

## Chapter 2

# Pathways to School Completion: An International Comparison

Stephen Lamb

Over recent decades, many western nations have stepped up their efforts to increase secondary school completion rates while maintaining high standards. How systems have approached this, and how successful they are, varies. One of the key differences is in the range of programs that are offered and the different pathways to completion. In some systems there is a menu of separate certificates and qualifications, each tied to a different strand of learning, and each representing a different pathway. In other systems there is a single certificate or qualification, but with structured options producing academic, general, and vocational tracks that work as pathways to different post-school options. This chapter compares some of the different pathways to completion of upper secondary qualifications offered by different countries. What are the main qualifications and pathways? How do they work? For whom do they work? Are they of equal value? Answers to these questions require an evaluation of the various options nations offer students to complete secondary school qualifications. The evaluation needs to consider criteria such as content, rigor and graduation requirements as well as how effectively the different options work to reduce dropout rates and deliver real benefits to those who participate. There is little use providing alternatives to deal with pupil diversity if the alternatives simply function to promote stratification by working as sources of relegation and offering only weak returns. For this reason, it is important to consider the extent to which different pathways are inclusive (who gets included) and promote equivalent standards of learning and outcomes. The discussion begins by comparing school-based pathways across countries, and then moves on to look in more detail first at academic pathways, then at alternatives such as vocational education. Finally, the discussion turns to alternative pathways to completion specifically available to dropouts.

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S. Lamb (✉)  
Centre for Post-Compulsory Education and Lifelong Learning,  
The University of Melbourne, Australia

## School-Based Pathways

### *Differences in Provision*

The provision of upper secondary education tends to vary across two main dimensions. The first is the level of *program diversification* or the variety of programs that are offered. This can include differently focused strands or streams such as academic programs, professional and technical courses, vocational education, and in some countries, subject-based strands such as specialist art, music, humanities and science programs (as in Italy, for example). The different programs orient students toward different post-school outcomes. The second main dimension is the extent of *institutional segregation* (or integration), which refers to the extent to which young people are separated into different schools or streams and tracks on the basis of the programs or qualifications in which they enrol.<sup>1</sup> In some systems this can occur early and extends well back into lower secondary or even primary school. In Germany, for example, it is common at the end of the primary school years for many students to be separated into different schools based on interests and aptitudes. Schools tend to be divided into those offering a more academic, university-preparatory curriculum (*Gymnasium*), those offering specialist technical training (*Realschule*) and those with a more vocational focus (*Hauptschule*). Alternatively, in other systems, such as in Sweden, Canada and the United States, students tend to remain in the same type of school through both the lower and upper secondary years, able to pursue a variety of programs or courses within one institution.

*Institutional segregation* and *program diversification* are mutually linked. Both are driven by curriculum requirements, and the demands of the academic curriculum are central to this. All systems give pre-eminence to academic knowledge. Some call it *general education*, while others refer to it more directly as *academic*. Even when alternative programs and curricula are developed, the academic curriculum enjoys the highest prestige. This is in part because of its role in preparing and selecting students for highly valued and sought after places in university. This function has worked against the development of truly democratic, inclusive and universal programs of teaching and learning built around a common curriculum. The stratifying effect of providing academic programs geared to university preparation operates in all countries, with the extent varying by the structure and number of alternative programs and the organisation of schools.

Table 2.1 presents information for a number of OECD countries on features of school organisation. It reports on school settings including the ages at which

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<sup>1</sup>This is different to the process of residential segregation which produces marked divisions in some systems, separating students on the basis of where they live and their racial and social backgrounds. Regional or residential segregation can create sharp divisions between schools in terms of intake, separating students almost as effectively as selective schooling. It also has a marked impact on student progress and outcomes, at least according to a range of school effectiveness studies (see, for example, Willms, 2006).

**Table 2.1** Comparisons of pathways to completion: features of school organisation

	Compulsory Years	Features of upper secondary schooling (organisational setting)		
	Age range	Age of entry	Level of segregation	Admission to type of upper secondary school
Australia	5–16	16	<b>Mixed:</b> largely comprehensive, some selective-entry schools	<b>Partly selective:</b> some schools use ability testing for entry
Austria	5–15	14	<b>High:</b> academic, technical, vocational, specialist schools	<b>Selective:</b> entry is dependent on type of school attended and academic achievement
Denmark	4–16	16	<b>Mixed:</b> some integration, though largely separate: general (gymnasium), technical, vocational	<b>Partly selective:</b> entry is dependent on completion of formal exams at the end of compulsory education and teacher recommendation
England	4–16	16	<b>Low:</b> largely comprehensive	<b>Non-selective</b>
Finland	6–16	16	<b>Mixed:</b> general (gymnasium) and vocational schools	<b>Non-selective</b>
France	3–16	15	<b>Mixed:</b> general (general and technological <i>lycées</i> ) and vocational schools ( <i>lycées professionnels</i> )	<b>Partly selective:</b> entry is dependent on completion of formal exams at the end of compulsory education
Germany	6–18	15	<b>High:</b> academic (gymnasium), technical, vocational, specialist schools	<b>Selective:</b> entry is dependent on type of school attended and academic achievement
Iceland	3–16	16	<b>Mixed:</b> some integration, though largely separate: general (gymnasium), comprehensives, vocational	<b>Partly selective:</b> Varied admission based on results at end of compulsory education
Italy	3–15	14	<b>Mixed:</b> general ( <i>liceo</i> ) and vocational schools ( <i>istituti</i> )	<b>Non-selective</b>
Japan	4–15	15	<b>High:</b> academic senior high school and vocational and technical schools	<b>Selective:</b> highly competitive entrance exams
Netherlands	5–18	12	<b>High:</b> academic (VWO), general (HAVO), vocational (VMBO) schools	<b>Selective:</b> entry is dependent on type of school attended and academic achievement, selection at end of primary school

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**Table 2.1** (continued)

	<b>Compulsory Years</b>	<b>Features of upper secondary schooling (organisational setting)</b>		
	<b>Age range</b>	<b>Age of entry</b>	<b>Level of segregation</b>	<b>Admission to type of upper secondary school</b>
<b>Norway</b>	6–16	16	<b>Low:</b> largely comprehensive	<b>Non-selective</b>
<b>Scotland</b>	4–16	16	<b>Low:</b> largely comprehensive	<b>Non-selective</b>
<b>Spain</b>	3–16	16	<b>Mixed:</b> largely comprehensive (Institutes for Secondary Education), though some specialist vocational schools	<b>Non-selective</b>
<b>Sweden</b>	6–16	16	<b>Low:</b> largely comprehensive	<b>Non-selective</b>
<b>United States</b>	6–16	16	<b>Low:</b> largely comprehensive	<b>Non-selective</b>

Sources: OECD (2006); Qualifications and Curriculum Authority, International Review of Curriculum and Assessment Frameworks Archive; Eurydice: Eurybase – the information database on education systems in Europe.

young people enter secondary school and the level of institutional differentiation or segregation. High levels of segregation operate where young people attend different schools either because of the streams or courses that they enter, or because they are divided across schools on academic ability lines. Low levels of segregation occur in systems that more often operate comprehensive schools, catering for a range of student skills and interests within one type of school. There are also countries that have mixed arrangements in which there is some separation across schools on the basis of academic skills or program choices, though there also are integrated or comprehensive schools that cater to a wide variety of students. Admission requirements vary depending on the types of schools and their level of differentiation.

Table 2.2 presents features of secondary school programs and qualifications. It provides details on the various programs and qualifications that are offered in each country. This includes information on the typical duration of courses, program-specific entry requirements (what criteria are set to enter each type of program and qualification), broad course content (in terms of core subjects and electives and associated arrangements) and the main form of assessment (whether exams, school-based assessment or other forms). To compare differences in qualifications standards, which can vary both within and across national systems, it is important to consider the formal completion criteria – what the requirements are to graduate and obtain a qualification. These can affect both the post-school opportunities, such as entry to university, and the rates of completion. Details on these are

provided together with completion rates expressed in terms of the typical age cohort, revealing the proportions of young people in each country who are likely to graduate with each type of qualification.

Table 2.3 presents some broad outcome indicators. These are provided at a system level rather than at a qualification level, since qualification-specific outcomes are not available either widely or consistently in an appropriate form for valid comparison. The broad indicators that are presented give some insight into the overall function and performance of system arrangements. Measures include *achievement levels* (mathematics achievement measured through the Programme for International Student Assessment [PISA]), *access indicators* (how inclusive are the qualifications and programs for the whole student population) and *transition outcomes* (what the upper secondary arrangements deliver in terms of labour market experience). The levels of PISA achievement relate to 15-year-olds and, therefore, achievement prior to upper secondary schooling in many systems. However, they provide a measure of the impact of school organisation and differentiation. The measures selected for inclusion are those that relate to between-school differences in achievement (percentage of variation in student achievement that is linked to differences between schools rather than students, all else equal). The second PISA measure is the percentage of between-school differences accounted for by the SES backgrounds of students and schools. This gives us an indication of the extent to which school arrangements and diversification work to stratify or separate students along social lines. The *access indicators* include measures of the percentages of young people who have left school without obtaining a qualification. They provide an assessment of the capacity of secondary school programs to accommodate and retain students. The *transition indicators* assess returns to study. They report rates of unemployment for dropouts and for graduates. Also included is the university entry rate, expressed as a percentage difference from the OECD average.

## Academic Pathways to Graduation

Every system provides programs and courses that work to prepare or select students for university, and this influences school and program organisation. Even so, there is considerable variation in the requirements for graduation and access to higher education.

In some systems, neither the number of subjects nor the disciplines to be studied for accreditation are prescribed. For example, students in England and Scotland may achieve accreditation in a single subject of their own choosing. In these systems, there are no compulsory subjects at upper secondary level – only electives, with the breadth of subject offerings dependent on school size and student demand. Students choose from a range of subjects available at *General Certificate of Education (GCE) Advanced Level* ('A level') and *GCE Advanced Subsidiary Level* ('AS level'). Assessment is academic and competitive, involving external examinations controlled

**Table 2.2** Comparisons of pathways to completion: features of qualifications

Features of upper secondary qualifications (program setting)									Cohort grad. rate
	Structure	Qualification	Duration (Years)	Entry requirements	Content	Form of assessment	Minimum completion requirements	Provides access to:	%
<b>Australia</b>	Varies by state	Senior school certificate (varies by state)	2	Open	Elective-based system, English compulsory in some states	External and school-based	Pass grades in at least four subjects	University, work, further education	68.0*
		VET certificates, school-based apprenticeships (single or dual)	1–2	Open	Module-based, industry specific	School/module-based assessment	Successfully completed course work	Work, further education	14.0*
		Certificate of Applied Learning (Victoria only)	1–2	Open	Elective-based system, VET focus	School-based assessment	Successfully completed course work	Work, further education	4.8
<b>Austria</b>	Separate	Certificate of Secondary Education ( <i>Reifeprüfung</i> certificate)	4	Dependent on type of school attended and academic achievement	Core subjects (mathematics, German, foreign language) and small number of electives	School-based written and oral exams with examination panel including at least one external panel member	Passing grades in compulsory subjects and electives (matriculation)	University and professional schools	12.8

		CSE and TVE Diploma ( <i>Reifeprüfung</i> and TVE Diploma)	4	Dependent on type of school attended and academic achievement	Core subjects (mathematics, German, foreign language) and electives	School-based written, practical and oral exams with examination panel	Passing grades in compulsory subjects and electives (matriculation)	University and professional schools	8.6
		Professional matriculation certificate ( <i>Berufsreife prüfung</i> )	4	Training certificate completion	Core subjects (mathematics, German, foreign language) and professionally relevant subject	External examination	Passing grades in compulsory subjects and electives (matriculation)	University and professional schools	20.5
		Apprenticeship certificate (dual system)	3–4	Open	Core subjects (mathematics, German, foreign language) and professionally relevant subjects	Examination	Passing grades in compulsory subjects	Trades, occupations, higher education	30.2
		Vocational certificates	2–4	Open	Core subjects (mathematics, German, foreign language) and professionally relevant subjects	School-based written, practical and oral exams with examination panel	Passing grades in compulsory and practical subjects	Trades, occupations, <i>Berufsreife prüfung</i>	17.9

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**Table 2.2** (continued)

Features of upper secondary qualifications (program setting)									Cohort grad. rate
	Structure	Qualification	Duration (Years)	Entry requirements	Content	Form of assessment	Minimum completion requirements	Provides access to:	%
Denmark	Separate	Gymnasium upper secondary certificate (STX)	3	Dependent on successful completion of formal exams at the end of compulsory education and teacher recommendation	Two main programs (languages, mathematics). Core subjects common to both programs (Danish, history, biology, music, geography, visual arts, religious education, classical studies, physical education), core subjects unique to each program and specialist electives Some options can be taken at different levels (intermediate or high)	External written and oral exams in ten subjects	Successfully completed examinations and program work with a minimum grade point average	University	22.7



		Higher preparatory upper secondary certificate (HF)	2	Dependent on successful completion of formal exams at the end of compulsory education and teacher recommendation	Common core subjects, three optional subjects and a major written assignment Some options can be taken at different levels (intermediate or high)	External written and/or oral exams in every subject studied	Successfully completed examinations and program work with a minimum grade point average	University	4.0
		Higher commercial upper secondary certificate (HHX)	3	Dependent on successful completion of formal exams at the end of compulsory education and teacher recommendation	Business and commercial studies focus. Core subjects, optional subjects and a major written assignment. Subjects are offered at different skill levels (A, B, C)	External written and oral exams in ten subjects	Successfully completed examinations and program work with a minimum grade point average. At least two of the subjects must be at 'A' (highest skill) Level	University	7.9

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**Table 2.2** (continued)

Features of upper secondary qualifications (program setting)								Cohort grad. rate
Structure	Qualification	Duration (Years)	Entry requirements	Content	Form of assessment	Minimum completion requirements	Provides access to:	%
	Higher technical upper secondary certificate (HTX)	3	Dependent on successful completion of formal exams at the end of compulsory education and teacher recommendation	Technical studies focus. Core subjects, optional subjects and a major written assignment. Subjects are offered at different skill levels (A, B, C)	External written and oral exams in ten subjects	Successfully completed examinations and program work with a minimum grade point average. At least two of the subjects must be at 'A' (highest skill) Level	University	2.8
	Vocational education and training (EUD)	1–4	Open	Seven programs comprising basic and main courses	School-based assessment with tests and an exam to measure proficiency	Successfully completed exam and program work with a final exam/proficiency mark	Trades and occupations	42.8
	Vocational education and training (EUD)	1–4	Open	Seven programs comprising basic and main courses	School-based assessment with tests and an exam to measure proficiency	Successfully completed exam and program work with a final exam/proficiency mark	Trades and occupations	42.8

<b>England</b>	Separate	General Certificate of Education (GCE) Advanced Level (A Levels). Single subject qualifications	2	GCE AS Levels	Range of elective subjects, commonly between two and four taken by a student	External examination	Pass grade in exam	University	42.4
		GCE Advanced Subsidiary Level (AS Levels). Single subject qualifications	1	No official criteria, though General Certificate of Secondary Education (GCSE) results can be considered	Range of elective subjects, cover half of the content of 'full' A Levels. Commonly four or more subjects selected	External examination	Pass grade in exam	University and further education	
		General Certificate of Education A Levels in Applied Subjects. Four qualifications available.	2	No official criteria, though GCSE results can be considered	Courses are available in ten vocational subject areas and are organised on the lines of the GCE AS and A format	External tests and internal assessment	Pass grade in requisite subjects	Work and further education	8.2

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**Table 2.2** (continued)

Features of upper secondary qualifications (program setting)									Cohort grad. rate
	Structure	Qualification	Duration (Years)	Entry requirements	Content	Form of assessment	Minimum completion requirements	Provides access to:	
<b>Finland</b>	Separate	Matriculation examination certificate	3	Dependent on successful completion of the compulsory education syllabus	Mother tongue (Finnish or Swedish) and three other core subjects from the second national language, other language, mathematics, general studies (science and humanities subjects) and at least one elective. Subjects in some core areas are offered at different levels of difficulty	National written examinations	Passing grades in all compulsory subjects with at least one subject taken at the advanced level (matriculation)	University	27.6 %
		Certificate in general upper secondary education	3	Dependent on successful completion of the compulsory education syllabus	Core subjects and electives. Subjects in some core areas are offered at different levels of difficulty	School-based	Passing grades in program syllabus	Polytechnics (professional higher education)	3.8

		Certification in Vocational Upper Secondary Education and Training	3	Dependent on successful completion of the compulsory education syllabus	Mixture of core general studies (same as national core curriculum), electives and workplace learning. 52 qualifications, 113 study programs across eight broad industry sectors	School work, theory and competence-based assessments	Successful completion of studies	Work and polytechnics	36.5
		Apprenticeship qualification certificate	1-4	Dependent on successful completion of the compulsory education syllabus	Mixture of core general studies (same as national core curriculum), electives and workplace learning	School work, theory and competence-based assessments	Successful completion of studies	Work and polytechnics	11.5
<b>France</b>	Separate	General Baccalaureate	3	Completion of lower secondary education	Three types of programs (literary, economic and social sciences, scientific). Minimum of eight or nine compulsory subjects plus a maximum of two optional subjects in each program	National written and/or oral examinations in core and elective subjects	Passing grades in examinations	University	34.6

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**Table 2.2** (continued)

Features of upper secondary qualifications (program setting)								Cohort grad. rate
Structure	Qualification	Duration (Years)	Entry requirements	Content	Form of assessment	Minimum completion requirements	Provides access to:	%
	Technological Baccalaureate	3	Completion of lower secondary education	Four types of programs (sciences and tertiary technologies, sciences and industrial technologies, sciences and laboratory technologies, medico-social sciences). Three specific programs for the hotel trade, applied arts, music and dance. Core and elective subjects	National written and/or oral examinations in core and elective subjects	Passing grades in examinations	University	18.9
	Professional (Vocational) Baccalaureate	2	Completion of lower secondary education	Compulsory general subjects and professional studies relevant to different occupations and industries	Written, practical and oral examinations in core and elective subjects, as well as work and training assessments during the course	Successfully completed examination and program work	Work, further education, university	12.5

		<i>Certificat d'aptitude professionnelle</i> (CAP) or <i>Brevet d'etudes professionnelles</i> (BEP)	2	Completion of lower secondary education	Compulsory general subjects and professional studies relevant to different occupations and industries	Tests or exercises based on compulsory subjects and professional studies	Successfully completed examination and program work	Work, further education	17.0
<b>Germany</b>	Separate	<i>Zeugnis der Allgemeinen Hochschulreife</i>	3	Dependent on type of school attended and academic achievement	Small number of majors selected from three areas (languages, literature and the arts; social sciences; mathematics; natural sciences and technology) with each area needing to be included	Abitur examination (written and oral exams)	Passing grades in at least four subjects	University	27.3
		Vocational leaving and apprenticeship certificates (Dual System)	2-4	Open	Workplace training and school-based formal curricula established by the lander. Training covers 350 professions	Final examination before an examination board relevant to the training industry. Practical and written component	Successful completion of the exam	Trades and occupations	48.5

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**Table 2.2** (continued)

Features of upper secondary qualifications (program setting)								Cohort grad. rate
Structure	Qualification	Duration (Years)	Entry requirements	Content	Form of assessment	Minimum completion requirements	Provides access to:	%
	Technical and professional certificates (such as the <i>Fachgebundene Hochschulreife</i> and the <i>Fachhochschulreife</i> )	2–3	Dependent on type of school attended and academic achievement	Specialise in subject areas such as engineering, economics, farming, the welfare system, and design. Students are also usually required to study core subjects (such as German, social sciences, mathematics, natural sciences, one foreign language and sport) from the three general subject areas	Final written and oral exams	Successful completion of the exam	Trades, occupations, higher education	12.2



<b>Iceland</b>	Separate	Matriculation examination certificate ( <i>studentisprof</i> )	4	Varied admission based on results at end of compulsory education	Three main academic programs: foreign languages, natural sciences and social sciences. Students required to take core subjects (regardless of program), specialised subjects according to particular program of study, and electives	Examination and continuous assessment	Successfully completed examinations. Can also be awarded from the accumulation of internally set unit-credits.	University	39.4
		Journeyman's examination certificate ( <i>sveinsprof</i> )	4	Open	Study comprises general academic subjects, theoretical vocational subjects and practical vocational subjects. Students must take a certain number of credits in general academic subjects	Journeyman's examination and continuous assessment of practical and theory work	Passing grades in exam and course work	Trades and occupations	40.6

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**Table 2.2** (continued)

Features of upper secondary qualifications (program setting)									Cohort grad. rate
	Structure	Qualification	Duration (Years)	Entry requirements	Content	Form of assessment	Minimum completion requirements	Provides access to:	%
Italy	Separate	Upper secondary leaving certificate ( <i>diploma di Stato</i> ) ( <i>Classical/Linguistic/Scientifica/Tecnica/ Professionale/ Magistrale/Artistica</i> )	5	Lower secondary diploma ( <i>primo ciclo di istruzione</i> )	Core and elective subjects, with electives varying by specialisation	Three written examinations and one oral examination	Successful completion of exams with a minimum grade point average	University	63.5
		Professional skills qualification ( <i>Diploma di Qualifica Professionale</i> )	3–5	Lower secondary diploma ( <i>primo ciclo di istruzione</i> )	Core and elective subjects, with electives varying by vocational specialisation. Specialisation involves basic training in either agriculture, industry and crafts, or the service sector	Examination	Successful completion of exam and course work	Work, further vocational education	5.8

<b>Japan</b>	Separate	Upper secondary school leaving certificate (academic)	3	Entrance exam	Credit-based system of core subjects (Japanese language; geography and history; civics; mathematics; science; health and physical education; art; home economics) and small number of possible electives	School-based assessment	Achieving threshold of credits (80) by successfully completing the required number of core and elective subjects	University entrance exam	66.1
		Upper secondary school leaving certificate (vocational/technical)	3	Entrance exam	Credit-based system of core subjects and specialised vocational or technical electives	School-based assessment	Achieving threshold of credits (80) by successfully completing the required number of core and elective subjects	University and work	24.7
		High school graduation qualification test		Individuals who have not graduated upper secondary school	Exams cover core subjects in the general upper secondary curriculum	Examination	Passing grades in exams	University entrance exam	

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**Table 2.2** (continued)

Features of upper secondary qualifications (program setting)									Cohort grad. rate
	Structure	Qualification	Duration (Years)	Entry requirements	Content	Form of assessment	Minimum completion requirements	Provides access to:	%
Netherlands	Separate	Upper Secondary Preparatory Diploma (VWO)	5	Achievement and school recommendation	Four programs (science and technology; science and health; economics and society; culture and society) with some common core subjects	National examination and school exam/assessment	Passing final grades with minimum overall grade	University	22.9
		Upper Secondary General Education Diploma (HAVO)	6	Achievement and school recommendation	Four programs (science and technology; science and health; economics and society; culture and society) with some common core subjects	National examination and school exam/assessment	Passing final grades with minimum overall grade	Professional higher education, VWO	21.2
		Upper Secondary Vocational Diploma (VMBO)	4	Achievement and school recommendation	Four programs associated with four industry or business sectors, each with its own combination of exam subjects	National and school-based examinations	Passing final grades with minimum overall grade	Work, further education	41.0

<b>Norway</b>	Separate	Upper Secondary Leaving Certificate (general)	3	Initially open, promotion can depend on achievement	Three general programs (general and business studies; music, dance and drama; sports and physical education)	Written and/or oral examinations and school-based assessment	Passes in all subjects and exams required for each program with minimum level of achievement in core subjects	University	44.0
		Vocational qualification/trade or journeyman's certificate	3	Open	Twelve vocational streams	Centrally set theoretical and practical examinations	Passes in all subjects and exams required for each program with minimum level of achievement in core subjects	Work, further education	29.9
<b>Scotland</b>	Integrated	National Qualification Certificates	1–3	Initially open, level of study depends on achievement	National Qualifications are available at five levels: Access, Intermediate 1, Intermediate 2, Higher, and Advanced Higher. Courses cover both general and vocational subjects. There are no compulsory subjects. National courses often involve three subject-related units	Internal and external assessment	National Course Qualifications are awarded to those who pass all of the internally assessed components and achieve a passing grade in the external exam for the course	University, work, further education	

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**Table 2.2** (continued)

Features of upper secondary qualifications (program setting)										Cohort grad. rate
	Structure	Qualification	Duration (Years)	Entry requirements	Content	Form of assessment	Minimum completion requirements	Provides access to:		%
<b>Spain</b>	Separate	Baccalaureate Certificate ( <i>Bachillerato</i> )	2	Lower secondary certificate ( <i>Graduado en Educación Secundaria</i> )	Four programs (arts; natural science and health; humanities and social studies; technology) with some common or core subjects	School-based assessment	Pass grade in all subjects	University entrance exam, advanced level specific vocational training		45.0
		Intermediate Specific Vocational Training Certificate ( <i>Técnico</i> )	1–2	Lower secondary certificate ( <i>Graduado en Educación Secundaria</i> )	Modules of theoretical and practical training based on 22 vocational fields, with some core subjects and field-specific options. Workplace module is compulsory	School-based and workplace assessment	Pass grade in all subjects and modules	Work, advanced level specific vocational training		21.0

Sweden	Integrated	Upper secondary leaving certificate ( <i>Slutbetyg från gymnasieskolan</i> )	3		Lower secondary certificate ( <i>grundskola</i> )	Two academic and 16 vocational strands. There are core subjects (Swedish, English, mathematics, civics, religion, science studies, physical education and health, and artistic activities) common to all strands plus specialist subjects	School-based with national tests in three core subjects (Swedish, English, mathematics)	Requisite number of credits with a pass grade in at least 90% for a completed course of studies, including a pass in a compulsory upper secondary certificate project	University, work, further education	88.0
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**Table 2.2** (continued)

Features of upper secondary qualifications (program setting)									Cohort grad. rate
	Structure	Qualification	Duration (Years)	Entry requirements	Content	Form of assessment	Minimum completion requirements	Provides access to:	%
<b>United States</b>	Integrated	High School Diploma (Regular/Standard, Vocational, Honor/ Regents, College Preparatory)	3	Open	Subjects can be clustered into vocational, general and academic tracks based on system of core subjects (often English, mathematics, social studies, science, health and physical education) and electives	School assessment on the basis of grades and work over the year	Satisfactory completion of a specified number of subjects (credits), designated for each diploma, varying by State. Minimum exit exam achievement scores in some states.	Higher education and work	75.0
		General Educational Development Certificate (GED)		Individuals who have not graduated from high school	Tests cover writing, social studies, science, reading and mathematics	Examination	Pass grade in all tests	Higher education and work	11.0

\*= Not mutually exclusive

Sources: Qualifications and Curriculum Authority, International Review of Curriculum and Assessment Frameworks Archive; Eurydice: Eurybase – the information database on education systems in Europe; National Ministries of Education – Austria, Denmark, France, Finland, Germany, Iceland, Italy, Japan, Netherlands, Norway, Spain, Sweden; U.S. Department of Education, National Center for Educational Statistics; Department for Children, Schools and Families, England; National Statistics Bureaus: Australia, Austria, Denmark, France, Finland, Germany, Iceland, Italy, Japan, Netherlands, Norway, Spain, Sweden.



**Table 2.3** Comparisons of pathways to completion: selected outcome indicators

	Selected outcome indicators						
	Mathematics achievement (PISA)		Access		Transition		
	% of between-school variance in mathematics achievement	% of between-school variance explained by SES of students and schools	% in programs in compulsory years leading to upper secondary vocational education	% of 25- to 34-year-old dropouts	% of 15- to 19-year-olds not in education or employment	% of 20- to 24-year-olds not in education and unemployed by attainment	% deviation from OECD average in university entry
						Dropouts	Graduates
Australia	22.0	15.4	0.0	23.0		11.1	3.1
Austria	55.5	35.2	42.9	13.0	10.2	12.0	4.2
Denmark	13.1	9.3	0.0	14.0	3.0	6.0	4.7
England	21.1 <sup>a</sup>	15.3 <sup>a</sup>	na	30.0 <sup>a</sup>	9.4 <sup>a</sup>	10.7 <sup>a</sup>	3.7 <sup>a</sup>
Finland	3.9	0.9	0.0	11.0	9.8	10.5	6.0
France	na	na	9.5	20.0	14.0	23.7	9.8
Germany	56.4	43.8	47.1 <sup>b</sup>	15.0	4.7	12.6	8.8
Iceland	3.6	0.3	0.0	32.0	4.3		
Italy	56.8	30.5	na	36.0	10.5	16.2	8.0
Japan	62.1	42.0	25.4	6.0			
Netherlands	54.5	40.7	61.3	20.0	4.6	7.4	2.7
Norway	6.5	2.9	0.0	4.0	2.7	10.9	4.0
Scotland	21.1 <sup>a</sup>	15.3 <sup>a</sup>	na	30.0 <sup>a</sup>	9.4 <sup>a</sup>	10.7 <sup>a</sup>	3.7 <sup>a</sup>

(continued)

**Table 2.3** (continued)

	Selected outcome indicators						
	Mathematics achievement (PISA)		Access		Transition		
	% of between-school variance in mathematics achievement	% of between-school variance explained by SES of students and schools	% in programs in compulsory years leading to upper secondary vocational education	% of 25- to 34-year-old dropouts	% of 15- to 19-year-olds not in education or employment	% of 20- to 24-year-olds not in education and unemployed by attainment	% deviation from OECD average in university entry
						Dropouts	Graduates
Spain	17.2	9.8	0.0	39.0	7.3	7.3	2.8
Sweden	10.9	5.8	0.0	9.0	4.2	11.9	8.2
United States	27.1	18.7	0.0	13.0	7.0	11.3	5.1

a = Figures are for United Kingdom

b = Figure from Secretariat of the Standing Conference of the Ministers of Education and Cultural Affairs of the Länder, Federal Republic of Germany (2009)

na = not available

Sources: OECD (2004, 2006).

and administered by GCE examining boards. High standards are required to pass a subject and gain accreditation, but the subjects can be of the student's own choosing. In terms of accreditation, this could be described as a system of standards, but standards without subject or knowledge prescription. For example, students could achieve high levels of learning in particular fields, such as history, while having poorly developed skills in other areas, such as mathematics. University preparation is sponsored in the areas of intensive study, and supported through a rigorous system of external examinations. However, accreditation is not based on a minimum number of subjects designed as a 'course' and covering a range of learning areas.

In other systems, the academic curriculum at upper secondary level is much more prescribed. In Austria, for example, students undertaking the matriculation certificate (*Reifeprüfung*) must study three compulsory subjects – mathematics, German, and a foreign language – and additional subjects from a range of specialist and interdisciplinary electives. The electives provide for some specialisation in certain areas depending on the school. The focus can be on classical languages, mathematics and the sciences, economics and business, instrumental music or art. Similarly, in Finland, students are required to study four compulsory subjects (mathematics, general studies, mother tongue, foreign language) and at least one elective. In both systems, assessment involves academically competitive examinations and graduation based on minimum grades.

Another common model is one involving a range of core and elective subjects grouped into specialist programs, with the course requirements varying depending on the length or duration of study. Denmark, for example, offers two main types of academic programs, one focused on languages and the other on mathematics. There are core subjects common to both programs (Danish, history, biology, music, geography, visual arts, religious education, classical studies, physical education) as well as core subjects unique to each program and specialist electives within each program. Graduation requires successful completion of externally administered written and oral exams with a minimum grade point average. France, Italy, the Netherlands, Norway, Spain, Sweden and Iceland all operate versions of this model of provision – separate specialist academic programs with core subjects common across all strands and either prescribed subjects or electives within each specialist course. Graduation is largely based on examinations, sometimes competitive national exams as in France and the Netherlands, with minimum passing grades or scores for individual subjects and a minimum overall score. Some systems, such as Sweden and Spain, use school-based assessment, though even in these systems there is sensitivity and pressure related to the issue of 'academic standards'. In Sweden, this has seen the introduction of national tests in key core subjects (mathematics, English, Swedish) which have to be used by teachers in the awarding of grades in these subjects.

Graduation (sometimes referred to as matriculation, or *matura*) in most countries requires successful completion of a minimum number of subjects. In Sweden, this means gaining a requisite number of subject credits through successfully completing a course of study. In many systems the requirement is for achieving minimum grades in at least five subjects including a set number of compulsory subjects

covering different key learning areas (such as mathematics and native language). An overall score, the equivalent of a grade point average derived from a minimum number of subjects, is sometimes used to set a threshold or standard for the successful completion of the award.

The function of academic programs in all systems, and the requirements around graduation and certification, are influenced by the process and needs of university selection. But there are some important differences in how this works. In some systems, successful completion of academic credentials at the end of schooling automatically qualifies students for entry to university without the need for further selection. In Germany, for example, candidates who are successful in the *Abitur* (the achievement examination taken on completion of upper secondary education) are awarded a general higher education entrance qualification (*Allgemeine Hochschulreife*). The *Abitur* grants access to all courses of study at universities and other higher education institutions. Similarly, in Austria, the *Reifeprüfung* or *Matura* entitles its holders to enrol in university studies of their choice, even though access to some specialist courses may require additional subject study and assessment. In the Netherlands, there may be different programs of academic study, but the VWO (matriculation) certificate qualifies pupils to enter university and higher professional education without further selection.

The onus of selection for university is removed from universities themselves in such countries because the whole organisational structure of schooling, programs and qualifications works to regulate the quality of students, delivering to universities a pool of academically selected and prepared students, homogeneous in skills, training and orientation. Numbers of students are also regulated because academic selection tends to occur early, more rigorously and more overtly than in other systems. The universities can distance themselves from involvement in the business of selection for entry because school organisation from an early stage is geared to the needs of academic recruitment and the promotion through matriculation of a minority of highly selected students. In all three systems (Germany, Austria and the Netherlands), the separation of students along academic lines occurs at the end of primary school or shortly thereafter. The majority of students in each system are channelled away from academic programs into vocational, professional and technical education paths at an early age. Table 2.3 shows that the three systems have the highest proportions of students in primary school and junior secondary years enrolled in programs leading to vocational education in high school (42.9% in Austria, 61.3% in the Netherlands and 47.1% in Germany). A minority of students – between 20% and 40% – are grouped into schools delivering intensive academic training leading to matriculation and university entry. The differentiation mainly occurs on the basis of students' ability and preference, and already orients students towards post-school study (university, higher education or other forms) or to the labour market on completion of school. Consequently, the rates of entry to university tend to be well below OECD averages in the three systems (see Table 2.3). These countries also tend to have high levels of variation in academic achievement across schools. Approximately 56% of the variance in mathematics achievement

among 15-year-olds in Germany is due to between-school differences (compared to 27.1% in the United States, 10.9% in Sweden and 3.9% in Finland, see Table 2.3).<sup>2</sup> In Austria, the rate was 55.5% and in the Netherlands 54.5%. Social differences in intake account for much of the between-school differences in all three countries (43.8% in Germany, 40.7% in the Netherlands and 35.2% in Austria). This is an indication that the school systems are highly segregated along social as well as academic lines.

University selection also influences the graduation requirements in other countries. However, where systems are more comprehensive and secondary education less differentiated, both in terms of school organisation and program structure, universities tend to undertake their own selection process or be heavily involved in the establishment of selection criteria. They are less likely to rely on school qualifications as the sole requirement for admission. In Sweden, for example, which has some similar features in school organisation to the United States, all upper secondary programs give access to higher education, formally at least. Admission decisions on the selection of students are made by the individual universities. This occurs within a national framework of credit points based on teacher assessment, other specific tests such as the university standard aptitude test, and previous education and work experience. In Spain, successful completion of the *bachillerato* (baccalaureate) grants access to the university selection process. To enter university, students must currently, in addition to obtaining the *bachillerato*, pass a national admissions examination.

The academic courses and graduation criteria work in such systems to provide access to the opportunity to compete for university selection, rather than to a university place itself (as would happen in Austria or Germany). The most extreme version of this is in Japan where, despite highly competitive academic exams at different stages of schooling, at which success is necessary for access to the next stage, students who graduate with a high school 'leaving certificate' still have to sit for a competitive national university entrance exam in order to be considered for admission to university.

In such systems, the universities do not rely on the school qualification alone as the entry status marker. This is in part because the number of university places falls far short of the numbers of students graduating from the academic school programs. In some countries, such as Australia, the response is to use high school subject grades translated into a university entrance score. In other systems, such as in Sweden and Spain, it is to impose further selection requirements such as entry exams. It may be no coincidence that such practices occur in countries that have

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<sup>2</sup>These figures were derived through an analysis of mathematics achievement using the PISA mathematics scale (see OECD, 2004, pp. 161–163 for an explanation of method). Variance was measured based on percentages of the average variance between OECD countries in student performance. For example, the total variance in student performance in the United States was 9,016 compared to the average OECD variance level of 8,593 giving a percentage of 104.9. For each country, variance is divided between that attributable to achievement levels of students in different schools (between-school differences) and that attributable to the range of student results within schools (within-school differences).

been successful in promoting higher proportions of students into academic programs in secondary school by delaying selection of branches of study to much later in schooling. A sizeable group of countries possess a largely comprehensive model in which students continue with a core curriculum until the end of the compulsory years (often at age 16). This is the model that exists in England and Scotland, many of the Nordic countries, as well as Spain, France and Italy. In these countries, students only choose a particular branch or type of schooling at the end of the compulsory phase, often following exams or assessments that lead to an accredited school certificate or qualification. Few countries have the system of secondary schooling that characterises the United States, Canada and most states of Australia in which there is no secondary school certificate or formal assessment to mark the end of the compulsory years.

Countries that postpone the point at which students have to choose a particular branch or type of schooling (those with no or low percentages of students in programs in the junior years tracking to high school vocational courses, see Table 2.3) do tend to encourage more students into academic programs leading to higher education. This can operate within the structure of a single certificate arrangement, as in the United States, where all students who graduate formally or technically qualify for higher education, or in a diversified high school program and accreditation structure as in Norway, Denmark, Spain, Japan and France where there are academic and alternative qualifications and only part of the student population enters a program oriented to university entry, even though the latter tends to be the majority of students.

Systems that defer the point of program choice tend to encourage more students into academic courses. But it would be wrong to conclude that institutional and program arrangements in such systems are not geared around the selective requirements of academic preparation for university entry. Even the most integrated and formally open secondary school systems tend to be organised around the needs of academic selection. Norway, for example, offers a wide range of general and vocational upper secondary programs which work to accommodate diversity in aptitudes and interests, while maintaining a more homogeneous group of the most academically skilled in the university-preparatory courses. Graduation from the academic preparatory courses is based on examination success and minimum grades in core subjects. In the United States, tracking serves the same purpose. Subject selection or more formal ability selection can work to group higher achieving students together in higher tracks, usually in mathematics and science classes, and low achieving students in lower track classes. The system of college preparatory classes for advanced students and general education and vocational classes for others sifts and sorts along academic lines, working to serve the needs of academic selection as the primary function.

The standards debate around graduation, and the push in the United States to install hurdle requirements through exit examinations and high-stakes testing, is usually focused on the standards of those who are not college-bound and the minimum skill levels they should possess or display in order to earn a diploma. A problem is that if higher standards are set (and high-quality learning and

achievement for all is a worthy national goal for education), it is important to ensure that the conditions are in place to deliver that high-quality learning for all. Currently, the upper secondary structures in most countries effectively prepare selected numbers of students for academic pathways. The challenge is around how effectively they deal with the learning needs and achievement standards of the remaining groups of students.

## **Alternative Pathways**

Not all students are able to or want to pursue academic pathways leading to university. While traditionally upper secondary courses were designed mainly for an academic elite, most countries have developed alternative courses and qualifications to enable an increasing number of young people, with a wider range of abilities, to complete school and graduate with a relevant qualification. The alternatives mainly involve technical or vocational education. In these developments, one challenge for systems has been to ensure that the programs are of high quality, fostering commitment to learning and personal development, and having valued employment or further education and training outcomes. Another challenge has been to ensure that the programs provide standards of learning that enable continued study in further education once students leave school, rather than being terminal options. The quality of programs is critical in addressing the problems of dropout because it is often the sorts of students at risk of dropping out – those who are not achieving well, those who have tended to become disaffected with school and formal academic work – who are likely to be attracted to available alternatives.

Countries have taken different approaches to these challenges. They differ, for example, in terms of whether vocational and general streams run in parallel or in integrated programs, in terms of the range and organisation of vocational qualifications, in terms of the timing and nature of the choices that young people have to make between distinct pathways and post-school destinations, and in terms of assessment and graduation requirements. Three broad approaches are evident, and these are discussed in detail below.

The first type of approach is to integrate or incorporate vocational options within the general structure and organisation of a more traditional school curriculum. This often involves offering a menu of vocational subject or unit options from which students choose, in combination with general and academic subjects, options that can be used as part of credit sequences which accumulate and are counted with other credits to meet completion requirements. This approach could be described as an ‘education or school-based’ model of vocational provision because it attempts to incorporate vocational education into the existing structure and logic of more traditional secondary school studies. Even though vocational units or subjects can be organised around areas of employment, industry or occupation, the modules of study tend to be school-based and school-delivered, designed in line with assessment and syllabus requirements of traditional school subjects. This approach is

more frequently provided in systems that have comprehensive school settings in the upper secondary years attended by university-bound students as well as those pursuing other destinations.

One example is provided by the United States where students have vocational choices as part of a menu of subject options. The vocational subjects tend to be designed around specific occupations in particular industries such as agriculture, business or health care. The sort of pathway vocational-track students would follow to graduation is to take a minimum number of credits in compulsory areas (such as English, mathematics, social studies, science, health and physical education), along with a number of credits in elective subjects from a menu including vocational options. The vocational electives can represent as much as one third of the required high school study. Alternatively, students may choose not to take any vocational subjects, since most high school students are free to take as much – or as little – vocational coursework as they want. This means that there can be varying levels of intensity of study in vocational education. Figures from the 1990s reveal that while the majority of high school students in the United States took at least one vocational education course (defined very broadly to cover a range of subjects from occupationally specific labour market preparation subjects to consumer education and technology), about 21% took a concentrated sequence of units that could be described as a vocational program or track (Laird et al., 2006). The rest enrolled in either a college-preparatory track (38%) or a general track (neither college-preparatory nor vocational, 41%). Of those taking largely a vocational program, about a quarter also completed a college-preparatory curriculum.

Based on outcomes data, vocational programs would appear to deliver some benefits as an alternative pathway for potential dropouts. Bishop and Mane (2004) reported that compared to other course takers, students taking larger numbers of vocational education units or subjects were more often lower achievers (based on Grade 8 grade point average) and from lower socioeconomic status (SES) backgrounds. Even so, in an analysis of short- and long-term returns to high school study, Bishop and Mane found that compared to other school leavers, those who opted for more vocational education tended, all else equal, to spend more time employed both in the initial post-school years and 8 years later. Other studies report equivalent employment outcomes, through lower levels of participation and completion in post-secondary education and lower earnings for those with stronger vocational preparation in school (Laird et al., 2006; Levesque et al., 2000). Bishop and Mane (2004) noted that stronger emphasis on vocational preparation courses in upper secondary education tended to increase school attendance of 15- to 19-year-olds. Other work also suggests that, all else equal, the more vocational education classes the students take, the less likely they are to drop out (Mertens et al., 1982, for example), and that part of the reason for this is the positive effects of vocational education courses on student engagement resulting from participation in applied, work-based learning (Hughes et al., 2001; Steinberg, 1998).

A similar model of vocational education to that found in the United States operates in Australian schools. The majority of young people enter a general education pathway at the end of compulsory education (Year 10 in most states). Usually completed



over 2 years, students can take vocational education subjects as part of their senior school certificate. To qualify for a certificate, students must generally complete a sequence of elective units or subjects with most final year students needing to successfully complete a minimum number of subjects, including English. One difference from the United States is that as well as obtaining a secondary school certificate, students enrolled in vocational education courses can also obtain a separate certificate for their vocational study, effectively providing a dual qualification. Vocational education programs can consist of stand-alone, nationally recognised, industry-specific courses based on industry training packages, which are also accredited for the secondary school certificate, though integration into school certificates varies across states. Some of the vocational education programs contain structured workplace learning with expected competency-based learning outcomes included in assessment.

In 2001, about 21% of Year 12 (final school year) students in Australian schools enrolled in at least one vocational education subject or course (Lamb & Vickers, 2006).<sup>3</sup> The rate was 29% for students from low SES backgrounds, and 11% for those from high SES backgrounds. The chances of unemployment in the first post-school year were lower among graduates who had undertaken some vocational preparation than among dropouts, and about the same as graduates who did not take any vocational education, though this varied depending on the type of program studied. There is also some evidence that students who studied vocational education courses in school were more likely to complete school because their study (including experiences in the workplace) helped them to form more positive views about learning and school. Students in Year 9 who reported plans to drop out more often completed school if they entered vocational courses rather than academic or general programs (Lamb & Vickers, 2006).

A second broad approach to the provision of alternative upper secondary pathways is to provide stand-alone vocational education qualifications where there is little or no attempt at integration with the academic or general high school curriculum. Instead, the alternative pathways have much stronger connections to employment and enterprises. The content of programs (including identified occupation skills and competencies) and assessment are often designed by agencies associated with employer and craft guilds, usually accredited or administered by labour and commerce ministries rather than education departments, and often legally governed by vocational training or commerce acts rather than education statutes. In such systems, vocational programs and qualifications have close links with the labour market and weak links with higher education, even though further education is often possible in the same vocational area. The programs are therefore sharply differentiated from academic programs where the main focus is preparing students for university. The programs and qualifications are mainly provided in separate schools. It is also a feature of such systems that separation based on selection or preferences tends to occur earlier in

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<sup>3</sup>The rate is closer to 14% using the approach applied in the United States by Laird et al. (2006) in defining a vocational program or course as a concentrated sequence of vocational units or subjects.

school, and students sometimes enter schools and courses in lower secondary education that already orient them towards vocational programs in upper secondary education. There are several examples.

In Austria, young people choose between a general education and several vocational pathways at a relatively young age. Most opt for vocational/technical pathways, with about 20% of all students completing their ninth year of compulsory schooling at a 1-year pre-vocational school (*Polytechnische Schule*), which qualifies them for transition to apprenticeship training within the dual system. There are a number of different types of schools offering technical and vocational education programs in the upper secondary years. In general, there are two pathways, the first involving apprenticeships as part of the dual system, and the second involving study either at a secondary technical or vocational school (*Berufsbildende mittlere Schule*), which provides intermediate vocational training, or at an advanced-level secondary vocational school (*Berufsbildende höhere Schule*). After reaching the end of the compulsory years, over 50% of students enter a school-based vocational route or an apprenticeship.

Similar structures are found in Germany, Switzerland, the Netherlands and Denmark. In Germany, after the universal 4-year primary-school period, educational pathways diverge within the secondary school system, which consists of vocationally focused schools (*Hauptschule*), general secondary schools (*Realschule*), academic schools (*Gymnasium*) and schools that combine these elements (*Gesamtschule*). The different pathways often converge within the dual system, which accepts graduates of all schools. At upper secondary level, the majority of German students (two thirds of each age cohort) undertake vocational training. In the Netherlands, secondary education, compulsory until the age of 16, is offered at several levels. Lower secondary vocational education (VMBO) programs combine general and vocational education, after which pupils can continue in upper secondary vocational education and training (MBO). Upper secondary vocational education (MBO) is offered in the areas of economics, technology, health, personal care, social welfare and agriculture. MBO programs vary in length from 1 to 4 years, as well as varying in level (from 1 to 4). About half of all upper secondary students take vocational programs.

There are variations to this broad approach, with some systems delaying the separation of students along academic and vocational pathways until the post-compulsory years. Examples are provided by Italy, Spain, Japan and France. In France, for example, many children enter vocational school after finishing lower secondary school. In vocational school, they do either a *certificate d'aptitude professionnelle* (CAP) or a *brevet d'études professionnelles* (BEP). Neither of these qualifications gives access to tertiary-level courses, but most young people who do enter vocational school leave for work. Both courses are taken over 2 years, and both offer training in a wide range of occupations in industrial, commercial and service sectors. It is possible for pupils who pass the BEP to do a further 2 years study to get the *baccalauréat professionnel* (or *bac pro*), giving access to university. About 40% of secondary school students enrol in vocational programs, and about 17% leave school having completed the CAP or BEP. In Japan, of the 30% of high

school students who take a vocationally based program, approximately two thirds enter vocational high schools (either special training colleges or miscellaneous schools) for a 3-year course. The remaining third enter colleges of technology for a 5-year course. Vocational programs combine learning modes, with theoretical and practical education at a vocational school or college alternating with practical training in an approved company or organisation. Courses are based on promoting applied technical skills linked to key occupations.

A third broad approach to the provision of alternative pathways is one in which separate vocational education programs are offered in upper secondary education, but these programs retain links with academic and general education and keep open avenues to higher education. Examples are provided in several Nordic countries, in particular Sweden, Norway and Finland. In Sweden and Norway, upper secondary education is largely provided in comprehensive schools as in the United States and Australia. In Sweden, after completing compulsory schooling, students proceed to a 3-year upper secondary school. Starting upper secondary education means choosing between a wide set of different educational tracks or programs. There are 17 national programs and numerous regional special programs. Over 50% of students embark on one of 14 national vocational programs when they enter the post-compulsory years, with the remaining students taking up one of two general or academic courses. All programs include a common set of core subjects (Swedish/Swedish as a second language, English, mathematics, religion, civics, science studies, physical education and health, and artistic activities) with the core subjects accounting for about one third of the tuition. The remaining time, pupils study program-specific subjects and choices. The national programs are frameworks within which the pupils can choose various specialisations, based on a sequence of credit-based units, with graduation requiring successful completion of a requisite number of core and other credits. The vocational programs are based on specific occupations and industries. All national programs qualify students for further study including higher education.

Completion of basic education in Finland leads to a choice in upper secondary school between general education or a vocational program. Both alternatives last 3 years and completion of the studies provides eligibility to apply for higher education. About 50% of high school students undertake vocational education. There are 52 vocational qualifications which provide generic basic vocational skills for work (in any field) and more specialised skills in one employment sector. For every program, 25% is core or elective and 75% is vocational studies, including about 15% in on-the-job learning. As in Norway, a vocational qualification can be obtained either through school-based education, or in the form of apprenticeship training. Apprenticeship training is based on an employment agreement (apprenticeship contract) between the student and the employer, confirmed by the education provider. The completion of a vocational qualification takes 3 years and provides, formally at least, access to higher education.

In Norway, upper secondary education is split into 15 education programs: 3 prepare for higher education and 12 are vocational. About half of the commencing cohort enters vocational pathways, though it is possible for students to transfer to the general education pathway in order to qualify for tertiary education. As in

Sweden, students undertake a set of common core and specialist subjects. Each educational program comprises a more basic first year, and 2 years of specialisation. Most vocational programs convert the last year of specialisation into 2 years of apprenticeship training in enterprises. The vocational preparation is based on specific occupations and industries.

### *Impact of Alternative Pathways*

There are few robust comparative evaluations of the effectiveness of the various alternative pathways looking at the issues of differentiation, inclusiveness and outcomes. It is possible to look in a descriptive way at the relationship between vocational pathways and graduation rates across countries by mapping rates of school completion against proportions of vocational graduates. This information is displayed in Fig. 2.1. The completion rates presented in Fig. 2.1 are cohort-based rates rather than the OECD measure using the percentage of upper secondary graduates to the population at the typical age of graduation. The rates were derived from reports provided by individual Ministries of Education and National Bureaus of Statistics.<sup>4</sup>

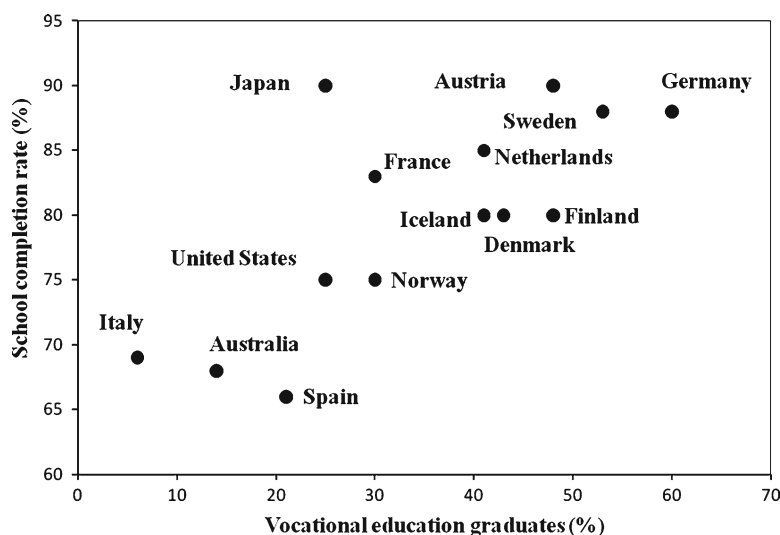
Figure 2.1 suggests that the different approaches to providing vocational pathways are related, on the surface at least, to differences in overall rates of completion. It shows that there is a tendency for countries that have higher completion rates to also have higher proportions of vocational education graduates.

The group of nations that operate vocational education programs as separate qualifications or tracks, including Germany, Austria, Denmark and the Netherlands, tend to have the highest rates of school completion. Sweden, which offers vocational programs that can qualify students for higher education, also has a relatively high graduation rate. Other factors need to be considered before drawing any causal conclusions, but the patterns suggest that systems enrolling more students in vocational education tend to have high rates of school completion.

Do high school completion rates promoted through program diversification come at the cost of stronger levels of social stratification? Diversification does contribute to social and achievement differentiation within nations: participation in different pathways is strongly linked to family background, and the different pathways promote social stratification. One measure of this is provided by OECD research using PISA data on the achievement of 15-year-olds collected from more than 35 OECD and other nations in 2000 (OECD, 2005). The data were used to measure the degree of institutional differentiation in each education system, and revealed that the countries that have more program and institutional diversification, such as Germany, Austria and the Netherlands, also have substantially higher levels of between-school variance in SES (OECD, 2005, p. 54). Differences in SES

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<sup>4</sup>For a comparison using OECD estimates of graduation, see Bishop and Mane (2004, pp. 384–385).



**Fig. 2.1** Upper secondary vocational education graduates, by school completion rates: selected OECD nations (Sources: see list at bottom of Table 2.2)

composition are more marked in those systems that promote selection of students into different schools and tracks at younger ages, even if these systems ultimately achieve high rates of school completion. Levels of social stratification across schools and programs are lower in systems that operate more comprehensive models of schooling. In highly diversified or segmented systems, social background is strongly linked to the school one attends and the curriculum track one takes.

Program and institutional diversification also promote stronger inequality in achievement. The second column in Table 2.3 shows cross-national differences in the levels of between-school variance in student mathematics achievement reported by the OECD using PISA data from the 2003 survey. The proportion of between-school variance in student performance was obtained through multilevel analysis and expressed as a percentage of total variance in student performance within a country (OECD, 2006). Total variance for each country is an aggregate of estimated levels of differences between schools and differences between students within schools. The figures show that the more diversified systems had the highest levels of between-school differences in achievement. Austria (55.5%), Germany (56.4%) and the Netherlands (54.5%) recorded between-school variance in mathematics achievement for 15-year-olds at rates more than double the rates for the United States (27.1%), England (21.1%), Spain (17.2%) and Sweden (10.9%). In the more diversified systems, students' achievement levels are strongly affected by the schools that they attend and the courses that they take. Recent *Education at a Glance* figures (OECD, 2007, p. 279) show that in many countries, even after controlling for social and other background differences, achievement levels of vocational education students are significantly lower than for students in academic and general programs. This suggests that the vocational education pathways attract

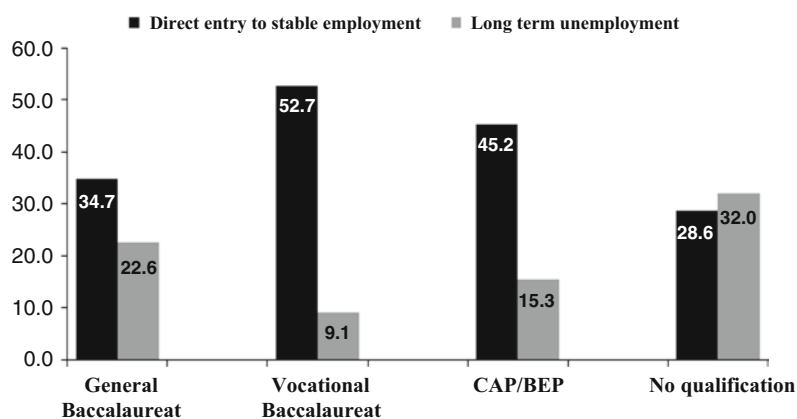
lower achieving students and can also be associated with lower standards of learning and achievement in areas such as mathematics (OECD, 2007).

A measure of the impact of social segregation on achievement in highly segmented systems is provided in the amount of between-school variance in student achievement that is accounted for by differences in student and school SES. Column 3 in Table 2.3 reports the percentage of variance in mathematics achievement explained by student SES and school social intake. In the highly segmented systems, student and school SES account for high proportions of between-school achievement differences. In Austria (35.2%), Germany (43.8%) and the Netherlands (40.7%), the percentage of between-school variance explained by the SES of students and schools is nearly double or more than the level of the United States (18.7%), and larger again when compared against England (15.3%), Spain (9.8%), Sweden (5.8%) and Australia (15.4%). Highly segmented systems are also more socially segregated.

While heightened social stratification may well be a risk of program and institutional diversification implemented as a means to achieving high upper secondary completion rates, this may be offset to some extent if the vocational and other alternative qualifications provide tangible benefits. This is a point made by Shavit and Muller (2000) in their cross-national study of vocational secondary education. They argue that alternative pathways provided by vocational education can work as a safety net, enhancing students' chances of finding gainful employment as skilled workers, while at the same time operating as a mechanism of social reproduction by diverting working-class students from upper secondary programs that lead to higher education and the professions. From this perspective, students who remain at school and complete a vocational or other non-academic upper secondary qualification are in a better position than those who drop out without completing any qualification, even if gaining the qualification has been achieved by being diverted away from more highly valued academic programs.

Do the alternative pathways offered in different systems provide good outcomes for students? Do they enhance students' chances of finding gainful employment as skilled workers? Estimates of economic prospects in the transition to the labour market suggest that there are returns to upper secondary qualifications in aggregate. OECD-derived estimates of unemployment among 20- to 24-year-olds show that unemployment rates are much lower for those with an upper secondary qualification than for those without, and as much as three times lower in some countries (see columns 7 and 8 in Table 2.3 for comparative rates across countries). However, these estimates do not separate out the effects of different types of upper secondary qualifications and pathways. While there are few robust international comparative evaluations of the effectiveness of the various alternative pathways, assessments of impact are available for individual systems and they tend to highlight the importance and value of vocational education qualifications, at least in comparison with dropping out and not gaining an upper secondary qualification.

Figure 2.2, for example, shows employment and unemployment experiences of a sample of 1998 school leavers over seven post-school years in France, by school attainment (Moncel, 2007). Long-term unemployment refers to those with either long



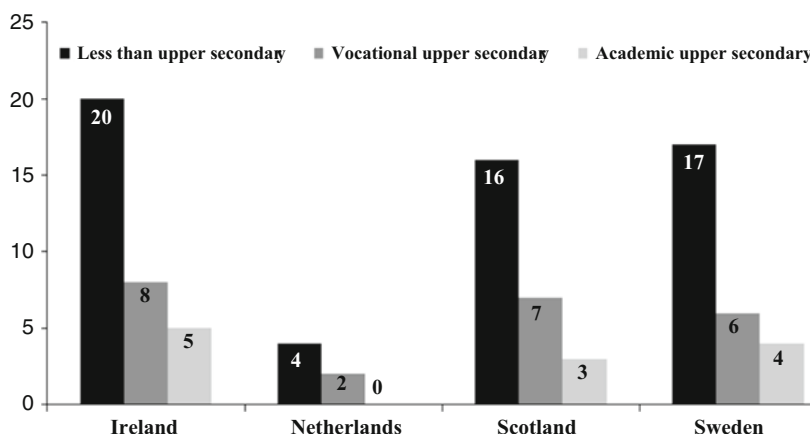
**Fig. 2.2** Stable employment and long-term unemployment as main labour market experiences over seven post-school years, by attainment: France (%) (Source: Moncel, 2007)

periods looking for work over the first seven post-school years, or recurrent spells of unemployment over that time. The patterns suggest that school leavers with vocational qualifications, either vocational baccalaureate or the shorter CAP and BEP certificates, are far less likely to experience long-term unemployment (9.1% and 15.3%, respectively) compared to either those who graduate with a general baccalaureate (22.6%) or those who do not gain any upper secondary qualification (32%). Those with vocational qualifications are also more successful at gaining early direct entry from school to stable long-term employment. The results suggest positive returns to alternative pathways in France.

The results in France are consistent with patterns in other countries. Figure 2.3 presents unemployment rates by qualification in four countries: the Netherlands, Ireland, Scotland and Sweden. The figures were derived by Ianelli and Raffe (2007) from national school leavers' surveys undertaken in the mid-1990s and are based on activities of leavers up to 4 years after leaving school. The results show that in each country, there is a lower rate of unemployment amongst those who have upper secondary qualifications than amongst dropouts (those with less than an upper secondary qualification). The gap can be quite large. In Sweden, for example, the rate of unemployment for those with vocational qualifications is almost three times lower than the rate for dropouts. In Scotland and Ireland, there are also positive effects for vocational qualifications. In the Netherlands, young people with vocational non-apprenticeship qualifications are half as likely to be unemployed as those without an upper secondary qualification. In all countries, those with an academic qualification were least likely to be unemployed.

The results for France and these other four nations are consistent with studies in other countries showing positive effects for upper secondary vocational qualifications compared to lower secondary education only or no qualifications (Payne, 1995; Dearden et al., 2001; Ryan, 2001, 2003; Van de Werfhorst, 2002; Gangl, 2003; Silverberg et al., 2004).





**Fig. 2.3** Unemployment rates, by school attainment and qualification type: Ireland, Netherlands, Scotland and Sweden (%) (Source: Ianneli & Raffé, 2007)

The results for France shown in Fig. 2.2 reveal an unexpected feature, which is the suggestion that there are positive returns for vocational qualifications when compared with academic qualifications, at least as measured by long-term unemployment. The results on other labour market outcome measures, however, reverse this pattern. According to Moncel's (2007) analysis, fewer graduates from vocational compared to academic programs enter higher education, and for those in the labour market, the vocational education effect is not evident when it comes to earnings or occupational prestige, at least for those with a CAP or BEP certificate compared to those with a general baccalaureate.

Making valid cross-national comparisons of the impact of different models of program provision and pathways on student outcomes is not a simple matter, partly because there are so few comparisons and little available comparative data that can support robust analytical modelling. In terms of inclusiveness, at a broad system level, the simple comparisons shown in Tables 2.2 and 2.3 and Fig. 2.1 suggest that despite the social segregation, the highly diversified models of provision in countries such as Germany, the Netherlands, Denmark and Austria can promote high levels of completion. The percentage of 15- to 19-year-olds not in education or training is relatively low in countries that have such arrangements (4.7% in Germany, 4.6 in the Netherlands and 3.0% in Denmark). This is partly due to older compulsory leaving age (at least in Germany) and long duration of all of the pathways, but also due to the diversity of programs that these systems offer to meet the needs and interests of a wide range of young people. The attainment levels of 20- to 24-year-olds suggest that these systems do well in getting high proportions of school leavers to graduate with an upper secondary qualification, even if for the majority it is from a vocational education pathway.

The highest attainment levels are in the systems that provide separate vocational programs in upper secondary education, but which permit movement between such



programs and academic or general education and provide avenues from alternative pathways to higher education. In Finland and Sweden, fewer than 10% of 20- to 24-year-olds are without an upper secondary qualification or not in education and training. Furthermore, these countries have comparatively high rates of graduation from general and academic pathways and strong entry rates into higher education (20% or more above the OECD average).

In terms of labour market outcomes, the simple comparisons at a system level shown in Table 2.3 may reflect at least in part the nature and structure of pathways taken. In every country, the percentage of 20- to 24-year-olds not in education and unemployed in 2004 is larger for those who left school without an upper secondary qualification than for those who left with a qualification. In some countries, the rates of unemployment are quite large. For example, the rates of unemployment in France are comparatively high for both groups (23.7% for dropouts and 9.8% for graduates). Yet, the large gap between the two groups suggests, particularly when viewed in conjunction with the cohort graduation rates presented in Fig. 2.2, some capacity for the vocational pathways in France to connect a proportion of young people to the labour market in the initial school-to-work transition period. In some countries, the provision of alternative pathways can also be associated with high rates of transition to higher education, suggesting that the range of upper secondary pathways is providing part of the youth cohort with high-quality vocational education qualifications combined with university entry certification. Sweden and Finland both have above average rates of entry to higher education, high rates of school completion, low rates of social segregation across schools and strong returns to upper secondary qualifications when compared against those outcomes for dropouts.

It is difficult to conclude much from the comparisons of outcomes in Table 2.3, however, because the results do not separate out the effects of the different alternative pathways in each country. Nor do they take account of differences between the populations of students who did and did not graduate, which is needed to assess the independent effects of the alternative qualifications. It is not possible to accurately measure effects without more rigorous modelling of the returns to qualifications. Such studies comparing returns to upper secondary qualifications, particularly cross-national studies, are rare. One exception is the study by Shavit and Muller (1998, 2000). They examined the impact of vocational education qualifications on occupational attainment in the early post-school years using similarly structured country data sets (from the 1980s and 1990s). Some of their results are presented in Table 2.4.

The results in columns 2 and 3 of the table are the log odds ratios of getting a first job as a skilled rather than unskilled worker. The numbers (presented as log odds ratios) are a way of representing the probability of gaining skilled work rather than unskilled work. The larger the number above 1, the more positive the effect of vocational education in helping graduates gain a job as a skilled worker. The results suggest that in most countries, upper secondary vocational qualifications have positive effects compared against dropout (not gaining any school qualifications), though not in Sweden or the United States. There are mixed patterns when effects of vocational qualifications are compared against academic education. In the

**Table 2.4** Country differences in the effects of vocational education qualifications on occupational outcomes for males

	Log chances of entering labour market as skilled rather than unskilled worker		Occupational prestige (standard deviation units)
	Compared to dropout	Compared to academic qualification	Compared to academic qualification
Australia	2.53	2.57	0.04
United Kingdom	1.72	0.62	-0.15
France	1.54	0.45	-0.28
Germany	3.05	na	-0.30
Italy	1.11	0.22	-0.16
Netherlands	1.14	1.10	-0.36
Sweden	0.59	0.52	-0.51
United States	0.71	0.20	-0.11

Source: Shavit & Muller (2000).

Netherlands and Australia, the results are positive (numbers greater than 1) for vocational qualifications, suggesting that there are gains to vocational training in school. In all of the other countries, the results favour academic education. The same is true in looking at the results for occupational prestige (the social standing or status of occupations). The authors claim that cross-national differences in effects of vocational education are in part related to differences in institutional characteristics and program design, with effects bigger in countries where programs have a strong occupational specificity and where there are strong linkages with labour market organisations (Shavit & Muller, 2000). It is important to note that the results relate only to the first job on entry to the labour market and may not reflect longer-term career effects. Vocational education effects in career beginnings may be short-lived as students who gained academic training take advantage of better career advancement. No account is taken of rates of entry to higher education and further study. Furthermore, in some countries such as Australia, the data relate to periods when vocational education in schools was undeveloped and involved only very small numbers.

A more recent study of four countries by Iannelli and Raffe (2007) examined employment outcomes for young people making the transition from school to work in four countries: the Netherlands, Ireland, Scotland and Sweden. They compared outcomes according to different types of school qualifications and across countries. The study included calculations of the probabilities of employment outcomes controlling for country, qualification level and grades. The findings revealed that at a broad level vocational qualifications were more likely than lower secondary education to lead to participation in post-secondary education (at least for males). Vocational education options were less likely than academic qualifications to lead to study in post-secondary education. There was a positive vocational education effect for entry to employment rather than being unemployed when compared with

dropouts, but no effect in comparison with academic graduates. Differences were also reported across countries, with the vocational education effects appearing stronger in the country that emphasised employment-linked or employment-based vocational programs.

## Pathways to Completion for School Dropouts

Despite the range of alternative programs offered to encourage more young people to remain in school and complete, most countries have numbers of students who drop out before gaining a qualification and the numbers can be large. In Australia, the dropout rate is about 30% (Lamb et al., 2004). In the United Kingdom, one estimate places it at about 25%, though much higher if it includes those who did not obtain five or more A\* to C grade General Certificate of Secondary Education (end of compulsory education) results – this would place the dropout rate at closer to 40% according to estimates for 2005/2006 published by the Office for National Statistics (2006). For the Netherlands, the level is around 15%, with a rate of 10% for those entering vocational pathways and 4% for those in general or academic programs (ven de Steeg & Webbink, 2006; Ministry of Education, Culture and Science, 2007). In Denmark and Finland, it is about 10% (Ministry of Education, 2005; Statistics Finland, 2007), in Spain over 30% (Ministry of Education and Science, 2006), and in France around 17% (Moncel, 2007).

Systems have responded to the problem of dropout in different ways. Some have resorted to legal and rather blunt measures by increasing the compulsory school leaving age, a measure which may keep students at school, but does not guarantee successful graduation, in part because it does not address the reasons why young people want to quit school in the first place. But many have responded by strengthening or putting in place opportunities for dropouts to gain upper secondary or equivalent qualifications outside of school. These external or post-school alternative pathways provide opportunities for study and graduation mainly through a range of educational or employment-based schemes. Some of these measures are occasionally criticised for their potential to encourage or induce young people to drop out of school – young people who may otherwise have remained in school and obtained a qualification. One pattern that may reflect this is the gender difference in dropout rates. The tendency for males to drop out of school at a greater rate than females in some countries may be linked to the availability of a wider range of alternatives for males, such as apprenticeships, as well as changes in labour demand (for example, in Australia, see Lamb et al., 2004). Some alternatives may work this way; however, systems face a critical dilemma – students may choose to drop out even if alternatives are not available. With large existing numbers of dropouts in an era where skills and education are more important than ever, can systems afford to restrict opportunities for young people to re-engage in study? Some econometric modelling of alternatives in the United States suggests that while alternative schemes may encourage some to drop out, their removal would not necessarily produce major reductions in dropout rates (Agodini & Dynarski, 2000; Tyler, 2003).

This section will look briefly at some of the main alternative pathways for dropouts to gain upper secondary or equivalent qualifications. There are three main categories examined: (1) those that are equivalent upper secondary credentialing programs, (2) those that provide employment-based education and training pathways such as apprenticeships, and (3) those that involve education-based qualifications through tertiary education institutions.

### *Upper Secondary Credential Equivalents*

Some systems have developed equivalency credentialing programs for young people who do not gain a school-based diploma or certificate. The programs represent equivalents to the general or main high school graduation qualifications. There are two main examples. The first is the General Educational Development (GED) tests in the United States and Canada – a series of tests (in writing, social studies, science, reading and mathematics) that can be taken by those who have not gained a high school diploma. If successful in these tests, a qualification is awarded attesting to the achievement of high-school level academic skills.

The second scheme is the high school graduation proficiency qualification test in Japan. It is similar to the GED in that it is open to those who have not gained their high school diploma (usually those who have been truant from school or home schooled) and it aims to assess the level of skills across key subject areas to secondary school graduation level. The examination gives young people the opportunity to be certified that they have an academic ability equivalent to mainstream secondary school graduates. Success in the tests gives candidates the opportunity to then take the competitive university entry examinations.

In the United States, according to recent figures, about 9% of school leavers successfully complete a GED within 8 years of leaving school (National Center for Education Statistics, 2004). Studies on returns suggest that those who obtain a GED are less likely to go to college than those who obtain a traditional high school diploma, and they have lower earnings in later life (Cameron & Heckman, 1993; Murnane et al., 2000; Rumberger & Lamb, 2003). Murnane et al. (2000) estimate that about 30% of GED recipients had entered college by age 27 compared to 69% of those with a regular diploma. Recent work suggests that in terms of returns the benefits of completing the GED work differently depending on skill levels, providing benefits mainly to those dropouts with the lowest cognitive skills. For dropouts with stronger skills, completion of the GED is not associated with higher earnings (Boesel et al., 1998; Murnane et al., 2000; Tyler et al., 2000). While the returns for those who gain a GED may not be as positive as for those who achieve a high school diploma, GED certification does play a role in the educational attainment of high school dropouts (a point made by Maralani, 2003). Many dropouts resume their schooling at some point and go on to earn a GED. According to a study by the National Center for Education Statistics (1998), those who gain a GED are three times more likely to enter a post-secondary institution than dropouts who do not earn a high school credential.

## *Apprenticeship Qualifications*

In some nations, apprenticeship training is an important pathway for school dropouts. While in countries such as Germany and Austria, through the dual system, apprenticeships are linked to the school system, in other countries such as Canada, Australia and the United Kingdom, they are generally provided as post-secondary education and training. Apprenticeship-type programs generally involve an indenture or contractual agreement with an employer where a young person is expected to undertake a period of formal training in a classroom setting, sometimes referred to as *block release*, as well as on-the-job experience. The programs are designed to equip young people with the skills associated with a particular craft or trade and to provide certification through widely recognised qualifications. In most systems, apprenticeships are a structured program of vocational preparation sponsored by an employer, involving both part-time education and on-the-job training and work experience, leading to a recognised vocational qualification, and taking up to 4 years to complete. Such schemes are often appealing to young people who drop out of school because they provide a wage while learning (often a training wage, and usually below average earnings for young people not in training). They also involve the acquisition of skills through applied learning in workplaces, again often appealing to dropouts who have become disengaged from formal classroom learning in school settings, providing an alternative for young people not attracted by full-time school. Formally, most systems provide the possibility for moving to higher levels of training after completion of apprenticeship qualifications, though actual progression rates are often low (Centre Européen pour le Développement de la Formation Professionnelle [CEDEFOP], 2001).

Apprenticeships and apprenticeship arrangements vary widely across nations. In some countries, such as the United States, apprenticeships are less well developed as a system of training for young people, organised around a smaller number of occupations, and mainly operate for young adults; therefore, they play less of a role for dropouts. In other systems, such as Australia, they are the major form of education and training available to dropouts. Across nations, apprenticeship programs vary on such matters as length of training (from 6 months to 4 years), how they are entered (through employment contract or formal college enrolment), the requirements around formal learning (initial period of formal training, or on-going mixture of workplace and classroom training, for example), time in the workplace and areas of training. The traditional model of apprenticeship in many systems has been a 4-year indenture in a traditional craft area such as an electrical trade, plumbing, carpentry or automotive trade. However, there have been major reforms in several countries, expanding the areas of occupational training and the length of training. In Ireland and Australia, for example, traineeships have been introduced which provide training in white-collar occupations, such as clerical work (Barry, 2007; Dockery et al., 2005). The traineeships are usually for 12 months rather than 4 years. Modern apprenticeships in the United Kingdom can be short in duration – less than 12 months – and resemble more a program of youth training than a formal apprenticeship indenture program (Ryan & Unwin, 2001; Ryan, 2001).

The evidence available to compare the effects and value of apprenticeships as a pathway for dropouts across nations is meagre. There is information available on individual systems comparing the relative merits of apprenticeships with other qualifications, though. In Australia, for example, the national school dropout rate (numbers of young people entering secondary school and leaving without having gained a senior school qualification) is about 30%, 36% for males and 24% for females (Lamb et al., 2004). In the 1990s, up to 36% of male dropouts took up an apprenticeship and 28% gained a qualification by age 24 (Lamb et al., 1998). For females, the rate of take-up was about 8% and the qualification rate was about 6%. Recent figures suggest similar levels (Lamb & Mason, 2008). Traineeships extend structured training programs to a wider range of occupations than those represented by apprenticeships. Like apprenticeships, traineeships provide wages, but these are usually lower than those of apprenticeships, and traineeships generally provide one year of training rather than four. About 12% of male dropouts gain a traineeship qualification and about 9% of female dropouts do.

Returns to apprenticeships in Australia appear favourable for male dropouts. Regression estimates of the length of time unemployed at age 24 suggest that males gaining apprenticeship qualifications spend significantly less time unemployed than dropouts without qualifications and those with other types of vocational qualifications (Lamb et al., 1998). The rate is similar to that for school graduates. The patterns are similar for females with apprenticeship qualifications though the gaps are not significant. In terms of earnings, average weekly earnings regression equations for 24-year-old full-time workers suggest that males who complete apprenticeships earn 10–11% more than male 24-year-old graduates who do not undertake any post-school education or training. The wage benefits for females are lower, with female apprenticeship graduates earning 2% more than 24-year-olds who had graduated from high school without undertaking any further study.

The effects may hold over careers. Borland et al. (2000) estimated returns using the results of a wage regression equation for male weekly earnings from 1997 data. The equation was estimated for employed males (full- and part-time) aged 18–59. The estimates suggest that those with trade or apprenticeship qualifications earn marginally less than school graduates (3% less), but they earn significantly more than dropouts without any qualifications (14% more).

Evidence from other countries suggests some differences in effects. In France, compared to other labour market entrants, apprentices are likely to have more stable early labour market experiences, spending more of their early working lives in employment compared to other labour market entrants, though their pay is lower at the end of 5 years (Bonnal et al., 1999). In the United Kingdom, apprenticeship graduates tend to have higher employment rates, though only for moderate and low achievers. They also tend to have higher earnings, but only for males (Payne, 1995). In several countries, apprenticeship training appears to do less for women than for men, in terms of entry rates, occupational access and subsequent labour market outcomes. This may be because there is considerable gender segregation in the areas of apprenticeship training, consistent with patterns of gender segmentation in occupations and labour markets.

In sum, apprenticeships provide an important alternative pathway for school dropouts. Compared to those who attempt to enter the labour market without post-school education and training, apprenticeship graduates enjoy benefits in terms of stable employment, less risk of unemployment and higher earnings. Apprenticeship shows up particularly well in such comparisons, being associated with gains in pay as well as employment. The returns may not hold up as well compared against mainstream high school qualifications, but for male dropouts the evidence suggests that they are an important avenue of successful transition from school to full-time work.

### *Vocational Education Qualifications*

Another avenue for school dropouts to obtain qualifications is the range of vocational education qualifications usually offered through tertiary institutions such as further education colleges, polytechnics, and adult and community colleges, depending on the country. In many countries, more and more young people have come to rely on opportunities in community and adult education and training as they make the transition from school to work. As a result, the numbers of school leavers who enter employment without participating in some recognised form of further education or training have declined (for example, see OECD, 2006, p. 329, for trends in participation in education and training of 20- to 24-year-olds). It is through the tertiary education and training system that dropouts who struggle to find work can acquire the skills and attain the upper secondary or equivalent qualifications that can help make them more competitive in the labour market. The parts of the tertiary education sector that offer opportunities for dropouts to gain vocational qualifications comprise a vast number of public and private providers catering to the needs of a wide range of clients. The principal role they play for dropouts is to help provide alternative pathways through which dropouts can enter study, gain qualifications and pursue work, as well as proceed to higher levels of vocational education and general study within the vocational or the higher education sector.

The evidence available for comparisons of the way tertiary education opportunities work for dropouts in different countries is meagre. Data on individual systems looking at comparative returns to qualifications are more readily available. One such study in the United Kingdom was undertaken by McIntosh (2004) who studied the outcomes of the vocational qualifications pathways for 25% of school leavers at 23–25 years of age who had dropped out of school without any qualifications. The study took data on the cohort of individuals who left school in 1993, 1994 and 1995, and examined their further education decisions and early labour market outcomes. The results revealed that 56% of male and 54% of female dropouts gained at least one vocational qualification by their mid-20s. Vocational qualifications are provided at different levels associated with length of study and depth of skills training, with Level 3 qualifications equivalent to A levels (academic high school qualifications). Table 2.5 shows the proportions of dropouts gaining qualifications at each level from Level 1 (low) to Level 3 and above (high).



**Table 2.5** Qualification pathways of 23- to 25-year-old dropouts: United Kingdom

No school qualifications	Males (%)	Females (%)
+ no vocational qualification	44.1	46.1
+ vocational level 1 (GCSE D-G standard)	30.7	29.9
+ vocational level 2 (GCSE A-C standard)	11.1	10.8
+ vocational level 3 (A levels)	5.4	4.1
+ above level 3	8.7	9.1

Source: McIntosh (2004).

**Table 2.6** Employment and earnings of 23- to 25-year-old school leavers with no qualifications: United Kingdom

	Females		Males	
	Employed (%)	HRLY wage	Employed (%)	HRLY wage
<b>No school qualifications</b>				
+ no vocational qualification	30.6	5.53	68.2	6.05
+ vocational level 1	58.3	7.35	75.3	7.25
+ vocational level 2	70.3	5.44	88.7	7.14
+ vocational level 3	77.4	5.79	94.3	6.22
+ above level 3	93.5	8.23	77.9	9.45
<b>High school qualifications</b>				
+ no vocational qualification	83.9	6.87	94.4	8.14
+ vocational level 1	90.6	7.81	91.5	7.38
+ vocational level 2	78.0	6.69	94.8	7.98
+ vocational level 3	90.5	8.19	95.8	8.18
+ above level 3	92.0	8.85	91.6	10.03

Source: McIntosh (2004).

The analysis then went on to show that vocational qualifications can significantly impact labour market success, with the group of unqualified school leavers being much less likely to be employed than both dropouts who later gained vocational qualifications, and school leavers who had obtained upper secondary qualifications at school (see Table 2.6). The analysis reveals that those dropouts who do obtain vocational Level 2 or 3 qualifications are much more likely to be in employment than those who do not, their employment likelihood closing significantly on that of those individuals who reach these levels via the academic route at school. To a lesser extent, the wage gap also closes with vocational qualification acquisition, at least for initially unqualified males.

Results obtained in similar studies undertaken for dropouts in Australia are more equivocal. As in the United Kingdom, vocational qualifications in Australia are provided at different levels associated with length of study and depth of skills training. Basic and middle level vocational qualifications, which are the main qualifications undertaken by dropouts in their initial post-school years, are associated with weak, sometimes negative, employment and earnings returns when compared against school



graduation, and provide little advantage over dropouts who do not undertake any further study (Lamb et al., 1998). This is not the case with higher level vocational qualifications, which show positive returns, but the participation and graduation rates for dropouts at these levels are low. In the 1990s, approximately 18% of male dropouts gained basic or middle-level vocational qualifications by age 24, with 3% of male and 7% of female dropouts gaining high-level vocational qualifications.

Figures are available on rates of entry to post-secondary education and training for dropouts in other countries (see for example, Berkthold et al., 1998, for results on the subsequent educational attainment of dropouts in the United States, and Human Resources Development Canada, 2000, for Canadian estimates). However, data are not readily available to assess the outcomes of gaining alternative qualifications.

## Conclusion

In building mass systems of secondary schooling, all nations face the challenge of finding ways to deal with pupil diversity – of finding a place for all – while maintaining high standards of learning. Some nations have been more successful in doing this than others. Historically, the development of the comprehensive high school and the high school diploma in the United States led the way in providing an architecture for secondary education that was inclusive and could promote mass rates of completion. This did not mean that the largely elective-based model did not continue to act as a powerful mechanism of social stratification, but it did help provide a system of mass delivery well in advance of other systems. Today, however, it is a different picture. Rates of graduation in the United States have tended to become stable, entrenched, whereas in other countries the rates have continued to grow, with some systems now achieving high levels of upper secondary completion.

Improvements in other countries have been partly achieved through developments based on the United States model. The Nordic countries of Sweden, Norway and Finland have all reformed their secondary school systems, implementing a comprehensive school model. In addition, during the 1980s and 1990s, these three nations implemented a number of educational reforms to upper secondary program provision focusing largely on vocational education as a means of encouraging students to stay in school. The approach in Sweden, for example, involves a group of vocational and general programs incorporated into a single school certificate. There are 14 vocational programs, structured around different occupational fields. All programs have a number of common subjects (providing a broad-based, general education) as well as generic and specialist options within vocational fields. The structure bridges the divide between vocational and general education by providing a stronger initial foundation in the early stages of all programs to prepare students for further learning. Foundation learning is followed by specialised training. Assessment is continuous with successful completion involving national tests for core subjects. Sweden has a fairly high proportion of vocational graduates, and a comparatively high overall graduation rate.

Another approach to dealing with the issues of pupil diversity and dropout is through offering an array of programs leading to separate qualifications, rather than a single certificate. National models that deal with the problem of pupil diversity through institutional, program and certificate diversification – providing alternative pathways through separate qualifications or certificates (academic, vocational, technical, specialist) – can also successfully promote high rates of graduation. Austria and Germany are good examples; they achieve high overall graduation rates. Vocational education graduates make up the majority of school graduates. Both systems have frameworks that find a place for everyone, though the places are not necessarily of equal value in terms of access to knowledge, learning and outcomes. They are also based on early selection, with students grouped along different school and program paths well before the senior years. The system is based on a selective rather than comprehensive school model. Social divisions across the different levels of qualifications in such systems can be quite marked. In such systems, inclusion can come at the cost of relegation for students from working class backgrounds. This leads to weaker opportunities for social mobility and a greater tendency for the reproduction of social differences in education across generations, even if the vocational alternatives provide positive labour market returns and work as a safety net.

As systems implement further reforms to raise completion rates and eliminate dropout, they will need to build programs and institutional arrangements that can cater for students from diverse backgrounds and with varying talents. The challenge for systems in doing this will be to ensure quality and consistency in the standards of learning for all students across all programs. To date, some nations have been more successful in doing this than others. Providing rigorous and meaningful alternative pathways, built on common foundations of learning that keep open further study options for all, will be the key.

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