



**Office for Standards
in Education**

Pathways to parity

A survey of 14–19 vocational provision in Denmark, Netherlands and New South Wales

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Introduction and context

1. The government sees vocational education as key to improving pupils' employability and motivation, and to raising standards generally.
2. The green paper *14–19: Extending opportunities, raising standards* (DfES, 2002) and the government's proposals set out in *14–19: Opportunity and excellence* (DfES, 2003) recognise the need to develop world-class vocational and technical education for young people. The terms of reference for the Working Group established to take forward the 14–19 proposals present a far-reaching agenda for change in the education and training of all young people.
3. This report examines the lessons that might be learned in England based on a limited survey of vocational education and training for 14–19 year olds in Denmark, the Netherlands and New South Wales, Australia. All three countries are referred to in an annex to *14–19: Opportunity and excellence* (op cit) and are noted in different ways for their vocational provision. The survey was carried out by Her Majesty's Inspectors (HMI) in March 2003. The methodology for carrying out the survey is described in Annex A. The survey report, however, is based mostly on background data and information provided by the three countries. Ofsted is grateful to the three host countries for providing data and information for this report and for facilitating relevant visits and discussions.

Main findings

- Vocational education in all three countries focuses more specifically on the development of skills for particular types of employment than it does in England.
- Staying-on rates into full-time education or training beyond the end of compulsory education are higher in the three countries visited than in England. The end of compulsory education is less of a watershed in terms of further education and training pathways than it is in England.
- In all three countries, employers are much more directly involved in determining the content and assessment of vocational courses than in England. This helps to give the courses and associated qualifications currency and status. It also helps to ensure that vocational provision is more closely aligned to the needs of the economy than it is in England.
- Vocational courses in the three countries are held in higher esteem by young people and others than they are in England. This is mainly because they are seen as providing clear pathways to higher education and employment.
- Teachers of vocational courses are normally required to have industrial experience, which is regularly updated through industrial placements. This helps to ensure that teaching is firmly embedded in current commercial and industrial practice and that strong links are forged with employers.
- As in England, most young people undertake some work experience during their time in compulsory education. However, in all three countries, structured work placements are a much stronger feature of post-16 vocational courses than they are in England. This helps to keep the courses relevant and strengthens the applied vocational dimension of the courses.
- Vocational education takes place in good-quality accommodation which reflects the working environment.
- Careers education and guidance are seen as a strong and integral part of vocational courses in all three countries.

Commentary

Specific and general vocational education

4. Although it is a feature of general education in the 14–19 phase, vocational education in all three countries is interpreted more specifically than it is in England. In particular, it is seen as developing skills for particular forms of employment. However, there is growing recognition in these countries that the rapidly changing nature of employment requires increased flexibility and the development of more generic skills among the workforce. The general nature of most of the 14–16 vocational education provision in England is regarded as providing more flexibility for young people, who either do not wish to make decisions too early about seeking employment in a particular trade or industry, or wish to have a broad introduction into vocational work without being tied down to one specific field too soon.

Staying-on rates

5. Staying-on rates into full-time education or training beyond the end of compulsory education are higher in the three countries visited than in England. There is a general assumption that education will continue to at least the age of 18. In the Netherlands, all students are required either to take another year of full-time education or two years of part-time education after the age of 16. Drop-out rates at the age of 17, particularly in New South Wales and the Netherlands, are low. This is less true in Denmark where, despite high-quality counselling and guidance, drop-out rates from further education are causing concern. However, the lessons to be learned in England from the situations in these three countries are not immediately apparent.

6. In general, assessment at the age of 16 is seen as less of a watershed than it is in England. In New South Wales, for example, students are given certification at the end of compulsory education, provided they complete the required courses to a satisfactory standard. The vast majority of students gain the School Certificate at the age of 16, and staying on to take the Higher School Certificate at the age of 18 is seen as the norm for most students. As a result, there is much less of a feeling of failure at the age of 16 than there is in England.

Involvement of employers and stakeholders

7. The close involvement of employers and other stakeholders, including trade unions, in developing the content and associated qualifications of vocational courses is a long-established and positive feature in all three countries. It is, perhaps, a feature of vocational education that could be looked at further in England. In Denmark, for example, employers have a powerful voice in determining which vocational courses are offered and the number of places available on each course. In all three countries, nationally recognised vocational qualifications are a prerequisite for employment in many industry sectors. This close involvement helps to keep vocational education up-to-date and aligned to the needs of industry. It also

helps to give currency to vocational qualifications because they are well supported and accepted by industry. This contrasts with England, where there is considerable variation between industry sectors in terms of their involvement in vocational education and training. There is often a lack of understanding and acceptance of vocational qualifications by employers at a local level because they have not been closely involved in their development. This lack of understanding at a local level was also reported as a possible factor in New South Wales.

8. The close involvement of employers and other stakeholders also helps ensure that the provision better reflects the needs of the economy and the labour market than it does in England. However, there is a recognition in all three countries of the dangers of vocational education becoming too industry dominated. There are concerns, for example in Denmark, about vocational courses focusing on too narrow a range of skills. Much also depends on who represents industry as to how up-to-date the advice on course content and qualifications is. Again, there is a lesson here to be learned in England.

Parity of esteem

9. There is greater parity of esteem between vocational and academic courses in the three countries visited than there is in England. Greater parity exists because there are clearer vocational pathways to higher education and employment in these countries. In Denmark, parity of esteem is further helped by assessing vocational and academic courses on the same 13-point scale, and using an average points score for university entrance purposes. In New South Wales, vocational courses have equal status with academic courses in the Higher School Certificate (normally taken at the age of 18) and one course can be included as part of the university admissions index. Vocational courses in New South Wales also meet industry standards and therefore offer dual certification. The acceptability of vocational qualifications by universities and employers alike does much to raise their status. In general, more students in the three countries visited take vocational courses or a mixture of academic and vocational courses than in England so that vocational education is seen much more as the norm. In view of the current position, universities in England would need to be influenced considerably to accept the status of vocational qualifications as being the same for entrance purposes as general qualifications. However, if the quality of the emerging and current vocational qualifications can be assured and, perhaps, endorsed by employers, and treated on an equal footing with general qualifications in regard to 'points scored', the acceptance may not be as difficult to achieve as it once was.

Teacher placements

10. Teachers of vocational courses in Denmark, the Netherlands and New South Wales normally have relevant industrial experience and are often required to update their knowledge of the sector they are engaged with. In Denmark and the Netherlands, this typically occurs through structured short placements in industry during school holiday periods. Exchanges between teachers and employers are a common feature of vocational education in the Netherlands, with both sides gaining valuable recent and relevant experience of current practice in each other's fields. In

New South Wales, the maintenance of teachers' knowledge of current industrial developments is dependent on the sector involved. It may take the form of short placements or through other ways negotiated with the particular industry. Such links between industry and education are not uncommon in England but they appear to be more consistently and better developed in the countries visited. The application of knowledge to the commercial world, often a weakness in school-based vocational courses in England, features strongly in the countries visited. This is facilitated through close links with industry, often brought about through teacher placements or recent employment in the sector. The teacher placement into industry scheme, introduced and developed in England in the 1980s as part of a broader strategy to improve education business links and associated relevance in the curriculum through the Training and Vocational Education Initiative, was successful in part. Teacher placements continue to be arranged to support the achievement of these aims, although their effect is not known by Ofsted. Criteria for evaluating the contribution of education/business links, and associated schemes and initiatives in connection with the statutory requirement to provide work-related learning in Key Stage 4, are currently being developed in Ofsted. Information and data on the impact of teacher placements and other initiatives might therefore feature more often in inspection reports as from September 2004.

Work experience

11. As in England, most students receive some work experience during compulsory education. As is also the case in England, the quality of work experience varies considerably between placements. However, structured work placements, as an integral part of vocational courses, are much more the norm in the countries visited than in England. In New South Wales, for example, work placements are a mandatory part of many vocational courses and include work-based assessment. In Denmark, work placements are organised centrally with industry being closely involved in vetting their quality. In the Netherlands, students on pre-vocational courses, taken by 60% of secondary pupils, spend two days each week in employment. This is organised by employers, who receive tax incentives for engaging in work experience. Such placements are seen as an essential part of vocational education and they do much to make the courses relevant and realistic. Work experience in England is more often organised as a means of making the transition of pupils from school to work less difficult than it would otherwise be. If these international models were introduced into England, therefore, much further thought would have to be given to work experience being an integral part of vocational courses and being assessed, in part, by employers.

Accommodation and resources

12. The vocational education observed in colleges as part of this survey often took place in good-quality accommodation which closely reflected the working environment of the sector being studied. In some cases, this was helped by colleges having a degree of specialism. At the Shipping and Transport College in Rotterdam, for example, students are able to use sophisticated computer simulations to develop navigational skills. At Ryde College in Sydney, students have the opportunity to operate their own cordon bleu restaurant, hotel, conference centre and commercial

horticultural nursery. The vocational centres of excellence currently being developed in England may prove to be as effective as their Australian counterparts.

Careers education and guidance

13. Careers education and guidance are a well-established and integral part of vocational courses in the countries visited. Schools tend to have their own specialist careers consultants and guidance counsellors. They are often supported centrally in terms of resources and information on labour market trends. This helps to ensure consistency in the quality of advice. Counselling and guidance is a particularly strong feature of the Danish system. All post-16 students on vocational courses have their own contact tutor to help guide their academic progress as well as good access to independent careers and personal development counselling. The Connexions service in England provides the opportunity and potential for ensuring that young people have the relevant support and make the best decisions for themselves concerning their learning pathways and future careers. For information concerning the effectiveness of local Connexions services, please refer to individual Ofsted reports on them.

Conclusion

14. While it is difficult to compare and contrast provision in the three countries visited with England, it is, nevertheless, worth noting that in key aspects of vocational education there appear to be lessons that can be learned. In particular, lessons about parity of esteem, staying-on rates and the role of employers in developing and assessing qualifications.

Case studies

15. The following case studies highlight certain aspects of provision in the countries involved in the survey. No attempt is made by inspectors to evaluate the provision, although reference is made occasionally to the quality of accommodation and resources, as appropriate. The case studies are used to highlight, in particular, the features of provision that appear to inspectors to be ones that might be used to compare and contrast provision in England with that in the countries visited. A brief summary of the English system of vocational education is provided below for the purposes of comparison with the case study countries.

English system of vocational education

Pre-16

16. Up to the age of 16, pupils in England receive a broad, balanced curriculum based on the statutory requirements of the National Curriculum. Between the ages of 14–16 the vast majority of pupils take courses leading to the General Certificate of Secondary Education (GCSE) in a range of general subjects. In addition, many schools have made provision for some vocationally related courses for pupils aged 14–16. Until recently, the most popular courses were those leading to part 1 of the General National Vocational Qualification (GNVQ) or to foundation and intermediate level GNVQs. These courses cover a range of vocational areas such as business, health and social care, and leisure and tourism. Their purpose is to provide a broad preparation for further education or employment. The part 1 GNVQ is no longer available and other GNVQ qualifications are being phased out in the next few years.

17. As part of its overall strategy aimed at raising achievement of 14–19 year olds, the government has increased the flexibility available to schools to provide more vocationally related courses for their pupils. It has done so by reducing some of the National Curriculum requirements. Its Increased Flexibilities Programme (IFP), for example, offers pupils the opportunity to undertake college or further education and work-based courses while at school. It also encourages pupils to opt for one or more of the eight new 'double award' GCSEs in vocationally related subjects, which were introduced in September 2002. They include subjects such as information and communication technology (ICT), applied science, applied business and manufacturing which mirror those available at the Advanced Vocational Certificate of Education (AVCE). Approximately 65% of schools now offer one or more of the new GCSEs. Schools also offer a range of other locally or nationally recognised vocational qualifications that lead to the certification of specific skills.

18. Approximately 95% of 15–16 year olds undertake some form of work experience. Typically, the period of time ranges from one to two weeks but may include some extended placements or short placements connected to learning goals in particular courses. Also, to increase the vocationalism within their curriculum provision, many pupils are given opportunities to take part in a range of other work-related activities. These include 'industry days', enterprise projects, visits to industry,

business mentoring, and so on. The activities are linked to all subjects of the curriculum. They are often organised or supported by education/business partnership networks (EBPs), by individual education/business link organisations (EBLOs) or, more recently, the Connexions service. However, while they are significant in relation to quantity, these activities and pupils' experiences vary considerably among schools, both in relation to quality and scope. Employers are not reimbursed for the time they devote to education/business partnerships or for supervising pupils on work experience. Many businesses, particularly small and medium sized ones, find it difficult to meet the increasing demands from education.

19. The government has announced that, as from September 2004, its 14–19 strategy will include work-related learning for all pupils as a statutory part of the Key Stage 4 curriculum. This will comprise a number of elements to be developed separately or across the curriculum, including, for example, enterprise learning, work experience, economic and business understanding and financial literacy.

Post-16

20. Approximately 75% of young people stay in full or part time education beyond the age of 16, mainly in school sixth forms, colleges of further education and sixth form colleges. Of those staying on, 26% take vocational courses and a further 10% take a combination of vocational and academic courses. Relatively few students (approximately 10%) take a work-based training route.

21. Students can choose from an extremely wide range of vocational courses offered by several vocational awarding bodies. However, the majority of 16–19 year olds studying vocational courses in schools take the GNVQ or the AVCE. These courses are also available in colleges but more students take first and national diplomas, professional qualifications and national vocational qualifications (NVQs). Steps are being taken to reduce the plethora of qualifications which currently number approximately 3,000.

22. The AVCE was introduced in 2000 to provide a broad vocational alternative to the General Certificate of Education (GCE), Advanced Level, and is available as a single or dual award. It covers several vocationally related subjects, including ICT, leisure and recreation, hospitality and catering, business and engineering. It is possible for students to take a combination of AVCE and GCE courses.

23. The NVQ is a much more vocationally specific and competency based qualification. It is available in a very wide range of vocational areas and levels, up to the equivalent of graduate level. NVQs are normally assessed in the workplace. Popular courses include business administration and hair and beauty qualifications.

24. Modern apprenticeships (MA), at foundation and advanced levels, provide training opportunities for 16–24 year olds. They are a mixture of work-based training and education and include:

- an NVQ qualification
- key skills

- a technical certificate which recognises specific occupational knowledge and understanding
- other mandatory or optional elements as specified by the particular occupation.

25. A new flexible and individually focused programme called 'Entry to Employment' (E2E) was introduced in September 2003 for young people who are not yet ready for apprenticeship.

26. Concerns about the current vocational education system in England:

- compared to other European countries, participation of 17 year olds in education and training is low
- there is a perceived lack of parity of esteem, or value, between vocational and general, 'academic' education and qualifications
- the current qualifications system is complex and does not always provide clear progression routes for students
- there is wide variation in the scope and quality of vocational education and training among institutions and within different parts of the country.

Case study 1: the Netherlands

Evidence base

27. Inspectors visited the new national quality centre for vocational education (KCE); the association of Dutch colleges (BVE Raad); a navigation and transport college in Rotterdam (STC); a privately owned education and training company (LOI); the national council representing the main occupational areas of the Dutch economy (COLO) and the ministry of education. They held a range of interviews with government officials, teachers, managers and students.

Context

28. One of the key features of the Dutch education system, guaranteed under article 23 of the Constitution, is freedom of education. This includes the freedom to establish schools and around 65% of all schoolchildren in the Netherlands attend privately run schools, many of which are denominational. State run schools must admit all pupils. The government imposes a number of statutory standards in relation to the quality of education and prescribes the subjects to be studied and the content of national examinations.

29. The Dutch education system comprises primary, secondary and higher education. Primary education is compulsory from the age of five and lasts for eight years. Pupils' performance in the upper years of this phase determines the type of

secondary school they attend. Pupils are separated into three types of secondary education: VMBO (pre-vocational study) over four years (12–16 years); HAVO (senior general education) over five years (12–17 years); VWO (pre-university education) over six years (12–18 years). VMBO replaced the VBO (pre-vocational) and MAVO (middle school) routes in 1999. There are three kinds of VWO certificates: Atheneum, Gymnasium and a unified VWO Certificate.

30. Most secondary schools offer more than one 'pathway' so that pupils can transfer between these different study routes; some schools offer all three streams. About a third of pupils take the HAVO and VWO routes; a certificate of lower secondary education applies where pupils take the VMBO route. This depends on teacher assessment and is supplemented by examinations. All study routes start with a period of basic secondary education which lasts for between two and three years. This requires 80% of curriculum time to be spent on Dutch, English, a second modern foreign language, history and politics, geography, economics, mathematics, sciences, technology, two arts subjects, ICT and life skills. Students have the opportunity to specialise in vocational options in the last two years of the VMBO.

31. Young people must either undertake a year of full-time education after the age of 16, or two years on a part-time basis. About 88% of pupils stay on in full-time education or training beyond the compulsory school age. Pupils on the VMBO route can progress to the MBO (senior secondary vocational education, 16–20 years) or, having successfully completed the theoretical elements of VMBO, can progress to HAVO. Those who do not obtain VMBO certification can receive practical training to help prepare them for the labour market. The MBO and apprenticeship training is divided into four levels: Level 1, training to assistant level, six months to one year; Level 2, basic vocational training, two to three years; Level 3, professional training, two to four years; Level 4, middle-management training, three to four years, or specialist training, one to two years. The curriculum is divided into common subjects (Dutch, English, social studies, physical education and the arts); vocational specific study; optional study linked to the vocational specialism. More than a third of the working population of the Netherlands hold senior secondary vocational (MBO) qualifications or have completed an apprenticeship. Entry to these types of education or training is possible with a VBO or MAVO certificate. There are fiscal incentives to encourage employers to provide apprenticeships.

32. Special schools (VSO) exist for pupils with disabilities and those with learning or behavioural difficulties. In many cases, they have formed consortia with mainstream schools to improve the chances of these pupils obtaining school leaving qualifications.

33. The VMBO is designed to offer new educational routes for pupils in secondary schools between the ages of 14 and 16. Approximately 60% of secondary school pupils follow this route. It comprises four broad occupational sectors: engineering and technology (taken by 36% of students), economics (13%), agriculture (25%) and care and welfare (26%). Assessment is by programme rather than level and includes theory and vocational practice, combined with employment-related studies. A total of 63 vocational programmes are offered, allowing progression to specialist higher study (for example, construction to carpentry or bricklaying). Two days per week in employment is provided and assessment covers the vocational subject, Dutch and ICT. Some of the problems encountered with the VMBO include: institutions not

providing a sufficiently broad range of vocational options; progression to higher study at an appropriate level; creating a suitable learning environment for vocational study.

Vocational pathways and curriculum provision

34. The curriculum in the Netherlands has a strong and overt vocational component and a majority of pupils follows one of the vocational pathways. Links between employment and education are strong and enshrined in the curriculum development and examination processes. Employers regard involvement in education as obligatory.

35. The pre-vocational routes in VMBO were introduced to improve progression from the former tripartite division of lower secondary education and upper secondary vocational programmes. The intention of introducing four study routes for a single qualification title was to ensure that teaching and learning styles were matched to students' needs and aptitudes. This, in turn, was designed to produce better-motivated students and an improvement in long-term retention. The current drop out rate is estimated at about a third of students failing to reach Level 2 standard by the age of 23.

36. For the first two years of secondary education, all pupils experience a broad curriculum. Following this, pre-vocational pupils select one of the four occupational sectors described in the context section above referring to VMBO. Within their chosen sector, pupils are directed to one of four study paths depending on their performance in years one and two:

- **theoretical** study path, which prepares students for middle management or vocational training at Levels 3 or 4 (MBO or HAVO)
- **combination** path, which prepares students for middle management or vocational training at Levels 3 or 4 (MBO)
- **management** path, which also prepares students for middle management but is intended for those who prefer to study practical subjects
- **basic** vocational path, where students are given basic vocational education (Level 1/2) much of which is based in the workplace.

37. The four levels broadly equate to the proposed European qualifications structure. Level 2 is regarded as the minimum target qualification for employment as an assistant or technician. This second stage of pre-vocational education lasts two years; students following HAVO continue for another year and VWO an additional two years.

38. All pupils on one of these vocational routes spend half of their time continuing general education in Dutch, English, social studies, physical education, the arts and two other examined subjects depending on the route. The rest of their time is spent on vocational studies, although the extent of workplace learning varies, with those on

the theoretical pathway having two weeks' work experience whilst those following the basic pathway spend most of their time on workplace-based activities. Students who attend the combined school/work programme may advance to Level 2 in MBO.

39. Cross-curricular themes and general skills are woven into VMBO studies as it was perceived that, in the previous system, pupils' difficulties and resulting drop-out often resulted from an insufficient command of basic skills. Cross curricular themes include: tolerance, gender differences, sustainable development, citizenship, safety at work, ICT, the social significance of paid and unpaid labour, and art and culture. The general skills incorporated are clustered into five groups: learning to deliver; learning to learn; learning to communicate; learning to reflect on one's own learning; learning to reflect on the future.

40. There are two parts to the final VMBO examination: a school examination and a central examination. All study pathways must have some central written examination and a combination of written and practical school assessment in the case of theoretical or combined routes. Students on the basic path are assessed largely by means of practical tasks in both the central and school components.

41. There are strong and systemic links between education and employment through social partners. Partners are involved in the local application of curriculum guidelines, government of colleges and assessment. The vocational curriculum provided by a college is to some extent determined by local employment needs. For example, courses on navigation and transport are run in Rotterdam, and elsewhere there are colleges specialising in agriculture, reflecting the local industry.

Visits to educational institutions

42. The evidence for this section is derived from a visit to the Shipping and Transport College in Rotterdam, the only college in the country providing courses within this particular occupational area. Courses at Levels 2, 3 and 4 are offered, as well as bespoke training for the shipping and transport industries. The strong entrepreneurial culture, with simulation programmes sold worldwide, adds to the college's industrial credibility as well as providing additional funds.

43. In the two classes observed, 16 year olds worked on practical tasks associated with aspects of transportation and inland waterway navigation. These included using a computer programme, designed by the college, to work out appropriate waterway routes for particular kinds of consignments. Whether such work is suitably challenging could not be ascertained on such a short visit, but given the close involvement of the sector in the design of the curriculum, it is likely that it is well matched to industrial reality. The students observed remained on task, had good levels of spoken English (taken as one of the 15 subjects within the first two years of the VMBO programme) and were competent in the use of ICT.

44. There were 24 students in the class observed. Work placements form an important part of the training (14 days over the course of a three-month unit). Each student has a loose-leaf folder containing the course content, task sheets, records of task completion and other monitoring data. Tutors see themselves as coaches, within an environment that mirrors physically and attitudinally the industrial contexts

for which students are being trained. Tutors know their students well. Progress is tracked and recorded rigorously, with the acquisition of professional attitudes given high priority. For instance, students are expected to demonstrate compliance with health and safety requirements such as wearing appropriate industrial clothing.

45. Approximately 50% of students have special educational needs (either for learning or behaviour). Large numbers of students join the VMBO in their third year, having taken the first two non-vocational years in schools in different parts of the country. This presents organisational and pedagogical challenges to the college, particularly as a substantial proportion of students have to be accommodated in hostels. Few girls are attracted to the college, reflecting a traditionally male-dominated industry. Dropout from the VMBO is low, around 3%, and a very high proportion of students find employment in this sector.

46. Workspaces are large and well lit and include HGV container facilities for practising loading procedures, which have been funded by companies within the occupational sector. There are stand-alone computers in both of the workshops. The use of computer-based simulations to develop competence in, for instance, managing fire at sea or using a fork-lift truck is an integral part of teaching at VMBO and MBO levels. Computer simulation is also a major part of the college's research and development activity, with large-scale projects involving in-service professionals much in evidence.

47. The two supervising tutors in the classes observed have up-to-date knowledge and experience of the sector; one, for instance, had recently been a master on a commercial barge. Neither claimed they had found working with youngsters overly difficult, the former master observing that his previous job had involved him supervising trainee mariners, providing him with valuable prior experience. The college principal took the view that tutors straight from the sector (impressively, over 50% of the staff) are more adept at coaching students in practically-based programmes than those entering teaching via more conventional routes. All tutors, however, have to complete a teacher-training course. While this was not pursued in this particular institution, evidence from elsewhere suggests that school-industry exchanges for teachers and professionals are working well, giving both partners recent and relevant experience of both sectors. These arrangements are said to be cost-neutral. It is mandatory for all teaching staff to receive annual updating in the relevant industrial sector.

Summary of key points from the visit:

- a strong emphasis on sector-validated practical work
- appropriately equipped working environments (funded by industry)
- tutors with recent industrial experience, updated annually
- close monitoring of student progress.

Outcomes and progression

48. The VMBO is being examined for the first time this summer. There is a school exam and central exam and an element of portfolio-based assessment. No overall statistics are available for pass or retention rates on the precursors to the VMBO or the MBO, mainly because of the relatively autonomous way institutions operate in the Netherlands. Neither the inspectorate nor the education ministry routinely requires schools or colleges to produce this information. Currently all students at school are being issued with a unique identification number which will allow closer tracking of their progress and destinations in the future.

49. The evidence from those interviewed is that pass rates on the outgoing MAVO are high overall and average close to 90% of those students who complete the programme. Approximately 60% of those who achieve the diploma do so at a level equivalent to an NVQ Level 2 standard; the rest achieve at a level equivalent to NVQ Level 1. The institution has a responsibility to secure appropriate progression for the 10% of pupils who do not achieve the diploma. The VMBO allows certificate success where a pass in an individual component of the whole study programme is accredited. The school also works with employers to try and ensure that pupils without the diploma progress to appropriate employment or further training. The education ministry and inspectorate recognise that there have been problems with students not reaching the required standard in general secondary education at the end of the equivalent of Key Stage 3 (VBO). This necessitated too many pupils being excluded from the vocational route in favour of more remedial general education. The VMBO is designed to better integrate the two parts of the secondary education phase so that more students undertake specialist vocational programmes at the age of 14.

50. Of those pupils starting the MBO, about 22% progress from studying at Levels 1 and 2 (equivalent to NVQ Level 2) to 3 and 4 (equivalent to NVQ Levels 3 and 4). A smaller number, about 17%, progress to the HBO (equivalent to NVQ Level 5). Again there are no national statistics on MBO success, but from the evidence provided through the visit, pass rates appear to be close to 90% overall. Most young people with an MBO at Level 2 or above progress to appropriate employment or higher professional education. The social partnerships created in the education system mean employers have a much greater obligation to employ people who possess a qualification which they have endorsed.

51. The status of the VMBO, from the perspective of parents, is considered to be lower than the HAVO or VWO routes of study which are still felt to offer the best prospect of a more secure and better paid career. However, there is greater parity of esteem between vocational and general education courses than there is in England. The move towards larger secondary schools is an attempt to allow vocational and academic routes to run in parallel so that pupils can make choices at the age of 14, rather than 12, about their study route.

Lessons learned

- ❑ Close involvement of social partners, including employers, in determining the content and assessment of the pre-vocational (VMBO) and vocational curriculum (MBO).
- ❑ Industry lead bodies (national centres), which have employer, union and college representation, closely define the labour market and skill standard requirements of the economy and find work placements for both pre-vocational and vocational students.
- ❑ Tax incentives are provided for employers to take on work experience students.
- ❑ Central funding links the vocational programmes provided to the labour market needs of the economy.
- ❑ Pre-vocational study routes (equivalent to NVQ Levels 1 and 2) are closely linked to advanced vocational study options (equivalent to NVQ Levels 1 to 4).
- ❑ Teacher-business exchanges ensure both parties are kept up-to-date with new developments; all vocational teachers are required to undertake some industrial or commercial updating on an annual basis.
- ❑ High pass rates on pre- (MAVO to VMBO) and advanced (MBO) vocational programmes with close to 65% of students reaching the equivalent of NVQ Level 2 at the age of 16.
- ❑ Drop out rate from pre-vocational study is low (around 3%), suggesting that the content and teaching methods used on these programmes are successful in motivating students.
- ❑ A broad range of pre-vocational programmes (63 in total), grouped into four sectors, is offered.
- ❑ The 'basic' study route of the VMBO affords mainly practical study at Level 1 with a significant amount of work experience. A practical study route is also offered to those students unable to achieve a VMBO diploma.
- ❑ Teaching methods on VMBO have been changed towards a 'coaching' style where close individual support is offered to students with often a single vocational teacher used for up to 50% of curriculum time. 'Learning by doing' is the pedagogic style promoted, rather than more traditional didactic methods.
- ❑ Employers provide significant physical resources to ensure students operate at an industry standard. Nearly half the teachers in the college visited were recruited from industry.
- ❑ Mentors are appointed in all companies offering work experience, who are trained to support and guide students in their time at the work place.

Case study 2: Denmark

Evidence base

52. Inspectors visited two technical colleges, a centre for education guidance and a production school. They held discussions with officials at the Ministry of Education with responsibility for vocational education, college principals, teachers, students and representatives from employer organisations and trade unions.

Context

53. There are nine years of compulsory publicly-funded education from age 7 to 16. Around 13% of Danish children attend private schools. General education over the nine years includes required subjects and is graded through teacher assessment. Most pupils have one week of work experience during general education and some have 'tasters' at vocational schools (equating to colleges of further education in England) of around one week in total.

54. Most secondary education in the public sector takes place in the folkeskole, each of which has one or more guidance counsellors. During grades 8 and 9 and the optional grade 10, pupils undertake periods of work experience. The provision and communications between schools and employers are co-ordinated by the guidance and counselling centres. There are no vocationally orientated courses pre-16.

55. In post-compulsory education and training, including vocational education and training (VET), there are strong links with industry. Students pursuing an education within VET are paid, and intersperse college-based learning with periods of practice with employers. Most students have a formal contract of understanding with employers.

Post-compulsory education pathways

56. Approximately 94% of students stay on in education or training after the age of 16. All young people aged over 16 are given the offer of a youth education programme which is either academically orientated, vocationally orientated or a combination of both. A varied range of courses aims to meet the individual needs of the full range of students. The proportion of young people not in education one year after the end of compulsory schooling – about 16% – is well below that of the UK (above 25%). These high participation rates are long established and are reflected in the levels of education of the adult population. More than 80% of the adult population has attended full-time post-compulsory education, compared with 60–70% in the UK. However, there are concerns in Denmark that almost 20% of vocational students fail to complete their courses.

57. The vocationally orientated general upper secondary programmes are three-year programmes offered at business colleges and technical colleges. The courses have a strong theoretical component and are completed with either the higher

commercial examination or the higher technical examination. These programmes qualify for admission to higher education or occupational employment in trade and industry, usually involving further training.

Careers guidance and counselling

58. Very considerable professional effort and finance are invested in providing young people with access to high-quality careers guidance and counselling. Every school has at least one counsellor: there are municipal guidance and counselling services and students in vocational schools have a personal tutor. The management of these services is currently (subject to parliamentary approval) being removed from schools' and colleges' control and placed in the responsibility of the municipalities with the intention of boosting coherence and impartiality of advice. The restructured service will have broad resonance with the principles of Connexions in England. Additionally, the optional grade 10 (which equates to Year 12 in England) provides many young people with a period in which to clarify their ambitions and reach decisions about their future directions.

Structure of vocational education and training

59. The system of vocational education and training aims to be responsive to changing circumstances. Employer groups, through the trade committees, can propose new courses or programmes of training to the Ministry of Education. Subject to vetting, these can then be offered through the various vocational education and training providers.

60. National monitoring of provision is conducted by the Council of Vocational Education and the Trade Committees and locally by colleges and Local Educational Committees. The close structural connections among employers' organisations, colleges and trade unions have several benefits:

- training is close to and representative of current working practices in the relevant industrial sector
- training within employment enables young people to decide whether they are suited to an occupation
- young people are paid during the training and work placement by an employer with whom they have a signed contract
- employers are vetted by the trade body for proficiency in mentoring and to ensure the range of practices encountered by a young person are up-to-date
- employers are able to reclaim the payments to young people during the period when study is taking place at college

- employers and young people (once in a harmonious and productive relationship) often agree to permanent engagement within the workforce.

61. However, employer and trades union representatives, and some students, report strains in the system:

- the non-completion rate is around 20% overall and up to three times this level in some industrial sectors
- drop out occurs at the end of training periods, but also by the severance of contracts within them (without financial penalty if, as is most often the case, both sides agree)
- some trades, such as butchery, where work is physically arduous, are much less popular with young people or have high drop-out and low recruitment rates
- because there are few concessions given for prior learning, those students wishing to change to a different trade often need to start their training from the beginning, resulting in a very protracted overall period of training
- some young people find difficulty in securing a paid training contract with an employer and must then take their workplace learning at the college
- technological change and the relative appeal of different trades cause fluctuations in the supply and demand for trained and suitably skilled personnel. This is compounded by the effect of changes in youth culture and the willingness for deferred full-status and reward, causing labour shortages in some sectors and surpluses in others.

Organisation of VET courses

62. Provision is overseen by the Council of Vocational Education which includes representatives from the Ministry of Education, local government, trade unions, employers' organisations, college principals and teachers. The Council provides guidance and gives direction to the system. Current issues are the degree of flexibility, seen as too little in the current economic climate, and the growing tendency of young people to change career intentions and direction.

Monitoring and evaluation of the system

63. There are national information gathering systems on measures such as retention rates, completion rates and transfers. These are analysed by reference to age, labour market data and employment sectors. There is keen interest in these among trade unions, trade councils and guidance counsellors as they provide

'outcome' measures of how well the system is operating. There is also background data from a national registration system and entitlement cards held by all citizens. However, there is no continuous monitoring of teaching and learning. External consultants and inspectors are called in when senior staff at colleges and schools have concerns about practice, standards or other features of the provision. Attainment data about folkeskole are not in the public domain; the academic records of individual students are confidential. Students contribute to monitoring through end of semester or course questionnaires. Employer trade committees provide a quality assurance service by vetting the placements that can be used by students for the contracted work-based part of their training.

Visits to educational institutions

Hamlet Technical College, Hillerod

64. Hamlet Technical College is a college of technology and business which serves the area of North Sealand. The college caters for post-16 students, including adult learners in employment. The college provides a range of courses from basic technical education through to qualifications for university entrance. There are approximately 8,000 students on roll, of which 2,000 are full-time. Vocational courses take four years and commercial and technical upper secondary courses take three years. The college is a national centre for an aspect of boat building (a system of designation not unlike that of Centres of Vocational Excellence in England).

65. The work takes place in good-quality accommodation that simulates the working environment. The college is self-managing but the Ministry of Education specifies courses and its approach to pedagogy. For example, teaching focuses on the needs of the individual learner in the four-year vocational courses but there is a greater emphasis on whole-class teaching in the three-year higher technical and commercial courses.

66. The content of the vocational courses is regulated by the various trade bodies and close links are maintained with industry. Each course is only allowed to expand in numbers if there are sufficient placements available for students in the relevant industry. There is very good social care and guidance for students. Despite this, the college has concerns about the lack of student motivation and the high drop out rate. The college feels this may be due to the length of courses and the focus on specific skills, rather than more general education associated with the vocational area.

Copenhagen Polytechnic

67. Copenhagen Polytechnic is an association of 11 centres offering vocational training. Each centre is an independent institution offering courses in particular vocational areas. In total over 40 different career paths are offered. The Ministry of Education decides on the courses which will be offered and the number of places available, based on advice from a board of employers. The management board for each centre is composed of representatives from the relevant employer organisations. Teaching staff have some flexibility in deciding on the content and duration of the programmes of study.

68. The visit focused on a centre providing courses leading to careers in the media and graphics areas. Many of the 700 students at the centre are over the age of 18, having first completed an academic course at a gymnasium school. Courses are comparable in level to the English national and higher diploma courses. The teaching of technical design is done through practical project work and assignments. There is a very strong inclusion and support agenda with all students spending individual time with a 'contact teacher' to discuss progress. This is separate from the strong counselling provision. The aim is to have a ratio of 12 students to each contact teacher, although in practice there is some departure from this. There is a very close professional involvement of the media and graphics industries in deciding the content of the courses. Employers who are involved in training and assessment are first vetted by their industry to ensure quality is maintained.

69. Students are assessed against a 13-point scale which pervades all academic and vocational courses, thus helping to promote parity of esteem. An average points score is used to determine admission to higher education.

Copenhagen Centre for Guidance

70. The centre co-ordinates the work of guidance counsellors across the municipality of Copenhagen. It provides young people with independent careers education and guidance and advice on further education courses and training. It also helps to provide and co-ordinate work experience, supports links between education and industry and co-ordinates grade 10 provision (an optional year of 'clarification' for young people who are undecided on their future direction at the end of compulsory schooling).

71. The guidance centres are provided with accurate and up-to-date information on the whereabouts and previous educational experience of all young people through a central register. This is generated from students using their 'entitlement card' which is presented whenever they apply for public health care, education and training or other social benefits.

72. Counselling and guidance are a central and mature part of the education and training system. Support is generally more coherent and consistent than it is in England. Each folkeskole, for example, has its own specialist guidance counsellors who are well supported by the guidance centre.

Copenhagen Production School

73. Copenhagen Production School was established in the 1990s as part of an initiative to re-engage young people in education. The provision is part of a social inclusion initiative with a strong emphasis on vocationally orientated education taking place in a supportive environment. Teaching and support focus on meeting individual needs. Students are taught in small groups with a ratio of about 12 students to each teacher. About 60% of students come from post-compulsory education, mostly from the vocational areas. The remaining 40% come mainly from grades 9 and 10 (Year 11 and Year 12). The average age of students is 18 and boys outnumber girls by about 3 to 1.

74. There are no formal tests or examinations but students have the opportunity to pursue qualifications in other institutions. Courses generally last no longer than a year and there is flexibility as to when students join and leave the course. Students receive a statement of what they have completed on leaving the course. Teachers develop individual learning programmes which centre on the production of a good or service for a defined client, often a local business. The production aims to be profit making but the scale of the income generation does not make a significant contribution to the overall operating costs of the school.

75. Teachers in the production school have considerable autonomy in designing courses to meet the needs of individual students. Emphasis is placed on developing effective teaching and learning styles. Work is currently being undertaken to evaluate the longer-term effect of the production school on the education and employment of former students.

Lessons learned

- ❑ Employers and trade unions are closely involved with the development of vocational courses. This helps to keep courses up to date and in line with the needs of industry. Courses and associated qualifications have high status because they have currency with employers.
- ❑ Guidance and counselling are seen as a key part of vocational education and counsellors are provided with strong central support. There is a significant emphasis on social inclusion and improving access to education.
- ❑ There is an assumption that most young people will stay in education until the age of 18. All young people are offered education programmes at the end of compulsory schooling, regardless of performance at age 16. The end of compulsory schooling is not seen as such a watershed in terms of success or failure as it is in England. The optional grade 10 gives students the opportunity to clarify and re-assess their future education, training and employment pathways.
- ❑ There is effective tracking of post-16 students in terms of their educational, training and employment history.
- ❑ Academic and vocational courses are assessed on the same 13-point scale and an average of these points is used for university entrance purposes. This helps to promote parity across general and vocational courses.
- ❑ Vocational courses take place in good quality and relevant work environments. There is a structured programme of work placements.
- ❑ Course provision and, to some extent, student numbers are strongly influenced by the opportunities that either currently exist or are forecast to exist in industry.

Case study 3: New South Wales, Australia

Evidence base

76. Inspectors visited three schools, one senior college and three colleges of further education in the Sydney area. They held discussions with Department of Education and Training and Board of Studies officers, school and college principals, teachers and students, and employer organisations.

Context

77. The states and territories in Australia each have different systems of education. New South Wales (NSW) is the most populated state and its Department of Education and Training (DET) is the largest single organisation in Australia, with an annual budget of over A\$8 billion. It incorporates: early childhood and primary education; secondary education; technical and further education (TAFE); vocational education and training; higher education; and adult and community education.

78. Pupils transfer from primary to secondary school at the age of 12. The minimum school leaving age is 15 but very few pupils leave at this stage. The overwhelming majority of secondary-aged pupils in the state sector attend non-selective high schools, most of which provide for 12–18 year olds. Approximately 30% of secondary pupils are educated in private schools, some of which are selective. Almost 80% of 15–19 year olds are in education and training in schools or colleges and a further 14% attend university. Approximately two thirds of students aged 15–19 in further education and training (excluding universities) attend schools and one third attend colleges of further education.

79. Students take the School Certificate at the age of 16. A high proportion of students stay on in school for the Higher School Certificate (HSC), which is usually taken after two further years of schooling. The HSC is an overarching qualification, with students studying a minimum of 12 units in Year 11 (Year 12 in England) and 10 units in Year 12 (Year 13). Courses normally comprise of two units each, so students typically take six subjects in Year 11 (referred to as the preliminary course level) and five in Year 12. English is the only compulsory subject. The HSC caters for a very broad range of students, much greater than the advanced level cohort in England. Assessment is through a combination of teacher assessment and external examination. Scores in the HSC are used to calculate the University Admissions Index (UAI). The two-year nature of the HSC results in relatively few students dropping out at the end of Year 11 (Year 12). This is in contrast to England where there is a considerable drop out rate at the age of 17 associated with one-year courses.

80. Having all education and training organised under one umbrella organisation brings about considerable benefits. For example, having all 120 colleges of further education as part of TAFE results in considerable economies of scale and allows specialisation and rationalisation. An illustration of this is the impressive Open Training and Education Network (OTEN), referred to later in this report. TAFE is

large enough to undertake major training and staff development contracts. For example, it won the contract to train administrative staff for the Sydney Olympic Games. The incorporation of schools and colleges of further education within one department also facilitates the integration of education and vocational training.

Vocational pathways and curriculum provision

81. Students follow a broad education up to the age of 16, comprising eight key learning areas: English; mathematics; science; human society and its environment; languages; technological and applied studies; creative arts; personal development, health and physical education. Vocational education up to the age of 16 focuses primarily on vocational learning. This is general learning that has a vocational perspective and is developed through the School to Work Programme. There is greater specialisation in the post-16 curriculum in schools, including the opportunity to take specific vocational options. There is no equivalent to the GCSEs in vocational subjects currently being developed in England.

School to Work Programme

82. Australia's national strategy for vocational education and training was launched in 1992 with the aim of raising standards and giving national recognition to vocational qualifications. The School to Work Programme is part of the NSW Education and Training Policy 1999–2003 which is a local response to the national strategy. It focuses on introducing individual school to work plans, expanding work education programmes, improving workplace learning and providing training and development for careers advisers. The programme aims to equip students with a set of skills, understanding and attributes that will enable them to manage more effectively the transition from school to further education, training and employment. The School to Work Programme has five key components:

- school to work planning
- work education
- workplace learning
- industry-specific information on vocational pathways
- professional development support.

83. The school to work planning component of the programme was introduced to secondary schools in 2000 and is now being implemented in nearly all state secondary schools. It provides students in Years 9 to 12 (Years 10 to 13 in England) with current and accurate information and guidance to assist them in planning their school courses and post-school education, training and employment pathways. An important element in this is the employment-related skills logbook. This was extensively revised in 2002 to give greater emphasis to vocational learning both across the curriculum and beyond the school context. New syllabuses in subjects across the curriculum identify work, employment and enterprise outcomes and these

are reflected in the employment-related skills logbook. As with similar schemes in England, there is some variation across schools in how effectively this cross-curricular dimension is being implemented.

84. Work education is a course for students in Years 9 and 10 (Years 10 and 11) that aims to develop students' understanding of work and workplace issues. Schools have implemented this flexible course, with core and elective modules, in different ways to meet the needs of their students. The course content covers a range of topic areas, such as workplace communication, effective job seeking, labour market trends, the changing nature of work and workplaces, occupational health and safety, employment and vocational training, employment and training opportunities in specific industries and small business operations. Many schools are linking their implementation of work education with school to work planning. In one school visited, part of the course was completed in the workplace. It was also assessed and recognised as part of the School Certificate, awarded at the end of Year 10 (Year 11).

85. The workplace learning initiative aims to better prepare students, employers and parents for workplace learning and improve the quality of on-the-job supervision and training of students. As in England, a high proportion of secondary school students take part in some form of work experience. However, the move is increasingly towards highly structured work placements as part of Vocational Education and Training (VET) courses which contribute towards the Higher School Certificate (HSC). The initiative includes induction briefings for students and employers, health and safety information, assessment of students in the workplace and the professional development of teachers. There is a comprehensive workplace learning handbook for schools and colleges, and supporting documentation for employers and parents.

86. Industry-specific information on vocational pathways fosters the greater involvement of employers and local industry bodies in providing high-quality careers information to students and teachers in schools and colleges. The outcomes include multimedia resources on different careers and a series of training seminars to provide up-to-date information to students.

87. Support for professional development is currently focused on improving the skills of a range of personnel in schools, including careers advisers, teachers and subject leaders. Each school has its own specialist careers adviser. Support also includes ensuring that careers advisers have up-to-date industry experience and knowledge, helping students to develop individual school to work plans and assisting the expansion and co-ordination of vocational education programmes, including workplace learning and school-business partnerships.

88. Much of the School to Work Programme is only just becoming embedded in schools and it is too early to evaluate its full impact. There is no external inspection of schools in NSW. However, the schools visited by HMI were very positive about the programme and could identify its benefits in improving students' understanding of employment opportunities and developing work plans. The strengths of the programme include good support for school-based careers advisers, high-quality resources and the development of work education through an assessed elective course which contributes to the School Certificate.

Post-16 vocational education and training

89. Vocationally specific courses are almost entirely a feature of the post-16 curriculum. However, courses which have a vocational flavour, such as business studies and food technology, are also available to students both pre- and post-16. There is a wide range of VET courses which are developed or endorsed by the Board of Studies and are accepted as part of the Higher School Certificate. Assessment is competency based and leads to industry-recognised certification. Students taking Industry Curriculum Framework courses in business services, construction, entertainment, hospitality, information technology, metal engineering, primary industries, retail and tourism can take an optional examination which counts towards the calculation of the University Admission Index (UAI).

90. Schools are registered to teach VET courses through their school districts, which are registered training organisations (RTOs), and have responsibility for quality assurance. School teachers delivering VET courses must be accredited to teach the specific course and are normally required to have spent some time in the relevant industry sector. This typically occurs as part of their retraining programme. Teachers in some sectors are required to update their industrial experience regularly. This may involve a short placement in industry. Teachers require accreditation to assess competencies in the workplace. VET courses are also delivered in schools by TAFE teachers, who must possess relevant teaching qualifications and industrial experience. Students may attend TAFE colleges for particular courses, often being taught with students from several schools in an area. Students have a wide choice of VET courses and there are few restrictions on options other than those resulting from timetabling.

91. The number of students taking VET courses in schools has increased considerably over the past three years with over one third of Year 11 and 12 (Year 12 and 13) students now taking at least one VET course, compared to less than a quarter in 1997. An important factor behind the increase in numbers has been the linking of VET courses to university entrance. This has raised their status and increased their appeal to higher attaining students, although some of the students interviewed still saw them as being of less value for university admission than 'academic' courses. All vocational HSC courses are based on training qualifications that are recognised under the Australian Qualifications Framework. The dual HSC and industry-level certification of vocational courses is also important in encouraging more students to take them. A number of the students interviewed saw the industry qualification as not only enhancing their long-term career prospects but also as a way of securing part-time employment to help finance them through university.

92. Most VET courses for school students include a structured work placement and they are a mandatory part of all Industry Curriculum Framework (ICF) courses. This typically involves a placement of 70 hours. Placements focus on: the development of specific industry competencies, providing opportunities for students to practise and develop skills learned off the job, and assessment to industry standards.

93. Industry in NSW has traditionally been much more closely involved in the development and assessment of VET courses than has been the case in England. There are considerable benefits of VET being 'industry led'. For example, courses

more closely reflect the needs of industry and VET qualifications are more widely recognised and accepted. However, there is recognition of the dangers of VET being industry led, for example industry representatives can have a narrow view of VET requirements and may not always be at the cutting edge of new developments.

94. A major programme of professional development was introduced in 1999 to support the teaching of VET courses in the revised HSC which was introduced in 2000. This was implemented by the 40 district vocational education consultants and included case studies of approaches to timetabling, industry-specific training packages and a variety of training events. Currently, there is an on-going programme of professional development and support for VET teachers in government and non-government schools and colleges of further education.

School-based part-time traineeships

95. School-based part-time traineeships combine paid work and structured training which contribute to the HSC and lead to nationally recognised certificates of proficiency. An example of a traineeship is the Technology and Training for Tomorrow initiative for car maintenance technicians. The scheme was originally developed with Toyota but has now been extended to other automobile companies. It was established as a response to the lack of interest in the industry, caused by its poor image, and as a way of countering the existing high drop-out rate of trainee mechanics. Trainees selected for the two-year course in Year 11 and Year 12 (Year 12 and 13) spend three and a half days each week in school following a core programme of HSC courses, an extended half-day in a college of further education and a day of paid work in a car dealership. The original scheme with Toyota proved highly successful, with over 90% of the 53 trainees who started in 2001 completing the course and gaining a qualification. Nearly all continued training and gained employment in the automobile industry. The effective co-ordination of school, further education and industrial experience has done much to raise the quality and status of training in this sector and resulted in Toyota recruiting higher-quality personnel. The willingness of other automobile companies to become involved is a testament to the success of the original scheme.

Equity programmes

96. Equity programmes aim to give all students access to high-quality education to enable them to complete the HSC or its vocational equivalent and to provide recognised pathways to employment, further education and training. Programmes are supported through a combination of national, state and industry funding and are targeted at particular groups including: young people at risk; students from low socio-economic backgrounds; the Aboriginal population; students with a language background other than English; students in isolated communities and students with special educational needs. Students at risk are defined as 'young people who are at risk of leaving school before completing the HSC in Year 12 (Year 13) or a VET course at the same level'. National research shows that students who do not complete the HSC or its vocational equivalent have half the chance of getting and keeping a full-time job.

97. VET courses, with their greater emphasis on more practical, activity-based and work-related learning, are seen as a key element in motivating more young people to remain in education and training. Equity programmes support the development of VET courses specifically targeted at the needs of particular groups of students such as Aboriginal students, students with a language background other than English and students in youth custody. Several courses focus on a specific industrial sector such as the music industry, ceramics and automotive maintenance but also include the development of basic literacy and numeracy skills and an understanding of training and employment opportunities.

Visits to educational institutions

Information technology at East Hills Girls Technology High School

98. East Hills Girls Technology High School is a comprehensive school for students aged 11–18, located in a suburb of Sydney.

99. A wide range of vocational courses with information technology (IT) aspects is offered in Year 11 and Year 12 (Year 12 and 13), including software design and information processes and technology. These courses build on core courses in the lower school in IT and computer studies. Considerable emphasis is placed on the development of e-learning with the whole curriculum and associated assessment increasingly being made available to students through the school intranet. The International Computer Driving Licence is an integral part of the Year 10 (Year 11) curriculum. Recently, students gained practical experience by assembling and installing a network of computers and undertook a major extension of the fibre-optic network in the school.

Open Training and Education Network of TAFE

100. The Open Training and Education Network (OTEN) supports distance learning in NSW but is also used by other states. There are currently 35,000 students enrolled on courses. The development and provision of resources and support for online learning are based at a TAFE college in Sydney which is devoted entirely to distance learning, much of it vocational in nature. OTEN provides all distance learning support for secondary schools in NSW, many of which are in isolated rural areas. An important dimension is the wide range of provision aimed at improving access to education. This includes services for Aboriginal support, disability support, multicultural education support and basic literacy and numeracy support. It also provides a wide range of technical and further education courses for adult learners. Its provision has a world-class reputation, reflected in its ability to win distance learning training contracts from major companies such as Cathay Pacific airlines.

101. OTEN employs 120 full-time, 200 part-time and 700 off-site support teachers. Course units are produced by teams involving staff with expertise in distance learning working alongside staff with subject expertise. This system is reported to work very well and results in some impressive resources which can be accessed at home, in schools and colleges and in the workplace. However, these resources are seen very much as supporting rather than replacing other forms of teaching and learning and students have access to online help from trained teachers, counsellors

and careers consultants. The online system of assessment provides rapid and comprehensive feedback to students on their progress. Some of the pedagogical approaches are reported to attract and maintain students' interest, for example through the use of games and simulations

102. The success of OTEN owes much to the economies of scale that are gained through bringing technical and further education together in one organisation. This has enabled funding for cutting-edge technology and employing teams of staff which have both subject expertise and experience of media design.

Business services at Georges River Oatley senior campus

103. In Year 11 (Year 12) students are involved in a 'virtual' trading organisation (the Network of Practice Firms) which is based in NSW but attracts interest across Australia and internationally. This forms part of their business services course which is included in the Higher School Certificate. Trading with other companies takes place through e-mail and involves students in business services such as ordering, invoicing, marketing and keeping accounts. Students rotate between the various functions to give them experience of a range of business services. The course also includes more formal classroom-based learning and structured work placements.

104. The teacher in charge of the course has recent experience of business practice and is able to apply this in the classroom. The students appreciate the emphasis placed on the practical application of their work. They see the course as being relevant and helping to improve future employability. Some students plan to go directly into employment in an aspect of business services when they complete the Higher School Certificate. Others see the course as being useful in helping to gain part-time employment while at university.

Specialisation in further education colleges

105. One of the benefits in NSW of having further education under one organisation is that it allows for a degree of specialisation. The development of specialisation is helped in the Sydney area because good transport systems make colleges accessible to large numbers of students.

106. The Enmore Design Centre is dedicated to design education and the commercial application of design. Many of the staff at the centre retain strong links with industry and several have won major design awards and industry commissions. Facilities include well-equipped studios, state of the art computer technology, specialist workshops and a library dedicated to design education. The centre has a reputation for excellence and many students wishing to study design choose to come to Enmore rather than going to university. A substantial proportion of students are post-graduates, seeking to add vocational qualifications to their more theoretical university studies. The centre has a commitment to providing TAFE-delivered Higher School Certificate VET courses. There was much evidence during the visit of close links with industry. In one class students were using computer-aided design to develop products for the sailing industry. Another class visited was targeted at upgrading the skills of Vietnamese outworkers in the textile industry. The class included the use of computer technology and translators supported students. The

college worked in close collaboration with a leading Australian fashion company to develop the course.

107. Ryde College has first-rate facilities for horticulture, hospitality and tourism. For example, there are 16 training kitchens equipped to industry standards, a training restaurant, hotel and conference centre, all of which are run by students as commercial operations. The college is licensed to run cordon bleu courses. The horticultural section has its own commercial nursery and environmental education facilities. As with Enmore, staff have close links with industry and the college undertakes training and a range of projects for public and private commercial organisations. The college works closely with schools, for example it organised a summer school project for pupils interested in horticulture which involved designing and building a small garden.

Lessons learned

- Having all public education under one umbrella organisation brings very considerable benefits in terms of economies of scale and the integration of vocational and 'academic' education.
- There has been a strong determination to improve the quality of vocational educational and training in schools and colleges. Needs were identified and a clear strategy, supported by adequate resources from state and federal funds, has been implemented across NSW. This has again been helped by having education under one organisation.
- There is a general assumption that young people will stay in education to complete the Higher School Certificate at age 18. Less emphasis than in England is placed on achieving qualifications at the age of 16. The School Certificate (awarded at age 16) does not act as a filter to the type of further education pursued to the extent that GCSEs do in England. As a result, the vast majority of students genuinely see education as continuing to at least age 18 and far fewer students, compared to England, see themselves as failing in education at age 16.
- There are close and effective links between industry and education. Vocational education is strongly driven by industry through its close involvement in the development of courses and associated qualifications. Industry sees vocational education and training as essential in securing a highly skilled workforce to meet the needs of the 21st century. Industry's close involvement in developing vocational competencies has given vocational qualifications considerable currency in the workplace.
- The status of vocational qualifications has been raised by including them as part of the HSC and university entrance requirements. Vocational courses also provide dual certification because they satisfy HSC requirements and provide industry level qualifications. This makes them attractive to a wide range of students.

- Structured work placements are an integral part of the high quality of Higher School Certificate VET courses. Some competencies are assessed in the workplace and teachers and others involved in work-place training are given good support in carrying out assessments.
- Teachers of VET in schools are strongly supported by a programme of professional development which ensures they have an up-to-date knowledge of industrial practice in the sector they are involved in.

Annex A. Inspection methodology

Short visits were made to the three countries by small teams of HMI during March 2003 to observe vocational education in schools and colleges and to discuss developments with government officers, senior managers in schools and colleges, teachers, students and employers. The focus of the visits was on the context in which vocational education operates in each country and the different vocational pathways available to young people.

Definition

During the visit, inspectors used the following definition of vocational education to inform their observations:

Vocational education is concerned with preparing individuals for work or a career in a particular sphere of economic activity, industry, occupation or profession. Such an education involves the acquisition of skills, understanding, knowledge, qualities, and attitudes that will contribute to individuals' ability to make a living in their chosen career. Vocational education in schools and colleges commonly refers to those courses, subjects or curricular aspects that are systematically organised to prepare young people for work in particular industrial sectors, such as leisure and tourism, health and social care, and manufacturing. It also provides opportunities for young people who have yet to make a firm career decision to explore a range of possible alternative