



Vocational education
and training in Australia,
the United Kingdom
and Germany

Josie Misko

National Centre for
Vocational Education Research

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Level 11, 33 King William Street, Adelaide SA 5000

PO Box 8288 Station Arcade, Adelaide SA 5000, Australia

ph +61 8 8230 8400, fax +61 8 8212 3436

email ncver@ncver.edu.au

<<http://www.ncver.edu.au>>

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Key messages

This study compares vocational education and training (VET) in Australia, the United Kingdom and Germany. The information presented in this overview has the potential to inform policy. The following are the key messages arising from this research.

- ✧ In Australia, the United Kingdom and Germany, training policies are increasingly based on similar general principles. However, in the main, implementation of these principles remains specific to each country.
- ✧ Arrangements in Australia stand out in terms of ease of movement and flexibility between the vocational and higher education sectors. Australia provides a good example of a lifelong learning system in action. However, international practices in relation to harmonisation and credit transfer frameworks have important lessons for improving portability of qualifications across Australian state and territory jurisdictions.
- ✧ Apprenticeship pathways associated with formal contracts of training and industry involvement in the development, delivery and assessment of competence continue to be key features for training, especially in the traditional trades in all three countries, and for other recognised occupations in Germany. In Australia and the United Kingdom they are increasingly being applied to occupations with no formal history of apprenticeship.
- ✧ Moves to establish consistency between countries and even states to facilitate student mobility and credit transfer may not require wholesale re-alignment of country and state-specific approaches to the provision of education and training. The challenge is to develop relationships between education and training systems so that they have clear and open communication. In this way, qualifications and credits can be more easily transported across education and training sectors and within and between education and training systems.

Executive summary

This study is concerned with education and training in Australia, Germany and the United Kingdom. It compares vocational education and training (VET) in the three countries, with a view to providing information for consideration by policy-makers.

The initial focus on industry involvement in vocational education and training (VET) highlights how all three systems, which are dedicated to improving relevant workforce skills and providing industry-relevant training for young people, have looked to increasing the involvement of industry in training. We also highlight the importance of apprenticeship pathways, especially for Australia and Germany, and note a focus on restoring such pathways in the United Kingdom. The introduction of assessment-only pathways to qualifications, observed in the United Kingdom and Australia, and the importance of institutional pathways to vocational qualifications are also explored. Subsequently, we look at the similarities observed in approaches to quality assurance and at the effect of European harmonisation (such that systems across countries are compatible) policies on the transfer of students and credits between institutions.

In comparing these countries, we argue that there are more similarities than there are differences. The convergence of approach is, however, much more evident in the conceptual underpinnings of training policies, rather than in their practical implementation. Nevertheless, moves to 'harmonise' European education and training may also mean increasing convergence of practice.

Formal industry input

Industry skills councils in Australia, sector skills councils in the United Kingdom, and unions and chambers of commerce and industry (also known as *the social partners*) in Germany represent the formal voice of industry in post-compulsory training. Industry is responsible for identifying national competency standards in Australia, occupational standards in the United Kingdom and occupational profiles in Germany. These standards then establish guidance for the delivery of training and the awarding of qualifications. A particularly Australian approach, however, is the introduction of national industry or enterprise-specific training packages. Devised to allow employers to have more choice, these training packages enable the individual customisation of training programs. Industry in all of the countries being examined is also responsible for providing labour market intelligence to government. The extent to which this practice has been successful has still to be evaluated.

Assessment-only pathways to qualifications

The testing of a candidate's knowledge, understanding and performance of workplace competence through practical observation and provision of evidence of prior learning is another particular feature of the United Kingdom and Australian systems. This allows existing workers and other individuals to acquire national vocational qualifications without having to attend a specific training course. The value of these pathways will depend on the extent to which they are respected by employers through higher levels of pay, regard and employment. Assessment-only pathways to qualifications are less evident in Germany.

Apprenticeships

The concept of a contract-based apprenticeship is a key strategy for developing occupational skills in Australia, Germany and the United Kingdom. However, it is far more commonly adopted in Germany where two in three students who move into further education will move into Germany's dual system.

Highly regulated by government and industry, such pathways are an important route to skilled work. Training is provided at the workplace through production activities and supplemented by regular attendance in off-the-job training delivered by registered training organisations in Australia, part-time vocational schools in Germany, and further education colleges and learning providers in the United Kingdom. Purely on-the-job arrangements have also been adopted in Australia. Arrangements are already in place in Australia and are soon to be implemented in the United Kingdom which enable young people to commence apprenticeships while completing their secondary education. In Germany highly structured training pathways to occupations are being modernised to enable training to be customised to changing industry needs. Although traditional approaches to training need to adjust to new technologies, shifts in the labour market and occupational profiles, the quest for broadening flexibility may also have to be evaluated in terms of its effectiveness in developing expertise. A particular feature of the German system is the provision of general education to students at the same time as occupation-specific training. All three countries have a focus on the development of employability skills.

The three countries examined are constantly looking to improve their stock of occupational skills through these apprenticeship pathways, and all are heavily dependent on employers volunteering to shoulder their part of the responsibility for increasing national skill stocks. In Germany the implementation of a training pact between employers and government has had some preliminary success in terms of increasing the number of training places on offer in 2004. However, this may also be explained by a desire among employers to avoid the proposed implementation of a training levy. In England a policy of entitlements attached to a modern apprenticeship for 16- and 17-year-olds who satisfy certain eligibility requirements has recently been introduced. However, all three countries continue to experience skill shortages, especially in the traditional trades. One reason for these shortages may have more related to what employers are prepared to pay for these skills (especially traditional trade skills), than the motivation of individuals to enter the trades.

Although there has been some talk of making the duration of training contracts more flexible, the concept of an absolute time that must be served continues to be utilised in Australia and Germany. Reforms of the modern apprenticeship system in the United Kingdom have introduced training contracts not associated with a predetermined duration.

Institutional pathways to vocational qualifications

Non-apprenticeship vocational pathways represent another route to accredited vocational qualifications and employment in Australia, Germany and the United Kingdom. In Australia these pathways have also been made available to secondary school students as they complete their secondary education. However, there continue to be concerns related to the rigour of these secondary school offerings and their parity with academic subjects.

It is clear that Australians are engaged in further education and training throughout their lifetimes to a greater extent than their German and United Kingdom counterparts. This is especially facilitated by flexible movement through the pathways across secondary, vocational and higher education sectors.

Quality assurance processes

Quality assurance processes and frameworks are adopted in different ways across the different educational sectors and countries under review. However, the principles are similar. Standards have been established for the accreditation of agencies and providers, and the measuring and monitoring of performance against these standards by independent review and through self-assessment. Requiring institutions to be accountable for the quality of the outcomes continues to drive the quality assurance agenda. Nevertheless, a system of self-assessment combined with an inspectorate model of assuring the quality of teaching and learning is mainly observed in the United Kingdom and is being investigated in Germany.

Recognition and credit transfer

There is a general move across vocational sectors in all three countries to ensure that students obtain adequate recognition for accredited training completed at an earlier time. This helps individuals to transport qualifications and credits across state and national borders. The challenge is to ensure that providers recognise suggested frameworks and give appropriate recognition.

Conclusions

A convergence of principles, and sometimes practice, is observed across Australia, the United Kingdom and Germany. However, arrangements in Australia tend to stand out in terms of ease of movement and flexibility between the vocational and higher education sectors. Australia provides a good example of a lifelong learning system in action.

However, international practices in relation to harmonisation and credit transfer frameworks have important lessons for improving portability of qualifications across Australian state and territory jurisdictions. European strategies like the *certificate supplement*, which describes the nature and content of studies undertaken and attached to diplomas and certificates, may also help to improve the transparency of training package qualifications and make it easier for employers, as well as universities, to understand the nature of the learning associated with the qualifications.

Although the flexibility associated with training packages can help employers to customise training to enterprise needs, there is also value in examining the frameworks and regulations associated with the German and United Kingdom systems in providing information to guide the structuring of programs of training. There are also benefits to be achieved by considering the recent approach to increasing apprenticeship places through increased collaboration with employers.

International convergence of education and training practices and principles has benefits for individuals and corporations hoping to transport skills, knowledge and qualifications to other states and countries. Although the concept of a European brand has been accepted in Germany and the United Kingdom, forces attempting to protect culturally specific approaches to delivery and certification continue to be influential in Germany.

Background

This study compares the institutional arrangements for vocational education and training (VET) in Australia, United Kingdom and Germany, with a view to drawing some meaningful lessons for the Australian system. It is important to note, however, that these countries also have in place separate state or country-based education and training systems. For example, Australia has six states and two territories, Germany has 16 *Länder* (states) and the United Kingdom is comprised of England, Wales, Scotland and Northern Ireland.

The report is organised according to the commonly observed features of the three systems. The first of these common features comprises the formal mechanisms for acquiring industry input and engagement. The second relates to the continuing or renewed belief in the importance of developing occupational skills through formal apprenticeship pathways. The third deals with institutional vocational pathways which have also become routes to occupational skills and knowledge. How each of the countries has dealt with quality assurance constitutes the fourth theme, while the fifth deals with recognition and credit transfer processes. In the final chapter we derive conclusions about the broad convergence of general principles and the implementation of country-specific practices, and identify some issues for consideration by Australian policy-makers.

Country overview

The discussion begins with a brief overview of each of the different education and training systems. A fuller description appears in appendix A.

Australia

Compulsory education in Australia occurs from the ages of five or six years to 15 or 16 years, depending on the state or territory in which it is undertaken. The first seven or eight years of school life are spent in a primary school. The remaining years are spent in a comprehensive high school or its equivalent. There are also schools which provide both primary and secondary education. Some states, like Queensland, are now requiring young people (up to the age of 17 years) to be either in employment or training.

After reaching the end of compulsory schooling, students may complete their secondary education, go directly into the workforce or take up apprenticeships and traineeships (which combine paid work with training), or undertake vocational education and training programs not associated with any industry-specific work requirements. If students stay on at school for the post-compulsory years (generally Years 11 and 12) and are successful, their studies will lead to a senior secondary school certificate. These studies may also prepare them to enter university or further training in VET institutions directly after secondary schooling or at a later date, should they wish to defer further studies. However, spending some time in industry gaining work experience is a part of the general education experience of most students. Education in government primary and secondary schools is free; education in private schools, and in university and post-compulsory VET institutions comes at a cost, although it is heavily subsidised for most students. A system of income support for eligible students is also available.

United Kingdom

Compulsory full-time schooling commences in England, Wales, Scotland and Northern Ireland at the age of five years and continues until the age of 16 years. These 12 years of schooling are divided into four key stages. At each of these key stages students are tested in English, maths and science. Education in government schools is generally free, while education in privately run schools comes at a cost.

During their secondary schooling, students in England, Wales and Northern Ireland are also able to undertake vocational education programs related to broad industry or career areas (for example, tourism, leisure, health, manufacturing, business, engineering and social care). These provide students with relevant work experience, skills and knowledge and a wider choice of subjects. In Scotland students may also take vocation-based examinations leading to the Scottish Vocational Qualifications Certificate. Training for vocational qualifications in the United Kingdom is generally competency-based.

At the end of compulsory education students undertake what are called the General Certificate of Secondary Education examinations in England, Wales and Northern Ireland, and the Scottish Certificate of Education in Scotland, also known as Standard Grade. Once this phase of education has been completed, students may enter the workforce, gain an apprenticeship (which combines paid work and training) or move into further education.

If students opt to stay in education, they may stay on in schools and enter sixth form, attend a sixth form college or enter a college of further education. They can obtain the Advanced General Certificate of Education or A levels by completing units of work offered at the advanced subsidiary (AS) level which is, in itself, a stand-alone qualification, but also represents the first half of a full A level qualification. The second half of the qualification covers material of a more demanding nature. The full A level is normally used to gain admission to higher education.

Individuals may also choose to apply for National Vocational Qualifications or Scottish Vocational Qualifications by providing evidence of their having the required skills and knowledge to perform according to industry occupational standards.

The White Paper, *14–19* (Ministry for Education and Skills 2005), heralds reforms to education and training offered to 14 to 19 year-olds. These reforms are aimed to encourage young people who might otherwise drop out of school to engage with learning and to understand the value of further education and training.

Germany

Compulsory full-time schooling in Germany starts at the age of six years and continues for the next nine years in 11 of the states or ten years in the remaining five. Within this compulsory schooling period all students complete the four years of what is called primary education (*Grundschule*). They may then follow a variety of pathways for their compulsory full-time secondary education. Some will go to the secondary modern or special schools (*Hauptschule*), while others will go to secondary schools (*Realschulen*), grammar schools (*Gymnasium*), and comprehensive schools (*Gesamtschule*), which offer the courses available in secondary modern, grammar and secondary schools under one umbrella. Grammar schools prepare students to take examinations (*Abitur*) for qualifications which will enable them to enter academic courses leading to degrees and/or diplomas at university or technical or polytechnic colleges.

Once this full-time compulsory schooling (general education) has been completed, students from any pathway (including students who have acquired university entrance certificates) may enter vocational training (full-time vocational schools or apprenticeships) for two, three or four years. Apprentices combine paid work with training. Once apprentices complete their training, they may also upgrade their qualifications to a *Meister* (master craftsman) or technician level. It is also possible for such graduates to enter progressively higher levels of education. Once students have

successfully passed the higher secondary school examinations for admission to universities or polytechnics, they enter higher education.

Public education in all sectors, including higher education, has historically been free. Today, the federal states can charge tuition fees independently from other states. Each state is free to decide on the amount of the tuition fee to be paid for higher education.

Formal industry input

Formal industry input refers to the advice provided by industry for the development of curriculum and the delivery and assessment of education and training. In this section we discuss the structures and arrangements that enable industry to participate in these areas.

Australian industry skills councils

Ten industry skills councils represent an amalgamation of 29 former national industry training advisory bodies. However, a network of industry training advisory bodies (ITABs) continues to be funded by state and territory governments; industry skills councils are funded by the Commonwealth Government. Their role is to provide information to government on industry trends and future skill needs and training requirements. The second major role of industry skills councils is to support the development, implementation and continuous improvement of nationally recognised training products and services (including national industry training packages). Industry input is also sought at the local level by VET institutions.

A description of the industry areas covered by each of these industry skills councils appears in appendix B.

United Kingdom sector skills councils

A similar framework exists in the United Kingdom, with formal industry input into training undertaken by sector skills councils. These sector skills councils are charged with establishing links with employers in each industry sector and seeking their cooperation in developing priorities and targets for various sector activities (Sector Skills Development Agency 2005a). These activities are directed towards reducing skills gaps and shortages, improving productivity, business and public service performance, and increasing opportunities to boost the skills and productivity of all employees in the sector's workforce. Sector skills councils are also charged with developing priorities and targets for action on equal opportunities and improving the provision of education and training, including apprenticeships and higher education. Sector skills councils are also involved in establishing sector skills agreements to meet priority skill needs to drive business performance. Along with standards setting bodies, sector skills councils develop, maintain, and update national occupational standards as industry needs and patterns of work in a particular sector change.

Although the sector skills councils cover the full range of industry activities as do the Australian industry skills councils, the coverage of industry sectors within each council is slightly different. These are described in appendix C.

German 'social partners'

Industry is involved heavily in vocational education and training in Germany. Here the format and level of education and qualifications in schools (including full-time vocational schools) and in higher education is the responsibility of the states. However, industry (that is, employer associations

and unions) is closely involved in the development of regulations and guidelines for vocational training in the dual system. Industry works collaboratively with the federal government to develop vocational training regulations and to specify trainee occupations and the period of training. Industry works with state governments to develop curriculum that describes the skills and knowledge to be developed as a result of the training. The Federal Institute for Vocational Education and Training (BIBB) performs an advisory role.

Approximately 480 chambers cover German occupations. However, the chambers involved in the dual system can be grouped under the categories of industry and trades, craft trades, public service, liberal professions, domestic service, agriculture, and maritime and shipping. The role of the chambers is to provide advice to companies, to register trainees, to certify the technical aptitude of trainers and to hold examinations. When apprentices have completed their training, they will undertake examinations set by these chambers or other 'competent bodies'. Such activities enable industry to have a powerful influence on curriculum. The chambers also monitor the performance of companies providing training within their districts or regions and review their ability to provide or continue to provide training. In addition, there are employee works councils which may also participate in the planning and conduct of vocational training and hiring trainers.

According to Deissinger (2004) this arrangement means that the dual system upholds the traditional elements of apprenticeship, the state participates in quality control of company training, and training adheres to principles of vocational education theory.

Nevertheless, there are cases where training companies cannot provide all the training. In these instances special training workshops give trainees access to these skills. Where companies are unable to establish workshops for this purpose (especially small companies), training workshops have been set up by the chambers and professional associations. Small companies can also collaborate to provide joint apprenticeships.

There are currently about 354 state-recognised occupations which form the basis for the vocational education of skilled workers. Training in these occupations then opens up access to other occupations and further training.

Australian national industry training packages

National industry or enterprise-specific training packages comprise endorsed competency standards, assessment guidelines and qualifications for particular trades and occupational areas. They provide guidelines for the development of teaching, learning and assessment programs. Moreover, the packages enable employers to customise training programs to the particular needs of their industries. Their usefulness lies in the ways they can be customised to meet employer needs. Employers may package different units of competency to develop a program leading to a qualification. To maintain currency of the training packages, industry skills councils must commence a review of these within eighteen months of their first and subsequent endorsement. Although learning resources used by trainers and students for the attainment of competencies identified in the training package may also be presented for government endorsement, there is no obligation for these materials to have government approval. A recent review of training packages notes their continued importance (ANTA 2004). In 2003 there were almost one million enrolments in training package qualifications.

The top ten training packages in 2002 according to enrolments represented about 75% of all training activity (Blythe 2003). These were business services, hospitality, communication services, information technology, retail, assessment and workplace training, transport and distribution, horticulture, metal and engineering industry, and financial services (see appendix D).

United Kingdom National Vocational Qualifications and Scottish Vocational Qualifications

National Vocational Qualifications for England, Wales and Northern Ireland and Scottish Vocational Qualifications for Scotland are based on occupational standards identified by industry. In the main they have been introduced to provide qualifications for individuals who want to acquire vocational qualifications and those who may have not had the chance to acquire qualifications during schooling. They apply to production workers, supervisors and managers in organisations, and those who are unemployed. They also apply to those who are still in education. Furthermore, there are no age limits nor special entry requirements with these qualifications. Assessment usually takes place through on-the-job observation and questioning by assessors who test the candidate's knowledge, understanding and performance of workplace competence. In addition, candidates may also produce evidence to show that they have acquired a particular skill. National Vocational Qualifications and Scottish Vocational Qualifications are awarded by bodies who have been approved by the Qualifications and Curriculum Authority and the Scottish Qualifications Authority. These bodies in turn approve assessment centres to assess candidates on their behalf. At the same time, they are responsible for ensuring that assessors in these centres have the required training and perform according to required standards. The number of National Vocational Qualifications and Scottish Vocational Qualifications attained in the United Kingdom increased substantially in the four years between 1995–96 and 1999–2000. In the subsequent four years they declined steadily. In 2002–03 they then had another significant jump. Nevertheless, since 1995–96 they have not fallen below the 400 000 mark per year.

German concepts of 'framework curricula'

Curriculum for the dual system in Germany has traditionally been based on prescriptive formal guidelines set by governments and social partners. These relate to teacher qualifications, class contact hours and training contents. Schools and institutions interpret these to develop suitable learning activities. The curriculum of part-time vocational schools is based on state government framework agreements. These agreements have established that one-third of the time is spent on general education subjects (social studies, economics, foreign languages, sports/religion). Two-thirds of the time is spent on specialised vocationally oriented programs (technology, economic fields of learning). The vocational subjects must correspond with the requirements of the relevant training regulations.

Recent reforms have attempted to modernise these traditional approaches to the development of curriculum to enable vocational education, especially in the dual system, to be responsive to the needs of the changing workplace. The *Lernfeldkonzept* (learning areas) approach to education provided by the vocational colleges represents an activity-based learning approach which uses the simulation of frequently experienced occupational tasks and processes. Learning areas also combine the knowledge of a range of traditional school subjects with the knowledge and skills associated with occupations; students are provided with problems to be solved using this knowledge. The cross-subject structure of learning areas means that teachers must cooperate with one another to develop suitable programs. Curriculum based on learning areas provides greater flexibility for enabling teachers to decide on how to design programs to meet established curriculum guidelines. However, increasingly, they have to interact with training companies to ensure that vocational learning activities are relevant to the workplace. In enhancing the work of teachers (by expanding responsibility levels and range of tasks), this added flexibility also increases their professionalism. Despite these advantages, there is some criticism of the way that the *Lernfeldkonzept* has been introduced. These are associated with the top-down approach to implementation and the lack of or inadequate preparation of teachers.

Generic employability skills

All three countries have established methods for acknowledging non-technical competencies and attributes which underpin successful work performance. In Australia these have included competencies such as communicating ideas and information, planning and organising information, analysing information, working with technology, using mathematical ideas and techniques, problem-solving, working in teams and cultural understanding. Currently there is also a focus on skills such as initiative and enterprise, self-management, and the ability to learn. In England, Wales and Northern Ireland, these skills are known as key skills and include communication skills, information technology, application of numbers, working with others, improving individual learning and performance, and problem-solving. In Scotland they are termed core skills. In Germany similar skills and attributes have been categorised as general technical, personal, social and methodological (*Methoden*) competence. The first component deals with confidence and ease in operating machinery and equipment. The second deals with employability skills and attributes, comprising 'motivation, decision-making, and awareness of the impact of technology and scope for creativity'. The third deals with the ability to work in teams, and willingness to cooperate. The fourth deals with application of 'abstract and logical reasoning and problem-solving strategies' (Dibowski 2003). Taken together, these different components are known as '*berufliche Handlungskompetenz*', or 'occupational action competency'.

Approaches to the assessment of these skills vary, ranging from formal systems for assessing key or core skills (also leading to qualifications) in the United Kingdom, to integrating such skills in training packages in Australia. In Germany these skills are not assessed separately but are included in technical subject examinations.

Discussion

Industry participation in the development, delivery and funding of education and training is a major platform of education and training systems in Australia, the United Kingdom and Germany. All three countries have established arrangements to enable industry to have formal input into the development of competency standards and/or curriculum requirements that will guide the delivery and the assessment of vocational education and training.

However in Germany, the social partners, and especially the chambers, play a far more significant role in the provision and assessment of training. They certify the technical aptitudes of trainers, develop and conduct examinations for apprentices, and monitor the performance of training companies. These certification and examination roles are not undertaken by the Australian industry skills councils or the United Kingdom sector skills councils. However, in Australia and the United Kingdom, quality assurance of in-company training is undertaken by government or delegated representatives.

The approach to standards development is broadly similar in Australia and the United Kingdom, in that industry provides major input into determining the skills and the performance levels that will constitute the standards. However, a particularly Australian approach is the introduction of national industry or enterprise-specific training packages.

In Australia and the United Kingdom the system of industry-developed competency standards, endorsed by government, means that these can also be used to qualify individuals on the basis of their workplace competence rather than on the basis of their performance in formal training program pathways. However, the system in the United Kingdom of a wide range of accrediting bodies responsible for awarding various National Vocational Qualifications and Scottish Vocational Qualifications is substantially different from that in Australia. In the latter, qualifications can only be awarded by registered training organisations who provide training and assessment leading to qualifications. Just a handful of these registered training organisations are assessment-only registered training organisations.

Apprenticeships

The concept of apprenticeship has its origins in the medieval craft guilds of Western Europe, when young people would live, work and learn with a master craftsman until they had become a qualified craftsman themselves. Today apprentices do not live with their employer, but they are contracted to him or her to undertake learning and work until they have completed their time and acquired their qualifications.

Australia

Traditional apprenticeships are offered in specific trade and craft areas (for example, engineering, building and construction, plumbing, automotive mechanics, commercial cookery, hairdressing, and printing). Contracts of a shorter duration (often referred to as traineeships) generally last less than two years and are offered in a variety of occupational areas traditionally not apprenticeship-based (including information technology, retail, childcare, tourism and hospitality). There are no age barriers to the uptake of these apprenticeships or traineeships. Mature-age apprentices have been well received, especially in the manufacturing industries where they have been used to provide qualifications to existing workers who have the appropriate technical skill but have no qualification (Saunders & Saunders 2002).

Typically, apprentices will spend four days of the week on the job, and one day at a training provider. In some programs off-the-job training is organised according to blocks of time (say two or three weeks) at a number of specified times throughout the year. Since 1998 arrangements have also been in place to enable apprentices and trainees to undertake both on-the-job and off-the-job training at the workplace. Although there has been criticism about the value of traineeships, and especially those where on- and off-the-job training are delivered at the workplace (Schofield 2000, 1999; Smith 1999), there are also those who believe such traineeships provide trainees with an entry into the labour market, and as such, provide a useful purpose (Cully & Curtain 2001).

Apprentices have a training contract with an employer or a group training company and will be paid a training wage (unless their employer chooses to pay them above the award). (A group training company employs the apprentice, coordinates arrangements for on-the-job and off-the-job training and hires out apprentices to host employers for a fee.) In theory, employers in conjunction with the registered training organisation and the student are supposed to develop a training plan which sets out the units of competency to be achieved. Often such a plan is developed by the registered training organisation, with employers and students agreeing with the registered training organisation recommendations. Moreover, students in schools are able to undertake part-time school-based apprenticeships or traineeships while completing their secondary school education. In the main, school-based arrangements are used for traineeship programs (commonly retail and hospitality) more than traditional trade apprenticeships (Robinson & Misko 2003; Smith & Wilson 2003).

Some concerns have been expressed in industry about the worth of these school-based apprenticeships (Smith & Wilson 2003; Jung et al. 2004), and a number of industries have not taken them up. Industry concerns relate to the difficulty of ensuring that apprentices have access to adequate time in the workplace, resources and specialist staff to enable them to complete work tasks and projects and develop vocational skills.

In 2003 there were 279 870 Australian apprentices and trainees who commenced a contract of training. This included 47 733 (17.1%) traditional apprentices and 232 137 (82.9%) other apprentices or trainees (see figure 1).

Figure 1: Commencements in the 12 months ending December, 1996–2004



Note: Based on March 2004 quarter estimates.

Source: NCVET Apprentice and Trainee Statistics, collection 39

Just 21% of males and 3% of females in the 14 to 19-year-age cohort will enter a traditional apprenticeship. However, 22% of males and 28% females in this age cohort will enter a traineeship.

United Kingdom

Once students complete full-time compulsory schooling in the United Kingdom they may enter an apprenticeship. Although traditional apprenticeships have existed in the United Kingdom since medieval times, their popularity among students and employers declined dramatically during the 1980s and 1990s, which in turn has led to significant skill shortages in the technical trades. Modern Apprenticeships were introduced to help meet this shortage and to equip more young people for participation in the changing economic environment.

Apprentices must have a job placement with an enterprise, or full-time employment. As in Australia and Germany, they are paid a training allowance or a basic wage. The on-the-job training is provided by the employer and the off-the-job training is provided by the learning provider. The monitoring and assessing of the training is also largely left to the learning provider. Apprenticeship ‘frameworks’ comprise the mandatory outcomes of the apprenticeship. This includes the level of the qualification, key skills (core skills in Scotland), and technical certificates, and in some frameworks, employment rights and responsibilities requirements. (These requirements refer to the rights and responsibilities of workers, the role of their organisation within the wider industry and the effect of public law and policy on industry.) The contract does not specify the duration of the apprenticeship (although there is an expectation that individual contracts will have an expected end date which takes account of the different needs of individuals). These frameworks are developed by sector skills councils, national training organisations or other sector skills bodies.

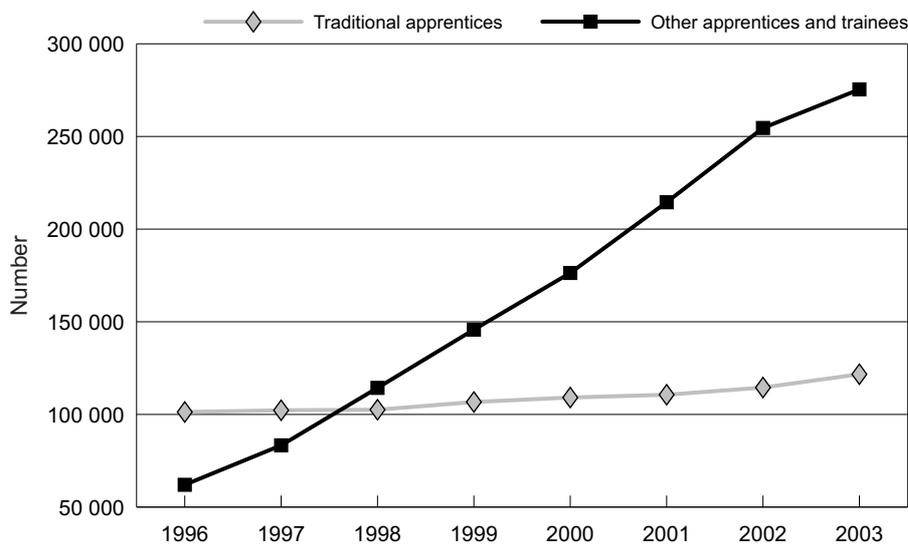
Initiated in 1995 in England and Wales, and 1994 in Scotland, the aim of Modern Apprenticeships was to enable 16 to 24-year-olds to undertake work-based training pathways leading to a National Vocational Qualification (NVQ) (Level 3) (in England, Wales and Northern Ireland), or a Scottish Vocational Qualification (Level 3). They were also introduced to enable industry to develop skills

and qualifications required for economic competition. Today Modern Apprenticeships are open to individuals past the age of 16 years.

Until September 2004 Modern Apprenticeships were initially also divided into two main streams. The Foundation Modern Apprenticeship ('Skill Seekers' in Scotland, 'Traineeships' in Wales) was designed to provide at least 12 months training (leading to an NVQ level 2), and the Advanced Modern Apprenticeship to provide for at least two years training (leading to an NVQ 3). All apprentices in Advanced Apprenticeships worked towards NVQ Level 3, key skill qualifications and a technical certificate. However, a number of Foundation Modern Apprenticeships also led to a technical certificate that reflected the achievement of knowledge-based vocationally related qualifications.

By the end of July 1999 there were 165 100 learners commencing a Modern Apprenticeship in England. By the end of July 2003 this figure had slightly decreased to 163 000 learners, with the shorter duration Foundation Apprenticeships steadily increasing across the time period, with Advanced Modern Apprenticeships steadily declining (see figure 2). In 2003 the number of learners commencing a Modern Apprenticeship represented just 7.9% of all 16 to 19-year-olds, and just 4.5% of 16 to 24-year-olds.

Figure 2: Commencing foundation and modern apprentices in England, 1999–2003



Source: Department for Education and Skills (2004)

In April 2004 a national campaign was conducted in England to encourage employers to provide places for apprentices by making them aware of the benefits. In May 2004 the Modern Apprenticeship scheme in England was broadened to include Young Apprenticeships (for 14 to 16-year-olds), Pre-Apprenticeships (for 16 to 25-year-olds who had potential but were not yet ready to enter an apprenticeship) and Apprenticeships (also for 16 to 25-year-olds). There were also arrangements to enable those over the age of 25 years (mature apprentices) to undertake apprenticeships. Apprenticeships were to replace the Foundation Modern Apprenticeship Scheme. They would be aimed at NVQ Level 2. Advanced Apprenticeships would replace the Advanced Modern Apprenticeship leading to NVQ 3.

Criticisms of the use of Modern Apprenticeships in sectors where most jobs require level 2 rather than level 3 skills and have no specific occupational focus, for example, hospitality and retail service sectors, have been expressed (Fuller & Unwin 2003).

Germany

In Germany, once students have completed full-time compulsory schooling, they may enter the dual system for two, three or four years (depending on the prior qualification or the occupation). As already noted, the dual system is a highly standardised and regulated system in which apprentices combine paid work with training. About 66% of students move into the dual system.

Under the *Vocational Training Act (Bundeministerium für Bildung und Forschung 1969)*, students undertaking training for skilled worker qualifications are entitled to a broad-based education. This must be well organised and provide students with adequate practical and vocational experience. Section 28 of the *Vocational Training Act* decrees that training for recognised trainee occupations must only be given in accordance with the relevant training regulation and ordinance. Today there are 354 occupations requiring formal training. These occupations are organised under seven training sectors: industry and trades, craft trades, public service, liberal professions, domestic service, agriculture and maritime and shipping.

In general, the on-the-job training involves apprentices in working on production activities alongside experienced and skilled workers who will teach them the basic skills until they progressively take on more of the work independently. Training in the part-time vocational school (*Berufsschule*) provides the underpinning knowledge (theory) and technical skills (for example, operation planning, technology, technical drawing, technical mathematics, business studies) to support the training provided in the company. General education courses include German language and literature, mathematics, economics or other social sciences, religion and sports. Apprentices may also undertake other optional subjects (Deissinger 2004).

Apprentices sit for final examinations set by the examination boards of ‘competent bodies’, (generally chambers). They must also sit for examinations set by the part-time vocational schools. To qualify for completion of the apprenticeship requires the apprentice to obtain the credential or certificate awarded by the chamber and the certificate awarded by the vocational school. The certificate awarded by the chamber, however, tends to be more valuable when applying for a job. Once an apprentice in the traditional industry and craft trades completes requirements for journeyman status, he/she may continue education to become a master-craftsman (*Meister*) through Germany’s continuing education and training system (to be discussed later).

The skilled worker qualification and subsequent employment in a related vocational sector form the basis for minimum wage and salary entitlements and for social security benefits (for example, unemployment benefits).

Group training companies have been established to provide places for those students wishing to enter the dual system but are unable to get a placement with a training company. Intercompany training is available for those training companies (generally small companies) who do not have adequate facilities to provide all the training for a certain occupation legislated by the *Vocational Training Act*.

In Germany there were a total of almost 1.6 million apprentices in training in 2003. However, numbers have been steadily declining since 2000. For example, there were 631 015 new training contracts in 1999. By 2003 new training contracts had fallen to 557 622. An example of the fluctuations in the number of new training contracts by industry sectors between 1998–2002 is provided in appendix E.

The decline in available training places has been attributed in part to a weak economy and uncertainty among potential training companies (business enterprises and public administration agencies) over the exact nature of skill shortages. Reduced student demand for apprenticeships has also played a part, along with an increased tendency of students to enrol in full-time vocational schools (an increase of 2.4%), or to enrol in universities or polytechnic colleges—for those students who are eligible to go on to higher education.

Significant declines in new training contracts for 2003 prompted the development of strategies to improve training places for young people. In mid-2004 government and industry representatives signed a national pact for career training and skilled manpower development in Germany ('training pact') for the next three years. Industry set itself the goal of creating an annual average of 30 000 additional training jobs over the three-year duration of the pact. The Federal Institute for Vocational Education and Training notes increasing optimism about the number of commencements in 2004—with 15 300 training places more than the 2003 figures. However, demographic changes in the profile of young labour market entrants indicate that, in the western federal states, the training place market will be tight for students, while enterprises will be experiencing a shortage of applicants in the eastern federal states (Federal Institute for Vocational Education and Training 2005a, 2005b).

There continue to be some questions about the success of the 'training pact' because 'parking' students in full-time vocational schools avoids their inclusion in unemployment figures. One explanation for industry's willingness to engage in the 'training pact' was that it hoped to stave off the introduction of a training levy if it could show that it was willing to provide training places for students (Deissinger & Hellwig 2004). On 9 July 2004 the Federal States Council rejected the implementation of the training levy law, but with the intention to reassess the situation in 2005.

Although it has traditionally been the main pathway for school leavers, the dual system is facing a number of major crises (Deissinger & Hellwig 2004) in view of insufficient numbers of training places in companies. There are also moves to reform the specific occupation approach to apprenticeship training so that the changing needs of the workplace and local situations can be accommodated. There is currently a move away from the 'mono occupation' approach to training—which was based on providing basic and general occupational skills for one occupation and no options for specialisation—to new or modified training occupations (Deissinger 2004).

Discussion

Apprenticeships in all three countries are based on the medieval craft guild model of training, whereby individuals enter a training contract with an employer. This training contract specifies the duration of the apprenticeship (in Australia and Germany) and requires the employer to provide the apprentice with paid employment, on-the-job training, and time to attend or engage in off-the-job training. Apprentices are paid a training or basic wage that has been determined by specific industry awards or state regulations. For their part of the contract, apprentices are required to undertake the training, engage in production processes, and generally meet employer expectations with regard to workplace behaviour and practice. In all three countries apprenticeships are regulated by governments. In Australia, Germany and the United Kingdom group training companies or their equivalents have also been established to facilitate industry training. However, their purpose and activities vary.

Paid work involves Australian, United Kingdom and German apprentices in production activities and in on-the-job training often provided by skilled tradesmen and women and experienced co-workers. On-the-job training provides all apprentices with practical workplace experience, while off-the-job training provides apprentices in England and Australia with theoretical knowledge and supplements the practical underpinnings of their occupations they have developed, or will develop on the job. In Germany off-the-job training is mostly devoted to theory and general education. When apprentices in all three countries complete both practical and theoretical training and satisfy assessment and contract requirements, they become fully qualified tradespersons. Employers in all countries must provide apprentices with access to appropriate and adequate facilities, equipment and expertise, either in-house or in other companies. In all countries, off-the-job training and qualifications are provided by accredited providers.

Apprenticeships have been consistently more highly valued in Australia and Germany as routes to skilled trade qualifications than in the United Kingdom. However, they are most highly prized in

Germany where about two-thirds of a cohort of German school leavers will move into an apprenticeship pathway.

During the last two decades the apprenticeship systems of Australia and United Kingdom have also undergone considerable reform. However, the German approach to apprenticeship training has remained relatively stable during this time. Nevertheless, moves have been made to increase the flexibility of apprenticeship pathways for certain occupations (especially for information technology occupations).

Although the duration of apprenticeships in the United Kingdom is not to be specified in training contracts, the concept of non-time-based contracts in Australia has been met with union resistance, especially in the traditional trades. Although there has been some discussion of this approach in Germany, apprenticeship training continues to be time-based.

The application of apprenticeship pathways to occupations not associated with traditional trades is also evident in all three countries. By contrast there is a longer history of this in Germany. The concept of shorter-duration apprenticeships observed in Australia may be similar to the concept of foundation apprenticeships or their equivalents in the United Kingdom. However, there is no concept of a shorter-duration apprenticeship or traineeship in Germany. Australian employers also receive substantial financial incentives or subsidies from governments to encourage them to participate in apprenticeship training. Such incentives are not as obvious in the United Kingdom and Germany, with these countries depending more on unsubsidised voluntary participation of employers.

In all three countries those who would like to upgrade their qualifications may move into advanced courses leading to higher-level qualifications. Theoretically, the opening-up of training pathways can enable suitably qualified individuals to enter university courses. In practice this pathway is not widely used by tradespersons. The modular approach to training has been in place in the United Kingdom and Australia for some time. However, its uptake in Germany has been slower, with the first major modularisation approach being experienced for four occupations in the information technology sector.

Institution-based vocational pathways

For students and individuals who do not want to follow an apprenticeship pathway but wish to acquire vocational qualifications, or who are not yet ready but wanting to move into such pathways, other institution-based vocational programs are available.

Australia

In Australia, industry-specific training programs leading to accredited vocational qualifications must be delivered by registered training organisations, or institutions working in partnership with a registered training organisation. This includes schools, technical and further education (TAFE) colleges and private training providers who are registered to deliver training in a certain field or occupational area. Enterprise-registered training organisations are those departments of enterprises which have been registered to provide accredited training.

VET programs

On completion of a secondary school certificate (or its equivalent) or leaving school before completion, students may opt to undertake a training program in a TAFE institute (public providers) or with private providers. All accredited training is delivered by registered training organisations. Here students may be enrolled in programs based on competencies that have been identified in the industry training packages, or with courses that have been accredited by state authorities. Both types of programs lead to an accredited VET qualification. These include Australian Qualifications Framework (AQF) certificates I to IV, diplomas and advanced diplomas. A variety of vocational training is available in enterprises, vendor organisations, and public and private education and training institutions to upgrade skills and or qualifications.

Increasingly, VET institutions are applying selection criteria for entrance into the great majority of programs, including requiring evidence of educational achievement in academic subjects, portfolios of work in visual arts and practical subjects, and interviews. These institutions are also providing bridging or preparatory courses to provide students with the prerequisites to allow them to enter the courses of their choice.

During each of the years 1999 to 2004, about 12% of 15 to 64-year-olds had participated annually in a VET training program for which there was an obligation on providers to provide data (NCVER 2004a). In 2004 this represented a total of 1.6 million students. Participation rate at 26.1% was highest for those between 19 and 24 years (NCVER 2003, 2004). About 40% of students in the VET system were aged 24 years or less, and 56.3% were aged between 25 and 64 years. Seven out of ten of all VET students were enrolled in programs leading to AQF qualifications, with half being enrolled in AQF certificate III and higher; 15.5% of VET students included apprentices undertaking their off-the-job training with a registered training organisation. Almost 90% of all VET students attended on a part-time basis. Full-time study applied to just one in ten students.

The three most popular major fields of education were management and commerce (20.6%), engineering and related technologies (16.2%) and mixed fields (11.8%). The three least popular major fields of education were natural and physical sciences (.4%) creative arts (3%) and information technology (3.9%).

VET in Schools programs

Students may also complete accredited VET qualifications (mainly AQF certificates I or II) while they are in the final years of secondary school. Such school-based VET programs provide students with a head start to further vocational studies. Although such pathways are often undertaken by students who are not currently bound for university, they are also open to students who will pursue university education directly or soon after leaving school. Such programs enable students to acquire initial VET qualifications (for example, bar and waiting certificates) they can use to acquire part-time jobs to help support them during their tertiary education. Another major feature of any VET in Schools program is the requirement for students to undertake formal work placements in industry. Many industries have been structured to enable them to deliver and formally assess certain competencies. In some instances schools may choose to become a registered training organisation in their own right and deliver accredited training and qualifications for their own students and members of their communities. At other times schools will work in partnership with a local TAFE college or private registered training organisation. In 2004 the Minister for Education, Science and Training announced the commencement in 2006 of 24 technical colleges. This is an innovation that will be watched with interest. In 2003 there were 202 900 senior secondary students in VET in Schools programs, with the great majority undertaking initial VET qualifications (NCVER 2003). Participation in VET in Schools programs has increased steadily since 1998.

United Kingdom further education training programs

Vocational education and training for post-16-year-olds is generally provided in further education colleges and sixth form colleges. However, there are also some higher education institutions that provide further education; these are specialist colleges, school sixth form classes, local authority adult education institutions and private and voluntary sector providers. Further education colleges also provide academic education (leading to university entrance qualifications), vocational training for adults wanting to find a job, workforce development programs for employers, second chance opportunities for adults, and leisure and personal development programs for the community in general. Further education colleges cater for those wishing to improve basic literacy and numeracy skills, to those wanting to develop technician-level skills; they provide training for part-time and full-time students, existing adult workers and those undertaking leisure courses. They provide simulated workplace facilities, including restaurants, hairdressing salons, travel agencies, classrooms, practical workshops, and e-learning facilities and equipment. Although further education colleges provide post-compulsory vocational education and training, they are also highly focused on providing preparation for tertiary entrance. This is not the same as Australian VET. Part-time further education students outnumber those studying full-time in England, Wales and Scotland (77%, 83% and 88%, respectively). However, part-time students represent just one-fifth of the further education student population in Northern Ireland (Department for Education and Skills 2004). In 2000–01 about 10.5% of the working population (16 to 64 years) was in further education. There was a slight increase in the following two years (see table 1).

Table 1: Percentage of population in full-time and part-time further education 2000–01 to 2000–03

Year	No. of students ('000s)			Population ('000s)	% of pop (16–64)
	Full-time students	Part-time students	All students		
2000–01	974.6	3161.4	4136.0	39 570	10.5%
2001–02	1024.6	3673.2	4697.8	39 907	11.8%
2002–03	1026.7	3701.6	4728.3	40 116	11.8%

Source: Department of Education and Skills (2004)

The three most popular learning areas for full-time students were health, social care and public services (15.3%), information technology (8%) and visual and performing arts and media (8%). The three least popular were retailing, customer service and transportation (0.7%), other subjects (1.3%), and land-based provision (1.6%). For part-time students the three most popular were information and communication technology (20%), health, social care and public services (13.3%), and business administration and professional (9.2%). The three least popular were land-based provision (1.3%), retailing, customer service and transportation (1.8%), and other subjects (2.1%).

In 2002 the government announced the ‘Success for All’ reform and standards agenda aimed at reforming the post-16 learning and skills sector (Learning and Skills Council 2003). Five key principles were articulated to guide training provision for 16 to 19-year-olds. These were high-quality, distinct provision appropriate to age group needs, diversity of choice for learners, affordability, value for money and cost-effectiveness.

In February 2005 the Secretary of State for Education and Skills presented the white paper, *14–19 Education and skills* to the English Parliament (Ministry for Education and Skills 2005). This heralded its intention to focus on increased participation in education for 16 to 19-year-olds and to raise the achievement of 14 to 19-year-olds.

Individuals may upgrade vocational skills and qualifications through a variety of programs and pathways, including National Vocational Qualifications and Scottish Vocational Qualifications. In 2004, 16.1% of all employees were working towards a qualification of some sort (Department for Education and Skills 2004); those most likely to be working towards a qualification were those who had already gained their General Certificate of Education A level or equivalent or those who had attained their General Certificate of Secondary Education grades A* to C¹ or equivalent.

Although the further education system incorporates some of the features of Australian VET, it is fundamentally different. There is a greater proportion of programs devoted to university preparation in further education than in VET. Although a small number of VET courses aim to prepare students for university entrance, the great bulk of programs are devoted to developing knowledge and skills for vocational qualifications.

Germany

Full-time vocational schools (which are supported and funded by the state) cater for students from the lower or intermediate secondary levels of education (generally aged between 16 and 17 years). Students will enter a full-time vocational school if they have not yet been able to attain an apprenticeship or if they want to prepare for vocational qualifications leading to polytechnic or university entrance certificates. Students may undertake a year of basic vocational education which can be used to articulate into the second year of the dual system of training. The goal of the vocational school is to prepare the student to pursue an occupation. In practice, many students who are unable to find apprenticeships or other jobs end up in the full-time vocational school. Training is aimed at achieving a qualification in an occupation.

In the full-time vocational schools students may pursue training for occupations (including in the health, social care and home management sectors) for which training is not provided in the dual system. Attendance at these full-time vocational schools may also be credited as the first year of training within a dual system program or lead to university entrance certificates. These programs may last from one to three years. About 27 of every 100 students in any one cohort of school leavers will move into these vocational schools. One-third of the curriculum is devoted to social studies, German language, foreign language, and sports and religion, while two-thirds of the curriculum comprises studies in the technology and economic fields of learning associated with a particular occupation (Putz 2003).

¹ Grades in the General Certificate of Secondary Education range from a high of A* to G.

A new initiative has occurred with the passing of the new *Vocational Training Act* in April 2004. It is now possible for graduates from a full-time vocational school to access the chamber examinations to gain a skilled worker certificate equal to that awarded to graduates of the dual system. However, students must first obtain some practical experience in the workplace and provide proof that this has occurred. They must also have passed their school subject examinations.

Vocational continuing education in Germany also includes further in-house training which is not regulated, and further training that is regulated by the chamber (for example, the achievement of *Meister* master craftsman and specialist or technician-level qualifications). Continuing education also comprises general education training which enables access to universities, polytechnics and vocational colleges. These qualifications and programs are also associated with federal regulations for further training. However, state governments also play a role in supporting continuing education that leads to qualifications.

Induction into the company or specific role and re-training in a recognised training occupation is also considered to come under the umbrella of continuing training. Reforms to the structure of vocational qualifications in the craft trades provide an example of ways in which Germany has tried to increase participation in continuing education (Bunderministerium fur Bildung und Forschung 2003). This reform is based on adding another two levels (the intermediate skill level and the *meister-plus* level) to the traditional pathway to *meister* status. A modular approach to upgrading qualifications training ensures that credit transferability between intermediate skill level and *meister* qualifications can occur. *Meisters* also can upgrade or participate in continuing education to enable them to start new businesses.

The *Upgrading Training Assistance Act* traditionally provided assistance to graduates from the dual system to attain their *meister* or technician qualifications and those who completed *Meister* qualifications to start new businesses. In 2002 the Act was modified to include continuing education courses from other training sectors, and to provide increased assistance to families, single parents, and those in part-time studies. Increased grants were also available for programs and students. In 2003 the government also signalled its intention to extend the modular approaches adopted in the craft trades to other areas and to make continuing education the second major route to higher education qualifications.

Discussion

Institution-based vocational education training pathways are observed in Australia, Germany and the United Kingdom. In Australia these pathways are provided by registered training organisations. In the United Kingdom they are generally provided in further education colleges or sixth form colleges or their equivalents and higher education institutions delivering specialised training. In Germany this training is delivered in full-time vocational schools and vocational academies. The range of offerings in these institution-based programs is greater in Australian VET and United Kingdom further education colleges than in Germany.

A focus on opening up access to formerly restricted pathways is another major aim common to all countries. It is also an aim of Australian and United Kingdom systems to enable individuals who have left schooling without qualifications or appropriate qualifications to undertake further training leading to qualifications. This has been achieved by establishing pathways to qualifications that may or may not involve formal attendance in a training institution. These qualifications are based on a competency approach to assessment and are awarded to those who have been assessed to have the skills and knowledge to perform a particular job at a particular standard. The German Government has also implemented reforms to recognise pathways to qualifications which may not involve attendance at training institutions.

In all three countries there is also a variety of community, industry, enterprise and commercial organisations which provide training for professional development and skills upgrades.

Recognition and credit transfer processes

In Australia, United Kingdom and Germany there has been an increased focus on the recognition of prior learning and transfer of credits obtained elsewhere.

Australia

In Australia the recognition of prior learning is available to individuals in the VET sector under the Australian Quality Training Framework. Recognition of prior learning in Australia refers to status or credit gained through formal and informal training, experience in the workplace, voluntary work, social or domestic activity (NCVER 2004a). In applying for recognition of prior learning, or its variant, recognition of current competency, the student must provide sufficient evidence to substantiate prior experience and knowledge and/or perform challenge tests to demonstrate current knowledge. The uptake of recognition of prior learning as a route to qualifications has generally been slow (Mawer & Jackson 2005; NCVER 2004a). One of the reasons for this slow uptake may also be associated with the resources required for conducting recognition of prior learning assessments, the amount of work that has to be done by applicants in gathering and organising suitable information, and the bureaucratic red tape that must be followed (Smith 2004; Bowman 2004; Bowman et al. 2003). In 2004, just 3.6% of all VET students had achieved a module outcome through recognition of prior learning.

The mutual recognition principle of the Australian Quality Training Framework means that registered training organisations are bound to accept the qualifications awarded by other registered training organisations. In theory the mutual recognition of qualifications enables the portability of qualifications and credit between states and territories. However, it is not uncommon for students to be asked to undergo extra training in the receiving registered training organisation to enable them to meet the requirements of such registered training organisations (Robinson & Misko 2003). This is one of the practical issues that continues to be problematic for the application of the Australian Quality Training Framework.

General guidelines for the awarding of credit transfer and advanced standing between VET and university sectors have been established by the Australian Vice-Chancellors Committee. However, the process of obtaining adequate credit for prior qualifications obtained in the VET sector still provides problems for students. The amount of credit transfer and advanced standing awarded to individuals is also highly dependent on the willingness of higher education institutions to acknowledge the previous training. However, agreements between universities and other universities, schools and VET colleges have formalised the amount of credit transfer an individual may obtain for a certain amount of learning or qualification. Generally, recognition and credit is easier between related areas of study. The Australian Vice-Chancellors Committee provides the following credit transfer guidelines for related fields. These are: 50% for an advanced diploma linked to three-year bachelor degree; 37.5% for an advanced diploma linked to four-year bachelor degree; 33% credit for a diploma linked to three-year bachelor degree; 25% credit for diploma linked to a four-year bachelor degree; and 16.5% for a nursing certificate IV and the nursing degree.

Nevertheless, in their wish to provide some recognition of prior learning acquired in unrelated programs, universities have also been prepared to provide credit for subjects that have been defined as electives.

United Kingdom

In the United Kingdom the concepts associated with recognising prior learning are referred to as accreditation of prior learning and accreditation of prior experiential learning. The former refers to prior learning acquired through certificated formal studies and workplace learning and uncertificated learning gained from self-directed study. The latter refers to learning gained from paid and unpaid work and leisure activities. Accreditation of prior learning, regardless of how it is acquired, is a key foundation of the National and Scottish Vocational Qualifications in the United Kingdom. Here workers may apply for assessments of their prior experiential learning and prior studies to achieve qualifications or credit towards qualifications.

Accreditation of prior learning was first used to provide a pathway to further studies. Currently, it is being used in further education to access vocational programs, to facilitate articulation with advanced standing in longer courses, for credit towards competence-based qualifications (National Vocational Qualifications/Scottish Vocational Qualifications) and for entry into ACCESS courses which prepare those without qualifications for entry to university programs. To help applicants deal with the complex process of gathering evidence, a number of further education institutions have established programs to assist adult learners to identify what learning they can include in applications for accreditation of prior learning.

The concept of establishing a set of principles and guidelines to enable students' achievements to be recognised is guiding the development of recognition systems in the United Kingdom. In England the Quality Assurance Agency provides guidelines to universities about how to go about recognising (accrediting) previous learning.

However, it is up to universities to determine the amount of credit provided to students for prior achievement. Credit consortia, comprising a network of universities and colleges of advanced education, aim to promote the development of credit transfer frameworks to make it easier for students to transfer between institutions and sectors. In Northern Ireland the Credit Accumulation and Transfer System provides a framework for the recognition of all learning, however it is acquired, and for the documentation of such attainment on a personal credit transcript. A number of credits are assigned to a block of learning and these can be used to build up a qualification. In addition, credits are also given to A levels and to National Vocational Qualifications. This process has been developed to enable employers and others to enable an easier comparison of the value of certain qualifications. In Wales the Credit and Qualifications Framework has been established to relate agreed allocations of credit to recognise learning (however it is acquired) and for qualifications. In Scotland the Scottish Credit and Qualifications Framework assigns each qualification a credit and a level. Credits are an attempt to quantify the outcomes of learning that are subject to valid, reliable methods of assessment; for example, one credit point is assigned to ten hours of time spent by students to acquire prescribed outcomes in a qualification. It also includes time for assessment. There are 12 levels in the framework.

The United Kingdom as a whole has implemented a credit equivalence project and is currently investigating ways to establish credit equivalency for the General Certificate of Education AS/A Level, the General Certificate of Secondary Education, the General National Vocational Qualification and other vocational qualifications.

Germany

Traditionally, the recognition of prior learning and the application of credit transfer based on hours have not generally been used in the vocational education sector in Germany, with entrance to courses based on the completion of prior qualifications. In practice, however, the duration of apprenticeships for students who enter the dual system with higher-level secondary qualifications (*abitur*) is reduced by one year. Nevertheless, the federal government has signalled its intention to make the pathways from vocational preparation programs to initial vocational training more flexible and from these, into continuing or upgrading training programs (Deissinger & Hellwig 2004). Amendments to the *Vocational Training Act* to include vocational preparation schemes and agreements between state and federal governments for the transfer of credits from school-based VET have also been passed. Reforms to allow apprentices with flexibility to undertake some of their training abroad and to count intermediate examinations towards final examination results have also taken effect. This is a substantial change for the dual system examination which has historically been based on a comprehensive examination at the end of the course.

European harmonisation

In 2002 the Copenhagen Declaration (European Ministers of Vocational Education and Training & the European Commission 2002; Commission Européenne 2004a) also called for steps to improve transparency in competences and qualifications in vocational education, cooperation, mobility schemes, and integrated programs of study, training and research. The *certificate supplement*, which described the nature and content of the studies undertaken to acquire the qualifications, is attached to diplomas and certificates. It is aimed at the development of clear and easy-to-read descriptions to facilitate integration and recognition.

In 2002 plans were made to implement a new uniform framework for improving transparency, called the 'Europass' (Federal Institute for Vocational Education and Training 2003). Its aim was to help individuals better communicate and present their skills and qualifications throughout Europe. The Europass, presented in a common format for curriculum vitae, includes a diploma supplement for higher education and certificate supplement for vocational education, which record the holder's educational record. The Europass also includes a European language portfolio which documents their linguistic skills and cultural expertise. A Europass portal also allows European citizens to complete their curriculum vitae and language portfolio online.

In November 2002 plans were also made to investigate the establishment of a credit transfer system for VET—the European Credit Transfer System in VET. It aims to 'facilitate the mobility of individuals during their vocational education and training (VET) within and between different national systems' and throughout their lives (Commission Européenne 2004b). It is still in the early stages of development.

The move to create an integrated European system has led to tensions within Germany. German school and university graduates are traditionally older than their European peers and this has affected the age at which they enter the labour market (Dorstal 2004). The move towards an integrated European education and training system will require Germany to modify such historical arrangements. In 2004 there have been attempts to shorten the length of time students spend in secondary school by one year. Difficulties have also been experienced in harmonising vocational systems which occur in different educational sectors. In many European countries vocational education mainly occurs in secondary schools and in tertiary education sectors. However, in Germany it naturally resides outside these sectors.

Discussion

The rationale for the recognition of prior learning across the systems is similar. First, it avoids duplication, and secondly, it can provide a pathway to qualifications for those who either have not been able to acquire qualifications from schooling, or who have wanted to use knowledge and qualifications gained previously to acquire further and higher qualifications.

The transfer of students between educational institutions has been common across all countries and has always depended on the willingness of institutions to provide credit or advanced standing for qualifications or subjects completed elsewhere. Increased student mobility between countries, states and institutions has led to the development of formal mechanisms for accrediting prior learning and transferring credit between domestic and international institutions. Where the Australian VET system has developed a national system for accrediting providers and training packages for the VET system, the move to establish a European education and training area has meant that Germany and countries in the United Kingdom, acting independently and as a whole, have had to develop formal systems for the recognition and transfer of credit. These are still in the early stages of implementation.

Quality assurance processes

Australia

Quality assurance in VET is organised under the Australian Quality Training Framework, which comprises standards for the registration of training organisations, the delivery of nationally accredited training and qualifications, and standards for registering and course accreditation bodies, bodies responsible for registrations and monitoring quality assurance processes (Department of Education, Science and Training 2005). Accredited VET in Australia may be delivered by any training organisation (including individuals and enterprises) registered to deliver the relevant qualifications (called registered training organisations) and may include secondary schools, community organisations, public and private vocational education and training institutions and commercial enterprises. Standards for these organisations relate to record-keeping, qualifications of teachers and trainers, use of marketing mechanisms, teaching and assessment processes, recognition of prior learning and the principle of mutual recognition. The mutual recognition principle, as its name suggests, refers to the mutual recognition of qualifications awarded by other registered training organisations, a mechanism devised to enable the portability of qualifications and credit across state and territory borders. Responsibility for monitoring the quality of implementation (through audit) of these standards resides with the registering and course accreditation bodies. A recent review of the Australian Quality Training Framework (ANTA 2004) notes the difficulties caused by cross-jurisdictional conflicts and variations in the application of the standards, and the need to make standards more transparent. Institutions may also seek quality assurance accreditation from commercial quality assurance companies.

United Kingdom

Quality assurance is organised differently for different education sectors in the United Kingdom (Department for Education and Skills 2005a, 2005b). Inspections continue to be important in assuring the quality of provision and outcomes in further education. The Adult Learning Inspectorate is responsible for publicly funded post-16 work-based training and learning. In England the Office for Standards in Education is responsible for the inspection of schools, non-work-based training for 16 to 18-year-olds, and the inspection of further education institutions.

The Department for Education and Skills noted the weak accountability system that applied to the further education sector providers and the variability in the quality of training provision, and subsequently identified specific quality assurance roles for providers, the Learning and Skills Council (responsible for planning and funding of the further education sector), the Office for Standards in Education and the Adult Learning Inspectorate. Providers were to be responsible for quality provision and were expected to adopt a culture of continuous improvement; the Learning and Skills Council was to define performance indicators and to demand training provision which evoked high satisfaction among employers and students. The Office for Standards in Education and the Adult Learning Inspectorate were to provide 'rigorous' inspection against a common framework. Provider self-assessment development plans detailing Learning and Skills Council agreed success rate targets for improvement were to be a major component of the quality assurance process. There was also to be a government process for intervention in situations where providers

were found to be struggling. Excellent education and training provision would be rewarded by applying a beacon status award to high-performing institutions.

Private institutions providing post-16 education may seek accreditation from relevant accreditation agencies. Codes of practice for different sectors also perform a quality assurance role. In addition, some institutions may also seek quality assurance accreditation from commercial quality assurance companies for administrative processes. The Investors in People program represents the quality standard for professional development for staff.

Germany

Quality assurance in Germany has traditionally been acquired through state supervision and monitoring of education and training. More recent concepts of quality assurance based on meeting specific accreditation and performance standards are being gradually introduced. However, by monitoring the extent to which training companies are able to provide or continue to provide training in the dual system, the chambers have always joined the government in assuring the quality of programs and services. They have also been involved in the registering of apprentices and in certifying the technical aptitude of trainers. The 1969 *Vocational Training Act (Berufsbildungsgesetz)* stipulates the rights and responsibilities of trainees and training companies, and defines the personal and technical skills required by those who will be providing apprenticeship training. Trainers must not have contravened the law, and must have both the technical and teaching skills to be involved in the provision of apprenticeship training.

The principles of the recently adopted Common Quality Assurance Framework among the European Union member states is also to be applied in Germany. This framework is tightly associated with the implementation of the Copenhagen Declaration and is based on European Union member states developing appropriate policies and appropriate strategies for planning, implementing, evaluating, assessing and reviewing the quality of their training provision (Technical Working Group on Quality in Vocational Education and Training 2005). Key indicators to be used in evaluating and assessing the quality of national systems are increased employability, improved match between demand and supply, and better outcomes for people from disadvantaged backgrounds (called vulnerable people).

Discussion

For all countries the push for formal quality assurance frameworks has been in response to concerns about the effectiveness and efficiency of educational delivery in an era of increased participation in post-compulsory vocational education and training and the proliferation of government and private training and education providers. It has also been adopted as a way to monitor the quality of provision in systems like Australian VET, where the notion of an inspection or supervision of educational provision by government bodies has been eliminated.

Associated with the move to mass further education there is also an expansion in the way institutions deliver courses, including online delivery, distance learning and franchising of courses to partner institutions. These developments have also made the implementation of quality assurance systems essential.

Quality assurance regimes have also been introduced in an era where business has adopted quality processes as a way to ensure that it can remain competitive by meeting the needs of clients. These developments have also influenced the development of quality assurance procedures and processes in education and training.

Similar principles: Varied practices

Although there are distinctively different arrangements for progression through primary secondary, vocational and higher education across the three countries, there are common principles guiding the modernisation of education and training pathways. This convergence is not surprising, as all three countries must remain competitive in an environment where technology is becoming more advanced, and labour markets are often in constant flux.

Convergence and sharing of ideas

The adoption of common principles (and sometimes broad practice) across the systems is made more possible by the sharing of successful approaches between countries. For example, Australian VET reforms were originally and significantly influenced by practice in Germany and the United Kingdom (especially Scotland). The modernisation of apprenticeships and traineeship pathways in the United Kingdom also shares a striking resemblance to the more flexible arrangements available in Australia.

In Australia and the United Kingdom, high levels of youth unemployment (especially in the early 1990s) also helped to drive reforms to the vocational education and training system. Because of Germany's high youth participation in the dual system, this has been much less of a driving force (Keating et al. 2001). However, there are current moves to address the problems of disadvantaged groups.

Portability of qualifications

Enabling the portability of qualifications (especially trade certificates and licences) and units of competency across state borders has been a driving force for the reforms of Australian vocational education. It has also been important for education and training systems in the United Kingdom, as moves are made to establish mechanisms that will be acceptable to England, Wales, Northern Ireland and Scotland. However, the Australian experience shows that such national arrangements are only as good as their implementation at the local institution level. The extent to which the European Credit Transfer System in VET will enable smooth portability of qualifications and credits is still to be fully tested. However, the implementation of common practical strategies for improving the transparency of qualifications and other information (for example, certificate supplements, common formats for curriculum vitae, and language portfolios) makes sense.

Recognition of prior learning

There is also general support for the implementation of frameworks and processes for the recognition of prior learning, experience and prior qualifications. This is based on the premise that individuals should not have to duplicate prior learning in subsequent courses, and that qualifications, especially in related fields, should have some currency for other qualifications. In addition, such arrangements allow individuals, including workers not attached to an educational institution, to acquire qualifications or components of qualifications, based on their experience and knowledge.

The recognition of prior qualifications or components of qualifications through credit transfer and advanced standing processes is not new. What is new however is the focus on recognising credits from different educational sectors and between different states and nations. The issues for all three countries relate to the willingness of different institutions to give students adequate status for qualifications gained elsewhere. For Germany and the United Kingdom the process of 'Europeanisation' also provides additional concerns and challenges.

Competency routes to qualifications

Under competency-based training, training and assessment leading to accredited qualifications are based on the practical demonstration of workplace skills and knowledge according to national industry competency or occupational standards. This process allows individuals to gain qualifications without having to attend formal training. In some ways practical training and assessment of practical skills for Australian apprentices was always competency-based. With the advent of training reforms, this became the preferred methodology for all vocational training. It also meant that individuals, especially existing workers, could be awarded qualifications according to their current competencies and prior learning. Such an approach is also the foundation of the National Vocational Qualifications and the Scottish Vocational Qualifications in the United Kingdom. The German dual system with its focus on 'vocation' and personal development through education ensures that competent performance of a skill is also underpinned by theoretical knowledge. This makes it an attractive option.

Apprenticeships

The apprenticeship approach is important for building up the stock of trade and occupation skills in Australia, United Kingdom and Germany. All three countries have in place a system of legal contracts specifying rights and responsibilities of employers and apprentices, and training regulations, frameworks, or other requirements which outline the different training requirements for completion. All three systems are dependent on industry support. Governments have applied a system of incentives for encouraging employers to take up apprentices. The United Kingdom has established a principle of entitlements to assure a training place for young people who achieve specified grades.

At face value the approach used in Germany is more definite about requirements for training completion. By contrast, the Australian approach has been devised to give more choice to employers and apprentices. Both systems have advantages and drawbacks. Giving employers and apprentices a choice of training package competencies means that programs can be tailored to enterprise-specific needs. However, a focus on satisfying enterprise needs for specific skills and knowledge may be at the expense of an in-depth preparation for the occupation as a whole. Furthermore, expecting employers and apprentices to make the right choices only makes sense if they are also fully aware of all the training possibilities available to them and are interested in making these choices. It is a disservice to employers and apprentices to expect them to make choices when these conditions are absent. It is for this reason that registered training organisation involvement at this level makes good sense.

Financial incentives for employers help to increase apprenticeship places. However, they do raise issues of accountability. In Australia there have been some problems with employers claiming incentives for training that was not happening (Smith 1999). Such problems have been reduced by a system which has some in-built checks and balances. Apprenticeships of a shorter duration (traineeships) in the Australian system have also been criticised for not providing sufficient training to trainees and for being used to gain financial incentives (Schofield 2000, 1999; Smith 1999). However, others (Cully & Curtain 2001) have reported that their usefulness lies in providing young people with an entry into the workplace. There have also been criticisms of non-traditional

apprenticeships in the United Kingdom where these have been associated with low completion rates (Fuller & Unwin 2003).

The value of time-based training contracts

The concept of ‘time-based training contracts’ has traditionally been associated with the notion that, before apprentices (in the trades/crafts) can become fully qualified tradespersons, they must serve out the contracted time which has been established for different occupations. This has been the traditional rite of passage for apprentices since medieval times. This concept formally came under fire during the era of national training reform in Australia, when ‘time-serving’ was used in a pejorative sense by training reformers. Recent reforms of the apprenticeship systems in the United Kingdom have done away with the principle of time-based contracts.

Although time-based contracts have been criticised by bureaucrats and academics for ignoring the skill of talented apprentices and acting to provide cheap labour for employers, the protection of these time-based contracts of training has been a major platform of many unions.

Much of the literature on the development of expertise (an extensive review has been provided in Misko 1995) emphasises the importance of content-specific knowledge and experience. Keeping this in mind, it is important to further investigate the importance of appropriate experience when drawing up training contracts. There may also be a case for investigating the application of combined time and competency-based approaches. The dual system in Germany is still time-based. However, there have been attempts to develop models where completion of contracts is associated with individual progress or competency. Such models have as yet to be applied in practice.

Flexible pathways

It is clear that arrangements in Australia currently allow for more flexibility of movement and articulation through different pathways and sectors than those in the United Kingdom and Germany. There are no selective tests for entrance into Australian secondary schools as there are for secondary schools in Germany and grammar schools in England and Wales, and currently all schools in Northern Ireland. This means that students can make their selections of subjects and sectors at later ages during their school life or after they have left school. Furthermore, compulsory schooling in most Australian states also starts earlier than it does in Germany and generally finishes earlier than in the United Kingdom and Germany. This also means that movement into the open labour market can take place at an earlier age and the completion of higher education and vocational education qualifications can also be accelerated. Increasingly, there is easier movement into higher education from vocational education and training. Maintaining this flexibility is the essence of lifelong education and training. However, flexible articulation pathways can only work if receiving institutions respect the pathways from which these students come, and they apply adequate and appropriate credit transfer.

Issues for consideration for Australia

There are three major issues that might be considered by Australian policy-makers. These are concerned with the portability of qualifications across national and international borders, the formal role played by training plans and frameworks, and the various methods for encouraging industry to provide training places for apprentices.

Portability and transparency

The concept of a *certificate supplement* attached to vocational qualifications could provide more transparent information for educational institutions when assessing the credentials of applicants for

admission or for credit transfer purposes. This is especially important in view of the flexibility of curriculum or learning resources that can be used to deliver training package qualifications and the problems that universities have with understanding the content of prior learning. Such an attachment or supplement could also help employers to better understand the nature of the training that has been undertaken. This concept is already being used in the statement of attainment where the units of competence already acquired are documented. The diploma or certificate supplements would be attached to qualifications.

Training plans and frameworks

Training plans in Germany and framework documents which specify mandated qualifications and additional requirements for apprenticeships in the United Kingdom provide detailed guidance for apprentices, learning providers and employers. Although training plans are also used in the Australian system, the frameworks used in the United Kingdom could also provide some useful examples.

Collaboration with employers

In mid-2004 the German Government established a *training pact* with employers whereby employers agreed to provide a certain number of training contracts for apprentices. This has been found to be successful in increasing the number of new training contracts for in-house training companies. Keeping in mind that the German corporatist tradition is not a major feature of the Australian system, there may be some value in government and employers coming together to discuss better ways to increase apprentice places.

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Appendix A

Country overview

A brief overview of the different education and training systems in Australia, the United Kingdom and Germany is presented in this appendix.

Australia

Compulsory education in Australia ranges from the age of five or six years to 15 or 16 years depending on the state or territory in which it is undertaken. The first seven or eight years of school life are spent in a primary school. The remaining years are spent in a comprehensive high school or its equivalent. There are also schools which will provide primary and secondary education. Some states, like Queensland) are now requiring young people once their compulsion to be in school is over to be either in employment or training up to the age of 17 years.

Students are able to leave school at any time after reaching compulsory age. Whether they do or do not complete their secondary education, they may go either directly into the workforce, take up apprenticeships and traineeships or undertake vocational education and training programs which are not associated with any industry-specific work requirements. If they move into an apprenticeship or traineeship, they will sign a contract of training with an employer who agrees to provide them with employment and training for the duration of the contract.

If students stay on at school for the post-compulsory years (generally Years 11 and 12), and if successful, their studies will lead to a senior secondary school certificate (or its equivalent), signalling the completion of their secondary education. At the same time these studies may also prepare them to enter university or further training in VET institutions directly after secondary schooling or at a later date, should they wish to defer further studies for some time. Since the early 1990s it has been possible for students, while still at secondary school, to undertake industry-specific vocational subjects leading also to VET qualifications. However, spending some time in industry gaining work experience is a part of most students' general education experience.

Once young people have left school, they may also combine part-time or full-time work with education and training to complete the secondary education qualifications required for entry to enter university or further vocational education and training. A system of mature-age entrance examinations is another pathway enabling individuals with no secondary qualifications to enter university. The flexibility of entrance requirements for the majority of courses, especially in VET, enables many adults to engage in further training as they require it.

If individuals choose to undertake an apprenticeship or traineeship, they will need to sign a contract of training with an employer. This contract entitles them to paid employment and on-the-job and off-the-job training. A system of financial incentives is also available to employers who employ apprentices and trainees, and a training plan must also be drawn up on commencement of training. Employers are able to choose the training provider who will deliver or oversee the off-the-job training component, and these providers will receive government funding for this provision. A feature that is specifically Australian is the training package which provides the competency standards, the assessment guidelines and the qualifications for specific occupations. These are developed by industry and endorsed by government.

There are also articulation and credit transfer arrangements between schools, post-school vocational education and training institutions, and universities, which enable students to have relevant prior achievement counted towards qualifications. However, there are questions about the extent to which these arrangements are always followed as intended by regulations. As well as attending formal training to complete qualifications, individuals may also choose assessment-only pathways to have previous and current knowledge and experience counted towards qualifications.

Education in public primary and secondary schools is free; education in private schools, and in university and post-compulsory vocational education and training institutions comes at a cost. Nevertheless, government funding is also used to support education and training in both public and primary secondary school sectors, government vocational education and training institutions (namely, TAFE institutes) and universities (which are not privately owned). Although private providers of vocational education and training are not supported by government funding, they are able to bid for government-funded training programs. A system of income support for eligible students is also available. This means that education and training for some students (generally from economically disadvantaged backgrounds) is heavily subsidised, while that for others attracts full fees.

A distinguishing feature of education and training in Australia is its flexibility. In the main, students may exit and enter education and training throughout their lifetime if they are able to satisfy entrance criteria along the way, and if there are vacancies available in their desired courses. Increasingly, universities and VET colleges are providing bridging programs to help those students acquire the skills and knowledge for entrance into specific programs. There has been a recent push by the Commonwealth Government to establish a national secondary certificate of education. This will have implications for the curriculum that is followed during secondary and especially senior secondary education.

United Kingdom

Compulsory full-time schooling commences in England, Wales, Scotland and Northern Ireland at around the age of five years and continues until the age of 16 years. These 12 years of schooling are divided into four key stages. Key stage 1 covers students in years 1 to 4 of primary education and Key stage 2 covers students in years 5 to 7 of primary education. Key stage 3 covers secondary students in years 8 to 10; Key stage 5 covers secondary school students in years 11 and 12. At each of these key stages students are tested in English, maths and science. Students in England and Wales follow a national curriculum which describes the subjects to be taught and the 'standard attainment targets'. These targets can be used to benchmark school performance and the achievement of government objectives. Northern Ireland has its own curriculum. There is no national curriculum in Scotland, with students following curriculum structured around eight different modes.

The overwhelming majority of secondary schools in England and Wales are comprehensive schools. A minority are selective grammar schools. Comprehensive schools cater for all students regardless of ability level. Grammar schools select students according to their academic ability. In Northern Ireland, the majority of secondary schools are secondary intermediate schools and grammar schools. Here entrance into all secondary schooling has been selective and based on performance in tests administered at age 11. However, there are current moves to alter this policy of selection. Northern Ireland also has in place public schools run on denominational lines. In Scotland the majority of secondary schools are called mainstream comprehensive schools and offer general education and vocational courses.

During their secondary schooling, students in England, Wales and Northern Ireland are also able to undertake vocational education programs, formerly called General National Vocational Qualifications, but now in the process of being withdrawn. These programs are related to broad industry or career areas (for example, tourism, leisure, health, manufacturing, business, engineering and social care) and provide students with relevant work experience, skills and knowledge and a wider choice of subjects. There are no arrangements for structured learning or assessment in the workplace associated with

these General National Vocational Qualifications. In Scotland, students may also take vocation-based examinations leading to the Scottish Vocational Qualifications Certificate. Training for vocational qualifications in the United Kingdom is generally competency-based.

At the end of compulsory education students undertake what is called the General Certificate of Secondary Education examinations in England, Wales and Northern Ireland, and the Scottish Certificate of Education in Scotland, also known as Standard Grade. Once this phase of education has been completed, students may enter the workforce, or move into further education.

If students opt to stay in education, they may stay on in schools to enter sixth form, attend a sixth form college or enter a college of further education. Here they may obtain the Advanced General Certificate of Education or A levels by completing units of work offered at the advanced subsidiary level which is in itself a stand-alone qualification, but also represents the first half of a full A level qualification. The second half of the qualification covers material of a more demanding nature. The full A level is normally used to gain admission to higher education. The White Paper, *14–19* (Ministry for Education and Skills 2005), heralds reforms to education and training offered to 14 to 19-year-olds.

Concerns about the mismatch between the demand for and supply of skills have been a major driver of reforms to the apprenticeship system in the United Kingdom. In May 2004 reforms were also announced to the Modern Apprenticeship system in England. Today they have been modernised to apply to students at younger age groups, and at different stages and levels. The broadening of apprenticeships to include Young Apprenticeships for those aged between 14 and 16 years is aimed at providing students with an opportunity to spend up to two days per week in a workplace learning a trade. This scheme is still in its infancy. Traditional higher-age restrictions on apprenticeships were also lifted. However, the majority of funding continues to be focused on 16 to 18-year-olds.

These moves to reform general education are designed to enable students to have more choice at the age of 14 years and beyond. They are also aimed at encouraging young people, who might otherwise drop out of training, to engage with learning that is relevant, and to recognise the value of further training. However, to give students this choice, there is also a need to improve education at Key Stage 3, so that students are able to reach the standards expected of them at age 14. The aim is to provide students with the skills and interest to ‘pursue their aspirations, and through hard work to qualify themselves to succeed, equipping themselves with the skills and attributes that employers need’ (Ministry for Education and Skills 2005).

National Vocational Qualifications and Scottish Vocational Qualifications cater for workers and other individuals who can provide evidence of competency according to predetermined occupational standards.

Germany

Compulsory full-time schooling in Germany starts at the age of six years and continues for the next nine years in 11 of the states or ten years in the remaining five. Within this compulsory schooling period all students complete the four years of what is called primary education (*Grundschule*). They may then follow a variety of pathways for their compulsory full-time secondary education. Some will go to the secondary modern or special schools (*Hauptschule*), while others will go to secondary schools (*Realschulen*), grammar schools (*Gymnasium*), and comprehensive schools (*Gesamtschule*) which offer courses available in secondary modern, grammar and secondary schools under one umbrella. Grammar schools prepare students to take examinations (*Abitur*) for qualifications which will then enable them to enter academic courses leading to degrees and/or diplomas at university or technical or polytechnic colleges.

Once this full-time compulsory schooling (general education) has been completed, students from any pathway (including students who have acquired university entrance certificates) may enter vocational training for two, three or four years. Duration depends on previous qualifications and on

the occupation. For example, if a student has an *abitur*, then the duration of the apprenticeship may be reduced to 2.5 years and so on. In fact any student who has completed full-time compulsory schooling, but is not in any other full-time education pathway, must participate in part-time vocational training. This means that, before they enter the workforce, German students must attend some form of education and training until they are 18 years of age. However, those who are in this compulsory part-time training may be over the age of 18 years. Recently there have been moves to reduce the amount of time students spend in secondary schooling to eight years (Dorstal 2004). This has been in response to European moves to establish an integrated higher education sector.

Students who opt for vocational education and training may become apprentices with a training company (generally referred to as employers in Australia). Once apprentices complete their training, they may also upgrade their qualifications to a *meister* (master craftsman) level. It is also possible for such graduates to enter progressively higher levels of education. The concept of 'vocation' is especially at the core of the German system of vocational education and training. It refers to the ability of the individual 'to act competently in a vocational environment' and coexists with the concepts of education for personal development. This means that, in addition to preparing individuals to undertake company-specific tasks, there is a focus on ensuring that individuals acquire a qualification and skills that can be transported to other companies and adapted to changing occupational labour markets and social environments (Ertl & Sloane 2004).

In 2003 the most frequently completed apprenticeship training contracts were automotive mechanic, trained retail salesman, cook, plant fitter (sanitary heating and air conditioning engineering), painter and lacquerer, joiner and metal fitter and trained salesman in wholesale and foreign trade (Federal Statistical Office, Germany 2004).

It is also clear that young male apprentices tend to choose training in the industrial skilled areas and trades. Of those who began their training in 2000, 128 296, or just over a third, undertook training to become motor vehicle mechanics, painters and lacquerers, electrical fitters, joiners, business specialists (retail trade), cooks, business specialists (wholesale and foreign trade), mechanical engineers (metal structures), bricklayers, and information technology specialists. Of young women commencing training in 2000, 143 601 or 53.4% undertook training to become commercial clerks, business specialists in the retail trade, hairdressers, physician's assistants, dentist's employee, business specialist (industrial production and sales specialist salesperson (food trade), banker, hotel specialist and salesperson.

An apprentice's secondary school leaving qualification is also associated with certain occupations. The most popular occupations by secondary modern school (*Hauptschule*) graduates are motor vehicle mechanic, business specialist in retail trade, and hairdresser. For graduates of secondary schools (*Realschule*), these are business specialist in retail trade, commercial clerk and physician's assistant. For graduates with a university entrance certificate, these are banker, business specialist—industrial production and sales, business specialist—wholesale and foreign trade.

Once students have successfully passed the higher secondary school examinations for admission to universities or polytechnics, they enter higher education. Higher education is also highly structured and follows a staged approach to the gaining of qualifications. Recently a two-tiered approach for higher education qualifications (undergraduate and post-graduate system) has been introduced to facilitate the mobility of students within Europe and to enable the portability of qualifications across country borders. Reforms to education and training in the polytechnics have also recognised the importance of introducing structured workplace pathways and applied learning in higher education pathways.

German citizens also participate in what is known as continuing education, which includes among other areas, re-training, qualification upgrades, second-chance opportunities for adults to complete school leaving certificates, university entrance preparation, specialist training, foreign languages instruction, and political education.

Public education in all sectors, including higher education, has historically been free. Today, the federal states can charge tuition fees independently from other states. Each state is free to decide on the amount of the tuition fee to be paid.

Appendix B

Industry skills councils in Australia

Table 2: Industry skills councils in Australia by industry sector

Industry skills councils	Industry sectors
Service Industry Skills Australia	Wholesale and retail trade, tourism, hospitality, sport and recreation, hairdressing, funeral services and beauty therapy industries
Transport and Distribution Training Australia	Transport and logistics: road transport, warehousing, rail operations and rail infrastructure, stevedoring, logistics management, maritime and aviation industries
Resource and Infrastructure Industry Skills Council	Extractive and renewable resources exploration, extraction, harvesting, primary processing, civil construction
Electrocomms and Energy Utilities Skills Council	Electronics, electrical, communications including telecommunications, voice, data, video computer systems, instrumentation, lifts, refrigeration and air conditioning, and renewable and sustainable energy
Community Services and Health Industry Skills Council	Child care, aged care, nursing
Agri-food Industry Skills Council	Food production and processing
Innovation and Business Industry Skills Council	Business services, cultural industries, education, financial services, information and communication technologies, printing
Manufacturing	Light manufacturing, manufacturing and process manufacturing
Construction and Property Services	General construction, offsite construction and plumbing, property services
Government	National, state and local government business sectors

Source: Australian National Training Authority <<http://www.anta.gov.au>>

Appendix C

Sector skills councils in the United Kingdom

Table 3: Sector skills councils in the United Kingdom by industry sector

Skills sector council: Name	Industry sector
Asset Skills	Property housing, cleaning and facilities management
Automotive Skills	The retail motor industry
Cogent	Chemicals, nuclear, oil and gas, petroleum and polymer industries
Construction Skills	Construction
Energy and Utility Skills	Electricity, gas, waste management and water industries
SEMTA	Science and engineering and manufacturing technologies
Skillfast-UK	Apparel, footwear and textile industry
Skills for Health	All staff groups working in the National Health System, independent and voluntary health organisations
Skills for Justice	Custodial care, community justice and police
Skills for Logistic	Freight logistics industry
Skills Active	Active leisure and learning
Skillset	Broadcast, film, video, interactive media and photo imaging
Skillsmart Retail	Retail
SummitSkills	Building services engineering (Electro-technical, heating, ventilating, air conditioning, refrigeration and plumbing)

Source: Sector Skills Development Agency (2005b)

Appendix D

Top ten training packages in Australia

Table 4: Enrolments in courses associated with training packages—top ten packages

Business Administration–BSA/BSB (1)	13.8
Hospitality Industry–THH (2)	9.8
Information Technology–ICA (16)	9.8
Community Services–CHC (10)	9.5
Retail–WRR (3)	5.3
Assessment and Workplace Training–BSZ (5)	4.2
Transport and distribution–TDT (7)	3.9
Horticulture–RUH (4)	3.9
Financial Services–FNB (33)	3.8
Metal and Engineering Industry–MEM (15)	3.7
Other	33.3
	100.0

Source: Blythe (2004)

Appendix E

New training contracts in Germany 1998–2003

Table 5: Percentage of new training contracts by sectors in Germany 1998–2003*

	1998	1999	2000	2001	2002	2003
Trade and industry	50.90	52.90	53.80	54.90	54.40	55.30
Craft trades	34.70	33.40	32.10	30.70	30.40	29.70
Public service sector	2.50	2.40	2.50	2.50	2.60	2.50
Agriculture	2.60	2.50	2.40	2.20	2.40	2.70
Liberal professions	8.50	8.10	8.40	8.80	9.30	8.90
Domestic services	0.90	0.80	0.80	0.80	0.80	0.90
Maritime shipping	0.03	0.03	0.02	0.02	0.03	0.03
	100.00	100.00	100.00	100.00	100.00	100.00
Total of new contracts	612 771	631 015	621 693	614 236	572 227	557 622

Note: * Derived from Bundesministerium für Bildung und Forschung (2004, 2003). Includes new contracts in Western Germany and Eastern Germany and Berlin Report on Vocational Education and Training. Also includes non-company training contracts (established by the government to provide training for disadvantaged youth, including those with a disability).



The National Centre for Vocational Education Research (NCVER) is an independent body responsible for collecting, managing and analysing, evaluating and communicating research and statistics about vocational education and training (VET).

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**National Centre for Vocational
Education Research Ltd**

Level 11, 33 King William Street
Adelaide SA 5000

PO Box 8288 Station Arcade
Adelaide SA 5000

Phone +61 8 8230 8400
Fax +61 8 8212 3436
Email ncver@ncver.edu.au

www.ncver.edu.au