

International approaches to the development of intermediate level skills and apprenticeships

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Foreword

The UK Commission for Employment and Skills is a social partnership, led by Commissioners from large and small employers, trade unions and the voluntary sector. Our mission is to raise skill levels to help drive enterprise, create more and better jobs and promote economic growth. Our strategic objectives are to:

- Provide outstanding labour market intelligence which helps businesses and people make the best choices for them;
- Work with businesses to develop the best market solutions which leverage greater investment in skills;
- Maximise the impact of employment and skills policies and employer behaviour to support jobs and growth and secure an internationally competitive skills base.

These strategic objectives are supported by a research programme that provides a robust evidence base for our insights and actions and which draws on good practice and the most innovative thinking. The research programme is underpinned by a number of core principles including the importance of: ensuring **'relevance'** to our most pressing strategic priorities; **'salience'** and effectively translating and sharing the key insights we find; **international benchmarking** and drawing insights from good practice abroad; **high quality** analysis which is leading edge, robust and action orientated; being **responsive** to immediate needs as well as taking a longer term perspective. We also work closely with key partners to ensure a **co-ordinated** approach to research.

This study presents an international comparison of the German, Australian and Dutch intermediate vocational training systems, and their apprenticeship systems in particular. It aims to create a better understanding of how other countries have developed intermediate level skills and what part apprenticeships play within their intermediate level skills systems. It further aims to highlight the lessons that can be learned within the UK context from international examples of good practice and the implications for action.

Sharing the findings of our research and engaging with our audience is important to further develop the evidence on which we base our work. Evidence Reports are our chief means of reporting our detailed analytical work. Each Evidence Report is accompanied by an executive summary. All of our outputs can be accessed on the UK Commission's website at <http://www.ukces.org.uk>.

But these outputs are only the beginning of the process and we will be continually looking for mechanisms to share our findings, debate the issues they raise and we can extend their reach and impact.

We hope you find this report useful and informative. If you would like to provide any feedback or comments, or have any queries please e-mail info@ukces.org.uk, quoting the report title or series number.

Lesley Giles

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Abbreviations

| | |
|-------|---|
| ABS | Australian Bureau of Statistics |
| ACCI | Australian Chamber of Commerce and Industry |
| ANTA | Australian National Training Authority |
| APL | Accreditation of prior learning |
| AQF | Australian Qualifications Framework |
| ASCL | Apprenticeships Skills Children and Learning Act |
| AQTF | Australian Quality Training Framework |
| AU\$ | Australian Dollars (1 AU\$ = 0.74555 EUR) |
| BBL | Work-based Vocational Training (<i>beroepsbegeleidende leerweg</i>) |
| BDA | The Federal Association of German Employers (<i>Bundesverband deutscher Arbeitnehmer</i>) |
| BIBB | German Federal Institute for Vocational Education and Training (<i>Bundesinstitut für Berufsbildung</i>) |
| BMBF | Federal Ministry for Education and Research (<i>Bundesministerium für Bildung und Forschung</i>) |
| BOL | School-based vocational training (<i>beroepsopleidende leerweg</i>) |
| CBS | Statistics Netherlands (<i>Centraal Bureau voor de Statistiek</i>) |
| CVET | Continuing Vocational Education and Training |
| DEEWR | Department for Education, Employment and Working Relations |
| DGB | German Federation of Trade Unions (<i>Deutscher Gewerkschaftsbund</i>) |
| EUR | Euros |
| FE | Further Education |
| FNV | Federation of Dutch Trade Unions (<i>Federatie Nederlandse Vakbeweging</i>) |
| HAVO | Senior general secondary education (<i>hoger algemeen voortgezet onderwijs</i>) |
| HBO | Higher vocational education (<i>hoger beroepsonderwijs</i>) |
| HE | Higher education |
| IVET | Initial Vocational Education and Training |
| KBA | Knowledge Centre for Vocational Training and Labour Market (<i>Kenniscentrum Beroepsonderwijs Arbeidsmarkt</i>) |
| MBO | (Dutch) Senior secondary vocational education (<i>middelbaar beroepsonderwijs</i>) |
| MCVTE | Ministerial Council for Vocational and Technical Education |
| NCVER | (Australian) National Centre for Vocational Education Research |
| NQF | National Qualifications Framework |
| OCW | (Dutch) Ministry of Education, Culture and Science (<i>Ministerie van Onderwijs, Cultuur en Wetenschap</i>) |
| PP | Percentage Points |
| RTO | Registered Training Organisation |
| ROA | Research Centre for Education and the Labour Market |
| ROC | Regional Training Centres (<i>Regionale opleidingscentra</i>) |
| SME | Small and Medium-sized Enterprises |
| SSC | Sector Skills Councils |
| TAFE | Technical and Further Education |
| VET | Vocational Education and Training |
| VMBO | Pre-vocational education (<i>voorbereidend middelbaar beroepsonderwijs</i>) |
| VWO | Pre-university education (<i>voorbereidend wetenschappelijk onderwijs</i>) |
| WEB | Vocational Training Act (<i>Wet en educatie en beroepsonderwijs</i>) |
| WO | University education (<i>wetenschappelijk onderwijs</i>) |

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Executive Summary

A longstanding feature of the UK vocational education and training (VET) system, in comparison with some of its main competitors, has been its relative weakness regarding intermediate level training. This was recognised at the end of the 1980s in the Low Skills Equilibrium hypothesis, amplified in the National Skills Task Force's reports, and reiterated in various editions of *Skills in England* in the 2000s (e.g. Campbell *et al*, 2001; IER and CE, 2003; Hogarth and Wilson, 2005). The *Leitch Review* (HM Treasury, 2006) drew attention to the need for a step change in skill levels if the UK was to maintain its position in the global rankings of industrial states. More recently, the *National Strategic Skills Audit for England* by the UK Commission for Employment and Skills (2010a) focused attention on the need for intermediate level skills demand to be stimulated if key sectors were to support economic and employment growth. There is little doubt that the UK needs to improve its supply and deployment of intermediate level skills, but the very fact that, twenty years after the Low Skills Hypothesis was first aired, policy is still drawing attention to this issue indicates the intractability of the problem.

Nevertheless, much has changed in the VET landscape in the UK over recent decades just as other national VET systems have changed too. This project allows a comparison with three countries which apply significantly different but nevertheless successful¹ approaches to intermediate level vocational training: Australia, Germany and the Netherlands. Australia's VET system was modelled on that in the UK, but it has developed its own qualification structures which have been able to attract rising shares of young and older workers. The German and Dutch approaches are widely regarded as exemplars in the development of intermediate level skills, but differ significantly regarding the role of company-based apprenticeship training.

Of course, the systems these countries have in place cannot be transferred lock, stock and barrel to the UK. If it was that simple this would have occurred many years ago, but there are likely to be important conclusions from the analysis of the three selected alternatives, which indicate the direction in which the UK can develop its intermediate VET system.

¹ Our main criteria for defining a 'successful' intermediate level skills system are: first, that a relatively high proportion of the adult populace is educated to intermediate level; participation in intermediate level education and training is high and participation rates have remained stable or have increased over the last decade (and this the case for all three countries studied (OECD, 2010)); and second, that there is a relatively high demand for intermediate level skills among employers as evidenced by the relatively high employment rates and low unemployment rates of those educated to intermediate level. Again, this is the case in all three countries studied (see section 3.3.2 in each country report).

Three efficient approaches

The major advantage of the German apprenticeship scheme is the close link between training and company needs: German companies obtain what they want and young people are attracted to this type of training. Almost two thirds of young people enter apprenticeship training with favourable job prospects afterwards (Gericke and Uhly, 2010). The major disadvantage, however, is that the system has gradually become less responsive to the needs of the economy due to:

- the transition to a knowledge-based economy which often creates greater demands for theoretical than for practical knowledge;
- the ageing of the workforce which creates the need for lifelong learning as well as initial training;
- higher education attracting many of the more capable young people and thus weakening the intellectual basis of the apprenticeship;
- economic and technological change which can devalue initial vocational training and create a demand for people with transferable skills.

The German apprenticeship system therefore needs strong political support to sustain its important role in the integration of young people into the labour market, and it needs continuous adaptation.

The Netherlands has opted to take a different path. The majority of young people embarking on intermediate level skills training are trained in vocational schools while apprenticeships have a less important role (Statistics Netherlands (CBS) website). Around one third of trainees undertake an apprenticeship, compared with almost half of German trainees. The intermediate VET system is structured according to a list of basic competences which are combined into a wide variety of training profiles. This helps improve the comparability of training pathways and is the basis of a highly flexible validation system. Nevertheless, the Dutch system sets binding and nationwide standards for qualification levels. The drawback of this approach is the sometimes weak link between training and company needs. Graduates from vocational schools can have more problems finding a job, with companies needing to provide them with additional training (OCW (Dutch) Ministry of Education, Culture and Science website).

The Australian approach is a modular one, which provides a high degree of flexibility based on nationwide standards for both trainees and training providers. It has a strong lifelong learning component reflected in the fact that it has successfully integrated adult workers into intermediate vocational training (NCVER, 2010a). The system is output-oriented in the sense that the attainment of competence standards is required rather than

passage through pre-defined training curricula. It opens up a wide range of training paths. This, however, is also its weakness as it potentially allows both employers and trainees to minimise their training investments. The strong orientation towards current needs may be cost-efficient in the short-run but in the long-run investment in a broad range of skills, which may necessitate a greater degree of investment in training, is required in order to improve the responsiveness of the intermediate level workforce to technical, organisational and market-related changes.

Principal trade-offs

The three approaches are effective and efficient in their respective national contexts. Their close link to the economic and social framework is their advantage, but it is also a substantial impediment to their application in a different institutional environment. Considerations about transferability therefore have to realise the principal trade-offs which appear in all of the observed systems.

A critical trade-off arises between the long term pay-off periods for training investments and the operation of a flexible labour market. Long term job tenure guarantees that the employer will appropriate the returns from training, but reduces the external reallocation of labour. It forces employers to adapt their knowledge base internally. Increasing the level of intermediate level skills therefore requires reduced volatility in employment. This may be achieved by absorbing the employment effects of market fluctuations, by creating transitional labour markets, or by supporting long-term strategic planning in the companies.

A second trade-off appears between company-based and school-based training; that is the relative benefits of training which is very much focussed on the current needs of the workplace (company-based) versus the wider needs of the labour market (school based). Although each type of training can develop a broad skills base, companies tend to provide training places in occupations specialised on current demand, and they select those people who are best qualified to take advantage of that training. Training investments can therefore be shorter-term, incremental, and highly selective. In contrast, school-based training does not need to be so selective and can therefore provide a broader based theoretical education and wider set of generic skills, but may have much more difficulty linking training to the needs of the workplace.

Finally, there is a trade-off between modular and curricula-based training. The Australian example shows that a modular intermediate VET system is able to attract adult workers and to compensate for the knowledge deficits accumulated by older generations. The Dutch system of flexible apprenticeships and traineeships has a similar effect. The

demographic challenge and the shortening of the half-life of knowledge² are strong factors, which push training reforms in the direction of modularised approaches. The main disadvantage is that modularised systems are often strongly driven by current needs of the employers and trainees. This may be cost-efficient in the short-run but in the long-run it will potentially constrain economic growth. This can be offset by developing training systems which set clear, nationwide standards regarding both competence levels and the quality of training providers. A well-structured validation procedure also helps improve the flexibility of the system. The evidence suggests that modular systems work best when they are embedded into well established public training standards (e.g. Hart and Howieson, 2004; Nisbet and Jadhav, 2009).

Strong incentives for trainees, partial incentives for employers

The analysis reveals that there are strong incentives for trainees to participate in intermediate level training given the higher wages and lower unemployment risks they will subsequently experience. In Germany, former trainees' wages are between 10 and 20 per cent higher compared with those who have attained only a lower secondary level education, in the Netherlands they are 15 per cent higher and in Australia they are 19 per cent higher (OECD, 2010). Conversely, unemployment rates for those educated to intermediate level are up to 10 percentage points lower in Germany, 1 percentage point lower in the Netherlands and 3 percentage points lower in Australia (OECD, 2010).

The incentives for employers are less universal. In spite of the fact that apprenticeship training is an efficient instrument for meeting future skills needs, and training costs are low if the productive value of apprentices' work is considered, only a minority of employers engage in apprenticeship training. A third of Australian employers are involved (NCVER, 2009), in Germany it is only every fourth company (BIBB, 2010), and in the Netherlands no more than a twentieth (expert interviewee estimates). This is in part due to the limited recruitment needs of companies, but it also reflects the limitations of the apprenticeship approach. Apprenticeship training is far from providing a universal instrument for intermediate VET. As the German case shows, it is mainly applied by profitable and innovative, but nevertheless domestically oriented companies in traditional trades, such as manufacturing, construction, retailing, etc. The rapidly growing knowledge-based services such as business services or software services are not vastly represented within this system.

² This refers to the time it takes for half of the knowledge in a particular area to be superseded.

Positive economic and social impact

All three countries spend around one per cent of their GDP on intermediate level VET. This includes both public funding and employer costs, and in the Netherlands a small share is met by trainees. Germany spends a little more. However, estimates of training costs are uncertain due to the difficulties in measuring the productive contribution of apprentices. According to OECD estimates (OECD, 2010), there are positive public net returns from these investments of between €21,000 and €43,000 for each person trained at this level (over the course of their life-time).

Even more importantly, there are positive contributions to economic growth and competitiveness. This is not only the case in Germany where the apprenticeship scheme is regarded as being central to the relative competitiveness of the manufacturing sector. In all three countries there is evidence that intermediate vocational training contributes to innovation and value generation in the production process. These effects particularly depend on the interaction between higher skilled employees and employees holding intermediate level skills (Mason and Wagner, 2005; Porter, 1990).

The continuous adaptation of intermediate VET to changing skills needs is a major challenge in all countries. Modularised and competence based systems as they are applied in Australia and the Netherlands appear to be more flexible than curricula based systems as the German apprenticeship system. The two former approaches are also better with regard to the inclusion of adult learners in intermediate vocational training. This last point is important given the ageing workforce in all three countries.

The strength of intermediate level skills training found in each of the three countries points to the acquisition of skills which allows people to flexibly navigate their way through the labour market in response to either their personal preferences or structural changes in the economy. It is notable in this regard that half of the Australian workforce and two fifths of the German workforce are not employed in the occupation in which they were trained. Modular training systems can support this flexible adaptation to the labour market because they potentially provide 'bite-sized' training to support people entering new occupations or to meet the challenges posed by structural change.

Governments and social partners in the three selected countries are convinced of the effectiveness and the efficiency of their own respective intermediate level training systems. Policy makers nevertheless have launched comprehensive training strategies in order to respond to the rising demand for skilled labour. These include measures to raise participation, improve the quality of training, and reduce the degree of skills mismatch in the labour market. They also include measures to improve validation procedures and to integrate disadvantaged young people in to the training system.

Lessons from abroad

Reflecting on the experiences of the three countries, this study points to a number of lessons that could be learned with respect to the UK situation:

- The close link of intermediate vocational training to economic and social development calls for a broad and long-term strategy which uses training as one of its major implementation tools. There are doubts as to whether the German apprenticeship is the model of the future because it has failed, as yet, to fully incorporate the skill-intensive, knowledge based service sector occupations within its sphere of influence.
- Apprenticeships confer many advantages on apprentices. This is a universal finding from the country case studies. The key issue is whether a sufficient number of employers across all sectors can be persuaded to participate in this form of training. The evidence from the country case studies, especially the Netherlands and Germany, is not wholly encouraging in that engaging employers is far from easy. Increasingly, the school-based system has an important role to play in maintaining or boosting intermediate level skills supply in these countries. This is not to suggest that efforts to increase participation levels should be disregarded (many countries across Europe, including the UK, have been successful in raising participation levels), just that increasing the number of apprenticeship places is a formidable challenge and it is unlikely to provide a panacea for optimally increasing the supply of intermediate level skills.
- School-based and work-based learning have to be integrated in order to provide the skills needed by employers and to improve school-to-work transition. The Dutch model is a promising combination of these two learning worlds if the aim is to substantially increase the supply of intermediate skills. It is important, however, that such an approach does not result in something akin to programmed apprenticeships being reintroduced. The problems associated with that form of training have implications for the direction of current policy on this issue in England.
- The lesson from all three countries is that intermediate vocational training is a long-term investment which requires a relatively long pay-off period over a sustained period of stability in the system. It should not be left to the markets exclusively. Public authorities can play a considerable role in structuring the training system, setting qualification standards, supervising training providers, and providing school-based training. A relatively prescriptive approach towards the duration and content of training can be expected to improve the performance of intermediate vocational training systems however thought should be given to the role of employers and wider social partners within such an approach.

- A modular system of training has much to recommend it. It provides a good solution regarding the adaptability of training to both changing skill needs and new methods of delivering training. There are concerns that it might lead trainees and employers to cherry-pick elements which finally result in lower levels of completion. This is particularly relevant for initial vocational education where the aim is more oriented towards full completion of a qualification, as is the case with apprenticeships where the aim is to complete the various elements which constitute a given framework. Modular training needs to be combined with a clear and generally valid definition of occupational standards and a well-functioning validation structure. This can improve the flexibility of training pathways considerably and their appeal to adult learners.

Implications for action

The lessons from the intermediate training systems in Australia, Germany and the Netherlands lead us to submit a number of implications for action in the UK:

- i. There needs to be recognition that intermediate level skills are of critical importance to the long-term growth potential of an economy. Consistent with this, the development of intermediate skills also needs to have a long-term perspective by providing trainees with those transferable skills which will allow them to progress in the labour market over time.
- ii. In contrast to the UK, all three intermediate level skills systems have enjoyed relative stability over a decade or more, which is likely to enable strong brand recognition for intermediate level qualifications, time for employers and learners to see the returns of such qualifications, enhance the ability of both parties to navigate the system and for information, advice and guidance (IAG) organisations to facilitate this.
- iii. In all three countries there are elements of social partnership in the specification of training standards with representatives of employers, employees, and the State involved in decision making at various levels. Arguably it is the balancing of these views which ensures that both the short- and long-term needs of the economy are met and that the interests of all three groups are satisfied.
- iv. The evidence suggests that a competence based approach (as currently found in the UK) is an efficient means of ensuring that economically valuable skills are developed efficiently. As noted above, there is a need to ensure that competence is not simply defined with reference to current employer demand for skill and recognises the longer term needs of the economy.

- v. In the face of an ageing workforce intermediate level training plays an important role in adult training. Skills supply cannot be simply regarded as the task of initial vocational education and training, as it is notably the case in Germany. Continuing training therefore needs to be integrated into the structures of the intermediate VET.
- vi. Modularised training systems provide an effective mechanism for delivering continuing vocational education and training. If it is to be applied to initial vocational education and training there needs to be structures in place to ensure that it leads to full completion of a recognised qualification.
- vii. Whilst finding the means to deliver additional apprenticeships is to be encouraged, it needs to be borne in mind that there will be a need to find alternate means of doing so, such as the school based system found in the Netherlands.
- viii. Increasing the productive contribution of trainees, so long as their productive contributions are confined to skilled work, is one means of demonstrating to employers the cost-effectiveness of adopting the apprenticeship route.

It is apparent in all three countries that there are rigorous standards in place with respect to what constitutes intermediate levels skills training, which can be accredited by public agencies. The implementation of these programmes relies on the strong involvement of public authorities in setting and maintaining those standards. Our view is that public authorities are needed to organise the intermediate training system and to finance at least the generic elements of training. The role of employers is important in the production of vocational skills to be used in the workplace and they can be expected to financially contribute to this training. The system in the Netherlands suggests that some financial contribution from learners can also be achieved without necessarily impacting negatively on participation rates.

The role of public authorities is also important with respect to those situations where companies have adopted relatively low skill, low value-added production strategies as appears to be the case in some UK sectors. It is therefore the role of public policy to foster the development of SMEs, innovation and international competitiveness in lagging industries. The provision of publicly funded training could be allied to measures designed to improve the performance of companies.

1 Principal ideas

1.1 Aims and research questions

This study looks at international experience and good practice to identify successful strategies that can be applied in the UK. Two tasks have therefore to be completed by the research, the analysis of successful foreign approaches of intermediate vocational education and training, and the examination of their transferability into the UK context.

We selected three countries which have not only developed efficient training systems for intermediate skills, but also vary in important aspects, such as: the relevance of company-based versus school-based training; the balance between initial training and lifelong learning; and the mix of generic and applied knowledge. The countries which were selected in agreement with the UK Commission for Employment and Skills were Australia, Germany and the Netherlands. These approaches can be expected to optimise the amount of information gained from this study.

The in-depth analysis of the three training systems delivers the answers to eleven research questions raised by the UK Commission for Employment and Skills:

- i. What are the different ways that public policy has ensured, encouraged and supported the development of intermediate level skills?
- ii. What constitutes good practice in the development of intermediate level skills policy and practice?
- iii. What constitutes effective approaches to the design, implementation and impact of apprenticeships?
- iv. Why are these approaches particularly prevalent/successful/well supported in some national contexts? Is there a history of respecting intermediate level skills/apprentices, for example?
- v. What circumstances are needed to ensure efficient and effective development of intermediate level skills?
- vi. What systems/institutions are used to support the development of intermediate level skills? What role do they play? What role does the education system play?
- vii. What have been the most effective delivery methods?
- viii. Are intermediate level skills part of a progression path to higher level skills? Are apprenticeships designed in this way? How have they been structured so that they can be a first step on the 'ladder' towards higher level skills?

- ix. How have employers and employer bodies been engaged and has this been delivered through a sector approach?
- x. How has provision been financed (public / private investment)?
- xi. What can policy makers in the UK learn from other countries about potential ways of developing intermediate level skills? Are there new policy possibilities?

The study is based on three country case studies. These should be viewed as appendices to this synthesis report, providing an essential evidence base for its analyses and conclusions. For ease of readability, they are available as appendices to download alongside this main report at the UK Commission for Employment and Skills website: <http://www.ukces.org.uk>.

This synthesis report provides a comprehensive view of the selected intermediate level vocational education and training systems, their internal logic, strengths and weaknesses, and their transferability to the UK. The report refers to the UK throughout. It needs to be borne in mind that the UK comprises four countries each of which has their own approach to the delivery of intermediate level skills training. Whilst differences between the four systems are not negligible there are significant commonalities too, including the use of Sector Skills Councils to establish training standards for formally recognised qualifications, the emphasis placed on publicly funded training such as Apprenticeship, being demand led, and the recognition given to Apprenticeships as a key ingredient in delivering future economic growth. Where necessary the report distinguishes between the respective intermediate skills systems in England, Northern Ireland, Scotland, and Wales but more usually refers to them collectively as the UK.

The analysis is strongly based on empirical evidence. Research evidence, expert interviews, and statistical information are all used to fill the information pool which comprises the study. Data from national sources or international organisations are scrutinised to depict trends in apprenticeship and related training. Expert interviews with representatives of stakeholders serve to validate our assessment of the training approaches.

1.2 The role of intermediate vocational training

Intermediate skills play an important role in economic development. This is attributed to the fact that intermediate level work is an essential part in production networks. It is needed for providing goods and services both directly to the markets and indirectly to the value chains of firms. Its role as an integrated part of value chains is particularly important as the productivity at intermediate workplaces affects the productivity of higher level workplaces and the productive system as a whole. The productivity of the economic

network therefore is the result of both the productivity in each workplace and the efficient organisation of production links between these workplaces.

During the Taylorist period of production³, workplace-related productivity was mainly determined by the efficiency of machinery (Taylor, 1911). Human labour was limited to supplying materials, assembling the different parts, or supervising automated production lines. While labour was regarded as a supplement to the mechanical production process, its importance increased over time with recognition that human errors could stop the whole assembly line, or result in the scrapping of expensive products. While Taylorism started out with little need for craft skills, it ended with a high demand for skills, especially at the intermediate level.

The times of Taylorism are over, at least in the Western world, and many countries recognise the importance of a broad skills base. It is not only the success of German manufacturing industries which shows how important intermediate skills are in modern industrial production. Many other sectors (such as logistics, trade, crafts business, financial services, public and social services, etc.) rely on intermediate skills as they have a great impact on overall economic efficiency (EU Commission, 2008). These sectors need a balanced skills structure in order to achieve optimal results.

In the long-run, the shortage of intermediate skills has an even stronger detrimental impact on economic growth because it limits the realisation of economic potentials. The best ideas generated by research and development departments are useless if they cannot be implemented adequately. Therefore the availability and continuous development of intermediate skills determine not only the efficiency of production activities but the effectiveness of technical and organisational advances. If intermediate skills are not available, production will be relocated and / or markets will be lost to competitors.

Intermediate vocational training, however, does not only serve economic goals. It plays an important role in the integration of young people into the labour market and in the integration of disadvantaged youth. An adequate range of training opportunities for youth at all levels of competence will not only assist with the avoidance of youth unemployment and social exclusion, but will improve their economic and social prospects over the life cycle.

³ Taylorism characterises a production methodology that breaks every task into small and simple segments which can be easily analysed and taught. Introduced in the early 20th century, Taylorism aims to minimise skill requirements and job learning time by maximising job fragmentation, separating execution of work from work-planning, dividing direct and indirect labour, and introducing productivity oriented work organisation and wage schemes. The fundamental principles of large-scale manufacturing through assembly-line factories were laid down by the industrial engineer Frederick Winslow Taylor (1911).

The supply of intermediate level vocational skills is not limited to apprenticeships, but this form of training can be seen as an important instrument for achieving both the expansion of intermediate skills and the reduction of youth unemployment. In several countries it is an effective tool which provides people with qualifications and helps to avoid skills shortages. It is part of economic development strategies which positively affect youth integration.

While intermediate level training opens the doors to labour markets for many young people, it is also the basis for career progression over the life time. Initial training and lifelong learning are closely interrelated, as the knowledge base gained at young ages needs continuously updating. However, the efficiency of lifelong learning depends on the competence base at hand, on initial training in particular. Balanced training structures are therefore of great importance.

The three national training systems investigated by this study all provide interesting solutions for these problems. Nonetheless, they cannot be readily transferred to other countries as they are strongly related to the national labour market institutions and the historical development of labour markets and education systems. That said, there are elements or specific policies or initiatives which the UK can learn from.

1.3 Rationale for the key areas of analysis

The study followed a detailed research agenda in order to respond to the research questions listed above, focusing on the following key areas:

- *Identification of alternative approaches to intermediate vocational training:* the countries studied incorporate a wide range of alternative approaches to developing intermediate level skills, which allowed an analysis of the strengths and weaknesses of these approaches and identification of good and transferable practice.
- *The strategic role of intermediate vocational training:* investments in human capital have become the major battlefield of international competition (China in particular is expanding its training capacities at high speed). It was therefore important for our analysis to identify the role that intermediate level skills has had in national training strategies and how this has been evaluated against competitor countries. This is all the more relevant as the development of an intermediate vocational training system can be expected to have a strong impact on industrial restructuring (the strength of the German manufacturing sector attests to this).

- *Training needs at the intermediate level:* training provides the skills for the future and thus has a significant impact on economic restructuring, competitiveness and future growth. Beyond current skills shortages, it should be related to emerging skills needs. With this anticipatory view, the analysis showed how intermediate training is linked to economic transition and which skills needs arise from restructuring trends.
- *Organisation of intermediate vocational training:* intermediate vocational training is strongly linked to the institutional background, at least in those countries which are extensively engaged in this type of training. The involvement of social partners and the role of public subsidy play an important role. It was therefore important to analyse the institutional background within the countries studied, to illustrate the extent to which policies or practices might be transferable to countries which have a different type of social contract in place (such as the UK).
- *Incentives to employers:* almost by definition intermediate vocational training is more workplace related than tertiary vocational training. This requires the involvement of employers in both the definition of training curricula and the financing of training. Consequently, the country analyses addressed the incentives for employers to engage in the supply of training and the extent to which they take advantage of these incentives. This helped to answer the question of how employers can best be motivated to support training and how training investments can obtain an optimal level of return.
- *Incentives to trainees:* the incentives to train beyond compulsory schooling are higher wages, safer jobs, better working conditions and higher job satisfaction. These work well for achieving rising participation rates in higher education and vocational training. It was therefore important to describe how labour markets in the selected countries reward intermediate training and which career pathways are open to graduates of intermediate vocational education. Moreover, there is the problem of exclusion among those who are disadvantaged by education, family background, or migration. The study also looked at the approaches applied by the selected countries to integrate disadvantaged youth.
- *Efficiency of intermediate vocational training:* this part of the analysis reviewed the participation rates, unemployment rates, wage levels, and other characteristics among both participants and graduates from intermediate vocational training. This was compared with other qualification groups, nationally and internationally. Moreover, the reduction of skills shortages is an important evaluation criterion which was investigated in detail.

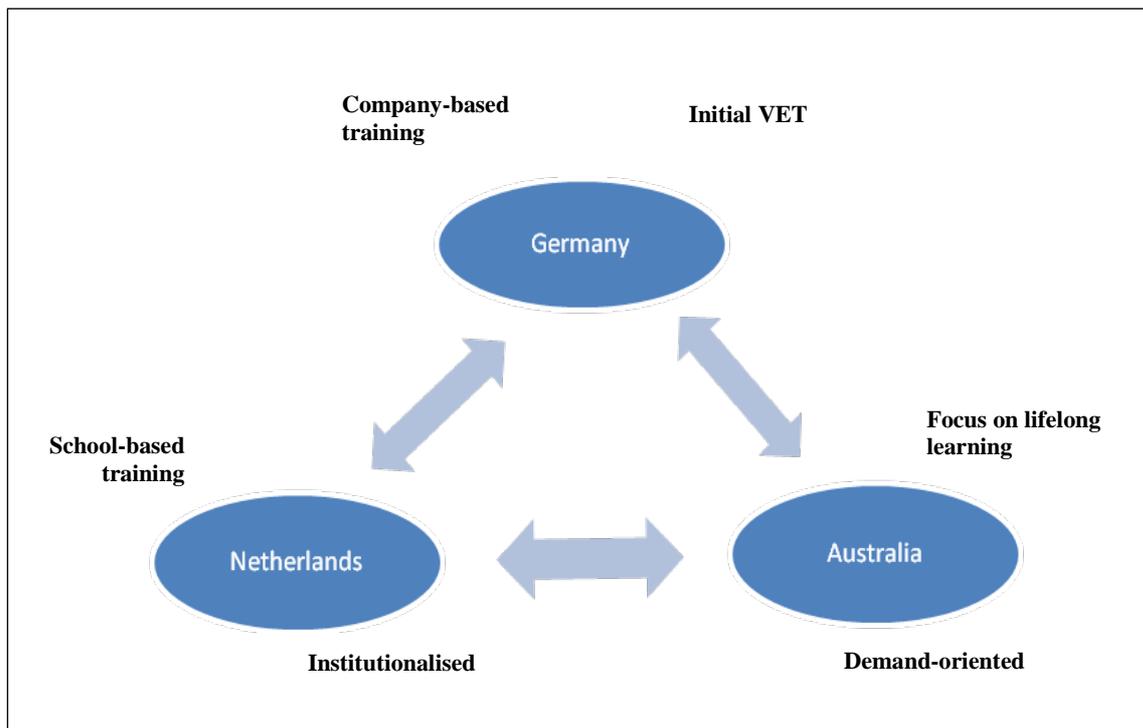
- *Identification of effective approaches and transferability:* training systems which work well under a given national framework might fail in other institutional settings. But training systems can also not be transferred in part. Beyond the identification of effective approaches the study therefore had to consider the transferability of these to UK conditions. In other words, what might an effective system of intermediate vocational training look like under UK conditions and how can it be implemented? In places the experience from other countries are used to shed light on this issue, but alternative solutions are also developed independently where appropriate.

1.4 Selection of countries

The selection of the three countries is consistent with the rationale of identifying alternative options for the design of intermediate vocational training. These alternatives can best be explained by referring to the principal trade-offs which appear in the systems (see Figure 1.1):

- The trade-off between initial VET and lifelong learning, exemplified by the differences between Germany and Australia.
- The trade-off between company-based and school-based intermediate VET, as shown by the two countries Germany and the Netherlands.
- The trade-off between institutionalised and demand-oriented intermediate VET, as demonstrated by the systems in the Netherlands and Australia.

Figure 1.1 The trade-offs in intermediate VET



Source: Economix.

Australia's intermediate level vocational training is a modularised system whose programmes range from single modules or learning units to advanced diplomas. The system is used by young people as a means of entering the workforce as well as by existing employees and unemployed adults looking to upgrade their skills. The country's intermediate VET system represents a highly flexible approach with a strong lifelong learning component, allowing high transition rates into the labour market.

Germany's dual apprenticeship training has, for a long time, played a dominant role in the education system. It combines in-company training with theory-driven lessons in public vocational schools. It represents an approach which concentrates on initial training rather than lifelong learning, in a strongly regulated system that has a high level of involvement, throughout, from social partners.

The Netherlands has a long tradition in intermediate level training. Vocational education is the largest component of the education system and is mainly provided by full-time vocational schools and colleges. Like Germany, it represents an institutionalised curricula-based approach which nevertheless incorporates a high degree of flexibility.

For two reasons, these three countries are therefore good practice examples:

- First, the countries have each developed an efficient and successful¹ training system which has existed for more than a decade. This guarantees that only good practice solutions are selected and that sufficient evaluation evidence is available to assess strengths and weaknesses.
- Second, the approaches describe alternatives: (a) company-based training versus school-based training; (b) initial training versus lifelong learning; (c) theoretical versus practical knowledge; and (d) modular versus curricula-based training.

1.5 Methods

The study was based on both broad literature reviews in the countries selected and a series of interviews conducted with education and training experts and representatives of training authorities in the countries. The expert interviews were used to improve our understanding of the national approaches, to gain additional insights, and to discuss the pros and cons in the public debate. They were a useful supplement to the available literature.

2 Characteristics of intermediate level VET

The three countries selected for this study follow clearly different approaches which are summarised in this section. This gives a first impression about the rationales which guide the provision of intermediate level skills training in each of the three countries and provides a basis for the discussion which follows in Section 3 onwards. More details on each intermediate VET system are available in the country case studies.

2.1 Australia

Australia's intermediate VET system is an output-oriented system meaning that learning tracks are less important than learning outputs. This opens a wide range of possibilities to achieving the competence standards and the system is therefore known for its flexibility. It is organised through a wide variety of training modules and is used by people of all ages, addressing the training needs of both school-leavers and adult workers. Its modular structure allows attainment at various levels, completion of formal qualifications, single certified modules, courses without formal qualification, and recognition of prior learning.

The intermediate VET system is based on the Australian Qualification Framework (AQF) and the Australian Quality Training Framework (AQTF). The AQF defines the attainable certificates for three intermediate qualification levels. Developed by industry, training packages determine how AQF qualifications in particular occupations can be achieved. These training packages do not regulate in which way and in what time period training should be delivered and completed. Choosing and applying appropriate teaching and learning models, as well as assessment methods, is the responsibility of registered training organisations (RTOs). The AQTF regulates the standards for the RTOs.

Figure 2.1 gives an overview of education and training in Australia and indicates intermediate VET as yellow boxes. After completing primary and secondary school, young people can achieve a Year 10 Certificate or continue to Senior Secondary where a Senior Secondary Certificate of Education can be achieved, allowing entrance to higher/tertiary education.

Accredited, non-accredited courses, and apprenticeships and traineeships can be achieved in the system.⁴ Accredited courses and apprenticeships lead to different AQF qualifications: Certificates I-IV, VET Diplomas, and VET Advanced Diplomas. Only

⁴ In Australia, apprenticeships and traineeships can be distinguished: apprenticeships last three to four years, whereas traineeships last between six months and two years, have lower skill requirements than apprenticeships and often take place in sales, service and clerical occupations. Due to the introduction of a number of higher level and longer traineeships, within the last few years the distinction between apprenticeships and traineeships has become somewhat blurred, and the term 'Australian Apprenticeships' is often used to refer to both.

Certificates I-III are defined as intermediate level skills according to the ISCED classification (levels 2C to 4B).

It is also possible to achieve 'statements of attainment', which are single units or modules of AQF qualifications that can be accumulated to the point where they result in the award of a full AQF qualification. Nonetheless, the modules have value as stand-alone supplements to peoples' skills profiles. After completing a Certificate III or IV, a VET Diploma or a VET Advanced Diploma, Vocational Graduate Diplomas and Graduate Certificates can be achieved. These two qualifications, alongside VET Diplomas and VET Advanced Diplomas can be credited towards the award of a higher education degree. Non-accredited courses do not lead to the award of a qualification.

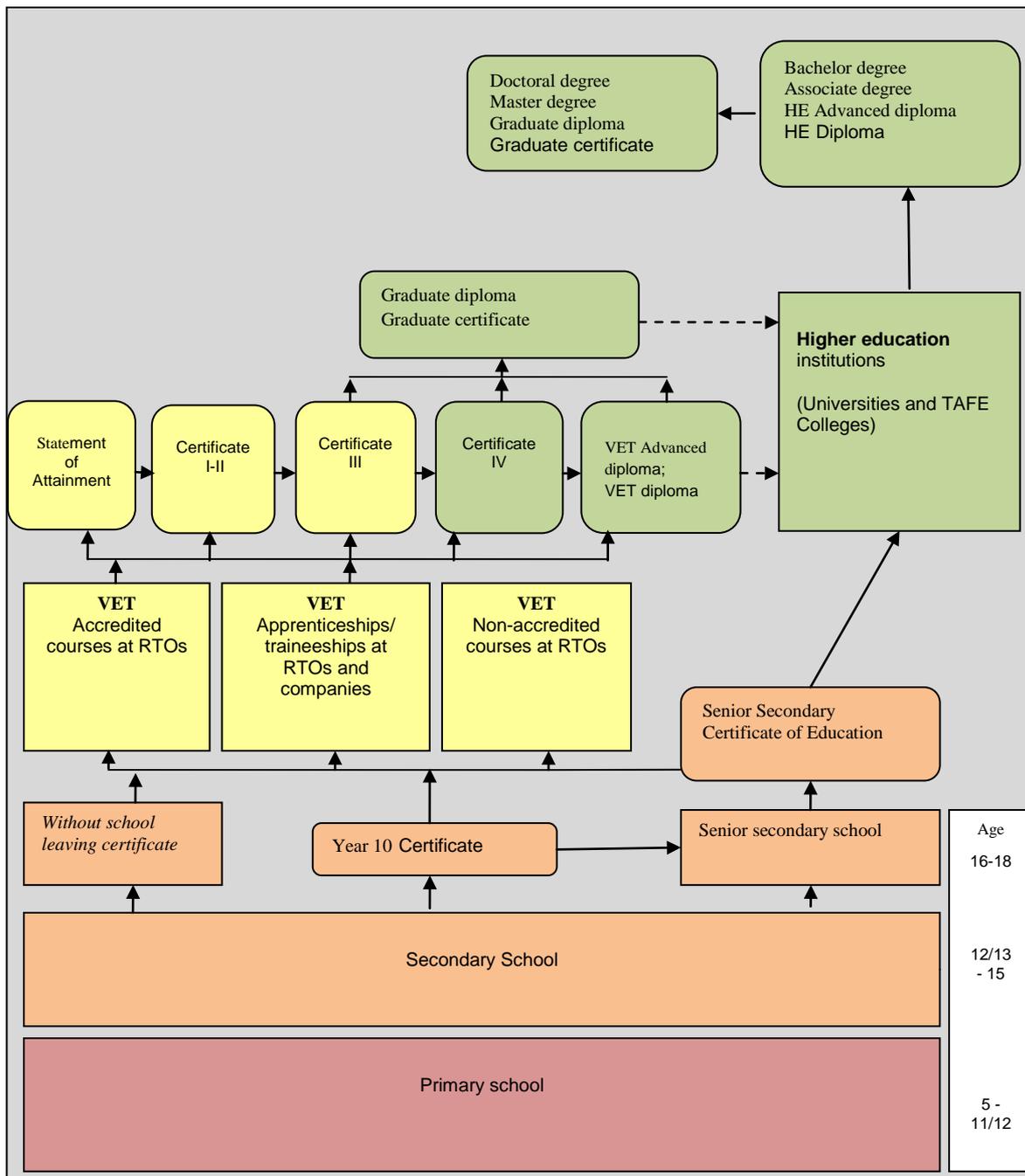
An important feature of Australian apprenticeship training is group training organisations, which arrange and monitor on-the-job training at host employers. This is a popular type of apprenticeship as it involves fewer administrative duties and legal commitments from the employers.

The government body accountable for VET policy is the Ministerial Council for Vocational and Technical Education (MCVTE), which is composed of state, territory and Australian government VET ministers. MCVTE is responsible for strategic policy, planning and performance of VET as well as workforce planning (including skills needs) and skills forecasting.

An important committee of the MCVTE is the National Quality Council, which comprises representatives from government, industry groups, unions, employee organisations and training providers. It is responsible for the quality standards of VET and monitors the AQTF. The state and territory training ministries are responsible for planning and reporting on VET strategies and administering funding. They also accredit courses and register training providers within the AQTF. The influence of industry is ensured by the existence of 11 Industry Skills Councils who develop training packages and give advice on training matters. Social partners are represented in the National Quality Council and have an advisory function.

The system is funded by the federal and regional governments, employers and individuals. Total expenditure on intermediate VET is estimated to be about one per cent of GDP, of which national, state and territory governments contribute about a half (Knight and Mlotkowski, 2009). In 2009 this amounted to AU\$ 4.7 bn (€3.5 bn), whereof states and territories funded around two thirds and the national government around a third (Australian Government, 2011a). The contribution of employers is not officially quantified, but some limited information available estimates that they spent roughly the same amount as the national, state and territory governments (Knight and Mlotkowski, 2009).

Figure 2.1 Education and training in Australia



Source: [Australian Government website \(2011a\)](#); Economix.

2.2 Germany

The German intermediate vocational training system is known for its comprehensive dual apprenticeship training which combines practical training at companies and theoretical training at vocational schools. It provides a well-qualified workforce which is seen as a key driver of economic growth.

Figure 2.2 gives an overview of the structure of the German education and training system, indicating the intermediate VET parts in yellow boxes. Intermediate VET consists of three parts: (i) dual apprenticeship training with focus on company-based training; (ii) vocational training at full-time vocational schools; and (iii) the transition system for those who do not fulfill the entrance requirements for full-time vocational schools or failed to obtain an apprenticeship position. Graduates from apprenticeship training and full-time vocational schools hold a vocational certificate which is equivalent to intermediate level skills as classified at ISCED levels 3 and 4. The transition system provides its participants with no vocational certificate as it serves as preparation for further vocational training.

The core of German intermediate vocational training is apprenticeship training. It qualifies workers for a variety of manufacturing or commercial occupations. In 2008, 48 per cent of new entrants to the intermediate VET system started apprenticeship training. Around 18 per cent started vocational training at full-time vocational schools, and the remaining 34 per cent were picked up by the transition system (BMBF, 2010a). The majority of graduates with a vocational certificate go into the labour market directly after completing their training. However, they also have the option to enter higher education or advanced vocational training (*Meister*).

Apprenticeship training is the responsibility of the federal government, whereas state (*Länder*) governments are accountable for full-time vocational schools and the vocational schools involved in apprenticeship training. The Board at the Federal Institute for Vocational Education and Training is responsible for training regulations and counsels the federal government in general issues of dual training. It consists of representatives of the *Länder* governments, employers' associations, and trade unions. They define the length, content, and examination requirements of training provision. The legal framework is determined by the Federal Law for Vocational Education and Training and the Crafts and Trades Regulation Code.

The nationwide standards are determined by the responsible chambers⁵. Trainees have to participate in apprenticeship training for the appointed period of time and attain their vocational certificate by passing final examinations. These include both practical and theoretical parts. Modular training is not part of the system. The employment relationship between companies and apprentices is regulated by a labour contract.

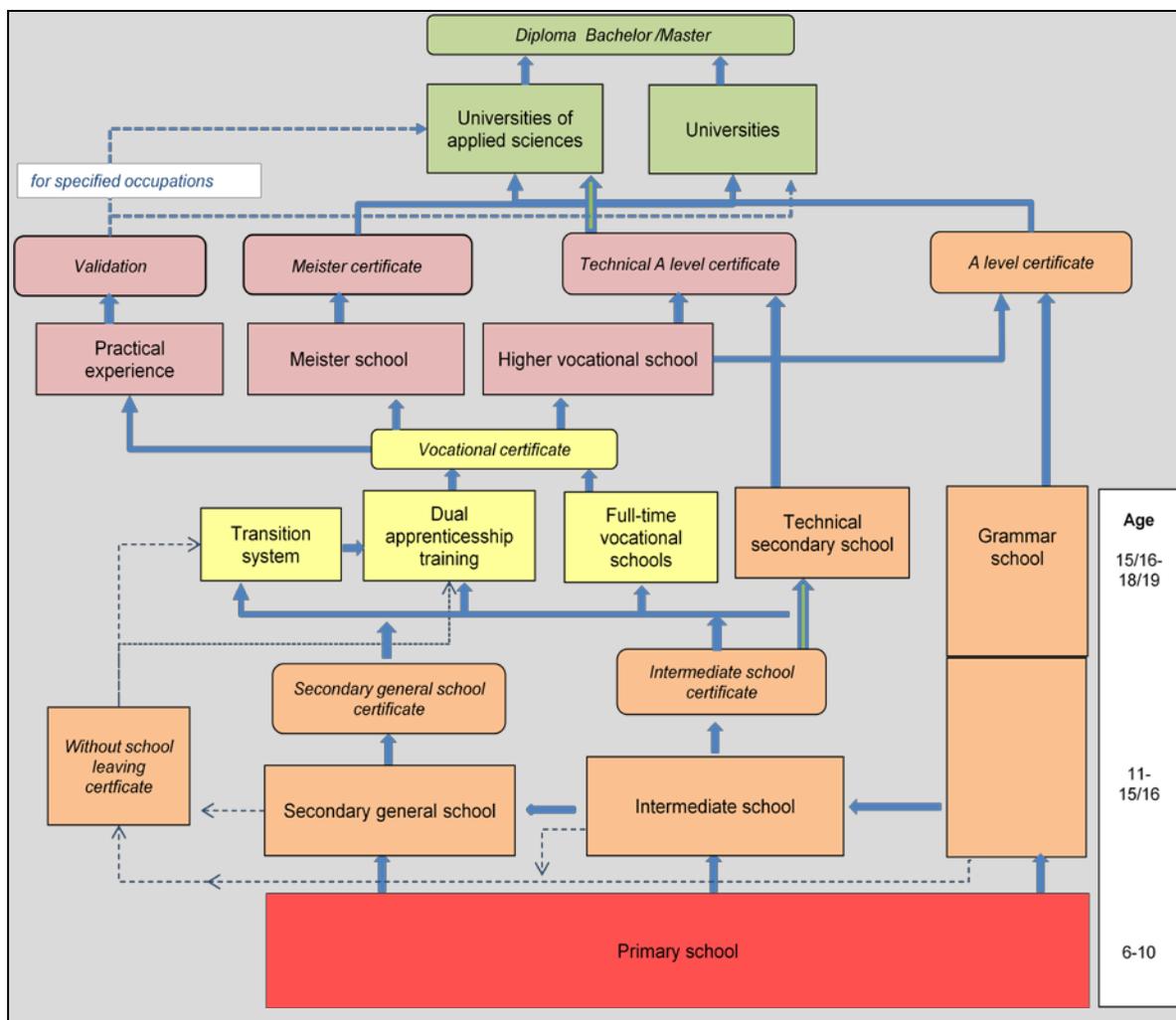
Full-time vocational schools fill the gaps left by apprenticeship training. They provide training for nurses, kindergarten teachers, office clerks, various arts occupations etc.

⁵ Chambers are legal institutions, which are self-governed by the companies, their mandatory members. They represent a series of trades, such as crafts business, manufacturing business, barristers, architects, medical doctors etc. One of their responsibilities is the supervision of apprenticeship training.

They are the responsibility of the *Länder* governments and lead to vocational levels equivalent to dual (apprenticeship) training certificates.

The German intermediate vocational training is mainly funded by the federal government and employers who train apprentices. In 2010 the government spent around €21.7 bn and companies around €5.7 bn for intermediate vocational training. This is equivalent to 1.2 per cent of GDP (OECD, 2010). The majority of this amount was spent on apprenticeship training (74 per cent). Around 10 per cent of funding was used for full-time vocational schools and 16 per cent for the transition system (BMBF, 2010a, 2010b). The net costs for the average apprentice amount to €3,600 per year for a company which offers training (Wenzelmann *et al.*, 2009).

Figure 2.2 Education and training in Germany



Source: Economix.

2.3 The Netherlands

In the Netherlands intermediate VET is the core of vocational education and training. It is known for its combination of predominately school-based training at full-time vocational schools and work-based apprenticeship training at companies.

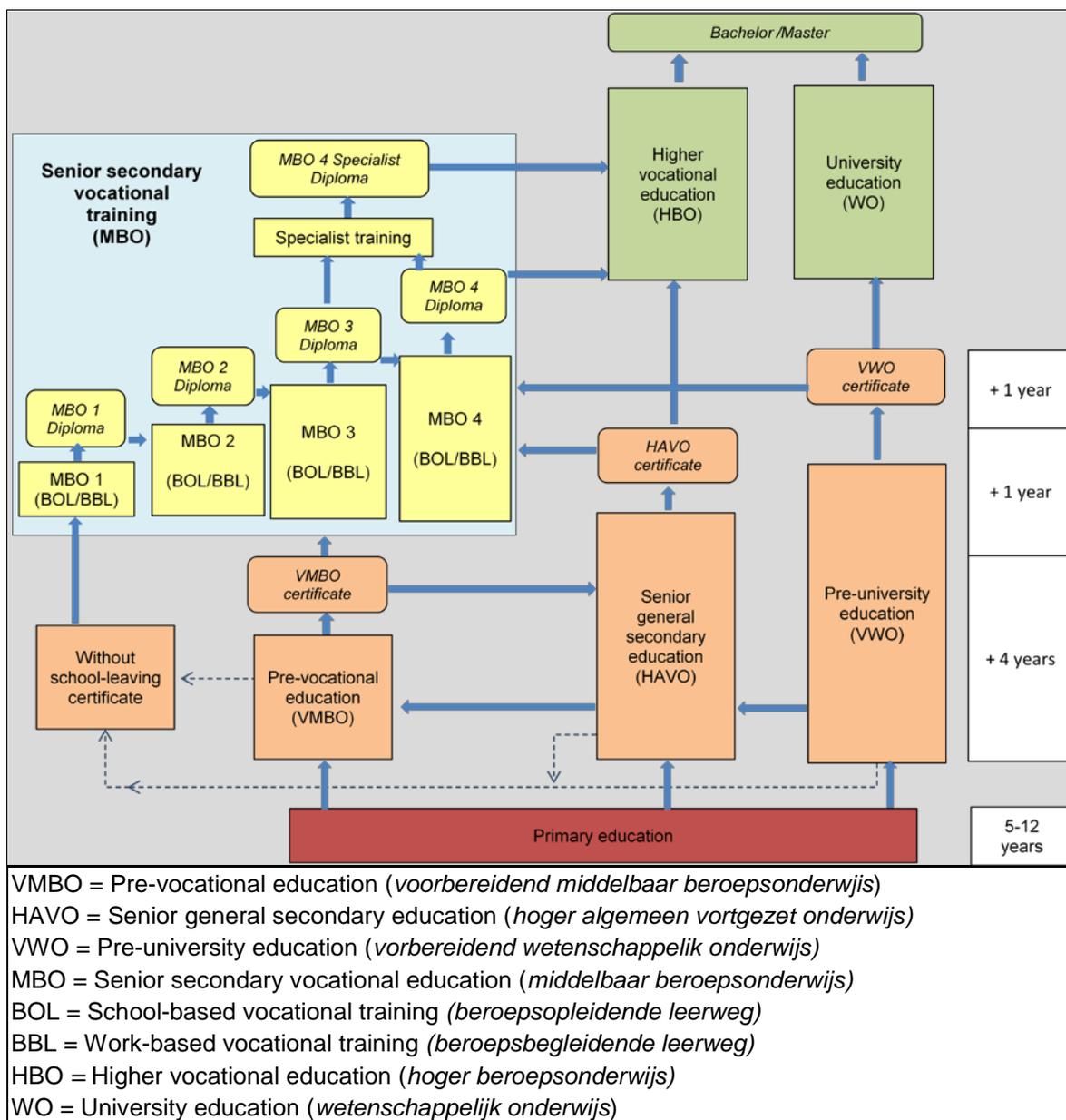
Figure 2.3 gives an overview of the Dutch education and training system, indicating intermediate VET in yellow boxes. After primary school, pupils opt to enter different educational streams. This includes theoretical education at senior general secondary education (HAVO) or pre-university education (VWO) which prepares them for higher education at tertiary institutions. Alternatively they may choose the pre-vocational learning pathway (VMBO) as preparation for senior secondary vocational training (MBO).

MBO training offers intermediate vocational training at four different qualification levels. These provide their graduates with intermediate level skills equivalent to ISCED levels 2 to 4. The lowest qualification level serves as entrance to VET for those without a school-leaving certificate, and the highest level qualifies its graduates for higher vocational training (HBO).

All qualification levels are provided as school-based (BOL) and work-based (BBL) training. Both learning pathways differ in their shares of practical and theoretical training. In the school-based pathway, the practical content comprises between 20 and 60 per cent of training time, while in the work-based pathway it accounts for at least 60 per cent of training time. On successful completion, both pathways offer the same form of certificates and diplomas. The more popular school-based track is chosen by around two-thirds of participants in MBO.

Like Germany, the Netherlands has a curricula-oriented vocational training system, but with a high degree of flexibility. This means that there is an occupation oriented structure which prescribes the content and length of the training courses. The curricula are competence-based and thus combine different training segments to complete a course of vocational training. In contrast to Germany the system validates courses in various different ways. The switch to a different occupation is easily possible as training modules are valid for different tracks, similar to the way in which 'equivalent units' can be recognised for different qualifications on the Qualifications and Credit Framework (QCF) in England, Wales and Northern Ireland (Ofqual, DCELLS & CCEA, 2008).

Figure 2.3 Education and training in the Netherlands



Source: Economix.

The Dutch education system is relatively decentralised: the Ministry of Education Culture and Science (OCW) only determines the basic rules whereas vocational schools and Centres of Expertise (Sector Skills Councils) operate autonomously. This makes the work of vocational schools and their training supply more flexible. It also means that the state cannot determine the supply of training courses. This can lead to skills mismatches as vocational schools often adapt their training supply to the short-term preferences of students rather than to the long-term needs of the economy (expert opinion of interviewee). Employers’ associations and trade unions are involved as they form the boards of the Sector Skills Councils. This gives them a say in the development and contents of occupational profiles.

The Dutch intermediate VET system is mainly funded by the government and the companies which train apprentices and interns (those undertaking the work-based component of the school based (BOL) training pathway). However, unlike in Germany and Australia, training participants are also involved in the funding. In 2009 funding had the following structure: the government provided €3.4 bn, companies €1.9 bn and individuals €0.3 bn. In total this was equivalent to one per cent of GDP. Slightly more than half of the total sum (54 per cent) was spent on school-based vocational training (BOL) and the other half on work-based training (BBL). This equates to €9,000 per BOL student and €14,600 per BBL student a year. Over the whole training period around €32,700 were spent in total per BOL student and €38,600 per BBL student (OCW, 2010).

3 Strategic trade-offs in intermediate level VET

All three countries have a long history of vocational training which still affects contemporary training systems. In Germany and the Netherlands vocational training goes back to the medieval guilds who saw training as one of their major tasks. The strong involvement of employers and workers is certainly rooted in this tradition. The systems have nevertheless been continuously adapted to meet modern needs. Both, German dual apprenticeship training and Dutch vocational schools were implemented at the end of the 19th century and various reforms followed afterwards. The principal ideas underlying each respective system, however, have been preserved.

Australia undertook a major effort to establish its intermediate VET system in the 1990s. The relatively new system has nevertheless been closely linked to the economic and social needs of the country as it has to the institutional features of the country as their historical traditions are clearly visible in the shape of its vocational training system.

These roots point to the principal difficulty with international comparisons including the one in which this study is engaged: all three training systems are efficient in their national context. They are closely linked to the economic and social framework and institutional settings. None of them are likely to work as well or as efficiently in a different environment, not only because the portability of the systems is limited, but also because the economic and social rationales which have guided their introduction are different in each. The first step of the transferability assessment is the definition of economic and social targets.

The second impediment to transferability stems from the fact that there are a series of trade-offs in the systems. Looking at the selected countries we see the antagonisms between long pay-off periods for training investments and flexible labour markets, between practical and theoretical learning, and between modular and curricula-based learning.

On the one hand, the transfer of approaches is limited because single elements of the training systems are linked to various auxiliary conditions and thus cannot be transferred in isolation. On the other hand, the transfer of a new training approach also means at least a partial revision of the economic and social rationale.

3.1 Pay-off periods for training investments versus flexible labour markets

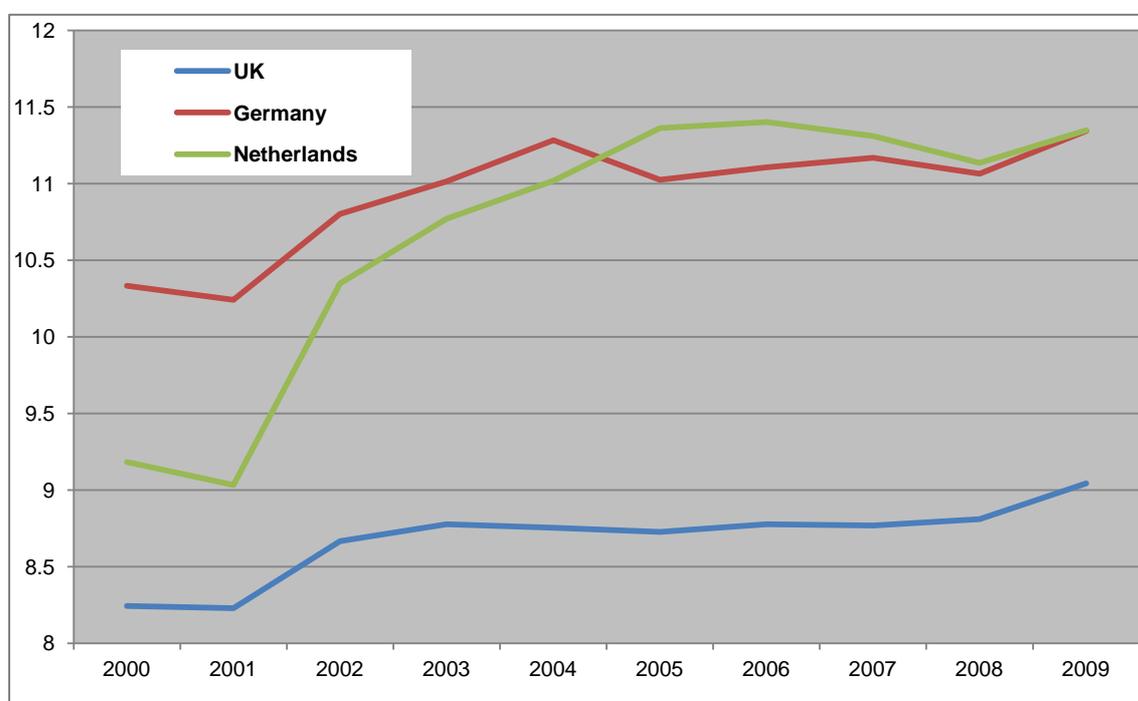
Human resource investments are more profitable the longer the investments can be used. This applies to investments by workers, employers and governments. The simple principle, however, is modified if the effects of technical and organisational change, of

market fluctuations, and of workplace relationships are considered. These factors determine the half-life of knowledge, job tenure, and the actual return from training investments.

The half-life of knowledge is determined by the speed of technical and organisational change and requires the continuous renewal of the knowledge base at workplaces. The question is how this renewal is achieved, either by training of the available workforce or by external recruitment. Internal training is the option which positively contributes to job tenure and tends to improve the profitability of training investments. External recruitment has the opposite effect. Liberal labour markets therefore tend to be characterised by shorter and lower training investments. Conversely, restrictive labour markets tend to have longer and higher investments.

This coincides with empirical data on job tenure. Germany and the Netherlands are both countries with long average job tenure; of about 11 years on average (OECD, 2011). In contrast, Australia achieved seven years and the UK nine years (Tusing, 2009).⁶ A considerable increase in job tenure can nevertheless be discerned in all countries during the last ten years. The UK values, for example, increased by almost 10 per cent. This indicates a substantial change in the labour market, associated with the overall rise in skill levels in the labour force.

Figure 3.1 Job duration in years



Source: OECD (2011)

⁶ Australia is not represented in the OECD job tenure statistics.

The authors argue that market-related fluctuations in employment have negative effects on job tenure and on the returns from training investments and that, more than ever, companies have become aware of this fact during the recent crisis when they used labour hoarding to avoid redundancies and to preserve human capital. The Dutch and the German economies introduced short-time working, but labour hoarding could also be observed in the UK labour market along with some cases of short-time working. These observations indicate the rising importance of human capital in company strategies, and confirm the trends in job tenure. In all countries, companies are aware of the relevance of human capital and search for the extension of pay-off periods from training investments.

The profitability of training investments also depends on workplace relations, which affect the motivation of workers and the cooperation between workers. These factors affect not only job tenure but the level of productivity in workplaces. In addition to the pay-off period, they determine the level of returns from training investments. A productive working environment created by 'fair' pay, the adequate match of skills and tasks, efficient work organisation, career opportunities, and many other elements of companies' human resource policies, all contribute to improved organisational performance (Rees, 1993).⁷

If there is a trend which continuously shortens the life of knowledge (and there are many signs that this is the case) rising investments into vocational training are required in order to stay competitive. These investments, however, call for longer pay-off periods for investors, companies, workers, and governments. Any successful training strategy therefore needs elements that extend the potential pay-off period by developing generic skills, by creating transitional labour markets and by absorbing the effects of market fluctuations. The adjustment to external market changes has to be achieved, at least partly, by improving internal adaptability.

Germany is a striking example of the last alternative: disregarding the long-lasting criticism of the 'sclerotic' German labour market and the repeated plea from international organisations for increasing labour market flexibility, Germany has not liberalised its labour market. Reforms which have been introduced left the core labour market more or less untouched and concentrated (via the 'Hartz reform' (Hartz Commission, 2002)) on the unemployment system. This was a positive development as it maintained job stability which lies at the heart of the system and secures investments in human capital. It became quite clear that the introduction of flexibility measures would shorten job duration and, thereby, reduce the return from training investments. German companies were thus forced to adapt their workforce through internal adjustment measures rather than

⁷Albert Rees (1993) has argued that: 'The factors involved in setting wages and salaries in the real world seemed to be very different from those specified in the neoclassical theory. The one factor that seemed to be of overwhelming importance in all these situations was fairness' (cited in Akerlof and Shiller, 2009).

expecting the external labour market to provide the skills they required (Vogler-Ludwig, 2011).

3.2 Work-based training versus school-based training

Both alternatives have significant advantages and disadvantages:

- Apprenticeship training is close to the needs of companies and can provide a better transition from training to work. However, its ability to provide a theoretical basis for study can be limited and can tend to be workplace related rather than labour market oriented. In addition, it depends on the willingness of firms to provide training places.
- School-based training is able to develop a broader and more labour market oriented theoretical basis and depends less on firms' participation. However, it can have difficulties with providing the 'right' skills for employers and participants thus have more problems entering the labour market.

The examples of the Netherlands and Germany, which represent the two approaches, show that both approaches work, regardless of their shortcomings.

- Both systems are able to integrate large numbers of young people into the labour market. Almost two thirds of young Germans (Gericke and Uhly, 2010) and 42 per cent of Dutch youth (OCW, 2010) participate in intermediate VET. This lowers youth unemployment substantially and allows rapid entry into the labour market for many young people.
- Both systems cover a broad range of manufacturing and service occupations. The Dutch MBO system trains in 237 occupations with 627 different grades. The German apprenticeship system offers training in 339 occupations, and full-time vocational schools provide additional alternatives (Australia differentiates among more than 500 occupations). The distinction between school-based and work-based training lies in the sectoral focus of each, with apprenticeships more often being offered in manufacturing occupations, while service occupations are more likely to be found in full-time vocational schools.
- Both systems successfully prepare disadvantaged young people for labour market entry. The Dutch approach with MBO level 1 and 2 appears to be more systematic and opens up more possibilities for disadvantaged youth to obtain training appropriate to their needs. The German transition system is a less structured basket of learning and training opportunities which is not directly linked to apprenticeship training and provides fewer opportunities for advancement.

Overall, Dutch employers rate both training tracks similarly. Apprenticeship graduates are ranked more highly regarding their skills and their ability to adapt skills to workplace needs, their motivation to perform tasks, their reliability, and approach to team work. Vocational school graduates, in comparison, are ranked more highly according to their willingness to learn and to develop further their skills, their sense of responsibility, willingness to handle problems, openness to travel, and communication abilities (Hövels and Roelofs, 2007).

For a minor share of companies in both countries, the advantages of apprenticeship training are high enough to cover the additional cost associated with this form of training (see country case studies, sections A5.1, B5.1 and C5.1). These advantages are primarily relevant for companies with a high demand for specialised workers who have to be trained in company-specific practices. Apprenticeship training is a relatively inexpensive way to provide such skills compared to the training of externally recruited workers. In addition, apprenticeship training is provided by companies which have very low training costs, or high returns from apprenticeship work. These are often traditional trades such as retail sales, cooks, hair dressers, in which companies even train more people than are needed.

The major difference between the German and the Dutch approach therefore lies in the adaptation of training to company needs. Dutch employers push for a stronger say in intermediate VET because the school-based training is not fully adjusted to companies' requirements (Hövels and Roelofs, 2007). German employers have no such complaints as they are fully involved in the regulation of apprenticeship training and provide a substantial part of the training themselves.

This solves one problem, the coherence of training with employer needs, but creates another. There is a trade-off between the adjustment of training to current labour requirements and preparing trainees for the labour market. As we know from adult learning, companies tend to focus training investments to the most relevant knowledge gaps on one side, and the more able workers on the other. Adult learning therefore can be short-term, incremental, and highly selective. This is not completely different in apprenticeship training. Companies provide training places in occupations which they currently need, and they select those young people who are best qualified for training. School-based training has difficulties in training for workplaces particularly modern workplaces, but prepares for labour market needs with a broader theoretical background and a set of generic skills. In addition, it can have a tendency to be less selective.

3.3 Modular versus curricula-based learning

This antagonism could also be called 'initial training versus lifelong learning' because there is little question that adult training is often best delivered in modules. This is not only because adults have relatively high opportunity costs of training often combined with concurrently higher financial and family commitments (and thus mainly participate in short courses). It is also because the learning needs and learning proclivities of adults are different from young people who have just entered the labour market. Older, more experienced workers often prefer context-related and incremental training courses (Düll *et al.*, 2006).

The Australian example shows that a modular intermediate VET system is able to attract adult workers and to compensate for the knowledge deficits accumulated by older generations. The Dutch system of flexible apprenticeships and traineeships has a similar effect. The demographic challenge and the shortening of the half-life of knowledge are strong factors that push training reforms in the direction of modularised approaches.

The question, however, remains whether modular training is also a good solution for initial vocational education and training. The answer to this is less clear, as standardised and regulated initial training has important advantages, and while modular systems can, in theory, be regulated and standardised to a high degree, the very fluidity of them can make this harder to achieve in practice, conferring these advantages more often on curricula-based learning: publicly defined training curricula and examination standards set the rules under which young trainees can attain certificates, and they also contribute to the acceptance of certificates by employers. In contrast, modular training opens a wide scope of choices and does not always require passing through a predefined set of courses in order to achieve occupational standards. When this is the case, it can weaken the implementation of generally valid standards and blur the competence signals to potential employers.

As we found in the Australian case, the system is strongly driven by the current needs of employers and trainees rather than by more farsighted considerations. Its standards can be weak as it allows training efforts to be reduced. There is no requirement to pass the full set of training modules to complete a qualification. This may be cost-efficient in the short-run. In the long-run, however, investments in a broad skill base are required in order to improve the responsiveness of the intermediate level workforce to technical, organisational and market-related changes. The free choice of modules therefore can be expected to serve employers more than trainees.

The choice between modular and curricula-based training therefore needs to consider the training requirements of different population groups. Modular training appears as an

adequate offer to adults on one side and disadvantaged young people on the other. Both groups have specific training needs for which general and basic courses do not appear to be an efficient solution. The major part of initial vocational training for young people, however, may be better provided by regulated and standardised vocational training courses, which at least set the competence levels for the final examinations. This helps young people to achieve current competence standards and raises the 'market value' of their certificates.

Another question is, whether the duration of training and the type of training provided should be regulated. The Australian model has achieved significant flexibility in this regard, and opens a wide scope of choices for trainees. Public monitoring of private training institutions seems, on the whole, to be sufficient to guarantee standards. The output-oriented model, which rewards competence rather than time-based participation provides more freedom to the trainees and strengthens the competition among training providers. In addition, a well-structured validation procedure helps improve the reputation of the system and its qualifications.

4 Economic and social impact

The comparisons of the three selected countries regarding the economic and social impact of intermediate VET show a great deal of similarities between the three countries, which are summarised in Table 4.2

4.1 Costs and public net returns

All three countries spend around one per cent of their GDP on intermediate VET. This includes governmental and employer related costs, and in the Netherlands a small share comes from trainees. Germany spends a little more (1.1 per cent) than the others, however, estimates of training costs are uncertain due to the difficulties in the measurement of value of productive contributions from apprentices.

The size of the employers' contribution in funding intermediate VET is very different. Australian employers contribute half of the overall training costs (Knight and Mlotkowski, 2009), Dutch employers around one third (OCW, 2010) and German employers around one fifth (BMBF, 2010a, 2010b). This is a surprising result, as the system which most strongly depends on dual training, Germany, has the smallest employer contribution. This can be attributed to two main factors:

- The productive use of apprenticeship work: compared to a more school-based system as in the Netherlands, German employers can better use training periods for productive work. From a financial point of view, apprenticeship therefore is a cost-efficient solution for the employers.
- The role of initial vs. continuing training: a substantial part of the costs of continuing training has to be financed by employers in the form of salaries and direct tuition fees. School-based initial training, in contrast, is largely financed by the governments.

The relatively low financial burden on German employers, therefore, can be explained by both the relatively high returns from apprenticeship work and the relatively weak engagement in adult vocational training.

The OECD figures on public net returns from investment in intermediate VET reveal that public budgets gain between €21,000 and €43,000 from each person trained at intermediate level. These figures consider public training costs, tax losses during training, tax revenues from higher incomes, unemployment benefits and other effects for a person with intermediate VET in comparison to a person without vocational training (OECD, 2010). The results represent the discounted values over a lifetime. However, subsumed within these figures there are differences among certain groups (particularly males and females) regarding income profiles and spells of unemployment.

These gender differences are particularly visible in the figures for Germany and the Netherlands. With €29,745, German women provide a much lower public net return than German men (€43,123). This is generated by the shorter working life of those women who take career breaks when they have children. In the Netherlands the result is almost the opposite because Dutch men are more affected by unemployment risks. In Australia, public returns from both genders are fairly similar, but the overall public return is lower than in the other two countries (OECD, 2010).

4.2 Contribution to economic growth and competitiveness

Beyond budgetary gains, training investments at the intermediate level appear to be profitable in terms of economic growth and competitiveness. This is not only the case in Germany where the apprenticeship scheme appears to be the basis of competitiveness in the manufacturing sector. For many authors and expert interviewees the combination of intermediate level workers and workers with higher level training is the key to innovative and efficient value creation (Mason and Wagner, 2005; Porter, 1990). Competitiveness therefore depends on the interaction between higher skilled employees and employees holding intermediate level skills, such as the German *Facharbeiter* and the *Ingenieur*. The argument, however, is not only presented by German authors. It is the same in Australia and the Netherlands. In both countries, innovation and efficient production are closely linked to the availability of intermediate level skills (country experts for Australia and the Netherlands).

However, intermediate VET has to be continuously adjusted to changing skill needs. This is underlined in all three country case studies, and it is seen as a serious challenge. In Australia and the Netherlands, the competence-based training system is assessed as being highly important to achieving continuous adaptation in the training system. There is a great variety of training modules for specific competences, and the modules can easily be combined in a new way, depending on labour market needs. This provides a great deal of flexibility and improves the coherence between training and employment.

The German apprenticeship approach seems to be less flexible, and the adaptation to changing skill needs appears to be comparatively slow (Vogler-Ludwig *et al.*, 2003). Even more important is the fact that apprenticeship training is suitable for manufacturing occupations and lower level service occupations while the knowledge-intensive service jobs tend to need more theoretical input. The other two countries are more flexible in this regard as they can switch to school-based vocational training (as in the Netherlands) or else lack a very firm occupational structure (as in Australia).

Finally, lifelong learning is becoming a major concern for intermediate training systems. Australia and the Netherlands have both succeeded in expanding intermediate VET to

adult learners. In the Netherlands, 39 per cent of trainees in the work-based track are over the age of 25 (Visser, 2009). In Australia, the proportion of older learners among all trainees in intermediate VET is even higher (55 per cent; NCVET, 2010a). Germany has been much less successful in engaging older learners with only 7 per cent of apprentices aged over 24 years of age in 2009 (BMBF, 2010c).

4.3 Demographic challenge and skills shortages

The population in all three countries is ageing, as Table 4.1 shows. Germany expects the most serious change in its age-dependency ratio (the number of working age people aged 15 to 64 for each person aged 65 and over): by 2050 it is projected to be 1.7 (compared to 3.2 in 2010) while in the Netherlands it is projected to be 2.2 (compared with 4.4 in 2010).⁸ Projections for Australia appear to be the most optimistic, with the number of working age people per person aged 65 and over projected to be 2.7 (compared with 5.0 in 2010) (Treasury of the Commonwealth of Australia, 2010).

Table 4.1 Age-dependency ratios, 2010 and 2050

| | Number of working age (15-64) people per person aged 65 and over | |
|-------------|--|------|
| | 2010 | 2050 |
| Germany | 3.2 | 1.7 |
| Netherlands | 4.4 | 2.2 |
| Australia | 5.0 | 2.7 |
| EU 27 | 3.9 | 2.0 |
| UK | 4.0 | 2.5 |

Source(s): Eurostat website; Treasury of the Commonwealth of Australia (2010); UKCES.

The demographic challenge will particularly affect those systems with a greater emphasis on initial training. Due to diminishing birth cohorts, the entry cohorts to apprenticeships in Germany are expected to decline by one third by 2025. This is likely to lead to rising skills shortages which can only be compensated for by immigration and/or by lifelong learning.

It is interesting to see that Australia and Germany focus on immigration rather than lifelong learning (see country case studies, sections A4.2 and B4.2, respectively). This is often the cheaper alternative for businesses, because immigration saves training investments as long as adequately trained workers can be found abroad. The problem arises from the fact that many countries try to compensate for a declining national workforce by immigration of skilled workers. These, however, may not be available in sufficient numbers, not to speak of the cultural and language barriers that exist between such workers and those employing them.

⁸ Calculations of age-dependency ratios for Germany, the Netherlands, the UK and for the EU as a whole are based on current and projected population estimates by age, available on the [Eurostat](http://www.eurostat.ec.europa.eu) website.

There is little alternative to the extension of working lives and higher investments in lifelong learning. The modular training approaches of Australia and the Netherlands seem to demonstrate effective ways of making lifelong learning attractive to adults.

4.4 Flexibility and the relevance of validation

There is a high degree of flexibility in all three systems as regards the application of knowledge acquired in the course of intermediate level training. In Germany around 40 per cent of employees work in an occupation other than the one for which they were trained (Aßmann and Hall, 2008; Hall, 2007). In Australia, almost half are in that position (NCVER, 2010b).

This can be viewed as both a weakness in the training systems and a strength. One could argue that it is a weakness because training is provided for the wrong or at least a partly wrong occupation. It can be seen as a strength because trainees acquire a sufficient amount of generic skills that can be applied to related or even completely different occupations. Evidence from the country case studies suggest this flexibility is more a strength than a weakness (country case studies, sections A4.3.1 and B6.3.3).

The use of generic and related skills for a new occupation, however, has to be supported by the training systems by means of validation. In combination with lifelong learning, the adjustment of formally acquired competences to current skills requirements needs a flexible system which allows new combinations of training and provides the possibility to extend training levels. This can be better achieved by a modular training system with clear occupational standards.

4.5 Policy priorities

There is little doubt that governments and social partners in the three selected countries are convinced of the efficiency of their particular training systems. Each of the three governments have nevertheless launched comprehensive training strategies in order to respond to the rising competition for human resources. A series of aims are headlined:

- Raising training participation and providing additional apprenticeship places in order to achieve a quantitative expansion of intermediate level training. Australia has improved access to training loans for this purpose.
- Improving the quality of training and the level of attainments in order to achieve qualitative progress. This includes higher standards for training providers, e.g. in the Netherlands and Australia.
- Achieving a better match between training and labour market needs, with a stronger say of industry representatives in the intermediate VET system.

- Improving and simplifying validation procedures.
- Increasing training participation of young people from immigrant families and disadvantaged youth by reducing school drop-out rates and providing adequate training tools.

Social partners are more or less satisfied with the existing training systems. Trade unions urge for better integration and improvement in work-based training. Skills Australia (2010), for example, argues that the bottleneck lies in the demand for and use of skills by employers rather than the supply of skills. Employer organisations demand stronger influence on training systems in order to achieve a better match and to avoid rising training costs.

Table 4.2 Economic and social impact of intermediate VET

| | Australia | Germany | Netherlands |
|--|---|---|---|
| Funding | 1,0 % of GDP (estimate) Government: 50 % Employers: 50 % | 1,1 % of GDP Government: 79 % Employers: 21 % | 1,0 % of GDP Government: 61 % Employers: 34 % Trainees: 5 % |
| Public net present value⁹ | Males: €20,569 Females: €21,219 | Males: €43,123 Females: €29,745 | Males: €26,941 Females: €38,024 |
| Contribution to economic growth and competitiveness | Switch to competency-based system facilitated keeping up pace with technology change. Competitiveness strongly depends on the interaction between higher skilled employees and employees holding intermediate level skills. | Apprenticeship is the basis of competitiveness in the manufacturing sector. Combination of skilled workers (<i>Facharbeiter</i>) and engineers is very important. Transition to knowledge-based economy is a challenge for apprenticeship training. | Intermediate VET contributes to innovation and adaptation to technological change. The flexibility of the training system is seen as an important pre-condition for adaptation to future changes. Lifelong learning is becoming more important. |
| Demographic challenge | Age-dependency ratio (the number of working age people 15 to 64 for each person aged 65 and over) will decline from 5.0 to 2.7 in 2050. Strong dependency on immigration of skilled workers. | Age-dependency ratio will decline from 3.2 to 1.7 by 2050. Entry cohorts to apprenticeship training will shrink by 1/3 up until 2025. | Age-dependency ratio will decline from 4.4 to 2.2 by 2050. Strong increase of migrant workers expected. |
| Skills supply | Proportion of people with post-school qualification is expected to increase from 60-75% by 2025 (Access Economics, 2009). Skills shortages in medium and higher education expected Meeting skill needs will be a challenge for the intermediate VET system. Skills shortages mainly in manufacturing jobs. | Proportion of people with intermediate VET will remain stable (53%) ¹⁰ . The share of employed people with tertiary education will increase to 20.6 % ¹¹ . Skill shortages reported by employers; technical subjects and manufacturing jobs particularly relevant ¹² . Fewer apprenticeship applicants. | Persistent skills shortages at the intermediate level, particularly in engineering, socio-cultural and economic activities. High replacement rates and low inflows from training system. |
| Flexibility and adaptability | 49% of graduates from intermediate VET are not working in their primary occupation. Upgrading of skills in many trades. | 40% of apprenticeship graduates are not working in their primary occupation. Upgrading of skills in many trades. | High flexibility of the training system due to extended validation and competence-based curricula. High comparability of training across occupations. |
| Government priorities | <i>Shaping our Future</i> (ANTA, 2004) is the major training strategy targeted to raise training participation and achievements, sustain investments in training providers (RTOs), strengthen the industry's role, and improving learning pathways; 39,000 additional training places; 22,500 additional apprenticeships. Expansion of training loans: Improvement of training standards. | <i>Aufstieg durch Bildung (Promotion through Education)</i> (BMBF, 2009) is the 2008 strategy for E&T which plans a 10% share of E&T expenditures of GDP. Apprenticeship is the pillar of Germany's economic strength; Targets: individual promotion of pupils at risk; better integration of youths with migration background; validation of certificates acquired in foreign countries. | <i>Strategic Agenda for Vocational Training and Adult Education</i> (OCW, 2008) from 2008 prioritises a better match between VET and the labour market, better quality of training, and higher participation in VET. Strong focus on drop-outs. |
| Social partner priorities | <i>Skills Australia</i> (Skills Australia, 2010): productivity not only depends on the availability of skills but on the ways these are actually used by the companies. <i>Australian Chamber of Commerce and Industry</i> (ACCI, 2010): stronger alignment of training to the industry's needs. More apprenticeships needed. | <i>German Federation of Trade Unions</i> : (DGB, 2010a; 2010b) Better integration but no radical reforms of apprenticeship schemes; inefficient transition system. <i>Confederation of German Employer Organisations</i> (BDA, 2010a; 2010b): 70,000 more apprenticeships offered. Shortage of sufficiently skilled apprentices. | <i>Federation of Dutch Trade Unions</i> (FNV, 2010) supports the government's views; focus on school drop-outs and improvements in the quality of practical training. <i>Netherlands Confederation of Industry and Employers</i> urge for stronger involvement of employers and see rising costs of trainees (Renique, 2010). |

Source(s): Country case studies, *Economix*.

Note: unless referenced in a footnote below, all figures are from sources which have been referenced elsewhere in the text of this report as well as in the country case studies.

⁹ OECD (2010)

¹⁰ BMBF (2010a)

¹¹ Bonin *et al.* (2007)

¹² BDA and BDI (2009)

5 Incentives to employers and trainees

The committed involvement of both employers and trainees is critical to successfully developing intermediate level skills, and the relationship is to some extent a symbiotic one. A high supply of intermediate level skills within a workforce is difficult to achieve without employers providing (and financing) apprenticeship places (or other work placements for the work-based component of intermediate level VET) and significant numbers of learners choosing to take up those placements. This section explores the incentives to involvement in the intermediate level skills system of both employers and trainees.

5.1 Incentives for employers

Employers play a critical role in intermediate VET systems as they are the ultimate users of skills and the providers of apprenticeship and other work-based training.

Across the observed countries, the principal motivation of employers to participate in training is, on the whole, rather similar (country case studies, sections A5.1, A5.3, B5.1, B5.3, C5.1 and C5.3). For Australian employers, the involvement in intermediate VET serves the twin goals of meeting specific skills needs and keeping up with the demands of technical change. Training is also integrated with human resource objectives, such as rewarding employees for their loyalty. German employers tend to relate training activities to long-term business targets and see training as an investment into their future skills base. Apprentices are expected to become fully productive workers, sometimes even during the training period. In addition, employers seek to improve their image by providing training. Dutch companies mainly use apprenticeships for recruiting skilled workers and to show corporate social responsibility. It is also seen as a good approach to the management of knowledge and skills within the company.

Nevertheless, company participation is rather low in all three countries. Only a third of Australian employers are involved in apprenticeship training (NCVER, 2009). In Germany it is only every fourth company (BIBB, 2010), and in the Netherlands (according to expert interviewee estimates) not more than every twentieth. This indicates that apprenticeship training is far from providing a universal approach to intermediate VET.

German apprenticeships are strongly concentrated in construction, manufacturing, and traditional services such as the hotel services and trades. Business services, transport and communication and public services are underrepresented, and small companies are generally reluctant to provide apprenticeships. As the investigations of company participation revealed, the willingness to engage in apprenticeship training is positively correlated with profit levels and innovation activities of the companies (BMBF, 2010a).

Unless apprenticeship models adapt, a high export share can reduce apprenticeship supply if traditional apprenticeships are not able to provide the skills for international business. With the exception of some engineering apprentices in Germany, such skills can exceed the competence level of average apprentices. In principal, traditional German apprenticeships thus cover the training needs of domestically oriented companies rather than internationally oriented firms in the knowledge intensive growth sectors of services. International firms in, for example, manufacturing, use apprenticeship training for production related activities and standard administrative tasks.

Moreover, training activities can only be expected from companies in a good or at least sufficient profit situation. On the one hand this reveals the risk that changes in profits are an important cyclical driver of apprenticeship supply. On the other, it points to the strong impact of cost considerations. This is not because the net costs of apprenticeship training (training costs minus the value of productive contributions by apprentices) are significantly high. It relates much more to the easier and cheaper alternative, which allows covering skills needs by the recruitment of vocational school graduates.

For an increasing number of cases, this appears not only to be the superior solution for companies demanding a comparatively high level of working competences, but to employers, it also appears as a cheaper solution as the public covers a much bigger proportion of training costs. In the Netherlands, this conflict was resolved some time ago by the introduction of vocation schools at the expense of public finances. In Australia, companies can adjust training efforts to closely match their requirements. In Germany, however, companies have become increasingly reluctant to engage in apprenticeship training and have had to be reminded of their corporate social responsibility by a 'National Pact on Vocational Education and Training'.¹³

From an employer cost perspective, apprenticeship training is cheap, as the apprentices mainly take the burden of costs. Annual net costs to employers per apprentice, which include value creation by trainees and government subsidies, are €3,596 in Germany (*Wenzelmann et al. (2009)*) and €9,360 in the Netherlands (CBS, 2011). For Australia we can presume even lower costs as apprentices training periods tend to be shorter and productive work contributions higher.

Employers particularly benefit when the apprentice is retained in the company after training, as a recruitment decision is already made during training. This helps to meet future skills needs more precisely and avoid skills shortages. Taking on an apprentice

¹³ The National Pact on Vocational Education and Training was first co-signed by the German Federal Government and employers' organisations in June 2004 as a means of committing German industry (on a voluntary basis) to creating 30,000 extra apprenticeship placements between 2004 and 2007. More information on the pact, which was renewed in 2007 and again in 2010 is available from the [Federal Employment Agency](#) (Bundesagentur für Arbeit) website.

after training avoids the costs of on-the-job training for the would-be externally recruited employees and is often the cheaper solution. In order to retain apprentices and thus extend the pay-off period of training investments it is crucial to provide career opportunities in the company.

An Australian employer survey (NCVER, 2009) revealed that more than 83 per cent of the employers were satisfied with intermediate training in the public VET system in 2009. The small share of dissatisfied employers stated low standards of training, poor attitude of apprentices/trainees and not enough focus on practical skills as reasons for their dissatisfaction. In Germany, employers claim better cooperation between vocational schools and companies (BDA, 2010a). In the Netherlands, employers assess the school track and the company track of intermediate VET more or less equally, but they would appreciate more influence regarding the supply of training courses by vocational schools. According to their statements, training opportunities for small companies should be improved (Hövels and Roelofs, 2007).

All governments in the three countries gave public incentives to promote employer involvement in training. In Australia a wide range of government incentives for employers exist which are equivalent to up to €3,000 for completing an apprenticeship leading to a Certificate III or higher. In Germany employers who provide an additional training position for disadvantaged young people, can receive a training bonus (*Ausbildungsbonus*) ranging from between €4,000 and €6,000 for the whole training period. In the Netherlands, employers benefit from tax deductibility of €2,500 per apprentice per year.

Table 5.1 Costs and benefits of intermediate VET for employers

| | Australia | Germany | Netherlands |
|--|--|---|--|
| Motivation to train | <p><i>Nationally recognised courses:</i></p> <ul style="list-style-type: none"> Provision of specific job- or business-related skills Keep up with new technology Improve HR management <p><i>Apprenticeships:</i></p> <ul style="list-style-type: none"> Meeting specific skills needs Improving overall level of skills in the workforce Altruistic reasons | <p><i>Apprenticeship:</i></p> <ul style="list-style-type: none"> Availability of qualified applicants Future need for skilled workers Quality of vocational schools/attendance of apprentices in the company Social responsibility Training costs | <p><i>Apprenticeships (BBL):</i></p> <ul style="list-style-type: none"> Recruitment of skilled workers Corporate social responsibility Management of knowledge and skills within the company |
| Costs | <p>Support for employees undertaking formal courses – fees and paid time off</p> <p><i>Apprenticeships:</i></p> <ul style="list-style-type: none"> Supervision costs Apprenticeship wages (annual value in the last week of training between €23,340 and €29,300) Recruitment costs | <p>Gross costs €15,288 per apprentice/year.¹⁴</p> <ul style="list-style-type: none"> Apprenticeship wages (61% of total costs); on average €664 per month Supervision costs (22%) Miscellaneous costs, e.g. chamber fees (12%) Administration costs Extra maintenance and material waste (5%) | <p>Supervision costs</p> <ul style="list-style-type: none"> Apprenticeship wages (€5,128-17,093/year) Reimbursement (books, examination fees) Training support costs (€7,652 for BBL per year, €6,215 for BOL per year)¹⁵ |
| Returns of training | <ul style="list-style-type: none"> Higher productivity from trained workers A competitive edge in attracting and retaining workers <p><i>Apprenticeships:</i></p> <ul style="list-style-type: none"> High productive contribution of apprentice Employers can show altruism | <ul style="list-style-type: none"> Productive contribution of apprentice (€11,692 on average)¹⁴ To show the employer's corporate social responsibility Recognition of the value of 'growing one's own' skilled employees Increased attractiveness of employer | <ul style="list-style-type: none"> Recruitment of skilled workers Productive contribution of apprentices and trainees (trainees work productively for 66% and 50% of their working time respectively)¹⁵ Increased productivity of other employees |
| Incentive payments | <p>Several government incentive payments exist. Most important are:¹⁶</p> <ul style="list-style-type: none"> Incentives for commencing and completing Australian Apprenticeships: AU\$ 1250-4000 (€930 - 3,000) Incentives to increase training in areas with skill shortages (up to €5,815/year for the first year and up to €3,876/year for the second year of an Australian Apprenticeship) Incentives to increase take up rates of matured employees | <p><i>Training bonus</i> ranging between €4,000 and 6,000 for training of disadvantaged youths (who have looked for a training position for a lengthy period, or who have no school-leaving certificate or poor marks)</p> | <p>Tax deductibility of €2,500 per BBL apprentice and year</p> |
| Average net costs | <i>not available</i> | €3,596 per apprentice/year ¹⁴ | €9,360 per BBL and €770 per BOL student/year (CBS, 2011) |
| Adjustment needs from employers' perspectives | <ul style="list-style-type: none"> 85.8% of employers using national recognised training and 83.2% of employers using apprenticeships/ traineeships were satisfied with training¹⁷ 10.2% and 6.7% respectively, were dissatisfied due to low standards of training, poor attitude of apprentices/ trainees and not enough focus on practical skills¹⁷ | <ul style="list-style-type: none"> Cooperation between vocational schools and companies should be improved (BDA, 2010a). Employer survey (BMBF, 2010c) showed the wish for a more flexible system with modules to react individually to differing performance levels of apprentices | <ul style="list-style-type: none"> The influence of employers in intermediate VET should be increased; employers can not influence the supply of training courses at vocational schools Facilitating training opportunities for small companies (Hövels and Roelofs, 2007) |

Source: Country case studies, *Economix*

Note: unless referenced in a footnote below, all figures are from sources which have been referenced elsewhere in the text of this report as well as in the country case studies.

¹⁴ Wenzelmann *et al.* (2009).

¹⁵ Detmar and de Vries (2009).

¹⁶ Australian Government (2011b)

¹⁷ NCVET (2009)

5.2 Incentives for participants

According to general human capital considerations, participation in higher training levels in general is related to the expectation of higher future earnings, better employment prospects, better working conditions and higher social status. In all three countries these considerations comprise the main motivations of individuals to participate in intermediate VET.¹⁸ As expressed in surveys in the Netherlands (Hövels and Roelofs, 2007) and in Australia (NCVER, 2010b), the attainment of skills needed in the labour market and the expansion of knowledge in the current job are important reasons. In Germany, apprenticeship training is associated with better future working conditions and more secure jobs (OECD, 2010). Apprentices see the close connection to working life as an advantage, and vocational certificates offer a clear signal to employers about the competences of the individual apprentice. This appears to extend beyond the sector in which an apprentice was trained. In other words, employers value the apprenticeship beyond the specific occupation for which it was provided.

Another motivation in comparison to school education is the direct benefits apprentices receive in the form of different kinds of wages. In all countries, they get paid apprenticeship wages which are on average €7,992 per year in Germany (BIBB, 2010) and between €5,128 and €17,093 per year in the Netherlands (Ministry of Social Affairs and Employment, 2011). Dutch wages are at least equal to the minimum wage, which increases with age. For Australia no equivalently quantifiable values are available, but evidence suggests that wages in the last week of training ranged between €23,340 and €29,300 annually (NCVER, 2010c).¹⁹ These comparatively high allowances are related, at least in part, to the higher proportion of adults in training in Australia.

Notwithstanding these labour incomes, participants in intermediate VET bear high net costs in the form of foregone earnings (Nechvoglod *et al.*, 2009).²⁰ In Australia these are estimated to amount to €16,939 for males and €17,476 for females, in Germany to €24,106 and €24,314 (respectively), and in the Netherlands to €33,055 and €31,559 (respectively) for the lifetime investment in intermediate VET (OECD, 2010). This is considerably more than the employers' cost share and indicates who the real investors are. The expectation of better-paid, safer, less burdensome and better respected jobs carries such individual investments.

In the Netherlands students have to pay tuition fees for vocational schools during intermediate VET. In Germany vocational schools are funded by the government. In

¹⁸ For more detail see the country case studies (sections A6.1, A6.3, B6.1, B6.3, C6.1 and C6.3)

¹⁹ The *Apprentice and Trainees Destinations Survey* (NCVER, 2010c) does not differentiate between qualification levels, thus these average values also include participants in Certificate IV and higher qualifications. This may also explain the comparative high values.

²⁰ Expected wages in an unskilled alternative job minus actual apprenticeship wages or allowances

Australia registered training organisations (RTOs) receive public funding for the provision of accredited courses, but they are also allowed to charge students additional course fees. Costs also arise from textbooks, tools, safety equipment and other training materials. In the Netherlands, the companies reimburse these costs.

Intermediate VET participants are also supported by the state. In the Netherlands students receive financial support and scholarships which amount to between €6,456 and €8,172 per year, which at higher levels include non-repayable performance-based scholarships if the trainee completes their training within ten years (Hövels and Roelofs, 2007). In Australia different incentive payments are offered by the government, for example, the *Support for Adult Australian Apprentices* payment, *Tools for Your Trade* payment and the *Living Away From Home Allowance* (Australian Government, 2011b).²¹

In all three countries participants in intermediate VET benefit from training in the form of higher wages and lower unemployment risks, compared to workers educated to below secondary level II. In Australia and the Netherlands, the incentives are mainly derived from wages, which are 19 per cent and 15 per cent higher, respectively (OECD, 2010). Unemployment rates in both countries, however, do not show significant differences between the two groups. Germany is different. The wage difference in favour of workers with intermediate VET is relatively narrow at 10 per cent, but the unemployment rate is 10 percentage points lower (OECD, 2010). This is significant and reveals the strong impact of formal education on income and employment in Germany.

According to survey data, training participants, in general, positively evaluate intermediate VET: in Australia, the majority of graduates and completers of singular modules are satisfied with the training they received in the public VET system. According to their statements, they fully or at least partly achieve their main objectives for training and state that training contents are relevant for their current job (NCVER, 2010b). Apprentices in Germany positively assess the professional quality of training in companies and vocational schools (DGB, 2010c). They appreciate being involved in real projects rather than learning single work steps (BMBF, 2010c). In the Netherlands, an assessment only exists for trainees of the school-based training path (BOL). These trainees are generally satisfied with the class community, the quality of internships, the orientation towards theory and the technical knowledge of teachers (Hövels and Roelofs, 2007).

There are only small details mentioned by participants which cause dissatisfaction with the intermediate VET system. In Australia, participants complained about low payments during the training period and the quality of training offered by companies. In Germany, apprentices would like to receive more feedback from their training companies especially

²¹ More information on these payments can be found in Table A6.1 in the Australia case study.

regarding work results. In the Netherlands, BOL students are dissatisfied with the financial burden of training and the poor timeliness of learning contents. Between 21 and 28 per cent of graduates from Dutch intermediate VET indicated that the alignment of their skills acquired during training and their present position at work was moderate or poor (OCW, 2010).

Table 5.2 Incentives for participating in intermediate VET

| | Australia | Germany | Netherlands |
|--|--|---|---|
| Motivation | <ul style="list-style-type: none"> Higher future earnings Better job opportunities on the labour market Attainment of skills/qualifications | <ul style="list-style-type: none"> Good employment prospects and career opportunities Higher future earnings Safer jobs Better working conditions Close connection of apprenticeship training to the labour market | <ul style="list-style-type: none"> Higher future earnings Good employment prospects Attainment of skills needed for the labour market |
| Direct returns | <ul style="list-style-type: none"> Apprenticeship wages/allowances Incentive payments from government <ul style="list-style-type: none"> Tools for Your Trade payment Support for Adult Australian Apprentices payment Living Away from Home Allowance Higher skill levels after training | <ul style="list-style-type: none"> Apprenticeship wages/allowances (averaging €7,992 per year) | <ul style="list-style-type: none"> Apprenticeship wages/allowance (€5,128-17,093/year) Financial support from the state, including scholarships (€6,456 - 8,172 per year) |
| Costs | <ul style="list-style-type: none"> Foregone earnings (€16,939 for males/ €17,476 for females) Low varying course fees Costs associated with training (e.g. textbooks, tools, safety equipment) | <ul style="list-style-type: none"> Foregone earnings (€24,106 for males/ €24,314 for females) Costs associated with training (e.g. textbooks, tools, safety equipment) | <ul style="list-style-type: none"> High foregone earnings (€33,055 for males/ €31,559 for females) Tuition fees (€205-933 per school year)²² |
| Lifetime benefits (in comparison to unskilled workers)²³ | <ul style="list-style-type: none"> Low unemployment rate of 2.6% (-2.6 pp) High employment rate: 80.9% (+19.4 pp) Higher wages (+19%) High net present value (€63,148 for males/€32,580 for females) | <ul style="list-style-type: none"> Low unemployment rate of 7.2% (-9.6 pp) High employment rate: 75.3% (+20.0 pp) Higher wages (+10%) Positive net present value (€32,385 for males/€21,185 for females) | <ul style="list-style-type: none"> Low unemployment rate of 2.1% (-1.3 pp) High employment rate: 81.5% (+17.8 pp) Higher wages (+15%) Low net present value (€13,479 for males/€16,784 for females) |
| Satisfaction with training | <ul style="list-style-type: none"> 84-89% were satisfied with received training 80-85% fully or partly achieved their main reasons for training 63-77% stated that training contents are relevant for their current job²⁴ | <ul style="list-style-type: none"> Professional quality of training companies Professional quality of vocational schools Working on 'real' projects and not only single work steps | <ul style="list-style-type: none"> Class community Quality of internship Orientation towards theory Technical knowledge of teachers |
| Adjustment needs from participants' perspectives | <ul style="list-style-type: none"> Payment during training Quality of training provided at companies | <ul style="list-style-type: none"> Feedback of training companies Cooperation between training sites | <ul style="list-style-type: none"> Financial burden Actuality of learning contents Moderate/poor alignment of skills with job position |

Source: Country case studies, *Economix*.

Note: unless referenced in a footnote below, all figures are from sources which have been referenced elsewhere in the text of this report as well as in the country case studies.

²² Eurydice (2009)

²³ OECD (2010)

²⁴ NCVET (2010b)

6 Lessons from abroad

This section addresses the extent to which parts of the VET systems designed to supply intermediate level skills in Australia, Germany, and the Netherlands can be transferred or accommodated within the existing VET system in the UK. The aim is not to suggest the wholesale redesign of the UK's VET system; rather it is to identify policies and practices which can be readily introduced into existing structures. It is therefore concerned with piecemeal, incremental change.

6.1 Introduction

One of the relative weaknesses of the UK labour market compared with countries such as Germany or the Netherlands is the limited supply of and demand for people with intermediate level skills (Finegold and Soskice, 1998; National Skills Task Force, 2000; UK Commission for Employment and Skills, 2010a). Intermediate levels skills refer to those that are currently classified in the National Qualifications Framework (NQF) as being at Level 3 and Level 4 (at sub-degree level). Statistically the group is difficult to measure at Level 4 as there is a tendency in the literature for intermediate levels skills to be regarded as Level 3 ones typically provided through (Advanced) Apprenticeships or vocational courses delivered in the further education (FE) sector leading to an NVQ Level 3 or equivalent qualification. This more limited definition does not fit readily with VET policy, which is concerned with promoting the take up of higher intermediate level skills through, for example, Foundation Degrees and Level 4 Apprenticeships.

Any discussion about improving the demand for, and supply of, intermediate level skills is bound up with policy developments relating to apprenticeships, the reform of the VET system following publication of the *Leitch Review* (HM Treasury, 2006), in relation to England and Wales the Apprenticeships, Skills, Children and Learning Act (ASCL; HMSO, 2009), and the latest skills White Paper (*Skills for Sustainable Growth*; BIS, 2010a). The general direction of reform is towards creating a system which is increasingly demand-led such that it will produce skills which are economically valuable. The rationale is that if employers have a say over the content of vocational training that leads to the award of formally recognised qualifications, they will ensure that there is an emphasis on equipping trainees with those competences which are valuable in the workplace. The role of the state is to ensure that training standards meet certain criteria (for example, as specified in the qualifications framework) and that the interests of the individual and the state are safeguarded (for example, by ensuring that skills are developed which may be important over the long-term given that employers may be preoccupied with short-term considerations).

Accordingly, employers have centre stage, *via* the Sector Skills Councils (SSC), in determining the scope and content of vocational qualifications, subject to the standards established by government. Training providers are funded according to the demand for the training they provide (and their capacity to successfully satisfy that demand). Policy also recognises the importance of work-based learning, especially apprenticeships, as providing one of the principal pathways through which the future skills needs of the economy will be met. This reflects, in part, the relative benefits both individuals and employers are estimated to derive from investing in this form of training (McIntosh, 2007; Gambin *et al.*, 2010). Following the introduction of the ASCL Act in England and Wales this form of training now has a statutory footing. The future of intermediate level skills training cannot be considered in isolation to the alternatives on offer. In this regard, the future funding of higher education (HE) is of importance and the extent to which this potentially makes intermediate level VET more attractive to young people. Following the Browne Review (BIS, 2010b) the funding of HE has been substantially changed. How this will affect the education and training decisions taken by young people, especially amongst those groups which, historically, have had relatively low levels of participation in HE, will only become apparent over the next few years.

There are some limits to the extent to which the UK can learn from the experience of delivering intermediate skills training in other countries which stem from the fact that the UK VET system has many differences with those found in other northern European countries. Perhaps the most important differences are the absence of tripartism²⁵ in the institutions which are responsible for the design and operation of the VET system, and the reliance on the market to send signals to training providers about training demand. For example, in the Netherlands and Germany, and even in a system such as that in Australia,²⁶ which has more in common with the UK, representatives of employers, employees and the state are engaged in determining the content of apprenticeship training. This is much less in evidence in the UK where social partnership has no formal role in the determination of training content.

Arguably the UK VET system was one of the first to move to outcome based measures of success, although this is now widely used in many national VET systems. Accordingly, at face value, the VET systems in Germany and the Netherlands with their reliance upon tripartite institutions are distinct from that found in the UK. The system in Australia has more in common with the UK, in part because it was modelled on the UK system in its early years, although since then it has followed its own developmental path. But there are

²⁵ Tripartism is concerned with 'dealings between the government and workers' and employers' organisations concerning the formulation and implementation of economic and social policy' (ILO, 2011).

²⁶ For example, in Australia there are employer and employee representatives in the Vocational Training Tribunals, which formally recognise new vocational qualifications (see Steadman, 2010).

similarities between these systems and those found in the UK and all of them, to differing degrees, are subject to the same pressures, including:

- a need to ensure that intermediate level skills systems are attractive to both learners and employers;
- an on-going requirement to ensure that the skills produced, both technical and generic, are relevant to the current and future skills needs of the economy; and
- a need to demonstrate that the systems are cost-efficient and the costs and benefits of the training are shared equitably between learners, employers, and the state.

All the systems reviewed have a work-based learning route (typically apprenticeships, but also 'traineeships' in Australia), and a school-based route, to the acquisition of intermediate level skills. The structure of the two pathways differs between countries, but there seems to be a consensus that the work-based pathway (*i.e.* apprenticeship) can generate higher returns for both the employer and the learner. A key issue, therefore, is how the work-based route can be stimulated.

The remainder of this chapter focuses on how some of the key challenges facing the UK intermediate level skills system (challenges which are common to many other countries) have been tackled in other countries, with a view to extracting potential lessons for the UK.

6.2 Participation in intermediate skills training

Increasing participation levels, especially in apprenticeships, is a pressing policy concern in the UK. This incorporates not only increasing the number of employers and individuals engaged in intermediate level training but also widening participation to ensure that:

- a wider range of employers by size and sector are engaged in this form of training;
- a wider socio-demographic mix of trainees are engaged as a whole and within particular sectors (e.g. increasing the number of women trainees in sectors traditionally dominated by men, and *vice versa*).

One of the reasons cited for the relatively low take up of apprenticeships in the UK has been the relatively limited amount of information available to young people about this form of training whilst they are in the compulsory school system (House of Lords, 2007). It is striking that in the Netherlands there is a considerable amount of prevocational training (VMBO) in the compulsory school system with children and their parents making a decision about whether they wish to enter the vocational or educational pathway at the comparatively early age of 12. This would appear to direct pupils towards eventually

adopting the vocational pathway in post-compulsory schooling (MBO). In the UK there would be concerns that such an approach would be closing down the options for individuals at too early an age. In many respects the move to comprehensive education in the 1970s with the abolition of most grammar schools and all secondary moderns, reflected a concern that certain groups of children were being confined to a 'second-class' education at the age of 11 years. The Netherlands appears to have potentially circumvented this problem by permitting people to transfer between academic and vocational pathways relatively simply and ensuring that the vocational pathway grants access, eventually, to higher education. Hence, theoretically at least, progression is not necessarily inhibited by choosing the vocational rather than academic pathway. There is, however, a general concern that where people have been streamed at an early age they find it difficult to transfer to an alternative (higher) stream.²⁷

Within the UK system there is prevocational preparation in the compulsory education system with schemes such as the Young Apprenticeship programme. So it is not necessarily the case that prevocational education is absent in the UK. Nevertheless, there are potentially lessons to be learnt about the capacity of the Dutch system to persuade people to adopt the VET pathway whilst at the same time allowing them to change their minds and choose another pathway without them incurring a large penalty. Implicit in the idea of people being able to move between streams is that a strong general education component be included in vocational courses.

Persuading more individuals to engage in intermediate level skills training needs to consider the relative attractiveness of the vocational pathway relative to the alternatives. The evidence indicates that where employers are looking to recruit an apprentice or a trainee to an initial vocational education and training (IVET) programme, the level of educational attainment required to gain entry is often the same as that required to gain access to full-time education courses which potentially give entry to HE (see Hasluck *et al.*, 2008; Hasluck and Hogarth, 2010). Moreover, there is evidence that the gross return from academic qualifications is greater than that from vocational ones (see *Skills in England*, various editions²⁸; Dearden *et al.*, 2002). Nevertheless, more recent evidence suggests that there are significant and substantial returns from completing an NVQ level 3 (compared to those with Level 2 attainment), and an even greater return from completing an Advanced Apprenticeship at this level (McIntosh, 2007).

²⁷ The difficulty of switching between streams and pathways is not uncommon in parts of Europe. In Flanders, for example, pupils entering secondary school can be placed in one of two streams: A and B. Stream A provides comprehensive secondary school education. Those in stream B receive enhanced support so that they can join stream A, although in practice relatively few do so. At the end of the first stage of secondary education, those in stream A are eligible to join any of the second stage options, whereas those in stream B are limited to vocational options (Kis, 2010). Despite the support provided to people in stream B not many transfer to stream A.

²⁸ See, for example, Campbell *et al.* (2001); IER and CE (2003) and Hogarth and Wilson (2005).

The choice appears to become one of the relative statuses of the two pathways with, historically, the vocational pathway accorded lesser status than the academic one. In Germany and the Netherlands this appears to be less evident with the vocational pathway accorded a relatively high status, although it is telling that many of those who enter the dual training system in Germany are from lower socio-economic groups compared with those who take the academic pathway.

The evidence from the comparison of the systems in Germany and the Netherlands suggests that the attractiveness of intermediate level skills training in these two countries relates to relative wage returns and chance of securing employment compared with less skilled workers. But this appears to be only part of the story. Both countries have had a strong demand for people with intermediate level vocational qualifications, which are widely regarded as being central to the strengths of their respective economies with, concomitantly, a supply side which has deep roots and has experienced stability. In contrast the system in the UK in its current guise goes back no further than the 1990s when NVQs and then Modern Apprenticeships were first introduced. It has also been subject to significant reform over that period. The reputation of the system has, therefore, had much less time to develop.

Central to the reputation of the training systems in Germany and the Netherlands is a clear indication of training content and the requirement to provide general as well as vocational skills. Depending upon which intermediate training course was being analysed this issue was always somewhat fuzzy in the UK system. A Level 3 Apprenticeship in engineering, for example, might contain a large amount of general education whereas one in another sector might contain much less. The latest specification for apprenticeships in England and Wales, following the ASCL Act (HMSO, 2009), is clearer than hitherto about the content of apprenticeships, including minimum guided learning hours. There may be, however, still lessons to be learnt from Germany and the Netherlands about how to communicate quality thresholds for those following the vocational pathway and the guarantees learners have about the amount of general education and training they are likely to receive. A common criticism aired in relationship to apprenticeships in England is that their training content is too narrowly focused on employers' current skills requirements with insufficient consideration given to the delivery of a broader, general education commonly found in, for instance, the German dual system (e.g. Brockmann, *et al.*, 2010).

In the UK there is a potential problem of there being too few apprenticeship places for those who would like them (Steadman, 2010). This has been managed in part by providing programme led apprenticeships where there was no employment relationship in place, the training provider delivered the apprenticeship and obtained the necessary work

experience so that the learner could meet the demands of the apprenticeship. Note that in Scotland, apprenticeships have always required there to be an employment contract in place.

Following the ASCL Act in England and Wales, there is an intention to phase out programme led apprenticeships in nearly all cases to ensure that there will be an employment relationship in place. This will place a degree of pressure on the apprenticeship system given that relatively few employers participate in this form of training (8 per cent of employers in 2009 in England reported that they had taken on at least one apprentice over the previous twelve months).²⁹ The alternative is that people take the school-based pathway to obtaining intermediate level skills. In the Netherlands, like the UK, there is the possibility of studying for a vocational qualification in college (the BOL pathway). It is notable, however, that this still places trainees in a work situation for one day a week. This is clearly seen as an important part of improving the vocational preparedness of young people. The returns from the BOL pathway appear to be lower than where the individual adopts the work-based learning pathway (BBL), but is still relatively well regarded by employers (Hövels and Roelofs, 2007). In a labour market such as the UK with relatively weak demand for taking on initial recruits, this may be one means of ensuring that young people are able to obtain experience of being in the workplace whilst receiving their vocational education under the aegis of a vocational school.

Ensuring that there are sufficient numbers of employers willing to provide apprenticeships or traineeships is an important issue. Australia has been able to expand its apprenticeship system over recent years, starting from a relative low base. The evidence from Germany and the Netherlands, both with large-scale, well established apprenticeship systems is much less promising. The German apprenticeship system has had substantial difficulties in meeting the demand for training and if it is better off now, this is mainly due to demographic reasons. Moreover, considerable cyclical fluctuations in the supply of training places can be observed in Germany and the Netherlands (Statistisches Bundesamt, 2009, 2011; CBS, 2010). The supply side of apprenticeship markets therefore appears a somewhat volatile part of the system. This is a considerable disadvantage compared to school-based training which often compensates for the fluctuations in apprenticeships.

Another key issue is the capacity of managers to train apprentices. It takes considerable management skills to understand how to use trainees sensibly so that they make a productive contribution while also quickly learning the skills necessary to do the job. Such skills may be better developed in firms with a long tradition of taking apprentices, and

²⁹ Field *et al.*, (2009).

perhaps where those supervising apprentices have themselves been apprentices. Consequently, successfully encouraging employers to provide apprenticeships and traineeships can have the potential to set up a positive feedback loop that stimulates further employer engagement in intermediate skill development.

In many respects the problem of ensuring that a sufficient number of employers in new growth sectors engage in intermediate level training is a universal one. The German system, for example, has been criticised for the slowness with which it responds to structural change in the economy. In some respects, the UK system of SSCs may be relatively agile in its responsiveness to specifying training programmes which meet the changing needs of the economy.

A barrier to more firms engaging in training is the uncertainty attached to recouping any return from the investment, especially for small firms where planning horizons are shorter and the investment is likely to be a proportionately large share of their overall turnover compared with larger organisations. Whilst employers tend to explain their decision to recruit an apprentice or trainee with respect to meeting future skills needs, it is difficult to divorce this from cost considerations. The question is never really posed to employers whether they would increase their training if their costs of training were lower or their returns were higher. The evidence from Switzerland suggests that the efficiency with which apprenticeships are delivered can be improved, without any fall in quality, if apprentices are engaged in skilled production work rather than substituting for unskilled workers (Dionisius, *et al.*, 2008). This, however, is dependent upon there being quality standards in place to ensure that the productive contribution of the apprentice is confined to skilled rather than unskilled work (Field *et al.*, 2009). The evidence from Switzerland suggests that employers can recoup much of their investment in apprenticeships before their apprentices have completed their training. The clear message sent to Swiss employers is that their apprenticeship system is, from the employer perspective, cost-effective in delivering high quality IVET.

Group training is also a potentially effective mechanism for limiting the costs borne by any individual employer. The Australian example of group training is interesting in this respect (it also takes place in the Netherlands and Germany to some extent). Whilst there are a range of issues related to who pays and who benefits, the evidence points to the Australian system appearing to have resolved these issues (see Australia case study, section A2.3.4 and training.com.au). The principal benefit is that it allows organisations that might otherwise be put off from engaging in apprenticeship training, due to the level of financial or training commitment required, to participate in this form of training. Hence there is potential for this to be explored further in the context of intermediate level training in the UK, notwithstanding earlier evaluation evidence which suggested such schemes

are dependent upon state support being in place to establish and sustain group training schemes (Rhodes and Graver, 2002).³⁰ Other evidence suggests that they can be effective in increasing the number of apprenticeships and training places provided (Gospel and Foreman, 2006; Cooney and Gospel, 2006).

6.3 Rate of successful completions

Vocational qualifications at an intermediate level in the UK are achieved either through completion of a vocational qualification or through completion of an apprenticeship. Data is not readily available on failure rates (i.e. where the trainee or student completes the training programme or course but fails to meet the required standard), but data on drop-out rates is available. They currently show that completion rates for a Level 3 Apprenticeship stands at 71 per cent (2008/09). International comparisons are difficult to make because of definitional issues surrounding what constitutes completion, but the evidence suggests that this compares favourably with other countries (Hogarth *et al.*, 2010).

The reasons for drop-out are multifaceted. The former Learning and Skills Council (LSC) in England made considerable inroads into improving completion rates through its Minimum Levels of Performance (e.g. LSC, 2010) criteria which it applied to training providers (essentially removing the right to receive public funding for a particular course where the completion rate was below a certain threshold).³¹ An issue still arises, however, with what happens to an individual who drops out of a course. In most instances they are required to start a course from the beginning with no credits gained from any previous training unless a qualification has been obtained (i.e. accredited prior learning). There is some scope currently within the existing Apprenticeship system for people to transfer any credits they have obtained (as recognised by the QCF), but it is not clear about the extent to which this happens. There are lessons which can be learnt from abroad here, notably Australia.

The Australian system effectively manages this *via* a modular approach to training where credits are gained from completing segments or units of a training course. Where a sufficient number of credits are gained the individual is deemed to have completed a given qualification or programme. The downside of this is that it potentially displaces training activities: trainees or employers may want to complete various elements of a training programme but not all of it. Employers providing apprenticeship places may also have concerns that, if the apprenticeship is delivered in a modular fashion, the productive

³⁰ Rhodes and Graver evaluated the Employer Learner Networks pilot which was funded by the then Department for Education and Skills which invested £2.5m to pump-prime 18 projects in England with sums from £10,000 up to £250,000 between November 2000 and July 2001.

³¹ Whilst it is desirable to increase completion rates, it has to be recognised that there is a tension with commitments to widen participation (see Hogarth *et al.*, 2010).

contributions of apprentices (often most evident closer to completion), may be less evident. It also has a negative impact on completion rates over the short-run. Moreover, if the benefit of completing an entire course is considered to be more than the sum of its parts, which is implicit in the apprenticeship system, allowing people to pick and choose what parts they want to complete may result in a net cost to the economy overall. That said, there is potential merit in allowing people to carry across credits from one training programme to the next, although it may be necessary to apply general qualification standards or even some time limits otherwise the duration of completions might increase and, importantly, the skills and knowledge obtained may become out-dated.

The Australian system has also introduced incentives for the apprentice to complete various milestones in their apprenticeship. Since 1 January 2011, trade apprentices have been eligible to receive up to an additional AU\$ 1,500 tax exempt bonus as they reach milestones in their training. It may be that an incrementally increasing bonus system of this kind, especially if learners are also responsible for providing tuition fees, may provide a greater incentive towards completion under a modularised approach to apprenticeships. The more general point is that there need to be incentives or structures in place to ensure that where the policy aim is for people to complete an entire programme of learning (such as young people entering apprenticeships) that this happens over a given period of time.

The Dutch approach successfully combines general qualification standards with flexible training pathways. This escapes the problem that both trainees and employers remain short-sighted in their decisions. The German approach is even stricter in this regard and does not offer many alternatives to the standard three-year apprenticeship courses. It also does not apply validation procedures for prior learning at broad level. These, however, are key features of a time and resource efficient training system.

6.4 Adapting to technical and structural change

The extent to which the intermediate VET systems are adaptable to change can be viewed from the following perspectives:

- i. the extent to which individuals have the skills to adapt to changes in the labour market, and the extent to which they can preserve learning abilities;
- ii. the capacity of systems to anticipate changes in skill demands; and
- iii. the capacity of the systems to adapt efficiently to bring in changes with respect to training content.

In all three countries there is evidence that people training in one profession are, after several years in the labour market, working in a different profession (e.g., Aßmann and Hall, 2008; Hall, 2007; NCVET, 2010b). This is regarded as a positive development

insofar as it shows that people have acquired transferable skills. The adaptability of those with intermediate level skills results from training programmes which have substantial generic skills content. This is particularly the case in the examples of Germany and the Netherlands where completing an apprenticeship in the dual system (Germany) or the BBL pathway (in the Netherlands) is regarded as conferring upon the individual something more than the specific technical skills required to meet the demands of the occupation for which they trained. It is also clear from the Netherlands that it is work-based learning (BBL) rather than the school-based pathway (BOL) which confers upon the individual a greater set of employability skills (Hövels and Roelofs, 2007). Apprenticeships in these countries appear to offer the best of both worlds: provision of occupation specific skills coupled with provision of a broad general education.

It is also apparent, especially in Australia and the Netherlands, that there is considerable effort expended on anticipating skill shortages through a range of forecasting exercises comparable with the *Working Futures* projections produced in the UK (see Wilson and Homenidou, 2011 for the latest set of forecasts for the UK). ROA, in the Netherlands, has produced forecasts at a sectoral level to reveal where, over the medium-term, skills demand is likely to outstrip skills supply (ROA, 2009).

In general, all countries are facing similar demographic pressures (given current birth rates) which are, other things being equal, likely to result in the demand for young people to outstrip their supply. This has placed greater emphasis on intermediate skills training in the context of continuing vocational education and training (CVET) and the need to train older people already in employment in intermediate skills. This is being achieved through the use of training programmes linked to accredited prior learning (the Netherlands) or the use of a modularised training system in Australia.

The third element to consider is the extent to which national systems are able to flex training content and structures to meet the demands of the economy resulting from technical and structural change. These demands include both a short-term element where skills supply has to fill current vacancies, and a long-term element where skills have to provide the potential to promote and to adapt to technical and structural change. Considering the length of training and the need for long pay-off periods for training investments, training systems are inevitably forced to apply a far-sighted perspective. In the case of Germany and the Netherlands, this is partly achieved by the provision of generic skills. The Australian approach, however, runs into the danger of being too short-sighted. This is potentially a problem facing the UK too, especially in those sectors where intermediate level skills training, especially that related to apprenticeships, is a relatively new development (Fuller and Unwin, 2007).

The limitation of intermediate VET being too oriented towards meeting current skills demand, and the orientation of training activities towards observable skills shortages, is that it potentially fails to deal with the longer-term needs of the economy. If strategies are not in place to deal with the longer term needs of the economy, then there is a danger that a situation could arise in the not too distant future where workers do not invest in training because there are no jobs requiring those skills, and employers do not invest because they cannot find skilled workers. This points to the pivotal role of public authorities in creating generally accepted training standards, ensuring that training standards are broadly based so that they are flexible enough to deal with future change, and financing at least parts of the training system.

Germany and the Netherlands are two countries which embedded their training strategies into a broader economic development strategy. In both countries, this was achieved by a broad social consensus including the social partners. The difficulty facing the UK in this respect is that it has relatively little tradition of social partnership of the type which governs the training systems in Germany and the Netherlands; at least, not since the abolition of the National Economic Development Office in 1992. An alternative approach would be to look at how Australia (which has a tradition of employee relations closer to that in the UK) incorporates the voice of the employee, as well as the employer, in training decisions. As noted above, Australian institutions involved in the intermediate level skills system often include an employee representative.

The evidence from the country case studies points to both the relative advantage of a work-based learning pathway and the need for training to have a strong generic element to ensure that individuals have the skills necessary to meet future change in the labour market. There is potentially a tension in a system where employers have a significant role in determining training content (i.e. *via* the SSCs in the UK) with the need for individuals to have a range of skills which are broader than those needed by employers either currently or over the short-term. The UK system has a series of checks and balances to ensure that training which receives public subsidy has a broader focus than employers' current skills needs. Nevertheless, there is a need to ensure that the generic content is comparable to that provided in other high skill, high wage economies such as Australia, Germany, and the Netherlands. At issue is the degree of balance between two competing factors: the extent to which decisions about training content are devolved to agencies so that they can react promptly to anticipated changes in the labour market *versus* the maintenance of training standards which needs to be supervised at a higher level.

6.5 Progression to higher level skills

At present, the vocational pathway has not provided a route which readily allows trainees to progress into HE. This is not a problem unique to the UK and is encountered in many countries across the EU (Hogarth *et al.*, 2007). The solution in the UK has been to develop a bridge between the vocational system at an intermediate level and HE through the development of Foundation Degrees and 2+2 degree courses (where the trainee studies towards a sub-degree course in the first instance and then transfers to a degree course for the final two years). Moreover, the latest guidance on apprenticeships indicates how many credits in the QCF are granted for completing an apprenticeship (or a National Vocational Qualification).

The extent to which these have provided a means which readily allows progression from an intermediate level to higher level skill acquisition is a moot point. Increasingly the aim is to develop a parallel vocational training system at Levels 4 and 5 (Higher Level Apprenticeships) to run alongside the traditional HE sector. This is a relatively new development in the UK and the numbers participating at this level are very small for the time being. Nevertheless, it provides a potentially seamless route along the vocational pathway to achieving higher level skills without the need to overcome barriers related to gaining access to higher education institutions which are, arguably, more focused on the academic pathway. The key issue is the extent to which people will progress towards completing a Higher Level Apprenticeship.

The *Meister* qualification in Germany provides the most seamless progression towards higher level skills upon the completion of initial vocational education and training at an intermediate level and there is scope to revisit this model of training, perhaps in relation to Foundation Degrees. This is potentially an important issue. To some extent the relatively low take up of vocational education beyond Level 3 in the UK relates to the lack of demand for such training from employers because higher level positions within an organisation are typically filled by graduates *via* graduate-only traineeships and/or firm sponsored CVET. The evidence reveals that few people continue directly from completing their Level 3 vocational training to enter higher level courses (House of Lords, 2007). Whilst the supply side has made many changes to ensure that there is the possibility of progression, there seems little appetite from employers (and their employees) to pursue this, presumably because the current job filled by the former trainee does not require formal structured training of a time envisaged for obtaining a Level 4 qualification. The situation is not much different in Germany where there is little progression beyond completion of a *Meister* qualification (Statistisches Bundesamt, 2009).

In fact there is little progression from apprenticeship to university in Germany. In 2008, 0.6 per cent of those students who started an apprenticeship without university entrance qualifications went on to enter university and 1.8 per cent to *Fachhochschulen* (University of Applied Sciences; UAS) (Hoekel and Schwartz, 2010). Indeed, the evidence across Europe suggests that there is relatively little progression into higher education other than through the traditional academic pathway (Orr, 2008).

The key issue is how to stimulate demand from employers (and their employees) for higher level training beyond completion of intermediate level skills training. None of the countries covered in this study have been able to solve this particular issue. What is apparent is that completion of training at an intermediate level provides a platform for lifelong learning even if this is not at a higher level.

6.6 Cost of training

Across all three countries there is a general consensus that the employer (*via* increased productivity, reduced recruitment costs, *etc.*), the trainee (*via* improved employability and relatively high wages) and the state (*via* tax revenues from higher incomes, reduced unemployment benefits, *etc.*) obtain a net positive return on their investments in intermediate level skills. The general structure of training is more or less the same across all countries:

- the employer meeting the costs of employing a trainee over the duration of their training;
- the trainee meeting some of the costs of training through receiving wages less than their productive contribution whilst training;³² and
- the state meeting the direct costs of training provided by training providers.

In the UK there has been an on-going debate about the extent to which costs are equitably shared between employers, the trainee, and the state. Currently there are plans to obtain co-funding from employers to meet the costs of training at Level 3 (for the debate in England see BIS (2010a) and the Banks Review (BIS, 2010c)). The extent to which the trainee might be expected to contribute to the costs of training has not been spelt out in any policy documents. It is noteworthy, however, that in the Netherlands trainees in both the dual system and those in vocational education schools are expected to meet some of the costs of their training through payment of tuition fees. If the aim, in England at least, is to introduce income contingent loans for certain groups of trainees

³² It is apparent that apprentice wage rates are higher in the UK compared with many European countries with established apprenticeship systems (Steadman, 2010), but there is also considerable variation within countries by sector.

(such as those over 24 years of age) working towards the completion of vocational training, then the Netherlands provides an example of how this has been introduced without significant negative effects upon participation in training.

Employers who do not take on trainees tend to report that they have little demand for such training either because they have a full complement of skills already, or they have no need of the skills provided via intermediate levels skills training. There is, however, no comparable data that indicates the extent to which the volume of intermediate level skills training undertaken by employers is sensitive to cost, relative to the costs incurred by recruiting from the external labour market. Clearly, recruiting employees from the external labour market (either experienced workers or those who have recently completed their training in vocational schools) provides, other things being equal, some cost savings.

The general message to emerge from the country studies is that those employers which choose to train via the apprenticeship route can point to a number of benefits from doing so. However the level of their investment would appear to be related to the ability to recoup the costs of that investment over time. Hence employers in Germany are more willing to invest in intermediate skills training because they are sure that the trainee will remain with the company for several years after the completion of their training, whereas employers in more flexible labour markets need to either limit the level of their investment or structure their investment in such a way that they can recoup most of their training costs before the end of the training period (Dionious *et al.*, 2008). In Switzerland, whilst employers have been able to recoup their training costs by the end of the apprenticeship, this appears to have little impact on the quality of training provision (compared with Germany where the employer is still in deficit at the end of the training period). This has been explained, as described above, with reference to the strong training standards which are in place in Switzerland. There are clear lessons here for the UK system where cost may well be one of the issues which discourages employers from investing in apprenticeships. The research by Gambin *et al.* (2010) suggests that employers in the UK tend to recoup their costs quite quickly upon their apprentices completing their training.

6.7 Duration of training

The duration of training in the UK is, in principle, determined by the time taken by the trainee to acquire the required level of competence and underpinning knowledge. In practice, employers in some sectors have a fixed duration for intermediate level training. It is apparent that in Germany and the Netherlands there is a fixed period of time required in which the trainee must acquire the necessary skills and pass any examinations, though there appears to be pressure in Germany to reduce the duration of some training programmes to around two years. The extent to which the duration of training affects the content of training is considered next. Shortening the duration of apprenticeships is not

always attractive to employers, especially those already providing the longer duration apprenticeships. In the final period of their training apprentices are often highly productive compared with fully experienced workers but are still paid training wages. In summary, the marginal product of the apprentice exceeds their wage rate over the later stages of the apprenticeship.

6.8 Training content

Training content is a potentially contentious issue in the UK insofar as there is criticism that some apprenticeships provide relatively few training opportunities, though this usually refers to Level 2 rather than intermediate level (Fuller and Unwin, 2005; 2007). As noted above, a key issue is the extent to which trainees receive generic skills training since many trainees will end up working in occupations or sectors that are different to those in which they completed their training. Traditionally the key/functional skills element of an apprenticeship is designed to meet this requirement. A key issue is the extent to which the generic element in the UK compares with that provided in competitor countries. In Germany and the Netherlands considerable emphasis is placed upon the acquisition of generic skills. In other words the IVET system is quite prescriptive about what needs to be developed. There is clearly a tension between being prescriptive about the provision of training and being responsive to employer needs, which needs to be driven towards a higher degree of compulsory standards and a stronger emphasis on generic skills. There are two key issues to consider:

- the breadth of skills training provided in Apprenticeships; and
- the quality assurance systems in place to ensure that the skills training is delivered.

It is apparent that both Germany and the Netherlands score highly on both these counts.

6.9 Upward mobility of intermediate level VET graduates

The evidence from all three countries reveals that trainees experience occupational mobility over the early stages of their careers. The evidence in the UK is particularly encouraging with references to estimated wage and employability gains over the life cycle (McIntosh, 2007). There appears to be a consensus across all countries that intermediate level skills training results in improved employability. What is less clear is the extent to which it is associated with occupational mobility. At face value all systems would appear to prepare people with intermediate level skills training for careers at the intersection between supervisory and first line management occupations. The extent to which current systems are able to provide their graduates with a launch pad to enter higher level occupations remains somewhat uncertain, despite the best efforts of policy makers to provide pathways from intermediate level skills to higher level skills. The recent

development of higher level apprenticeships in the UK is particularly important in this respect.

6.10 Summing up

This chapter has provided an outline of the lessons which might be learnt from the intermediate level skills training systems in Australia, Germany, and the Netherlands. In doing so it has addressed many of the current issues that policy makers in the UK are grappling with in order to stimulate the supply of intermediate level skills at both initial and continuing levels. The next chapter provides more concrete implications for action concerning the potential for transferring practices from each of the three countries to the UK. Given the current direction of policy across the four nations of the UK (to increase both the supply of and demand for intermediate levels skills training whilst, at the same time, ensuring that there is equitable sharing of the costs of such training between employers, employees and the State) it is important that lessons are learnt from those countries which have made substantial public and private investments in intermediate level skills to the significant benefit of their respective economies. This is addressed in the next chapter which provides conclusions and recommendations from the study.

7 Conclusions and implications for action

The UK VET system at an intermediate level has many features which other countries have adopted to differing degrees, namely the competence-based approach and the flexibility of the system in relation to the needs of the labour market. At the same time there are concerns that in some sectors, or amongst some employers, there may be a minimalist approach to training with too much emphasis on the short term needs of the employer and insufficient attention placed on the longer term needs of both employers and trainees. This has been reflected in the many reforms of apprenticeship training over recent years. It also needs to be borne in mind that there are many exemplary intermediate level training programmes which compare favourably with the dual systems found in either Germany or the Netherlands, or that found in Australia. Nevertheless, there are a range of challenges facing intermediate skills training in the UK, including:

- i. concerns that participation levels, reflected in the number of employers or trainees which engage in this form of training, have settled at an undesirably low level;
- ii. that the intermediate skills system is too oriented towards meeting the current needs of employers rather than the longer term needs of all stakeholders, employers, trainees, and the state; and
- iii. the limited amount of progression from intermediate level to higher level training and education.

The key issue, beyond the good practice examples mentioned above, is how to incrementally improve intermediate level training so that overall returns are improved. The reviews of Australia, Germany, and the Netherlands suggest the following implications for action.

7.1 Increasing participation

Participation levels are determined by a mix of employer demand for such training stemming from the needs of their production systems and the attractiveness of publicly funded training programmes such as apprenticeships to employers. How the UK might improve its productivity levels is outside the scope of this review other than to note that in all of the countries reviewed their intermediate level skills system are considered to be of critical importance to economic performance. There is implicit and explicit recognition that these skills are central to improving productivity and competitiveness. A number of implications arise from the three countries reviewed:

- The vocational pathways in all three countries reviewed are highly regarded by participants and the evidence points towards there being relatively high returns accruing to employers and former trainees. In the UK, the reputation of the apprenticeship system, although improving, has been somewhat mixed as reflected in the large number of inquiries into how the system can be reformed. Apprenticeships in the UK tend to include Level 2 and Level 3 training. The evidence suggests positive returns to Level 2 vocational qualifications, which are more substantial at Level 3. There is scope, therefore, for giving that part of the apprenticeship system concerned with the provision of intermediate level skills training, i.e. at Level 3 and above, a more distinct identity.
- The intermediate level skills training reviewed in all three countries has been subject to review and reform over recent years. In its relatively short history since its establishment in 1994, the publicly funded apprenticeship system in the UK has been subject to considerable reform either as a consequence of inquiries which have focussed specifically upon the apprenticeship system, or on the vocational training system more generally. To achieve the status accorded the apprenticeship systems in Australia, Germany or the Netherlands, a comparable level of stability enjoyed by these systems may well be required if mixed signals are not to be transmitted to employers and would-be trainees.
- All of the evidence suggests that intermediate level skills training delivers higher economic returns where it is delivered through the apprenticeship system. Cost is often an issue for the employer in this respect. But much of the evidence suggests that high quality training can be delivered such that the costs can be recouped over the training period. The evidence cited for Switzerland alongside that from Australia, Germany, and the Netherlands is instructive in this regard. This can be achieved by ensuring that apprentices' productive contributions are limited to undertaking skilled work.
- Where training is of relatively long duration, the employer tends to bear relatively high net costs over the early stages of the training programme. Hence there is a need to ensure that trainees (or apprentices) successfully complete their training with a given employer and, thereafter, for employers to retain the apprentice in their employment in order to recoup their training costs. Historically, Germany and Australia have recorded relatively high apprenticeship completion rates compared with the UK, though more recently the UK system has recorded levels of completion similar to these countries. Where training is of shorter duration, there are often pressures for employers to ensure that the increased productive capacity of trainees or apprentices is sufficient to offset the employer's costs of training over the short-run, especially so in labour markets characterised by relatively high

levels of labour turnover. The evidence for England at least suggests that apprenticeship system is designed in such a way that employers are able, on both longer- and shorter- duration apprenticeships, to recoup their costs relatively quickly upon completion of the apprenticeship (Gambin, et al., 2010).

- The Australian system demonstrates how cost can be managed; through: (a) modularisation; and (b) group training. Potential dangers with a modularised system arise from insufficient safeguards to ensure that trainees complete the apprenticeship or traineeship over a given period of time. Trainees receiving an incomplete level of initial vocational education and training may struggle to compensate for this over the rest of their working lives. Rather than dismissing modular systems *per se*, the point is simply made that people need to be able to complete a recognised accredited programme of training and public authorities have to set the standards for these programmes.
- Group training has worked well in Australia, although the evidence is a little more mixed with respect to the Netherlands, insofar as it allows employers who would otherwise be unable to participate in apprenticeship training on the grounds of cost to do so. The system in Australia has much to recommend it and merits further investigation with respect to its transferability to the UK.
- Given that all the countries reviewed generally experience a situation of demand for apprenticeships outstripping their supply from employers, an obvious solution is to find an alternative means of delivering intermediate level skills training. Programme led apprenticeships have been discredited in the UK and largely abandoned, so this is clearly not a solution. The approach adopted in the Netherlands is to develop a strong school-based vocational pathway. The returns to the individual are not as high as those obtained from the apprenticeship pathway (at least not in the short-run) but they are likely to be higher than they would be in the absence of such training. The school based vocational pathway, despite the introduction of Diplomas, is not so well established in the UK as in the Netherlands so there are lessons be learnt in this regard.
- The evidence from the Netherlands points to the importance of a school-based intermediate vocational training system which is better able to comply with the rising importance of theoretical knowledge in almost all activities. Nevertheless it is crucially important that school-based training is combined with practical work in companies. With respect to apprenticeship and school based learning, the UK intermediate vocational training system should therefore be developed in both directions. The tendency is to develop new qualifications for the school based pathway, but there may be more merit in using the existing vocational and academic qualification awards system, where particular qualifications are highly

regarded in the general education system and labour market, to accredit vocational training delivered in schools. The system in the Netherlands has developed its reputation over a number of years. Arguably the UK does not have this luxury if it is to improve the level of its intermediate level skills base to a level comparable with Germany or the Netherlands.

7.2 Training Content

The attractiveness of the intermediate skills system owes much to what it delivers with respect to economically valuable skills to both employers and employees. The structure of training in the UK (and Australia), a competence based approach, differs from that in Germany and the Netherlands so there are potential lessons to be learnt. A number of points can be made:

- The competence-based approach in the UK and Australia proves attractive to both employers and learners. Whether Germany and the Netherlands provide a higher quality learning experience compared with the UK and Australia remains a moot point. It is an issue which needs to be monitored in order that the relative competitiveness of the UK is protected. It is apparent that in both Germany and the Netherlands that there are pressures for those systems to become more competence based.
- The key issue is to ensure that the long term needs of the economy are met through the provision of intermediate level skills training. The evidence points to the UK system possessing less social partnership in the design of publicly funded intermediate level skills courses and qualifications. As noted above some commentators see a balanced representation of the state, the employers, and the employees/trainees in the design of vocational training programmes as being essential to the longer term needs of the economy being met. The OECD has questioned the extent to which employers are truly represented or engaged in the UK system (Field *et al.*, 2009), and it is clear that the voice of the employee is not formally represented in the labour market institutions which regulate the provision of intermediate level skills training.
- The system of collectivised industrial relations which operates in Germany and the Netherlands is such that the capacity to learn from these systems with respect to the balancing of employer and employee interests in the design and regulation of training is limited. Much more, however, can be learnt from Australia where employer and employee interests are presented. There is merit in the UK looking further to see what can be learned from this system.

- It is clear in all countries that employees can end up working in industries and occupations somewhat different from those in which they undertook their initial vocational education and training. This is seen as a particular strength of the German system, where employers recognise the intrinsic value of completing an apprenticeship regardless of its occupational focus. This provides a win-win situation for employers and employees. It also points to the importance of ensuring that there is a significant amount of general education provided in any apprenticeship or other type of intermediate level skills training. This is the case with many Level 3 apprenticeships in the UK, notably in sectors traditionally associated with this form of training. Again, there is much to be learnt, especially from Germany and the Netherlands, about the benefits of providing a broad based education to trainees.

7.3 Progression to the higher levels

All the countries reviewed, including the UK, have systems where relatively few (even a negligible number) people who progress from publicly funded intermediate level skills training to higher levels of study, such as entering university. It is also true that all the countries reviewed have developed systems with mechanisms which allow people, in principle, to progress to higher education. It is not clear from a review of the evidence whether the lack of people progressing from intermediate to higher levels of training relates to:

- i. a failure of the systems in place to allow people to make the transition; or
- ii. a lack of demand from individuals, or their employers, for training at a higher level once intermediate level skills training has been completed.

With respect to progression a comparison of all four countries reviewed reveals the following:

- The lack of people progressing towards higher levels may reflect weaknesses in the respective education levels at earlier stages. Once compulsory education is completed (and in some instances before then) individuals enter either a vocational or academic pathway. All countries have mechanisms in place which allow people to transfer between schemes but the evidence suggests that this fails to happen. Hence, from an early stage in the process people are locked into a training programme which has its end point completion of intermediate level skills training. There would appear to be a tacit acceptance of this from employers and employees; that is, that more senior positions within a company or organisation will be filled by people who have taken the traditional academic pathway through to completion of university level studies.

- If the progression from intermediate to higher levels of education is to be achieved it may require a more root and branch reform of the education system. It is clear that the other countries have little to offer the UK other than variations of the same problem. In fact, with the development of Level 4 apprenticeships in the UK, this may be a situation where the UK has lessons to offer countries depending upon the take-up of these in the future.

7.4 Implications for action

Fundamentally, the extent to which the UK can learn from the systems in other countries is a question of degree. This relates to: the content of training and the extent to which the longer term skills needs of employers and employees are sufficiently met; who determines the content of training; the extent to which there is equity between vocational and academic pathways in post-compulsory education; who bears the costs of training and who obtains the benefits. These are all observable to differing degrees. Whilst there are pressures for the UK system to adopt some of the more high quality elements found in Germany and the Netherlands, similarly there are pressures for the systems in these countries to move towards the UK, although it would be unwise to speak of convergence. For the time being, the systems in Germany and the Netherlands still rely upon a higher degree of formal off-the-job classroom based training than is found on average in the UK. On the other hand, the Australian system has developed along similar lines to that in the UK and has successfully developed an intermediate skills training system which is seen as central to supporting its economic performance.

The lessons from the intermediate training systems in Australia, Germany and the Netherlands lead us to recognise a number of implications for action within the UK:

- i. There needs to be recognition that intermediate level skills are of critical importance to the long-term growth potential of an economy. Consistent with this, the development of intermediate skills also needs to have a long-term perspective by providing trainees with those transferable skills which will allow them to progress in the labour market over time.
- ii. In contrast to the UK, all three intermediate level skills systems have enjoyed relative stability over a decade or more, which is likely to enable strong brand recognition for intermediate level qualifications, time for employers and learners to see the returns of such qualifications, enhance the ability of both parties to navigate the system and for information, advice and guidance (IAG) organisations to facilitate this.

- iii. In all three countries there are elements of social partnership in the specification of training standards with representatives of employers, employees, and the State involved in decision making at various levels. Arguably it is the balancing of these views which ensures that both the short- and long-term needs of the economy are met and that the interests of all three groups are satisfied.
- iv. The evidence suggests that a competence based approach (as currently found in the UK) is an efficient means of ensuring that economically valuable skills are developed efficiently. As noted above, there is a need to ensure that competence is not simply defined with reference to current employer demand for skill and recognises the longer term needs of the economy.
- v. In the face of an ageing workforce intermediate level training plays an important role in adult training. Skills supply cannot be simply regarded as the task of initial vocational education and training, as it is notably the case in Germany. Continuing training therefore needs to be integrated into the structures of the intermediate VET.
- vi. Modularised training systems provide an effective mechanism for delivering continuing vocational education and training. If it is to be applied to initial vocational education and training there needs to be structures in place to ensure that it leads to full completion of a recognised qualification.
- vii. Whilst finding the means to deliver additional apprenticeships is to be encouraged, it needs to be borne in mind that there will be a need to find alternate means of doing so, such as the school based system found in the Netherlands.
- viii. Increasing the productive contribution of trainees, so long as their productive contributions are confined to skilled work, is one means of demonstrating to employers the cost-effectiveness of adopting the apprenticeship route.

It is apparent from all three countries that there are rigorous standards in place with respect to what constitutes intermediate levels skills training which can be accredited by public agencies. The implementation of these programmes relies on the strong involvement of public authorities in setting and maintaining those standards. Our view is that public authorities are needed to organise the intermediate training system and to finance at least the generic elements of training. The role of employers is important in the production of vocational skills to be used in the workplace and they can be expected to financially contribute to this training. The system in the Netherlands suggests that some financial contribution from learners can also be achieved without necessarily impacting negatively on participation rates.

The role of public authorities is also important with respect to those situations where companies have adopted relatively low skill, low value-added production strategies as appears to be the case in some UK sectors. It is therefore the role of public policy to foster the development of SMEs, innovation and international competitiveness in lagging industries. The provision of publicly funded intermediate level training could be allied to measures designed to improve the performance of companies.

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