|---|
| Systemic quality | Quality policies |
|  | Quality administration |
| Quality of training and learning | Quality programs |
|  | Quality learning experiences |

# Quality indicators

Indicators are signs that are evidence of the presence or absence of particular qualities. While they may be qualitative or quantitative in form, it is the latter which are more generally applied in the reporting of system outcomes and outputs. Van den Berghe defines quality indicators as

'performance indicators that refer to a quality characteristic or objective', which would allude to the broad context of performance evaluation in which they operate. Being more specific, he goes on: 'A quality indicator is a figure, which is helpful for the assessment of a quality characteristic or the achievement of quality objectives' (Van den Berghe 1997b).

Indicators provide information about the state of particular systems. They are usually recorded numerically (that is, they are quantitative, not qualitative) and this is a point of contention for those who claim that the complexities of such things as quality are not easily or meaningfully reduced to that which may be counted. It must be remembered that indicators are just that—they are *indicative* of a certain state, not descriptive of the entirety. Indicators are typically used as yardsticks in such comparisons as a series of values over time; for example, 'Course completion rates in this faculty increased from 83% in 1995 to 95% in 2000'.

The purpose of indicators is twofold: they provide information to policy-makers to assist in policy formulation, and they demonstrate accountability. As Nuttall points out, 'Any indicator system embodies value judgments about what is meant by quality or desirable outcomes in education' and is therefore not only inherently political and potentially contentious but also bound to change over time. He concludes that indicators ought to be developed so that they are:

✧ policy-relevant

✧ policy-friendly (timely, comprehensible and few in number)

✧ derived from framework (defensible in research terms, and including alterable variables, hence oriented towards action)

✧ technically sound (valid and reliable)

✧ feasible to measure at reasonable cost. (Nuttall 1994)

Woodhouse uses the term 'proxies' rather than 'indicators', and points out that they are based on context-dependent assumptions. In considering issues of quality assurance for virtual education delivery, he suggests that 'when the environment changes' (for example, from face-to-face to online) 'we must ask whether the same proxies are still valid' (Woodhouse 2000). Developing valid proxies or quality indicators to suit the requirements of changed circumstances is as much a challenge for education as it is for any other enterprise.

Worldwide trends that have contributed to the use of indicators include:

✧ demands for accountability, accompanying growth of public administration

✧ rise of quality management approaches

✧ globalisation

✧ increasing sophistication of information and communication technologies, enabling the collection and comparison of data. (Van den Berghe 1997b)

Seyfried suggests that the quality of vocational training be determined by assessing the quality of its:

✧ structure (the national and regional conditions under which vocational training takes place)

✧ process (all the aspects which directly affect the training process)

✧ outcome (the product and the expected result of the vocational training). (Seyfried, Kohlmeyer & Futh-Riedesser 1999)

Input indicators tend to be developed first as they are easiest to measure, but as any system develops and becomes more complex, the need to develop output or outcome indicators increases, and reaching agreement as to what those indicators should be is a challenge to stakeholders within the system (Van den Berghe 1997b).

Whereas economic and financial indicators have been developed and refined over many years to the point where they are widely understood means of making international comparisons, indicators

for values such as quality and performance, being less quantifiable, have been more slow to develop, and tend to show more variation and context-dependence.

While the rationale provided in defence of the implementation of a quality program in an organisation (such as a VET provider) is likely to contain a combination of economic and social elements, the social dimensions of quality processes emerge more clearly when the focus shifts from input to output measures: 'Quality driven organisations view every single interface that a customer has with them as a measure of performance' (Corbett 1997).

The European Commission Working Committee on Quality Indicators identified 16 quality indicators in its report on the quality of school education. It selected the following four main groups of quality indicators:

✧ attainment indicators

✧ success and transition indicators

✧ monitoring of school education indicators

✧ resources and structures indicators.                           (European Commission 2000)

The OECD launched the Information on National Education Systems project in 1998 to develop a set of international education indicators. The initial set of 43 indicators was revised in 2000 to 31 indicators, which are grouped into the following six categories:

✧ context of education (two indicators)

✧ financial and human resources invested in education (seven indicators)

✧ access to education, participation and progression (seven indicators)

✧ the learning environment and organisation of schools (seven indicators)

✧ individual, social and labour market outcomes of education (five indicators)

✧ student achievement (three indicators).

More than one-third of the indicators relate to the outcomes of education, and this represents a shift away from a focus on control of resources and education content to a focus on results. Almost half the indicators provide a perspective of 'in-country variation', which provides the opportunity to analyse issues of equality of education provision and outcomes (OECD 2000a).

## Problems with quality indicators

It is worthwhile remembering that 'indicators are only a tool, not an end in themselves' (Van den Berghe 1997b).

The development of quality indicators for VET systems at the international level remains limited owing to the difficulty of arriving at consensus about aspects of quality and the expense and amount of resources required to collect and process the necessary data (Van den Berghe 1997b).

Prior to establishing their national quality system, VET organisations in Scotland had a lot of difficulty in having to deal with a multitude of quality systems, which did not easily fit together, recognise each other or use the same criteria for auditing purposes. A similar situation can prevail within systems that use conflicting quality indicators, resulting in well-intentioned activity being pursued at cross-purposes.

In the United States of America, the initiatives of the 1994 School to Work Opportunities Act have resulted in a proliferation of work-related curricula activity and a significant increase in the numbers of integrated vocational and academic programs. However, amongst so much innovation and integration it is difficult for evaluators to identify which aspects of a particular innovation have resulted in the observable outcomes that are being achieved (Stasz 1999).

The Act prescribes that 'levels of performance must be objective, quantifiable and measurable'. However, some performance measures may not accurately nor completely measure the educational and skills training mission performed by community colleges, and 'simple measures designed to assess "success" may be misleading'. As more students follow non-traditional pathways through higher education, the model of the linear pathway becomes less and less appropriate (Stasz 1999).

Bailey and Kienzl argue that 'the concepts of placement, retention, completion, and degree attainment are increasingly complex and ambiguous' and that commonly used accountability measures need to be redefined in response to these changes in the way postsecondary education is accessed. 'In order to arrive at an appropriate set of accountability measures, we need a clear mapping of emerging non-traditional pathways through higher education … and the so-called competence without credentials'. Given that 'students use community colleges for a variety of reasons and obtaining a credential may not necessarily be their main objective', and when some students may be so-called 'experimenters', it makes no sense to persist in using measures like institutionally based retention data, when individual longitudinal data would give a more accurate picture (Bailey & Kienzl 1999).

Boardman suggests that many of the quality systems and performance indicators that have been applied in the VET sector are too mechanistic for education and ignore the requirement to identify the needs of VET 'customers' and to maintain academic standards (Boardman 1998).

Seyfried observes that the quality of vocational training programs may be evaluated from three different perspectives: a product-oriented perspective; a process-oriented perspective; and a contextual perspective. He goes on to claim, however, that European studies very rarely look at all three of these perspectives in an interrelated fashion (Seyfried 1998). Woodhouse likewise confirms the importance of an integrated perspective: '… for adequate checking of quality we must take a balanced account of inputs, processes, outputs and outcomes' (Woodhouse 2000).

# International perspectives

The countries whose choice of quality indicators was most accessibly documented are reviewed in this section. Given that, in some contexts, VET quality indicators are determined by groups of countries, as well as by individual countries, the discussion of indicators that follows has been structured accordingly. The individual cases are prefaced by overviews of two systems that have taken a federated approach to quality: the European Union and the United Kingdom.

Some countries which are members of these federations are discussed both individually and also within the context of the broader grouping. For example, England is discussed both individually, and also as part of the United Kingdom.

CEDEFOP has investigated the impact of local networks on the quality of vocational training in Europe. Case studies were conducted in seven countries. The quality indicators identified have been categorised into quantitative and qualitative indicators and those for the United Kingdom, the Netherlands, Germany, Sweden, and the Republic of Ireland will be listed at the end of the respective discussions of individual countries that follows.

## The European Union

Shifting socio-economic imperatives as the world moves into a globalised 'new economy' have prompted a widespread reappraisal of national education and training systems. The establishment of the European Union occasioned such a reappraisal throughout its member (and intending member) states.

One of the aims of the Treaty of Maastricht, which guided the setting up of the European Union, was to 'contribute to the development of quality education by encouraging cooperation between Member states and, if necessary, by supporting and supplementing their action' (Carpenter 1998). Programs such as Force (developing continuing education) and Petra (for vocational training of young people) were predecessors and shaped the design of the first phase of the Leonardo Da Vinci program, which was an action program for the implementation of a European Community vocational training policy for the period 1995–99. The program pursued 19 objectives, with a major focus on the promotion of quality and innovation in national vocational training systems (Commission of the European Communities 2000).

The European Union has re-emphasised the importance of quality in vocational training systems by establishing the second round of the Leonardo da Vinci program. The program will run from 2000–06 and affirms the need to develop quality, innovation and a European dimension in vocational training systems and practices through transnational cooperation (European Union 2000). Funding will be made available for projects such as 'the Training Small/Medium Enterprise–Certification of Quality', which will develop a planning methodology for quality certification processes and a quality manual for vocational training.

CEDEFOP distinguishes between initial and continuing vocational education. Initial vocational education and training is delivered within the secondary education system, and has a strongly social focus, whereas continuing vocational education and training is provided by a range of providers to people already in (or potentially in) employment who may also have existing qualifications.

Continuing vocational education and training has a more limited, vocation-specific focus. Throughout the European Union the state has much less control in the continuing vocational education and training sector than it does in the initial vocational education and training sector (Van den Berghe 1996).

The following trends throughout Europe are influencing the quality of initial vocational education and training:

✧ the average age at which vocational education is completed is increasing

✧ the role of 'social partners' (business and unions) is becoming increasingly important in some countries

✧ vocational schools are becoming increasingly accountable

✧ final education objectives or vocational training targets are beginning to replace detailed curricula

✧ institutes are being increasingly freed to be as flexible and responsive to local needs as the market demands

✧ the apprenticeship system is being reappraised.                    (Van den Berghe 1996)

The OECD considers that the quality indicators which are most applicable to continuing education and training are patterns of participation, and demand and supply characteristics (Van den Berghe 1997b).

Van den Berghe has summarised system-level indicators as follows:

✧ demographic trends; educational attainment and the labour market

✧ initial VET indicators which include indicators pertaining to: participation rates; distribution by age and gender; training location and duration; access; certification and funding indicators

✧ continuing VET in enterprises which includes indicators pertaining to: enterprise size; sector; training plans/budgets; courses offered and cost of training, training duration; participation rates; and demographics

✧ self-employed which includes indicators pertaining to: participation rates according to age, educational attainment, occupation, age and gender

✧ European Community Programs which include indicators pertaining to: European Social Fund and the Leonardo da Vinci Program.                    (Van den Berghe 1997b)

CEDEFOP has reported on the performance of VET systems within the 15 European Union member states according to seven key areas:

✧ the place of young people in the socio-economic context of the European Union (12 indicators)

✧ vocational education and training (eight indicators)

✧ the enterprise: an active partner in vocational training (five indicators)

✧ apprenticeship (seven indicators)

✧ continuing with education and training (five indicators)

✧ participation in vocational education and training (ten indicators)

✧ equal opportunity for men and women (six indicators).                    (CEDEFOP 1999)

The indicators can be used to gauge the quality of VET systems; however, caution should be exercised in making comparisons between the various VET systems owing to the structural differences in the various countries.

Meanwhile, the Eastern Bloc countries have been readying themselves for entry into the European Union. This process has often entailed complete reconstruction of their systems, and has often

meant that standards have been adopted from other European countries in the attempt to achieve the standard required by the European Union for admission. There is, however, no agreement as to what exactly those standards are, nor whether they are necessarily the most appropriate guidelines for countries whose cultures are very different from those from whom the standards are borrowed. There is agreement that a significant objective for the European Union is to encourage mutual recognition of qualifications in order to facilitate the mobility of the workforce. This objective, originally referred to as the search for 'harmonisation', and later for 'comparability', is now described as seeking 'transparency' of qualifications. All the VET reconstruction programs which the European Union has funded have sought to embody the values that were first defined by the United Kingdom's Further Education Unit in 1979, and which have gone on to become fundamental to the philosophies and objectives of most European VET systems.

In 1989 the European Union established the Phare program to give financial and technical assistance to Central and Eastern European countries as they prepared to apply to join the European Union. Vocational education is one of the areas of infrastructure that is focussed on in this process. Although the challenges facing the Phare countries are not unique, they are taking place in contexts of 'severe economic constraint and dynamic political circumstances' (OECD 1999). In many of these Central and Eastern European countries, the European Union-sponsored move to the implementation of quality assurance in VET is occurring in a climate in which there is often still a lack of more fundamental educational resources.

The various Phare countries also differ in their levels of political commitment to such implementation. In Bulgaria, Latvia, Estonia and the Czech Republic, for example, very little is happening (European Training Foundation 1997a; European Training Foundation 1997b; European Training Foundation 1997c; European Training Foundation 1997e). In some countries, like Poland, the focus continues to be on standardised examinations as guarantors of quality (European Training Foundation 1997g). However, in other countries in the region, it is interesting to note which quality strategies have been adopted first in the move towards a quality VET system.

In Slovenia, the continuing education sector is being audited by a working group that includes foreign experts, while both Romania and Lithuania have begun to involve social partners in the development of their qualification and training standards (European Training Foundation 1997f; European Training Foundation 1997h; European Training Foundation 1997i). In Hungary, which is highly motivated to enter the European Union, the promotion of vocational training has been identified as a central plank in its transformation process. In common with many other Phare countries, Hungary has decentralised the administration of its country's education. At the same time, however, it seeks to ensure the quality of its training by requiring a National Vocational Qualifications Register, professional requirements for each qualification, standard curricula, and nationally recognised certification resulting from a national system of examinations. Funding for VET programs is assured via the mandatory enterprise contribution. In Hungary it is acknowledged that transparency of process and regular evaluation and updating of standards underpin quality assured training (European Training Foundation 1997d).

The European Training Foundation has responsibility for the promotion of cooperation in vocational training policy and practice between the European Union and the 'partner' countries of Central and Eastern Europe, and as part of this work the foundation has developed the following system-level indicators of quality for VET in Central and Eastern Europe:

✧ educational attainment and labour market, including attainment levels of the population, and education and labour market participation

✧ access to education and training, including indicators of participation rates in education and training, participation in vocational training, VET at upper secondary level, and participation in post-secondary education

✧ early school leavers and drop-outs from secondary education

◇ financing of education and vocational training, which includes indicators of expenditure on education as share of gross domestic product, expenditure on VET as share of gross domestic product, and participation rates and expenditures. (European Training Foundation 1999)

# The United Kingdom

National Vocational Qualifications standards have been introduced in the United Kingdom in an attempt to establish a nationally applicable system of vocational qualification standards. These qualifications are based on the National Occupational Standards, which are statements of performance standards that describe what competent operators in a particular occupation are expected to be able to do. Standards Setting Bodies have developed the standards in collaboration with employer-led National Training Organisations. However, these qualifications have not proven universally popular among employees and employers.

The purposes of the regulatory authorities' monitoring activities are, in part, to ensure the quality of programs and qualifications according to criteria designed to:

◇ ensure that the standards of achievement required for an award meet the regulatory requirements for quality, rigour, fairness and consistency within and across qualifications, across awarding bodies, and over time

◇ ensure that individual awarding bodies are delivering particular qualifications according to the accreditation criteria, including the common and qualification-specific codes of practice

◇ promote continuing improvement and public confidence in the quality of external qualifications

◇ keep under review the effectiveness of the accreditation criteria, in particular the codes of practice.

According to Seyfried, six aspects of vocational education in the United Kingdom have proven to be the main issues of contention at the system level:

◇ the relevance of the training provided

◇ confidence in the standards of training

◇ the credibility of the qualifications

◇ the competence of the teachers

◇ flexibility and cost effectiveness

◇ the question of 'who benefits and who pays?'.

The quality issue has become problematic not only because traditional key industries have declined and the general recognition that human resources are underskilled but also because of the necessity of a new culture of lifelong learning being accepted (Seyfried, Kohlmeyer & Futh-Riedesser 1999).

The Qualifications and Curriculum Authority is developing a national framework of qualifications with its partner regulatory authorities in Wales and Northern Ireland to ensure that quality requirements and standards are met across the United Kingdom.

The arrangements for the statutory regulation of external qualifications in England, Wales and Northern Ireland have been documented in the form of criteria which outline the requirements necessary for any qualification within the authorities' sphere of responsibility to be accredited and admitted into the national qualifications framework. Processes and procedures required to ensure high quality, consistency and rigorous standards in assessment and awarding across qualifications and over time have also been specified (Qualifications and Curriculum Authority 2001).

Vocational training networks in the United Kingdom use the following types of quality indicators:

✧ quantitative: placement times

✧ qualitative: placement satisfaction; consideration of individual requirements.

(Seyfried, Kohlmeyer & Futh-Riedesser 1999)

# Denmark

Gerhard Bosch of the Institute for Work and Technology has suggested that the VET system in Denmark is a model that should be recognised for its innovation and commitment to funding a quality VET system (Elson-Green 2001). The Department of Vocational Education and Training of the Danish Ministry of Education instituted a quality strategy plan in 1995, listing the following institution-level quality indicators for gauging the performance of vocational training providers:

✧ management instruments: strategic management; adaptation strategies to changing goals and needs; educational plans and curricular work; and budgeting issues

✧ educational indicators: student consultation; educational culture and environment

✧ external contacts: cooperation with local education and training committees; collaboration with other colleges: locally, regionally, nationally and internationally

✧ resource parameters (allocation): planning of supply of courses and services; economic management and cash flow control; staff recruiting and policy; equipment and physical facilities; and registration of students, throughput and completion rates

✧ resource parameters (operational aspects): induction/guidance; special educational assistance; safety/working environment; organisation of examinations; and outreach

✧ innovative and developmental activities: organisation of learning; human resource policies; professional development for trainers; and innovation of education.      (Van den Berghe 1997b)

# England

Assessment of the quality of higher education in England (and Northern Ireland) is the responsibility of the Quality Assurance Agency for Higher Education. Further education colleges involved in delivery of vocational training are included within its charter.

The agency's institution-level quality indicators are mainly focussed on:

✧ degree of success in achievement of aims and objectives by providers

✧ assessment of the student learning experience and student achievement with a focus on: direct observation of instructional situations; assessment methods; curriculum, staff and staff development, resources; and student support

✧ assessment by academic and professional peer review

✧ self-assessment in the subject, based on the provider's own aims and objectives

✧ a three-day assessment visit carried out by a team of assessors.

The agency has also developed a set of quality indicators which focus on the following aspects of the learning process:

✧ curriculum design, content and organisation

✧ teaching, learning and assessment

✧ student progression and achievement

✧ student support and guidance

◇ learning resources

◇ quality management and enhancement.

<div align="right">(The Quality Assurance Agency for Higher Education 2001)</div>

The Further Education National Training Organisation is one of 80 National Training Organisations across the United Kingdom established to promote competitiveness by raising education and training standards in the industries and occupations they represent. The training organisation has developed standards for teaching and supporting learning in further education in England and Wales.

The training organisation's aim is to:

◇ provide a set of standards that can be used to inform course design

◇ provide standards that can be used to inform professional development

◇ assist recruitment, appraisal and the identification of training needs.

<div align="right">(Further Education National Training Organisation 2001)</div>

Raising the level of competence of trainers is considered to be a vital part of raising standards. All new unqualified teachers in further education will be required to obtain an appropriate qualification, based on the quality indicators in the following Further Education National Training Organisation standard:

◇ assessing learners' needs

◇ planning and preparing teaching and learning programs for groups and individuals

◇ developing and using a range of teaching and learning techniques

◇ managing the learning process

◇ providing learners with support

◇ assessing the outcomes of learning and learner's achievements

◇ reflecting upon and evaluating one's own performance and planning future practice

◇ meeting professional requirements.      (Further Education National Training Organisation 2002)

The Training Standards Council has a contract with the Department for Education and Employment to inspect work-based training, which is funded by the training and enterprise councils in England.

The Training Standards Council has developed a range of institution-level quality indicators. The quality indicators have been incorporated into a framework that focusses on the quality of seven aspects of training provision. The first three aspects of the framework contain the main guidelines for judging the quality of occupational areas (training and assessment, trainees' achievements and resources). The four remaining aspects are generic and each leads to a grade for the training organisation as a whole (equal opportunities, trainee support, management of training, and quality assurance) (Training Standards Council 1998).

The Further Education Funding Council was the forerunner of the Learning Skills Council and developed the following institution-level performance indicators for use in evaluating the quality of further education organisations:

◇ achievement of funding target

◇ change in student numbers

◇ in-year retention rates

◇ achievement rates (effectiveness in enabling students to attain their learning goals)

---

♦ contribution to the national targets (the number of students attaining one of the national learning targets by achieving a National Vocational Qualification or equivalent at the appropriate level). (Further Education Funding Council 1998)

The Learning and Skills Council was established in 2001 to raise participation and attainment through high quality education and training and has responsibility for all post-16 training in England. It supersedes the training and enterprise councils, and the Further Education Funding Council. Although the government's existing National Learning Targets run to the end of 2002, the Learning and Skills Council intends to establish interim national outcome targets for 2004 and to provide data showing performance against the relevant indicators at the local skills council level (Learning and Skills Council 2001).

The Learning and Skills Council has developed a national framework for reviewing the performance of providers. Quality indicators within the framework are focussed on the following ten key areas:

♦ quality of education and training and the standards achieved by learners

♦ continuous improvement

♦ other aspects of the leadership and management of learning

♦ quality of planning

♦ data management

♦ financial viability and assurance

♦ delivery of the volume of provision agreed with the local Learning and Skills Council

♦ learner health and safety

♦ equality and diversity

♦ other national or local priorities (for example, basic skills). (Learning and Skills Council 2002)

The Adult Learning Inspectorate was set up in April 2001 to support the new system of post-16 learning in England and the work of the Learning Skills Council. Quality indicators developed by the learning inspectorate are focussed mainly on the experience of learners. As part of its brief, the learning inspectorate has developed a common framework for inspecting post-16 education and training. The framework applies to the inspection of education and training, with a focus on providers, learners, trainers, learning goals, and personal and learning skills. Inspections focus on the experiences and expectations of individual learners through the evaluation of:

♦ the standards reached and the learners' achievements

♦ the quality of teaching, training, assessment and learning

♦ other aspects, such as the range, planning and content of courses or programs, resources and the support for individual learners

♦ the effectiveness of provision, its quality assurance and improvement, and how efficiently resources are used to ensure that the provision gives value for money

♦ the extent to which provision is educationally and socially inclusive, and promotes equality of access to education and training. (Adult Learning Inspectorate 2001)

The following system-level quality indicators have been developed to monitor whether the 2002 National Learning Targets for England are being achieved:

♦ targets for young people: 85% of 19-year-olds with a Level 2 qualification and 60% of 21-year-olds with a Level 3 qualification

♦ targets for adults: 50% of adults with a level 3 qualification, 28% with a Level 4 qualification, and a 7% reduction in non-learners (which represents the learning participation target)

  ✧ targets for organisations: 45% of medium-sized or large organisations recognised as investors in people, 10 000 small organisations recognised as investors in people.

<div align="right">(Department for Education and Employment 2001)</div>

# Germany

The central goal of the federal government's VET policy is to provide learners with long-term employment opportunities through initial and continuing education and training. It is regarded as essential from both the economic and social policy point of view that adequate numbers of training places are provided and also that vocational training institutions have appropriate material and human resources. Consequently, the provision of training places and the quality of resources within vocation training institutes are important indicators of quality in the German VET system (Federal Ministry of Education and Research 2002).

Vocational training is based on a 'dual system', which is similar to modern apprenticeships in the United Kingdom. In initial vocational training, the training is provided by companies (three or four days per week), and, additionally, the trainees attend a course at a vocational college (one or two days per week). A vocational training law provides the framework for training, but the actual implementation is the responsibility of training organisations, professional bodies and trade corporations. Companies offering traineeships are subject to regulation. Continuing vocational training is based on a combination of publicly funded and privately funded (employer or employee) training provision (Gutschow 2001).

The standard for the in-company training is the training regulation (federal law) that monitors quality using the following indicators:

  ✧ the designation of the occupation requiring formal training

  ✧ the duration of training

  ✧ the skills and knowledge to be acquired

  ✧ instructions concerning the training contents and timetable for obtaining these skills and knowledge (general training plan)

  ✧ the examination requirements.                                    (Gutschow 2001)

Examinations are organised by 'competent bodies'—that is, mostly by chambers of craft or commerce—with representatives from employers and employees and teachers on the examination boards. Federal law also prescribes minimum prerequisites for companies and instructors (Gutschow 2001).

Education in vocational schools is regulated by laws of the Länder (the federal states) but based on common framework curricula that are harmonised with the training regulations. Currently, there is a shift in policy and more power is being given to individual schools. In this context, systems of quality assurance are becoming more important for the schools (Gutschow 2001).

Increased cost pressure on vocational training providers has seen an upsurge in interest in quality measures. Some institutions implement quality measures as a money-saving strategy, while other providers implement process-oriented quality control systems on the basis of ISO 9000 (Seyfried, Kohlmeyer & Futh-Riedesser 1999). At the continuing vocational training level, quality assurance for in-company vocational training or training funded by companies for their employees often relies on total quality management and certification in accordance with ISO 9000 or other internationally recognised systems of quality assurance (Gutschow 2001).

Continuing training sponsored by the Federal Labour Office (mostly for the unemployed) has independent instruments for checking and assuring the quality of continuing training that it sponsors. At the heart of these standards are (traditionally input-oriented) criteria that training providers have

to meet; for example, for teaching methods or the qualification of staff. These standards are updated regularly (Gutschow 2001).

However, there is now pressure to reform this very successful dual system of VET in Germany. This pressure is being resisted by those who defend the system's strengths and fear the influence of other countries' reforms (for example, England's National Vocational Qualifications and the Scottish Vocational Qualifications). Deissinger cites Raggatt's observation that although apprenticeships themselves are controlled by trade unions and employers, quality is the concern of the wider community in whose interests it is that the qualification process is not merely regulated by market forces. The marketability of qualifications is actually dependent upon quality control (Deissinger 2000). There is a perception that making the system more flexible and accommodating of a wider range of learners (for example, by introducing modular, competency-based training programs) may compromise the present quality standards. This perception, however, is opposed by those who are concerned that the system no longer caters for the rapidity of change in the labour market, in which knowledge and skills no longer serve for a lifetime in a single enterprise (W Brand 1998).

Deissinger argues that dual training systems neither solve the problem of assuring VET quality nor necessarily improve links to the labour market. As a consequence, holistic training courses linked to apprenticeship models, embedded into a dual system, must be developed as well as a comprehensive VET quality control system (Deissinger 2001).

There are three areas of vocational training in which efforts to improve quality standards are underway:

✧ in primary vocational training there is an attempt to undertake a forward-looking redefinition of training contents and to create new vocational profiles

✧ in further vocational training there is to be greater clarity in the range of courses on offer, as well as the implementation of binding quality standards

✧ in funding of disadvantaged groups there are attempts to improve integration into the labour market and to develop appropriate training opportunities.

The city of Cologne vocational network aims to unite institutions of general and vocational training, social welfare and the local economy, in order to achieve common successes in the struggle against unemployment and lack of perspective amongst teenagers and young adults. In order to achieve this end, the following measurable, common district-level quality indicators have been formulated:

✧ reduction in the number of premature school leavers in a district to a minimum

✧ provision of training places to all school leavers (increase the number of trainees to 20%)

✧ a measurable reduction in drop-out rates in the dual system.
(Seyfried, Kohlmeyer & Futh-Riedesser 1999)

Vocational training networks in Germany use the following types of quality indicators:

✧ quantitative: reduction in the rate of premature school leavers; provision of a training place for all school leavers; and reduction in the drop-out rate in the dual training system

✧ qualitative: development of new funding models for disadvantaged target groups.
(Seyfried, Kohlmeyer & Futh-Riedesser 1999)


# Ireland

In the Republic of Ireland, strategies for system-level quality improvement in vocational training monitor quality in the following areas:

✧ a quality improvement strategy is being pursued which aims at meaningful and participative assessment and certification arrangements, using both qualitative and quantitative approaches

◆ in addition to the integration of assessment with other dimensions of VET curriculum such as aims, objectives, content and methodology, energy is also being put into the development of certification pathways with clearly articulated entry points and progression routes

◆ encouragement of lifelong learning

◆ reinforcement of providers by means of support structures, such as training of trainers, personal, educational and vocational guidance or improved study, resource and library facilities in general.                              (Seyfried, Kohlmeyer & Futh-Riedesser 1999)

'Springboard', which is a bilateral partnership between vocational training provision in Northern Ireland and the Republic of Ireland, uses the following system-level indicators as criteria for the assessment of training quality:

◆ the number of participants completing

◆ the number and type of vocational qualifications attained by the participants

◆ participant's progress in the field of social skills (self-confidence, team work)

◆ the whereabouts of the participants subsequent to completion (level of integration into employment)

◆ the quality of employment and the degree of job satisfaction

◆ the extent of mutual understanding and cultural tolerance.
                              (Seyfried, Kohlmeyer & Futh-Riedesser 1999)

It is notable that in this set of indicators the quality of the training is not only measured according to the 'hard factors' typically used in the evaluation of vocational training measures, such as integration into employment and qualifications, but also in terms of 'soft indicators' such as self-confidence, tolerance and mutual understanding.

Vocational training networks in the Republic of Ireland use the following quality indicators:

◆ quantitative: completion rates; profile of qualifications provided; and learner destinations (particularly in employment)

◆ qualitative: success of participants with regard to personal skills (self-confidence, teamwork, tolerance, etc.); quality of employment; degree of job satisfaction; and extent of mutual understanding and cultural recognition.              (Seyfried, Kohlmeyer & Futh-Riedesser 1999)

# New Zealand

The New Zealand Qualifications Authority was established to oversee the development of a National Qualifications Framework. Industry Training Organisations were formed to assist in the development of industry-specific standards and qualifications (New Zealand Qualifications Authority 2001).

The qualifications authority has recently developed and implemented a quality assurance system which is administered by the Quality Assurance Service. The authority focusses on the registration of training providers; registration of unit and achievement standards on the National Qualifications Framework; accreditation of schools, institutions and other establishments to offer approved courses and/or award credits for registered national standards; and accreditation of Industry Training Organisations to register workplace assessors. The Quality Assurance Service uses systematic quality audits to verify that quality systems are effective. Providers are required to carry out self-assessment prior to audit. The standards against which providers and training organisations are audited have been developed through consultation with the stakeholders (New Zealand Qualifications Authority 2001).

The focus of quality indicators in the New Zealand training environment is currently undergoing a shift in emphasis from monitoring quality on the basis of inputs to monitoring quality on the basis of outputs.

System-level quality indicators have been framed by the New Zealand Qualifications Authority for use in auditing of providers according to the following principles:

✧ each provider is primarily responsible for the quality of the education it provides

✧ New Zealand Qualifications Authority's audits check that each provider's own goals are being met

✧ there will be ongoing external checks on quality and quality improvement, as audit will become a major focus for Quality Assurance Services

✧ external quality assurance focusses on the effectiveness of each provider's own quality management systems so each provider's formal self-evaluation is crucial

✧ external quality assurance provides a level of confidence for learners, those providing funding for education and the users of qualifications

✧ different providers need different levels of audit.

The Approvals, Accreditation and Audit business unit of the New Zealand Qualifications Authority has developed detailed quality indicators in the following areas for use in accreditation of providers:

✧ governance and management

✧ personnel

✧ physical and learning resources

✧ learner information, entry and support

✧ development, delivery and review of programs

✧ assessment and moderation

✧ notification and reporting on learner achievement

✧ research.                                             (New Zealand Qualifications Authority 2002)

Skill New Zealand's new Performance Management System is a significant factor in bringing about this change of emphasis. In return for greater discretionary powers in the allocation of training funds, the performance of Industry Training Organisations will, in future, be assessed against system-level quality indicators. These indicators will measure outputs, such as credits achieved and qualifications completed by trainees, as well as inputs, such as participation data. The system focusses on trainees and determines quality by considering institution-level quality indicators such as:

✧ participation rates according to program level

✧ racial/gender/age distribution

✧ educational history

✧ attainment levels

✧ attrition rates

✧ training cost.                                                         (Skill New Zealand 2001)

The 'charters' and 'profiles' under development by the Transition-Tertiary Education Commission in New Zealand will impact on quality monitoring arrangements in all publicly funded providers, including Industry Training Organisations. These charters and profiles may replace the current regulatory and accountability systems for registration and re-registration of Industry Training Organisations (Industry Training Federation 2001).

If the New Zealand Government accepts the commission's recommendations on profiles, an interim form of profiles should be instituted for the calendar year 2002. Interim profiles could build upon existing policy instruments, such as statements of objectives or relevant contracts, and progressively move towards institution-level quality indicators requiring providers to:

✧ state their contribution to the tertiary education system and to take account of their impact on it

✧ demonstrate responsiveness to the needs of their community, industry and business, and others outside of the system, and to build partnerships with them

✧ collaborate and cooperate with other providers

✧ collaborate in the establishment of networks of research excellence (where the provider is engaged in research—including those delivering undergraduate degrees)

✧ establish and implement processes for rationalising existing programs and activities that fall outside the interim profile (particularly those programs and activities established after 1 January 2001)

✧ desist from planning new offerings or activities outside their interim profile, unless negotiated with and agreed to by the government

✧ include any other requirements that might apply either generally or to a particular type of provider.                                    (Tertiary Education Advisory Committee 2001)

Charters set the providers' medium- to long-term goals and objectives. They are an existing policy instrument that can be adapted and modified to provide an effective tool (when used in conjunction with functional classifications and profiles) for allocating funding and helping to steer the system. Ultimately, charters will create greater predictability and stability in the tertiary education system (Tertiary Education Advisory Committee 2001).

By 2004, organisations seeking government funding for tertiary education will need to use approved charters and profiles to meet the goals and objectives requirements of the New Zealand Qualifications Authority Quality Assurance Standard One (New Zealand Qualifications Authority 2002).

# Scotland

The Scottish Quality Management System is designed for use by VET organisations in Scotland. It is a highly regarded system, and elements of it have been incorporated into the quality systems for VET in England, Poland, Ireland and Australia. It originally had two objectives: to enable self-development of its VET organisations and to create an audit system that would ensure that those standards were maintained (Gunning 1998).

The Scottish Quality Management System is a comprehensive auditing system, which organisations can use to evaluate themselves against requirements. It should reduce administrative complexity for organisations and help to guide and support quality developments (Scottish Quality Management System 2001).

The system is designed to be used in a range of ways:

✧ a guide to the quality elements, and perspectives of agencies and systems

✧ a tool for organisational self-development and development of quality in provision

✧ a way for organisations to marshal evidence for purposes such as accountability, marketing and promotion, and contracting.

The management system was set up as a result of a review into the expensive and sometimes conflicting overlaps between the quality systems which had preceded it. Two of the aims of the review were to identify a single set of criteria that all stakeholders could use, and to establish a form

of mutual recognition or credit transfer between them. The system today comprises 14 sets of quality indicators which focus on the following institution-level quality standards:

1   strategic management—organisation has a clear sense of purpose and direction

2   quality management—focussed on needs of clients, learners and staff

3   marketing—the needs of the organisation's clients and learners are identified, and its education and training services are effectively promoted

4   staffing—appropriate structure, level, and type of staffing

5   staff development—meets organisational and individual development needs

6   equal opportunities—ensured for all clients, learners, and staff

7   health and safety—guaranteed for all learners, staff and visitors

8   premises and equipment and materials are appropriate

9   communication and administration—meet the needs of external bodies, clients, learners and staff

10  financial management is sound and the organisation makes a reliable provision

11  guidance services—learners' needs are identified, action plans/personal training plans are formulated, progress is reviewed, and support is provided where needed

12  program design—programs are relevant, encourage access and are responsive; learning/ assessment methods are appropriate to program aims and purposes

13  program delivery—is purposeful, with attention to the needs of individuals; the methods used are appropriate, emphasise activity and responsibility, and are varied

14  assessment for certification—assessment instruments allow evidence of sustained competence to be gathered; the evidence conforms with the standards required; assessment is internally verified; awarding body requirements for external verification are met; and there is an appeals system.

Each section has three parts:

✧ the introduction, which explains the scope of the section and gives commentary on the quality associated with the standard

✧ the overview, which is designed to be used by organisations for planning the audit and summarising the findings. It includes a list of pointers—questions about procedures and outcomes, which demonstrate achievement of the standard

✧ the audit instrument, which sets out the standards and its pointers together with indications of the kinds of appropriate evidence.

Some aspects of organisational capability are not represented; for example, aspects of human resource management such as employee relations. Organisations are encouraged to customise the framework to include their own additional quality features where necessary.

There are two main lines of evidence in the management system: data on client, learner, and staff satisfaction, and documentary evidence.

The kinds of documents suggested as evidence in the Scottish Quality Management System include:

✧ development and business plans, policies, and procedures

✧ program information, including methods of learning and assessment

✧ examples of learners' work

✧ placement information

- notes of meetings (for example, management or program team meetings) which provide evidence of planning and action taken as a result of monitoring and review

- records such as those on recruitment, selection, induction, guidance, attendance, learner success, staff development, safety risk assessment, and many others

- statistical data, for example on performance indicators.

The existence of documents is not in itself regarded as evidence of compliance with quality standards. The content of documents should be examined. For example, all documents should clearly indicate the allocation of responsibilities for certain functions.

In order to satisfy the requirements of the management system organisations are expected to make use of appropriate performance indicators in a systematic way. These provide information, usually in a quantitative form, about resources deployed and the education and training services provided.

Examples of primary performance indicators used in the Scottish Quality Management System are: learner success (for example, Scottish Vocational Qualifications achieved); post-program success; client satisfaction; learner satisfaction; quality of learning and teaching profile; and unit costs profiles. They may be supplemented by a range of other, secondary, indicators, useful in providing detailed information and suggesting solutions where primary indicators suggest problems. Examples of secondary performance indicators are: staff satisfaction; program cost; staff/learner ratios; learner progress; learner attendance; learner enrolment (success in meeting target numbers); average group size; utilisation of accommodation; participation ratios for induction; and participation ratios for staff development (Scottish Quality Management System 2001).

Vital components in the success of this national system have been the attention given to the ground rules for external auditing, and the training of auditors. Organisations must be certified by the management system in order to carry out any government-funded training. The Scottish Quality Management System has been so successful that interest in pursuing ISO 9000 certification has declined in Scotland's VET organisations, and several agencies outside the VET sector have adopted and adapted it for their own quality assurance purposes (Gunning 1998).

In an effort to further refine the effectiveness of the system and to achieve the application of the Scottish Quality Management System standards uniformly and fairly, the system has carried out moderation of the auditing process across Scotland (Scottish Quality Management System 2001).

# South Africa

South Africa's National Qualifications Framework is motivated by a balanced, twofold commitment to meet the needs of individual learners (and especially, to redress historical inequities in the education system) and to contribute to the country's economic and social needs. The intention of a national framework such as this is to enable nation-wide recognition and portability of qualifications. It is underpinned by a strong commitment to the principles of lifelong learning.

The quality indicators for the National Qualifications Framework are intended to encompass the following objectives:

- integration (theory and practice and knowledge, values and attitudes should be integrated in all qualifications and standards)

- learning outcomes (expected standards of attainment should be clearly stated, and programs designed to ensure achievement)

- access, mobility and progression (learning should lead to continued learning and to employment opportunities)

- redress (there should be increased access for those who were previously denied opportunities)

✧ personal and national development (learners should be empowered and enabled both for their own and their country's development needs).

Implicit in the South African Qualifications Authority's implementation of the quality system is the understanding that quality assurance, quality management and accreditation are not things or products; rather, quality is a process (South African Qualifications Authority 2001b).

Within the authority's framework, standard setting is initially separated from quality assurance and the quality process can be viewed as 'a cycle within an upward spiral' where the cycle begins with standards setting and the consequent registration of standards and qualifications on the National Qualifications Framework. Education and Training Quality Assurance bodies are then accredited to monitor and audit the achievement of a specific set of registered standards and qualifications. The quality assurance bodies subsequently accredit providers for provision of learning and assessment of learning achievements against these standards and qualifications. Evaluation and reporting requirements for accredited bodies provide feedback to assist in the continual improvement of National Qualifications Framework registered standards and qualifications (South African Qualifications Authority 2001a).

The qualifications authority has developed the following range of institution-level quality indicators.

Providers will only be accredited if the body seeking accreditation:

✧ is registered as a provider

✧ has a quality management system which includes clear aims and policies

✧ has procedures and review mechanisms

✧ has the necessary financial, administrative and physical resources to develop, deliver and evaluate specified learning programs culminating in the attainment by students of registered qualifications.                    (South African Qualifications Authority 2001a)

The quality management system should also be informed by national, sectoral, local and learner requirements within the context of accessible, affordable and cost-effective quality systems for delivery and assessment.

Program-level quality indicators have been developed for evaluating the quality of providers' policies and practices in the following areas:

✧ program/course development and design

✧ materials development

✧ teaching and learning services and responsibilities

✧ learner support

✧ access issues including equal opportunities

✧ authenticity of assessment evidence and appeals systems, as well as the use of tutors and mentors and learning resources

✧ the language of teaching and learning

✧ assessment

✧ finances, fees and payment regulations

✧ collaboration and partnerships

✧ management and administration

✧ marketing

✧ evaluation and research

✧ internal quality assurance mechanisms and reviews

✧ quality assurance reviews and accreditation.

Education and Training Quality Assurance bodies are required to:

✧ accredit providers for specific standards or qualifications

✧ promote quality amongst constituent providers

✧ monitor provision

✧ evaluate assessment and facilitation of moderation

✧ register assessors

✧ certify learners

✧ cooperate with moderation bodies

✧ recommend new standards or qualifications to National Standards Bodies

✧ maintain a database

✧ submit reports and perform other functions assigned by the authority.

(South African Qualifications Authority 2001b)

# Sweden

The quality debate in Sweden concerns itself not only with the quality of vocational training but also with its broader social implications, and with such general objectives as creativity. The involvement of participants and other stakeholders is considered crucial, as is the use of different kinds of evaluations, both qualitative and quantitative approaches, and the wish for useful results for developers, planners and decision-makers (Seyfried, Kohlmeyer & Futh-Riedesser 1999).

Vocational training and general education are not clearly distinguished, and, indeed, it is an objective of the Swedish education system 'to narrow the gap between vocational and general education as much as possible' (Abrahamsson 1999). The Swedish Ministry of Education and Science recognises that high quality VET will only be achieved if there is close cooperation between school and working life. Vocational programs at the upper secondary level are considered to be initial vocational training and all other forms of training, from labour market through to professional degrees at university are regarded as continuing vocational training. As the education system in Sweden is very decentralised, it is difficult to generalise about quality management.

Private education institutes are guided by an annual survey of training needs conducted by an association of small enterprises, which operates as a de facto quality assessment mechanism. If it is apparent that an institute is attracting declining numbers of students, the association assumes that it is the quality of that institute's offerings that is lacking.

In Sweden, there is no national vocational qualifications scheme. Sweden's national Labour Market Board has, however, had a continuous evaluation system in place since 1979. The board uses the following system-level quality indicators:

✧ employment impact six months after completion of training

✧ proportion of participants who complete training

✧ utility of training.

Since 1994 regional labour market boards have had to follow new rules that guide public authorities when purchasing training from private providers, and some have contributed to the development of appropriate quality indicators to use in this context. Many training enterprises develop their own training certificates or quality standards, which may be approved by labour market agencies.

Finally, the School Act prescribes reporting on the following system-level quality indicators: teachers must have completed the appropriate training, and municipalities must provide continuing and further education. It is acknowledged that the quality of VET depends on content, learning environment and teacher qualifications. This last is particularly important in a changing work environment with an increased demand for generic skills (Abrahamsson 1999).

Priorities in Swedish VET may be summed up as being:

✧ teacher training (both initial and continuing)

✧ vocational guidance

✧ support for work experience

✧ consideration of the needs of people with disabilities (including 'vocational rehabilitation')

✧ a higher profile for research into the sector.

Vocational training networks in Sweden use the following quality indicators:

✧ quantitative: quantity of courses and participants; employment rate of students

✧ qualitative: satisfaction of firms; and satisfaction of the participants.

<div align="right">(Seyfried, Kohlmeyer & Futh-Riedesser 1999)</div>

# The Netherlands

The Netherlands' approach to quality is characterised by strong externally imposed quality controls, and top-down strategies. As well as self-assessing their internal quality programs, schools are evaluated by external visiting committees every five to six years, and the attempt to find the right balance between these internal and external quality assurance mechanisms is ongoing. Furthermore, 'reconnaissance' studies, for which approximately 300 evaluative questions have been designed, are conducted when the need becomes apparent in specific industrial/economic/disciplinary sectors (Nielsen & Visser 1997).

The Regionale Opleidingencentra Overgelder is an association of VET providers which has set up a quality management system that has developed institution-level quality indicators to gauge quality in the following 11 areas:

✧ policy development and quality management

✧ finance

✧ personnel

✧ communication

✧ infrastructure and resources

✧ program availability

✧ influx, transfer, outflow and education and training outputs

✧ training 'fit' to participants.

These areas are checked against performance indicators with a view to fostering continuous improvement. The Regionale Opleidingencentra Overgelder uses a yearly quality management cycle made up of four stages: self-evaluation; priority setting; improvements; and 'intervisitatie'—where a committee composed of sector managers, the two overall quality managers and members of the board decide on overall quality improvement measures for the Regionale Opleidingencentra Overgelder based on the faculty evaluations (Seyfried 1999).

The quality indicators developed by the VET institutes in the Nijmegen region of the Netherlands have been included to provide a detailed example of the sort of institution-level quality indicators that may be used to gauge the quality of learning processes and the conditions and experience of teachers.

In the Nijmegen region, VET institutes have jointly developed a quality system which identifies 12 indicators as being indicative of the quality of the learning process; that is, the percentage of:

✧ teachers who consider the learning process to conform with the educational concept of the institute

✧ tutoring staff (for placements and practice) who consider that the program is relevant for the chosen employment sector

✧ former students, employed in the sector concerned, who consider the program to be relevant for their professional needs

✧ teachers, staff and students who consider the program goals to be clear and concretely formulated

✧ teachers, staff and students who are satisfied with the integration of theory and practice

✧ teachers and students who consider that the program content corresponds with the stated learning goals

✧ teachers and students who consider the structure of the program (content, time, sequence) to be clear

✧ students who consider that the planned study load corresponds with reality

✧ students who are satisfied with the student guidance and advice facilities

✧ students of particular target groups who consider the program is sufficiently adapted to their particular needs

✧ students of particular target groups who consider the program is sufficiently flexible in terms of timing, content and format

✧ students who are satisfied with the quality of the program in terms of its content, didactics, support material, exercises, tests, etc.

✧ students and practice/placement staff who are satisfied with the practical component of the program in terms of preparation, effect, organisation, clarity of learning goals, guidance, evaluation, etc.                                                          (Van den Berghe 1997b)

The Nijmegen institutes have also jointly identified the following quality indicators pertaining to staffing, which focus on teaching conditions rather than on the quality of the teachers themselves:

✧ absenteeism (compared with national average)

✧ proportion of male and female full-time equivalent

✧ correspondence between qualitative/quantitative needs for staff and the actual situation

✧ percentage of teaching staff time spent on teaching

✧ number of departments and programs in which teaching staff teaches (goal: minimum)

✧ percentage of staff who consider that their work load corresponds with their appointment

✧ frequency and intensity of staff contacts/employment in the employment sector

✧ level of insight in the training needs of staff

✧ opinion on support for incoming and outgoing staff

✧ frequency of staff appraisals.                                                          (Van den Berghe 1997b)

Vocational training networks in the Netherlands use the following quality indicators:

✧ quantitative: output of the regional vocational training system

✧ qualitative: individual fit of the measure via participant-specific pathways.

<div align="right">(Seyfried, Kohlmeyer & Futh-Riedesser 1999)</div>

# The United States of America

## National initiatives

Vocational education in the United States of America is not a well-defined 'system' and is more accurately characterised by scattered, decentralised and unconnected programs (B Brand 1998).

The major emphasis of VET provision in the United States of America is on the transition from school to work. So-called 'Tech Prep' programs represent a major pathway whereby students enter post-secondary education directly from high school. Tech Prep is a program of study which begins in high school, continues at a post-secondary institution, and culminates in an associate of applied science degree, two-year certificate, or two-year apprenticeship (Illinois Tech Prep 2002).

The Carl D Perkins Vocational and Technical Education Act came into effect in July 1999. The purpose of the Act is to improve vocational and technical education programs, including Tech Prep programs. Its primary focus is to develop challenging academic standards and promote the development of activities that integrate academic and vocational and technical instruction. The Act prescribes the most significant set of performance indicators that is applied in the United States of America and is designed to promote continuous program improvement, of which *accountability* is the most pertinent to quality.

The core accountability quality indicators of the Carl D Perkins legislation are:

✧ student academic achievement

✧ student technical skill attainment

✧ graduation and completion rate

✧ placement and retention

✧ equity
  ◆ enrolment in non-traditional programs
  ◆ non-traditional graduation percentage.                          (Chin 2002)

Quality indicators are used in many different ways. For instance, the National Consortium for Product Quality in Vocational Education provides an example of the use of quality indicators to assure the quality of VET products. The consortium has developed a comprehensive list of quality indicators which focusses on the following areas and guides the curriculum review process for vocational courses:

✧ content standards, which focus on the integration of academic foundations into career development, life skills, and occupational competencies

✧ instructional standards, which include problem-solving, communication, and reasoning strategies of all students presented through applied experiences within classroom and community environments

✧ student assessment standards, which are student-focussed in the measurement of attitudes, knowledge, and skills, as well as their application to problem-solving within the classroom and workplace environment

✧ equity/diversity standards, which ensure that the instructional material reflects equity and diversity as a behaviour (rather than an issue) that is incorporated throughout the material

✧ technical and format standards, which include physical, format, and design considerations of submitted instructional and curriculum products.

(National Consortium for Product Quality in Vocational Education 2001)

## State initiatives

The Perkins Act allows states flexibility in selecting measures and standards, and, as a result, states have developed quality indicators to measure quality in a range of categories as outlined in table 2.

In table 2, 'other' covers employer/student satisfaction measures; program input and process measures (including programs or curriculums having identified competencies and state approval, business and industry site visits by instructors, collaboration, program productivity, and stable program enrolment); and career guidance and development measures (The Office of Vocational and Adult Education 1996).

**Table 2:    Quality indicators developed by states within the United States of America**

| Category | Number of states that have developed quality indicators for this category in their secondary programs | Number of states that have developed quality indicators for this category in their tertiary programs |
|---|---|---|
| Academic skill | 46 | 42 |
| Occupational skill | 39 | 32 |
| Placement | 43 | 48 |
| Retention, completion, or graduation | 35 | 33 |
| General employability skills | 6 | 6 |
| Enrolment, equity, and access | 29 | 21 |
| Other | 20 | 21 |

Connecticut, Florida, Illinois, Texas, and Wisconsin have developed the following statewide Tech Prep evaluation models that provide frameworks for evaluating Tech Prep programs for accountability and program improvement purposes:

 ✧ Connecticut has developed an 11-point framework that uses quantitative quality indicators related to program and student outcomes.

 ✧ Florida has developed consortia-level quality indicators that focus on: attainment of goals/ objectives by Tech Prep consortia as stated in their proposals to the Department of Education; collection of information for determining the characteristics of each consortia; collection of data to determine the impact of Tech Prep by identifying measurable benchmarks and parameters that can be used in programmatic comparisons; and collection of data to determine the status of Florida's role in supporting its local Tech Prep consortia.

 ✧ Goals that guide the Illinois framework include institution-level quality indicators that require providers to: describe the status of Tech Prep implementation; identify participants in Tech Prep and describe how the participation of students changes over time; identify the benefits (outcomes) of Tech Prep for students, especially outcomes linked to student learning; identify the benefits (outcomes) of Tech Prep for other stakeholder groups; and discern strategies that support continuous improvement of Tech Prep.

 ✧ Texas uses a site-based peer review process with quality indicators to review areas including program, instruction, counselling, professional development, marketing, budgeting, planning, student access, and evaluation.

 ✧ Wisconsin has developed 15 Tech Prep performance indicators that are incorporated into existing local data systems, are quantitative in nature and focus on enrolment numbers, participation rates, completion rates, etc.

The Office of Superintendent of Public Instruction in the state of Washington has developed standards and indicators for vocational-technical programs in schools. Their quality indicators are institution-level indicators and they focus on the need for vocational-technical programs to:

✧ provide opportunity for students to develop and demonstrate technical, related academic, and work readiness competencies required in the workplace, community, family, and for continuing education

✧ be an integral part of the K-16 educational system and to be coordinated with other training programs

✧ include student leadership competencies

✧ engage and support quality trainers

✧ set student numbers per class according to safety factors and available equipment

✧ be needs-based and to be regularly revised and evaluated

✧ provide career development and planning services.

<div align="right">(Secondary Education and Career Preparation 2001)</div>

The State of Ohio has generated a list of 38 quality indicators, for secondary vocational education, which were ranked by educational policy-makers into the ten most important indicators. Of the ten indicators ranked as most important, three measured student achievement and learning, three measured labour market outcomes, two measured student attendance and retention and two measured student educational advancement and employer satisfaction.

Indicators that are fairly unique to this group of indicators include those with a focus on:

✧ 'generic' skills (work ethic, leadership, self-esteem, knowledge of the world of work, educational aspirations, problem-solving and critical thinking ability of students)

✧ proportion of graduates self-employed after the program

✧ earnings of graduates

✧ proportion of students continuing their education in programs related to their initial training

✧ student citizenship as measured by rate of graduate voter registration

✧ rate of student advancement to a higher level of skill or competency

✧ economic return on investment of program as measured by the ratio of graduate earnings to program costs

✧ counselling services

✧ recruitment activities

✧ how program evaluation results feed into program planning.          (Peasley & McCaslin 1995)

## Provider initiatives

Oklahoma Area Vo-Tech Schools have developed quality indicators for implementing student and staff services to assure effective transition from school to work. The quality indicators apply to the seven areas that are regarded as crucial to student success: guidance, assessment, education enhancement, job placement, financial aid administration, curriculum coordination, and staff development.

California community colleges are required to report on five key areas: student access, student success, student satisfaction, staff composition, and fiscal condition (Jones 1996).

The Utah State Office of Education has indicated that on-site evaluation of vocational education programs may use quality indicators, such as needs assessment, guidance program, student placement, follow-up activities, community responsiveness, evaluating pupils, teacher selection,

teacher evaluation, in-service growth, building facilities, vocational classrooms, operation and maintenance (of vocational education areas), tools and equipment, objectives, pupil growth, special pupils, curriculum and change, and innovation (Utah State Office of Education 1982).

Other indicators used in Utah focus on teacher skills, competency development, student utilisation of instructional process, basic skills, and teacher/student/material interaction (Campbell & Panzano 1985).

# Analysis of the quality indicators

## A framework of quality indicators

While individual systems may vary in the emphasis they place on certain indicators, there is more commonality than difference overall in the quality indicators used in international VET systems. These common characteristics are represented diagrammatically as figure 3 (Framework of VET quality indicators). This framework builds on a much simpler model developed by McCaslin (1990) as outlined in figure 2.

**Figure 2: McCaslin's model of vocational education evaluation**
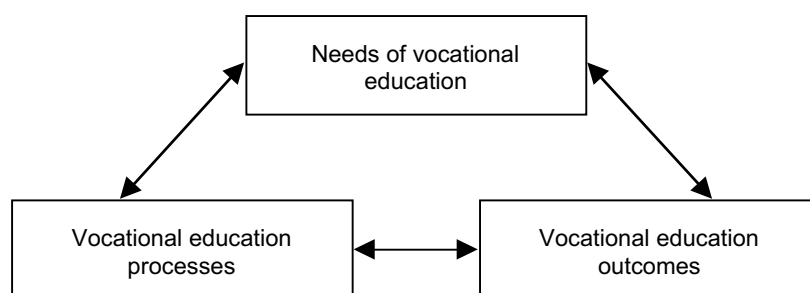


While this model is a useful starting point from which to design a framework of quality indicators, it requires several additional elements. First, the *context* within which the quality indicators are located must be identified. As has been stressed earlier, the selection and operation of quality indicators is strongly influenced by contextual factors. These contextual factors include personal characteristics and background of learners, community influences, labour market and family factors.

The first part of the proposed framework is therefore the background context (shaded). Despite the influence of these contextual factors on VET policies, quality indicators are not used to measure this background context.

Within the background context sit the remaining three parts of the framework, structured as a flow chart. At the top, *Stakeholders* and *Stakeholder expectations* are identified. Each group of stakeholders views the VET system from its own perspective and, as a result, each has quite different expectations of what the VET system should deliver and consequently seeks to influence *Policy* to that effect.

Vocational education and training policies govern the *Process* of training delivery, administration and management that are represented in the centre of the flow chart. This section also features the first cluster of quality indicators, with *Learning* being the outcome of this process.

The second cluster of quality indicators relates to *Outcomes/outputs.*

The arrows that connect both *Outcomes/outputs* and *Process* back to *Stakeholders and Stakeholder expectations* indicate a feedback mechanism. The information gauged by each of the two clusters of quality indicators forms feedback that is used to inform stakeholders and further iterations of the

policy development process. Thus a continuous improvement cycle is established and maintained in VET systems which use quality indicators.

**Figure 3:   Framework of VET quality indicators**

**Personal characteristics and background**

**Stakeholders:**
- learners
- business and industry
- community
- government (national, state)
- managers and VET institutions
- teachers

**Stakeholder expectations:**
- achieving competencies
- work readiness
- cost effectiveness
- transformation
  (development of individual)

**Policy**

**Process**
- resources
  – learner support (counselling, induction, guidance)
  – training programs, curricula, products, innovation
  – infrastructure (equipment, classrooms, IT, libraries)
  – teachers (industry experience and professional qualifications, professional development)
  – assessment procedures
- administrative structures and procedures (OH&S, QA)
- management structure/approaches/culture
  – financial, strategic planning, marketing and collaboration
  – communication strategies
- teaching (practices, styles, delivery)
- industry and community links
- evaluation (program, teacher) and research

**Family**

**Community**

**Learning**

**Outcomes/outputs**
- employment outcomes
  – placement, employment rates, earnings
- stakeholder satisfaction
  – learner, business and industry, community, government
- education and training
  – achieving vocational competencies
  – achieving generic skills
  – prepared for lifelong learning
  – attendance, completion, retention
  – access and equity
  – participation
- cost effectiveness and funding
- social (effectiveness, aspirations, personal attributes)

**Labour market**

## Stakeholders and stakeholder expectations

Learners, business and industry, community representatives, government representatives at the national and state level, managers of VET institutions and teachers constitute the main stakeholders in all VET systems. The main expectations that these stakeholders have of training include:

✧ achievement of competency

✧ work readiness at completion of training

✧ cost effectiveness of training

✧ extent of transformation and development of the individual.

The degree to which particular stakeholders influence VET quality policy varies considerably between different countries, owing largely to variation in their background contexts. All systems have a diverse range of stakeholders who have quite different expectations, and the structure of a system may itself contribute to how diverse those varied stakeholder perspectives are. For example, Germany's dual system formally recognises that the input of both industry and the academy are integral to the successful conduct of vocational training, and hence that the perspectives of each of these stakeholders must be taken into account in the determination of quality indicators.

The influence exercised by business and industry on VET quality systems has greatly increased recently in countries such as Scotland, England, New Zealand and Australia, mostly owing to the formation of national training authorities that regard business and industry as their key stakeholders, while other groups of stakeholders have less influence in the formulation of VET quality policies. European Union countries, South Africa and the United States of America place a high degree of emphasis on the requirement to meet broad community needs in the formation of VET quality policies. National and state governments are particularly influential stakeholders in European Union countries, the United States of America and South Africa. Learners are given prominence as stakeholders in Denmark, while teachers are regarded as important stakeholders in the Netherlands.

## Gauging the quality of the process of VET delivery

Once stakeholders' expectations of VET have been interpreted into policy, the implementation of that policy becomes apparent in the process of VET delivery. Here we find a preponderance of quantitative measures of quality, for the focus is understandably on the extent to which programs are resourced in physical and human terms, on how well programs are administered and managed, on the effectiveness of teaching and external links, and on the place given to the activity of evaluation.

There is widespread concern with the provision of learner support, including the quality of VET infrastructure, and the quality of teachers and the teaching process, but beyond these there are interesting differences in focus from one system to another. The Scottish Quality Management System prescribes that the quality assurance of VET processes must itself be subject to evaluation—a level of reflexivity not often found in other systems. It is European Union policy that collaboration be fostered among member countries, and Denmark clearly articulates the importance of this aim. In Sweden, cooperation is interpreted at a local level, with strong links between small enterprises and private training providers, for whom enrolment numbers are considered quality indicators. In South Africa, provider accreditation is contingent upon demonstrating that their quality management systems are informed by their stakeholders. In England and the United States of America there are expressed concerns that teaching quality can only be ensured if the quality of teacher education and ongoing professional development are themselves subject to assessment. In the Netherlands, the movement of learners through the system is monitored carefully, reflected in such measures as influx, transfer and outflow. Furthermore, this strong focus on the learning process itself sees teachers, other staff and students all contributing to final program evaluations in

the Netherlands. Safety in the working and teaching environment is an expressed concern in Denmark and Scotland, reflected in its inclusion as an indicator of quality in both systems.

## Gauging the quality of VET outcomes/outputs

Participants move through the VET system, engaging in its various processes, pursuing the learning that is its objective, and finally emerging at some end point of exit, if not completion, at which the so-called outcomes or outputs of the processes in which they have been engaged will be measured. Here again, certain quantitative measures will predominate in such areas as participation and employment rates—indicators that seem to be universally adopted because they meet the demand for measures that can be used to demonstrate accountability. However, this is also the area in which we find many qualitative measures as systems seek to establish how satisfied their stakeholders are, and how effective their programs have been. Some of these are very difficult to measure.

Some systems have more specific social goals than others in the international community. South Africa has a strong social agenda, which foregrounds the needs of its learners, especially in order to redress past inequities, as well as the needs of society as a whole. One stated objective of the bilateral partnership between Northern Ireland and the Republic of Ireland is that 'mutual understanding and cultural tolerance' be considered as measures of quality. In Germany, efforts are being made to integrate disadvantaged groups into the labour market, in recognition that the impacts of teenage unemployment, for example, are being felt throughout the society. In a similar fashion, Sweden extends its focus from those with disabilities to those who need 'vocational rehabilitation'.

# Distribution of quality indicators

Tables 3 and 4 give an indication of how the quality indicators identified in the *Framework of VET Quality Indicators* are distributed across the countries included in this study. Table 3 is concerned with the quality of the training process, and table 4 with the quality of training outcomes/outputs.

**Table 3: Quality indicators used to measure the quality of training processes**

| Country | Training processes quality indicator number (see key below) | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
| Australia | * | * | * | * | * | * | * | * | | * | * | * |
| Denmark | * | * | * | * | * | | * | * | | * | | |
| England | * | * | * | * | * | | * | * | | * | | |
| European Union | | * | * | | | | | * | | | | |
| Germany | | * | | * | * | | | * | | * | * | |
| Ireland | * | * | * | * | * | | | | | | | |
| Netherlands | * | * | * | * | * | | * | * | * | * | * | |
| New Zealand | * | * | * | * | * | | * | * | | * | * | * |
| Scotland | * | * | * | * | * | * | * | * | * | * | | * |
| South Africa | * | * | * | * | * | * | * | * | | * | | * |
| Sweden | * | * | | * | | | | * | | | * | * |
| United Kingdom | | * | | * | | | | | | * | | |
| United States of America | * | * | * | * | * | | | * | | | * | * |

Key: **1** learner support; **2** training programs; **3** infrastructure; **4** teachers; **5** assessment; **6** administrative structures; **7** management; **8** financial and strategic planning/marketing/collaboration; **9** communication; **10** teaching; **11** industry/community links; **12** evaluation and research

**Table 4: Quality indicators used to measure the quality of outcomes/outputs**

| Country | Outcome/output quality indicator number (see key below) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| Australia | * | * | * | * | | * | * | * | |
| Denmark | | * | | | | * | * | | |
| England | * | * | * | * | | * | * | * | * |
| European Union | * | | * | * | | * | * | * | * |
| Germany | | | * | | | * | * | * | * |
| Ireland | * | * | * | * | * | * | | | * |
| Netherlands | | * | * | | | * | | | * |
| New Zealand | | * | * | | | * | * | * | * |
| Scotland | * | * | * | | | * | * | * | * |
| South Africa | * | | * | * | * | * | * | * | * |
| Sweden | * | * | * | * | * | * | | | * |
| United Kingdom | * | * | * | | | | | * | |
| United States of America | * | * | * | * | | * | * | * | * |

Key: **1** employment outcomes; **2** stakeholder satisfaction; **3** achievement of vocational competence; **4** achievement of generic skills; **5** lifelong learning; **6** attendance/completion/retention; **7** access and equity; **8** cost effectiveness/funding; **9** social (effectiveness, aspirations, personal attributes)

Note: These tables are based on the quality indicators that have already been identified in the discussions of countries and their quality systems, located within the *International perspectives* section of this report. The Australian information is based on the national key performance measures and the Australian Quality Training Framework and also on the reporting requirements of state and territory training authorities.

# Importance of various quality indicators

The countries included in the study employ a diverse range of quality indicators to monitor quality within their VET systems. Some quality indicators occur almost universally (high frequency), others occur in many of the VET quality frameworks but are not applied universally (medium frequency), while others occur infrequently and typically address issues that are specific to particular systems. The frequency measure used was derived by mapping 22 quality indicator groups (as shown in table 5) against 23 sources of quality indicators (see appendix). The frequency with which individual indicators within the groups occur was then calculated. Table 5 sorts the quality indicator groups into those that occur with high (12–23 occurrences), medium (6–11 occurrences) and low (5 or fewer) frequencies, respectively.

There is a core set of quality indicators that occur very frequently throughout the VET quality systems included in this study. Not surprisingly, educational attainment, including achievement of academic, technical and generic skills, appears as the most commonly occurring quality indicator. The other area that is measured almost universally concerns students' progression through training programs to completion. Quality indicators in this group have labels such as 'participation', 'progression', 'retention', 'success' and 'completion'. They are important because they are often included in VET systems as national targets. Most systems also measure the quality of the experience of the learners. They do this, first, in terms of the quality of the learning environment, which includes the culture, context and availability of learning resources; and second, in terms of learner support which includes information provided to learners, student services and guidance. Levels of resourcing are also frequently measured, with human resources being a significant focus. This can include measures for the qualifications and general quality required of teachers, professional development arrangements for teachers, recruitment processes and broader human resources policies. Other common resource-based quality indicators include physical resources such as buildings, facilities and equipment and also financial resources, which includes funding levels, economic management and budgeting processes.

**Table 5: Quality indicators ranked according to frequency of occurrence**

**High frequency quality indicators**

| Name of quality indicator group | Frequency | Name of quality indicator group | Frequency |
|---|---|---|---|
| 1   Educational attainment | **16** | 2   Progression | **13** |
| 3   Human resources | **12** | 4   Learning environment | **12** |
| 5   Learner support | **12** | 6   Demographics and inclusiveness | **12** |

**Medium frequency quality indicators**

| Name of quality indicator group | Frequency | Name of quality indicator group | Frequency |
|---|---|---|---|
| 7   Assessment processes | **11** | 8   Financial resources | **11** |
| 9   Physical resources | **10** | 10   Course documentation | **10** |
| 11   Quality assurance systems | **10** | 12   Quality of teaching | **10** |
| 13   Quality of courses | **9** | 14   Stakeholder satisfaction | **9** |
| 15   Training cost effectiveness | **9** | 16   Access and equal opportunity | **9** |
| 17   Employment outcomes | **7** | 18   Management of training provision | **7** |

**Low frequency quality indicators**

| Name of quality indicator group | Frequency | Name of quality indicator group | Frequency |
|---|---|---|---|
| 19   Effectiveness of training | **5** | 20   Collaboration and cooperation | **5** |
| 21   Occupational health and safety | **3** | 22   Innovation and development | **2** |

There is then a group of quality indicators that occur less widely but are still present in many of the VET quality frameworks included in the study. Many systems complement the collection of their attainment and completion data with quality indicators relating to employment outcomes for students once they have completed their studies. These quality indicators include 'labour market outcomes', 'placement' and 'employment rates'.

Many systems measure the demographic profile of students with a view to gauging the social inclusiveness of their VET systems, particularly with respect to ensuring that adequate diversity is maintained within the student population and ensuring that minority groups are adequately represented. Similarly, issues of 'outreach', 'access' and 'equal opportunity' are measured in most VET systems.

Most systems also measure the quality of the training delivered. Quality indicators for this purpose typically focus on:

✧ the range, planning, content and availability of courses provided

✧ course design and curriculum development

✧ cost effectiveness and affordability of training

✧ the quality of the management of the training process including such issues as communication, administration and governance

✧ the location and duration of training

✧ development of training plans

✧ relevance, utility and fitness to purpose of training

✧ assessment processes

✧ effectiveness of training in terms of credibility, standards reached by learners

✧ the competence of the teachers delivering the programs

✧ the quality of the teaching being provided.

Training providers are commonly required to demonstrate that they have set up quality management systems, quality assurance systems and continuous improvement mechanisms. The

final group of quality indicators that occur in most VET systems relate to research and evaluation, including measurement of stakeholder satisfaction.

Less commonly applied quality indicators include requirements for providers to:

✧ collaborate and cooperate with stakeholders as well as with other providers

✧ address occupational health and safety issues

✧ engage in innovation and developmental activities

✧ demonstrate mutual understanding and cultural tolerance.

# Conclusions

## What do international comparisons reveal?

Several of the VET systems considered in this report share certain approaches to the implementation of quality. Many countries have introduced national schemes that are typically accompanied by the establishment of regulatory authorities, which impose quality controls, conduct inspections of various sorts, and monitor compliance by means of auditing. However, some countries have adopted the latter elements without having implemented either a national qualifications scheme or a national quality framework. For example, Sweden has not found the idea of a national scheme to be appealing, preferring instead to rely on strong links at the local level between stakeholders and VET providers to ensure that quality outcomes are achieved. The European Union would claim that it has common quality goals despite the absence of a single set of standards that could be unilaterally applied. Instead, they talk of striving for 'harmonisation', 'comparability' and 'transparency'; goals which they may be said to share with those operating in more centrally structured systems.

In examining the quality indicators adopted by various international VET systems, certain common characteristics have appeared. In all systems, the personal characteristics and background of learners, community influences, labour market, and family factors can be thought of as comprising the context in which the quality of VET is measured. Stakeholders and their expectations drive VET policy, which, in turn, informs VET processes. The learning that results from the learners' participation in the process is the final outcome or output. Quality indicators in VET can therefore be divided broadly into two categories: first, those that focus on the *process* of training, and second, those that focus on *outcomes or outputs*.

Some indicators need to be interpreted carefully, and all need to be assessed as to their applicability to context, particularly when considering adopting one or more from one VET system to use in another. For example, the use of 'completion rates' as a quality indicator is widespread throughout international VET and low completion rates are typically regarded as an undesirable outcome. However, students engage in vocational education and training for a variety of reasons, and obtaining a credential or qualification may not necessarily be their main objective. For example, students may elect to engage in training to achieve a suite of work-related competencies rather than to complete a whole qualification. This is a factor which has been acknowledged in the Australian VET environment, with the adoption of 'student outcomes' as a measure.

The Australian VET system has a well-defined structure, in that it bases training on national Training Packages that are strongly endorsed by industry, and has established the Australian Quality Training Framework to underpin the quality assurance of the training system. However, the current VET system in Australia is mainly geared towards meeting the expectations of business and industry, and industry is often narrowly focussed on equipping learners to function in the current work environment, rather than concerning itself with preparing learners for future work and the journey of lifelong learning. As a consequence, the needs of learners and broader community concerns are given seemingly less priority and have much less impact on VET policy in Australia than they receive in the VET systems of many other countries.

# Issues for debate within Australian VET

In focussing on quality indicators used in VET systems outside of Australia a range of quality indicators has emerged that are not currently included in the Australian quality system. The implications of some of these are discussed below.

The major regulators of quality within European VET (the European Union, OECD and the European Training Foundation) have developed quality indicators pertaining to the expenditure of funds on VET, including VET expenditure as a share of gross domestic product. Should such a measure be included as a quality indicator and used for comparison of the quality of our VET system with VET systems in countries of similar economic status to Australia?

Several of the countries studied, particularly those in Europe, use their national VET quality frameworks to engineer the implementation of broad social policies, particularly those related to young people. The Australian VET community may wish to consider whether their quality frameworks are sufficiently integrated with other social policy initiatives.

The United Kingdom incorporates a dimension of VET quality that is concerned with the relationship between who benefits from VET and who funds the VET system. Australian industry currently has a high degree of influence over VET policy and its quality and is a major beneficiary of the VET system. Does Australian industry make enough of a contribution to funding the VET system to justify this situation and should the general community (that is, the taxpayers who largely fund the system) have a more equal role in influencing how the quality of the Australian VET system is gauged?

The VET quality system in Denmark emphasises the need for training providers to have external contacts and to collaborate with other providers locally, regionally, nationally and internationally. The New Zealand VET quality system also requires providers to be responsive to the needs of their community, industry and business and to build partnerships with them while collaborating with other providers. Should this be a requirement for Australian providers? While the Australian Quality Training Framework does emphasise the importance of links with business and industry, perhaps Australian VET could be focussing more on broader community collaboration and partnerships between providers.

Denmark also has quality indicators for innovative and developmental activities. If innovation is regarded as important in ensuring that the VET system responds efficiently and creatively to the future needs of learners and other stakeholders, should there be a greater emphasis on innovation as a quality indicator within the Australian VET system?

England has quality indicators which gauge the extent to which training provision is educationally and socially inclusive and promotes equality of access. How well does the profile of learners in the Australian VET system reflect the overall population profile, particularly for minority and special needs groups? Should quality indicators be developed to assist in monitoring this aspect of quality within the Australian VET system?

England also gauges the extent to which teachers work with a professional value base, conform to agreed codes of professional practice and reflect upon and evaluate their own performance. Are these issues of professionalism addressed by the current qualification requirements for teaching staff within the Australian VET system? Is there a need for additional quality assurance measures, beyond those included in the Australian Quality Training Framework, aimed at fostering increased professionalism in teaching practices?

International standards (ISO 9000) and total quality management play a significant role in the German VET system, particularly for company-sponsored training, whereas the advent of the Australian Quality Training Framework has reduced, to some extent, the amount of emphasis given to these in the Australian VET system. However, the fact that some training organisations continue to pursue international certification under these systems suggests that they see benefits in

international endorsement. This raises the question of whether it would be desirable to adopt a more globalised approach to VET quality systems which is quite separate from International Standards Organisation certification. Many of the quality indicators that are used within the various VET systems included in the study have a high degree of commonality. Perhaps there is a need for more discussion about the merits of developing a set of international standards specifically for VET quality assurance.

Ireland includes quality indicators that measure learners' progress in the field of social skills such as self-confidence, as well as indicators pertaining to the extent of mutual understanding and cultural tolerance. Australia does not currently use these sorts of factors as indicators of quality. Is there a role for them in our VET quality framework?

There is a high degree of similarity between the model used for VET quality assurance in New Zealand and that used in Australia. One area in which the New Zealand Qualifications Authority quality indicators differ from those in the Australian Quality Training Framework is that of research. Where degree programs are offered, teaching staff must have a significant involvement in research within the area in which they are teaching. Research must be conducted according to ethical and cultural standards, and within appropriate research facilities. While Australian VET practitioners are required to have appropriate academic qualifications, should the Australian VET system give greater emphasis to research and should demonstration of involvement in research by providers be used as an indicator of quality?

The Australian Quality Training Framework was, in part, modelled upon the Scottish Quality Management System. For instance, the emphasis on auditing of training outcomes within the Scottish system has been adopted within the Australian framework (and also in several other national quality systems). There is also a high degree of commonality between the quality indicators used within both systems. The division of quality indicators into primary and secondary level performance indicators within the Scottish system is a distinguishing feature within the system. Would it be useful to introduce some level of stratification into the quality indicators used within the Australian VET system?

The South African VET quality system's response to a quite specific set of social requirements sees a balance between meeting the needs of individual learners, redressing past inequities within the system, and contributing to the economic and social needs of the country. The principle of lifelong learning is also stressed. This principle does not currently feature to any significant extent in the Australian VET quality system and yet there is broad consensus as to its value. Australia could consider giving greater prominence to similar social objectives in its VET system.

Sweden also has quite a different expectation of the role of the VET system than occurs within Australia. In Sweden the accomplishment of broad social outcomes is balanced against the more technical aspects of VET outcomes. For example, consideration is given to the achievement of such skills as creativity. This raises the important issue of the role that generic skills should have in the Australian VET system and, in particular, how their achievement should be quality assured. Is the current Australian approach of incorporating generic skills into Training Packages in the form of the Mayer Key Competencies adequate? Are they being adequately assessed and does the lack of a certification system for generic skills limit their potential? How can achievement of generic skills by learners be better quality assured in the Australian VET system?

Vocational education and training quality assurance in the Netherlands involves strong externally imposed quality controls, which might seem quite intrusive to providers in other systems. Like the United Kingdom, the Netherlands has a comprehensive set of quality indicators for the quality assurance of their teachers. Training 'fit' to participants is also used as an indicator of quality, placing the learner at the centre of the training process. This re-emphasises the question of whether stakeholders, other than industry, are given adequate opportunity to influence the framing of training objectives in the Australian system and also whether their needs are adequately catered for.

It is difficult to make comparisons between VET quality issues in the United States of America and those in Australia because of the lack of a systematic approach to management of VET in the United States of America and because VET provision there is strongly linked to the school sector. Neither of these is true of the Australian VET system. Labour market outcomes are key quality indicators in the United States of America, whereas they do not feature so prominently in the Australian VET quality system. Given the emphasis within the Australian VET system on ensuring that VET is tailored to meet the needs of industry, should labour market outcomes be used as a test of the effectiveness of the Australian VET system?

It is vital that the above issues be debated in the interests of equipping the VET sector to assist Australian society to meet the demands of the future. If the Australian VET system is to more adequately address broad community needs and the aspirations of lifelong learners, it will be essential that it meets the challenge of identifying appropriate indicators to measure these efforts. Thus the experiences of international VET systems which have begun to tackle this same challenge are of great importance as a means of informing the VET quality debate in Australia.

# References

Abrahamsson, K 1999, *Vocational education and training in Sweden*, European Centre for the Development of Vocational Training (CEDEFOP), Thessaloniki.

Adult Learning Inspectorate 2001, <http://www.ali.gov.uk/> [accessed 22 August 2001].

ANTA (Australian National Training Authority) 1998, *A bridge to the future: A national strategy for vocational education and training, 1998–2003*, ANTA, Brisbane.

——2001, *Standards for Registered Training Organisations*, ANTA, Brisbane.

Australian Quality Council 2001, <http://www.aqc.org.au> [accessed 2 August 2001].

Bailey, T & Kienzl, G 1999, <http://oeri4.ed.gov/offices/OUS/eval/NAVE/bailey.html> [accessed 30 October 2000].

Baker, J 1997, <http://www.ed.co.nz/docs/quality.pdf> [accessed 3 September 2001].

Boardman, D 1998, *Total quality improvement in vocational education*, paper presented at the International Vocational Education and Training Association (IVETA) conference, 31 August – 2 September, Ankara, Turkey.

Brand, B 1998, 'The process of change in vocational education and training in the United States', in *Changing vocational education and training: A comparative perspective,* eds I Finlay, S Niven & S Young, Routledge, New York, pp.137–38.

Brand, W 1998, 'Change and consensus in vocational education and training', in *Changing vocational education and training*, eds I Finlay, S Niven & S Young, Routledge, London, pp.103–22.

Calder, WB & Gordon, B 1996, 'Developing institutional leadership for improved student success', *College Canada*, vol.1, no.3.

Campbell, P & Panzano, P 1985, *Elements of vocational program quality* (ED325663).

Carpenter, P 1998, 'Achieving quality through transnational cooperation: A European perspective', paper presented at the IVETA conference, 31 August – 2 September, Ankara, Turkey.

CEDEFOP (European Centre for the Development of Vocational Training) 1999, *Young people's training: Key data on vocational training in the European Union*, European Union.

Chin, E 2002, *Carl D Perkins Guidelines*, Wisconsin Technical College System Board.

Commission of the European Communities 2000, <http://europa.eu.int/comm/education/leonardo/report/com_2000_0863_en.pdf> [accessed 7 September 2001].

Corbett, D 1997, 'How to think like a business without becoming one', *College Canada*, vol.2, no.1.

Deissinger, T 2000, 'Current problems and developments of VET in Germany: The educational case for modernisation', *Australian Journal of Adult Learning*, vol.40, no.2, July, pp.5–32.

—— 2001, 'Quality control and employability: Are the parameters of VET in Germany's dual system facing severe challenges?', paper presented at the Research to Reality: Putting VET Research to Work conference, 28–30 March, Adelaide.

Department for Education and Employment 2001, <http://www.dfee.gov.uk/nlt/targets.htm> [accessed 27 September 2001].

Elson-Green, J 2001, 'Training, a casualty of privatising public sector', *Campus Review*, 12–18 September, pp.7.

European Commission 2000, <http://europa.eu.int/comm/education/indic/rapinen.pdf> [accessed 7 August 2001].

European Foundation for Quality Management 2001, <http://www.efqm.org/> [accessed 6 August 2001].

European Training Foundation 1997a, *Report on the vocational education and training system: Bulgaria*, European Training Foundation.

—— 1997b, *Report on the vocational education and training system: Czech Republic*, European Training Foundation.

—— 1997c, *Report on the vocational education and training system: Estonia*, European Training Foundation.

—— 1997d, *Report on the vocational education and training system: Hungary*, European Training Foundation.

—— 1997e, *Report on the vocational education and training system: Latvia*, European Training Foundation.

—— 1997f, *Report on the vocational education and training system: Lithuania*, European Training Foundation.

—— 1997g, *Report on the vocational education and training system: Poland*, European Training Foundation.

—— 1997h, *Report on the vocational education and training system: Romania*, European Training Foundation.

—— 1997i, *Report on the vocational education and training system: Slovenia*, European Training Foundation.

—— 1999, *Vocational education and training in Central and Eastern Europe: Key indicators*, European Communities.

European Union 2000, <http://eur-op.eu.int/opnews/100/en/t1701.htm> [accessed 7 August 2001].

Federal Ministry of Education and Research 2002, <http://www.bmbf.de/pub/bbb2002_en.pdf> [accessed 18 July 2002].

Freeland, B 2000, *International comparisons of vocational education and training*, National Centre for Vocational Education Research, Adelaide.

Further Education Funding Council 1998, <http://www.fefc.ac.uk/data/pi-pdf/perf2000.pdf> [accessed 9 October 2001].

Further Education National Training Organisation 2001, <http://www.fento.org/start.html> [accessed 22 August 2001].

—— 2002, <http://www.lsc.gov.uk/news_docs/Mentoring-Sect_1.PDF> [accessed 10 July 2002].

Gibb, J 1999, 'Quality in the National Training Framework', *The Australian TAFE Teacher*, vol.33, no.1, pp.13–14.

Gunning, D 1998, 'The Scottish quality management system – a way through the quality jungle', paper presented at the IVETA conference, 31 August – 2 September, Ankara, Turkey.

Gutschow, K 2001, 'Quality standards in the German Vocational Training System', BIBB (Federal Institute for Vocational Training).

Illinois Tech Prep 2002, <http://www.isbe.net/techprep/> [accessed 27 June 2002].

Industry Training Federation 2001, *Training Federation update* (Update #48), ITF.

International Standards Organisation 2001, <http://www.iso.ch> [accessed 2 August 2001].

Irving, J 1992, 'The OECD international indicators project and its relevance to New Zealand, with particular reference to the work of the 'student outcomes' network', paper presented at the Qualifications for the 21st Century conference, 21–24 January, Victoria University of Wellington, New Zealand.

Jones, J 1996, <http://www.peralta.cc.ca.us/indev/oid.htm> [accessed 1 August 2001].

Learning and Skills Council 2001, <http://www.lsc.gov.uk/documents_list.cfm?categoryId=3> [accessed 27 September 2001].

—— 2002, <http://www.lsc.gov.au/news_docs/circular.02.05_(updated.8.3).pdf> [accessed 12 July 2002].

McCaslin, NL 1990, 'A framework for evaluating local vocational educational programs', *ERIC Digest*, *ED 327738*.

National Consortium for Product Quality in Vocational Education 2001, <http://vocserve.berkeley.edu/ST1.1/NCPQVEStandards.html> [accessed 16 August 2001].

New Zealand Qualifications Authority 2001, <http://www.nzqa.govt.nz/Services/> [accessed 3 August 2001].

—— 2002, <http://www.nzqa.govt.nz/services/aaa/docs/qastd1.pdf> [accessed 29 June 2002].

Nielsen, SP & Visser, K 1997, *Quality debate in initial vocational education (School-based quality measures at intermediate level: A Danish-Dutch comparison)*, CEDEFOP, Thessaloniki.

Nuttall, DL 1994, 'Choosing indicators', in *Measuring quality: Education indicators – United Kingdom and international perspectives,* eds KA Riley & DL Nuttall, The Falmer Press, London, pp.17–40.

OECD (Organisation for Economic Co-operation and Development) 1999, <http://www.oecd.org/sge/ccnm/pubs/gd/pharedu/ph_ove.htm> [accessed 7 February 2001].

—— 2000a, *Education at a glance – OECD indicators* (2000 edn.), OECD.

—— 2000b, <http://www.oecd.org/els/pdfs/EDSTIEWDOCA001.pdf> [accessed 11 August 2001].

Peasley, D & McCaslin, N 1995, *Ratings of quality indicators for secondary vocational education programs by educational policy makers*, Ohio State University, Columbus Department of Agricultural Education.

Qualifications and Curriculum Authority 2001, <http://www.qca.org.uk/nq/> [accessed 21 August 2001].

Rosenfeld, SA 1999, <http://oeri4.ed.gov/offices/OUS/eval/NAVE/rosenPart1.html> [accessed 30 October 2000].

Schofield, K 2000, *Delivering quality: Report of the independent review of the quality of training in Victoria's apprenticeship and traineeship system*, Department of Education, Employment and Training, Victoria.

Scottish Quality Management System 2001, <http://www.sqms.co.uk/index.htmm> [accessed 16 August 2001].

Secondary Education and Career Preparation 2001, <http://www.k12.wa.us/secondaryEd/vocstandardsindicators.asp> [accessed 24 August 2001].

Senate Employment, WR Small Business and Education References Committee 2000, *Aspiring to excellence: Report into the quality of vocational education and training in Australia*, Commonwealth of Australia.

Seyfried, E 1998, *Evaluation of quality aspects in vocational training programmes: Synthesis report*, CEDEFOP, Thessaloniki.

Seyfried, E, Kohlmeyer, K & Futh-Riedesser, R 1999, *Supporting quality in vocational training through networking*, CEDEFOP, Thessaloniki.

Skill New Zealand 2001, *Performance Measurement System: Guidelines and definitions*, Skill New Zealand.

South African Qualifications Authority 2001a, <http://www.saqa.org.za/html/publications/ publicationshome.htm> [accessed 29 August 2001] SAQA.

—— 2001b, <http://www.saqa.org.za/html/publications/publicationshome.htm> [accessed 29 August 2001].

Stasz, C 1999, <http://oeri4.ed.gov/offices/OUS/eval/NAVE/stasz.html> [accessed 30 October 2000].

Tertiary Education Advisory Committee 2001, <http://www.executive.govt.nz/minister/maharey/teac-system/report/chapter_10_01.htm> [accessed 4 September 2001].

The Office of Vocational and Adult Education 1996, <http://www.ed.gov/pubs/VocEdAcct/index.html> [accessed 3 September 2001].

The Quality Assurance Agency for Higher Education 2001, <http://www.qaa.ac.uk/revreps/ subjrev/assessingquality.htm> [accessed 22 August 2001].

Training Standards Council 1998, <http://www.tsc.gov.uk/> [accessed 18 September 2001].

Utah State Office of Education 1982, 'Quality indicators for vocational education', *Eric Digest*, *ED219572*.

Van den Berghe, W 1996, *Quality issues and trends in vocational education and training in Europe*, CEDEFOP, Thessaloniki.

—— 1997a, *Application of ISO 9000 standards to education and training: Interpretation and guidelines in a European perspective*, CEDEFOP, Thessaloniki.

—— 1997b, *Indicators in perspective: The use of quality indicators in vocational education and training*, CEDEFOP, Thessaloniki.

Visser, K 1994, *Systems and procedures of certification of qualifications in the Netherlands*, CEDEFOP, Thessaloniki.

Woodhouse, D 2000, 'Research issues in quality in open distance education', *Indian Journal of Open Learning*, vol.9, no.1, pp.105–8.

# Appendix

## Sources of quality indicators

### Europe

1    European Union
2    Organisation for Economic Co-operation and Development (OECD)
3    European Training Foundation

### England

4    Adult Learning Inspectorate
5    Further Education Funding Council
6    Further Education National Training Organisation
7    Learning Skills Council
8    Quality Assurance Agency
9    Training Standards Council

### New Zealand

10    New Zealand Qualifications Authority
11    Skill New Zealand
12    Tertiary Education Advisory Committee

13    Denmark—Department of Vocational Education and Training
14    Germany—various (see relevant section in report)
15    Ireland—various, including Republic of Ireland, 'Springboard' and vocational training network
16    Scotland—Scottish Quality Management System
17    South Africa—South Africa Qualifications Authority
18    Sweden—various (see relevant section in report)
19    The Netherlands—various, including Regionale Opleidingencentra Overgelder, VET Institutes in the Nijmegen Region and vocational training network

### United Kingdom

20    European Centre for the Development of Vocational Training (CEDEFOP)
21    Qualifications and Curriculum Authority
22    Vocational training network

### United States of America

23    various, including Carl D Perkins Act
24    National Consortium for Product Quality in Vocational Education
25    Office of Vocational and Adult Education
26    Office of Superintendent of Public Inspection
27    Oklahoma Area Vo-Tech Schools
28    Utah State Office of Education

**≜NCVER**

The National Centre for Vocational
Education Research is Australia's
primary research and development
organisation in the field of vocational
education and training.

NCVER undertakes and manages
research programs and monitors the
performance of Australia's training
system.

NCVER provides a range of
information aimed at improving the
quality of training at all levels.