OECD Reviews of Vocational Education and Training

A Skills beyond School Review of Germany

Mihály Fazekas and Simon Field

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Table of contents

Summary: Strengths, challenges and recommendations 9

Strengths 9
Challenges and recommendations 9

Chapter 1. **Introduction and initial assessment 11**

The policy review of Germany and its place in the wider OECD study 12
The structure of the report 13
A snapshot of Germany's postsecondary vocational education and training system 13
Comparing Germany with other countries: Key indicators 18
Previous OECD analysis and recommendations bearing on postsecondary VET in Germany 27
Appreciation of the German approach to postsecondary VET – key strengths 29
Challenges 36
References 38

Chapter 2. **Transition to academic higher education 43**

Challenges: Increasing competition and meeting strong demand for transition 44
Recommendation: Facilitating credit transfer 48
Supporting arguments: Positive economic payoffs and international examples 48
References 54

Chapter 3. **Better information on preparatory courses for examinations 59**

Challenges: Lack of transparency and varying course quality 60
Recommendation: Information provision and industry self-regulation 62
Supporting arguments: Better informed student choice and assuring minimum standards 63
References 66

Chapter 4. **Quality of examinations 69**

Challenges: Exam quality and occupational licensing 70
Recommendation: Framework regulation and clear standards for examinations 73
Supporting arguments: Clear standards, drawing on international experience 73
References 77

Chapter 5. **Teachers and trainers in *Fachschulen* 79**

Challenges: Flexibility and updating skills 80
Recommendation: More part-timers and better skills updating 82
Supporting arguments: Better response to industry needs 82
References 85

Chapter 6. **Workplace training at *Fachschulen* 87**

Challenges: Making full use of workplace training in support of learning goals 88
Recommendation: Mandatory internships 91
Supporting arguments: Higher training quality and ample support for implementation 91
References 95

Chapter 7. Fachschule **provision and the labour market 97**

Challenges: Labour market imbalances and diverse governance 98
Recommendation: Systematic use of evidence and enhanced flexibility 101
Supporting arguments: Better recognition of mismatch and greater capacity to respond 101
References 104

Tables

Table 1.1 The German labour market 22
Table 2.1 Entrants to universities and universities by form of access 47
Table 3.1 Available and desired information about continuing education courses 61
Table 6.1 Age distribution and prior qualifications of *Fachschule* entrants 89
Table 7.1 Employment predictions up until 2020 by occupational group and qualifications level in Germany 99

Figures

Figure 1.1 First-time graduation rates for tertiary A and B programmes 19
Figure 1.2 Adults' participation in formal and/or non-formal education, by education attainment 20
Figure 1.3 Annual expenditure by educational institutions per student for all services relative to GDP per capita 21

Figure 1.4 Percentage of 25-64-year-olds in employment, by level of education.....23
Figure 1.5 Percentage of technicians and associate professionals in the labour force.....24
Figure 1.6 Relative earnings from employment.....25
Figure 1.7 Trends in relative earnings of population with tertiary attainment.....27
Figure 2.1 Relative earnings from employment among 25-64-year-old men (compared to secondary school leaving certificate).....45
Figure 2.2 Students entering higher education through an alternative route by type of route, as a percentage of all entrants.....48
Figure 4.1 Number of examinees and pass rate per profession, advanced vocational examinations.....71
Figure 4.2 OECD professional services market regulation scores.....72

Boxes

Box 1.1 Skills beyond School: The OECD study of postsecondary vocational education and training.....12
Box 2.1 Main elements of a policy package facilitating transitions between vocational and academic education.....50
Box 2.2 Florida's State Course Numbering System.....52
Box 4.1 An International Standard in Examinations for professional certification (ISO/IEC 17024).....74
Box 4.2 Exam certification systems: United States and Switzerland.....75
Box 5.1 Teacher-worker pairing: Co-operation between VET institutions and industry in Finland.....83
Box 6.1 Workplace training at Swiss professional colleges.....93
Box 7.1 An innovative regional approach in Austria.....103

Summary: Strengths, challenges and recommendations

Strengths

- The social partners are extensively engaged in the system.
- Policy leadership is strong with a clear division of responsibilities.
- Smooth school to work transition provides a strong basis for future upskilling.
- Labour market outcomes of advanced vocational examinations and *Fachschule* programmes are strong.
- The advanced vocational exams effectively link upskilling to recognition of prior learning.
- *Fachschule* programmes have a recognised place in the system, with a clear value both for students and employers.
- Postsecondary VET programmes are well-articulated with upper secondary vocational education and training (VET) providing avenues of progression attractive to students as well as meeting labour market demand.
- The government has been actively opening up avenues of progression from vocational to academic education.

Challenges and recommendations

- Despite recent reforms, the route from postsecondary VET to academic higher education remains rarely travelled, and not all the obstacles on the route have yet been removed.
  - *Encourage credit transfer arrangements that facilitate the transition from postsecondary VET to academic higher education.*
- Weak information on the quality and price of preparatory courses for professional exams combined with very little external quality control

means that student choice of preparatory courses is difficult, and incentives for providers to provide good courses at a modest cost are insufficient.

  - *Collect and disseminate better information from preparatory course providers on course quality and costs. Encourage industry self-regulation of preparatory courses to ensure high and consistent standards.*

- The regulation of exam quality varies greatly in Germany, and there is limited evidence of adherence to clear standards.

  - *Explore the option of a framework regulation and clear standards for all examinations, to support their quality.*

- Rapid changes in technology and labour market demand, and somewhat inflexible employment arrangements, make it challenging for *Fachschulen* to keep their workforce skills up-to-date.

  - *Länder should seek to allow Fachschulen the flexibility to employ more part-time teachers and trainers who also work in industry. Full-time teachers and trainers should be encouraged to spend some time in industry throughout their careers to sustain and update their knowledge and skills*.

- Workplace training is not extensively employed in *Fachschulen* despite its many potential advantages.

  - *Fachschulen should make some form of workplace training a mandatory part of their curriculum. This could be linked to students' project work. They should also develop a framework linking workplace experience to the school curriculum.*

- While *Fachschulen* provide qualifications of value, the evidence base on skills needs, and mechanisms to respond to that evidence, could be improved.

  - *Further strengthen the evidence on demand for Fachschule provision and encourage greater flexibility for Fachschulen to respond to that demand.*

Chapter 1

Introduction and initial assessment

This chapter describes the OECD policy study of postsecondary vocational education and training (VET), the review of Germany, summarises the main features of the country system and sets out an assessment of its particular strengths. The challenges, dealt with in subsequent chapters, are also listed.

The policy review of Germany and its place in the wider OECD study

This review is one of a series of country reports on postsecondary vocational education and training (VET) in OECD countries, prepared as part of an OECD study (see Box 1.1). The series includes *reviews*, (such as this one) involving an in-depth analysis of a country system leading to a set of policy recommendations backed by analysis. In addition there are *commentaries*. These exercises pursue the first part of a review and include an assessment of strengths and challenges in the country system. The commentaries are designed to be of value as free-standing reports, but also can become the first phase of a full review, should a country so wish.

Box 1.1 Skills beyond School: The OECD study of postsecondary vocational education and training

Increasingly countries look beyond secondary school to more advanced qualifications to provide the skills needed in many of the fastest growing technical and professional jobs in OECD economies. The OECD study, Skills beyond School, is addressing the range of policy questions arising, including funding and governance, matching supply and demand, quality assurance and equity and access. The study will build on the success of the previous OECD study of vocational education and training Learning for Jobs which examined policy through 17 country reviews and a comparative report. The study also forms part of the horizontal OECD Skills Strategy (OECD, 2012a).

Full country policy reviews are being conducted in Austria, Denmark, Egypt, Germany, Korea, the Netherlands, Switzerland, the United Kingdom (England), and the United States (with case studies of Florida, Maryland and Washington State). Shorter exercises leading to an OECD country commentary will be undertaken in Belgium (Flanders), Canada, Iceland, Israel, Romania, Spain, Sweden and in Northern Ireland and Scotland in the United Kingdom. Background reports will be prepared in all these countries, and in France and Hungary.

See: www.oecd.org/education/vet

This review follows a standard methodology. Germany initially prepared a country background report (Hippach-Schneider, U., et al., 2012). An OECD team then visited Germany on 26-30 March and 18-22 June 2012 where they discussed the issues arising with a wide range of stakeholders.

The structure of the report

This first chapter places the review of Germany in the context of the OECD policy study of postsecondary VET, presents the structure of the report, describes the main features of postsecondary VET system in Germany, compares its main features with other systems internationally, explores some key international indicators bearing on the system and examines its strengths and challenges.

The following chapters advance policy recommendations. Each chapter is set out as:

- *The challenge* – the problem that gives rise to the recommendation.
- *The recommendation* – the text of the recommendation.
- *The supporting arguments* – the evidence that supports the recommendation.

A snapshot of Germany's postsecondary vocational education and training system

Postsecondary vocational education and training (VET) is designed for those seeking to achieve state recognised higher vocational qualifications above upper-secondary level. Two main sub-sectors were examined in this review. First, there are advanced vocational examinations regulated by the federal Vocational Training Act (*Fortbildungsgänge nach dem Berufsbildungsgesetz*) and in some cases also by the individual chamber regulations of the chambers of crafts and trades and of the chambers of industry and commerce (*Fortbildungsgänge nach Ordnung der Handwerks- und Industrie- und Handelskammern*). Second, there are trade and technical schools (*Fachschulen*)[1] regulated under *Land* law.

Under the International Standard Classification of Education (ISCED) advanced vocational examinations and *Fachschulen* are at the tertiary level (5B). There are other institutions in Germany which offer tertiary level vocational programmes such as universities of co-operative education (*Berufsakademien*), co-operative state universities (*Duale Hochschulen*), vocational schools for the health sector (*Schulen des Gesundheitswesens*), and colleges of public administration (*Verwaltungsfachoberschulen*) (UNESCO, OECD, EUROSTAT, UOE, 2012). However, classifications may vary. For instance, *Berufsakademien* and *Dualen Hochschulen* are either at tertiary 5A or 5B level, and *Schulen des Gesundheitswesens* and *Verwaltungsfachoberschulen* are either listed as tertiary 5B or as postsecondary non-tertiary (tertiary 4A/B). These variations point to the

heterogeneity of postsecondary VET programmes which renders international educational classifications inevitably incomplete.

In recent years, roughly 60% of the age cohort has pursued vocational programmes at upper secondary level, representing 90% of those without a higher education entrance qualification. Approximately 13% of them subsequently also obtained a postsecondary VET qualification (Hippach-Schneider et al., 2012). In 2010, approximately 8% of Germany's adult population (>15 years) were holders of postsecondary (tertiary B) VET qualifications compared to 13% with tertiary 5A attainment (Statistisches Bundesamt, 2011a). While tertiary 5A graduation rates rose between 1995 and 2009, tertiary 5B showed little change (OECD, 2011a).

Advanced vocational examinations

Both the federally-regulated and chamber examinations reflect the classical progression from apprentice to *Meister*.[2] *Meister* examinees have to show that they can pursue their profession independently, run their own business, and can train apprentices. The professions covered now include non-technical professions of the agricultural, commercial, manufacturing, and service-related sectors. In 2010, there were 212 federally-regulated advanced vocational examinations and 3 112 examinations regulated by individual chambers (BIBB, 2011).

The number of advanced vocational examinations passed fell by 24%, from over 122 000 in 1996 to 93 000 in 2010, and has since remained at this level (Hippach-Schneider et al., 2012). While enrolments in some of the advanced vocational specialisations in the commercial field have declined by half, the certified senior clerk (*Fachwirt/in*) rose in popularity by 45% between 2003 and 2010 to become the most common advanced vocational examination, followed by the certified industrial supervisor (*Industriemeister*) and the master of skilled trade (*Handwerkmeister*) (Statistisches Bundesamt, 2011b).

The federal and the chamber regulations define the examinations, i.e. the admission requirements, the examination objective and content, the examination procedure, and pass criteria. The competent examination bodies establish boards of professionally experienced examiners which must include equal numbers from both the employers' and the employees' side and at least one vocational school teacher.

Candidates must submit an application to the competent examination body which decides on admission. The advanced vocational examination is most often taken after the completion of upper secondary VET (typically an apprenticeship) and some years of relevant work experience. If no VET

qualification is held, evidence of extended practical experience is assessed and may suffice.

Preparatory courses for examinations are not mandatory, but candidates almost always attend either part- or full-time courses offered by the chambers or private providers (DIHK, 2011). In some cases, *Fachschule* courses also prepare students for exams on top of their own curriculum. The number of preparatory course providers is estimated at over 15 000 and the quality and price level of training provision vary as neither a federal training regulation nor a federal or a *Land*-wide quality assurance mechanism exists (Dietrich, Schade and Behrensdorf, 2008).

Typically teachers and trainers involved in preparatory courses hold a VET qualification and have many years of work experience; many also teach at upper-secondary vocational schools and at *Fachschulen*, and some have been members of examination boards. But there are no uniformly defined standards.

Trade and technical schools (Fachschulen)

Fachschulen offer programmes designed to enable graduates to assume more extensive responsibility and management functions in their workplace. The programmes last two years full-time or three to four years in part-time education, with part-timers often working in a job closely related to their course. As well as gaining a qualification and the occupational designation of "State certified/recognised", graduates may also acquire the *Fachhochschule* Entrance Qualification.

Almost one third of *Fachschulen* are privately run (Statistisches Bundesamt, 2011c). In 2010/2011, there were 1 363 *Fachschulen* and 87 *Fachakademien* offering 170 specialisations in the five occupational fields of agriculture, business, design/manufacturing, social care, and technology. Nearly two thirds of the 183 000 students (61%) were enrolled in courses in the fields of business and social care, while most of the remainder (32%) attended technical courses (Statistisches Bundesamt, 2011a).

Entry to *Fachschule* requires a qualification in a recognised training occupation relevant to the intended specialisation and at least one year of work experience (which can also be acquired during the *Fachschule* programme). If demand is higher than capacity, students' names are put on a waiting list.

Student numbers at *Fachschulen* declined until 2007/2008, but have since risen. An increase of 10% in student numbers for the academic year 2009/2010 (from 159 467 to 175 200) reflects both an effect of the economic crisis (as redundant workers seek further VET qualifications) and

a planned expansion of childcare services and therefore in childcare workers (Hippach-Schneider et al., 2012). According to the number of graduates, *Fachschulen* represent about one third of the German postsecondary VET system with examinations accounting for the remaining two-thirds.

In 2010/2011, 68% of all students at *Fachschulen* were in full-time programmes. Part-timers accounted for on average half of all students in technical programmes but only 27% of students in service sector courses (Statistisches Bundesamt, 2011b). Part-time numbers have grown significantly (Hippach-Schneider et al., 2012).

Fachschulen are often co-located with upper-secondary vocational schools and most *Fachschule* teachers also teach at upper-secondary level. There are two types of teachers: *i)* the more theoretical type (*Wissenschaftliche Lehrer*) must have completed university at master's level in two school-relevant subjects, have undertaken pedagogical training, and the second state examination. In general they obtain civil servant status after a three-year probationary period; *ii)* the teachers of vocational practice or technical teachers (*Lehrer für Fachpraxis, Technische Lehrer*) are required to have postsecondary VET qualifications and professional experience. They are paid according to the Public Sector Collective Agreement on Länder (*TV-L*), and can become civil servants after one-year of pedagogical training and meeting some other requirements (Baden-Württemberg Kultusportal, 2012). Given the current shortage of teachers in some vocational specialisations, for example in electronics, efforts are being made to attract school leavers into the profession, to facilitate the transition of university graduates with work experience into VET teaching, and to employ skilled workers from companies as part-time teachers (see Chapter 5).

Fachschule curricula are developed by each *Land* within the framework agreement established by the Standing Conference of Ministers of Education and Cultural Affairs of the Länder (*Kultusministerkonferenz*) allowing 20% of the syllabus to reflect local needs.

At public *Fachschulen,* there are no tuition fees. *Länder* governments in consultation with local authorities and the *Länder* committees for vocational training (*Landesausschüsse für Berufsbildung*) determine the number of training programmes and available places (Hippach-Schneider et al., 2012). Often, the *Land* pays the salary cost of the teaching staff, the local authorities (*Stadt-* or *Landkreis*) cover capital and administrative costs, while private contributions by students or enterprises help to cover expenditure for expensive training equipment (see Chapter 7).

General points

Financial support for students preparing for an advanced vocational exam or attend a *Fachschule* programme is of various types. The Upgrading Training Act (*Aufstiegsfortbildungsförderungsgesetz*, AFBG), awarded loans and grants to approximately 166 000 persons in 2010. The Federal Education and Training Assistance Act (*Bundesausbildungsförderungsgesetz*, BAföG) presents another, though more restrictive, financial support measures (age-limit of 30; depending on parental income; no funding of course fees). There are also continuing education grants (*Weiterbildungsstipendium*) for talented VET students under the age of 25 and tax reduction schemes for companies investing in advanced vocational degrees of their employees. But students also make a significant contribution. In 2002, the average individual contribution to postsecondary VET was EUR 1 268 for upgrading courses, and EUR 692 for courses at *Fachschulen* (Hippach-Schneider et al., 2012).

The academic tertiary A system, including universities and universities of applied sciences (*Fachhochschulen*) (UASs), is an important part of the wider context. The UAS sector was originally created in the 1970s by upgrading the schools of engineering to provide academically-based VET programmes. The UAS sector has grown fast, between 2005 and 2010, enrolments rose by 40%. In 2011/2012 three-quarters of all tertiary A students attended universities and one-third were enrolled at UASs (Autorengruppe Bildungsberichtserstattung, 2012).

There have been several initiatives to help graduates of vocational programmes enter tertiary A education. Under the 2009 *Kultusministerkonferenz* (Standing Conference of the Ministers of Education and Cultural Affairs of the Länder) resolution, advanced vocational graduates are now eligible for university studies, and holders of an upper-secondary VET certificate can pursue a subject-related university degree if they have three years of professional experience and pass a university-specific aptitude test (Kultusministerkonferenz, 2009a). By 2011, these recommendations had been implemented in 15 of the 16 *Länder*. The "2010 *Kultusministerkonferenz* Common Guidelines" also grant advanced vocational graduates access to master degrees upon entrance examination. But few people have used this route – they represent only 2.1% of university entrants in 2010, i.e. 1.9% at universities and 2.5% at UASs (Autorengruppe Bildungsberichtserstattung, 2012).

Effective recognition of prior learning should also support permeability. The BMBF (*Bundesministerium für Bildung und Forschung*) initiative "accreditation of prior learning from VET for higher education programmes"(ANKOM) has proven the feasibility of awarding credits for

vocationally acquired competencies towards university degrees and transfer procedures have been piloted in certain *Länder* (Hippach-Schneider et al., 2012).

Comparing Germany with other countries: Key indicators

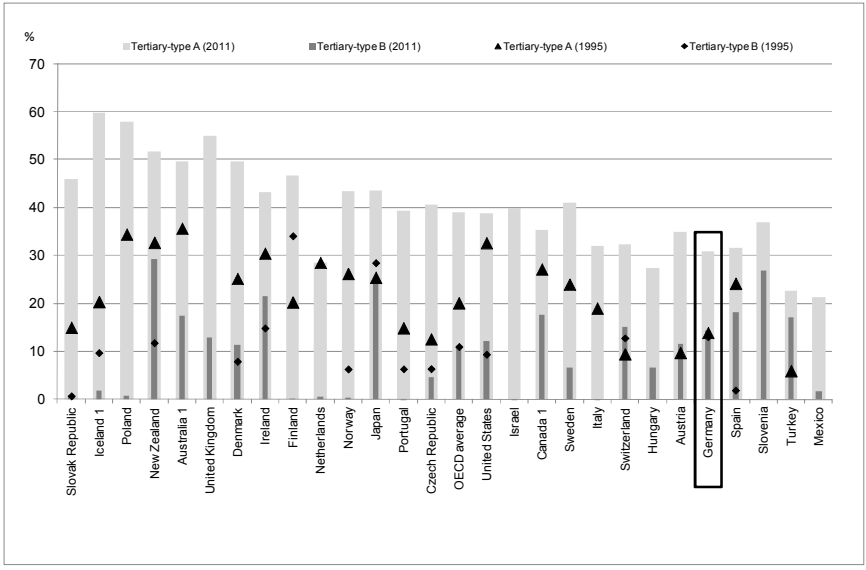
This section looks at some indicators comparing the German postsecondary VET system, and its labour market context, with the pattern found in other countries. Comparisons of a statistical indicator for any one country with the OECD average are useful, but must always be interpreted with caution. Few indicators are unequivocally positive in one direction, and there can be no presumption that convergence with the average is desirable.

Indicators of education and training

While tertiary A and B education are equally valuable and no direct policy consequence follows from international comparisons of their attainment and graduation rates, comparing Germany to other OECD countries still provides a useful background to this review. Between 1997 and 2009 tertiary attainment in Germany grew by less than in any other OECD country, at 1.4% per annum compared to the OECD average of 3.7%. In 2009, 26% of Germany's population aged 25-64 years had tertiary education qualifications compared to the OECD average of 30% (OECD, 2011a, Table A1.4). While graduation rates between 1995 and 2011 increased in tertiary A education, they barely changed in the tertiary B sector (see Figure 1.1). In 2009 the overall graduation rate was still ten points below the OECD average of 38%, because of few students qualifying for tertiary A (54% vs. OECD average of 64%) and low tertiary A entry rates (40% vs. OECD average of 59%) (OECD, 2013, Chart A3.2, Table A3.2; OECD 2012b). Between 1995 and 2008 the tertiary B graduation rates were consistently 1-2 points higher than the OECD average and stood at 14% compared to the OECD average of 9% in 2009 (OECD, 2011a, Chart A3.2, Table A3.2).

Figure 1.1 First-time graduation rates for tertiary A and B programmes

1995 and 2011



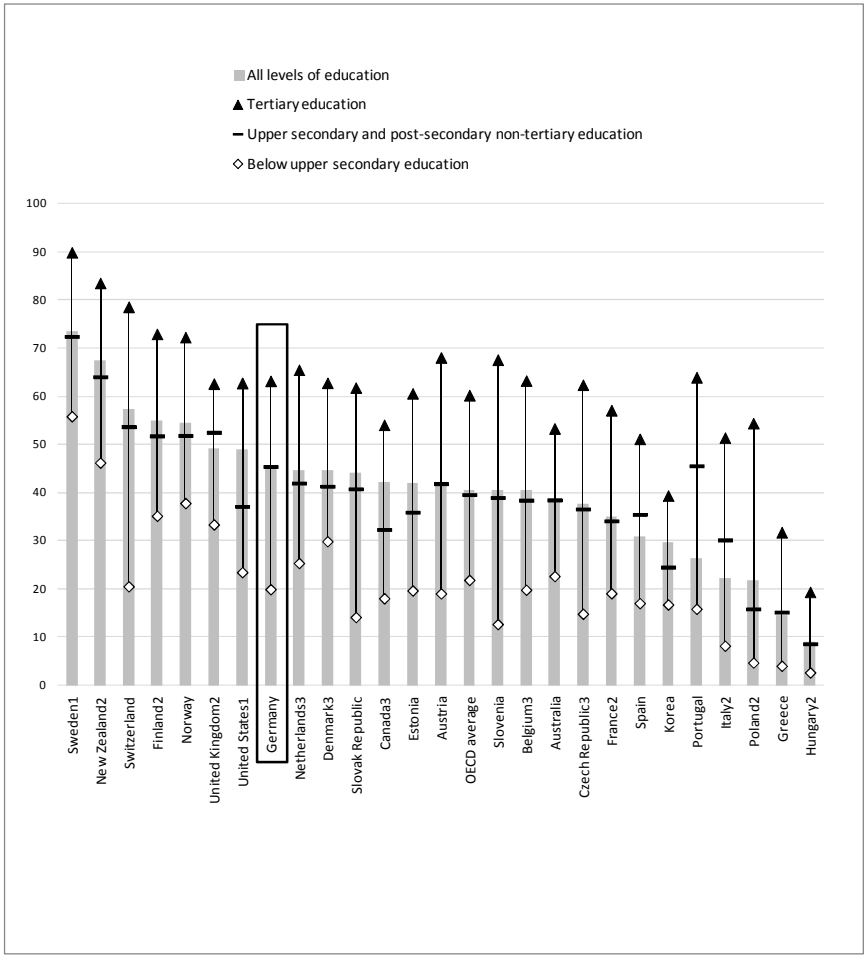
Note: 1. year of reference 2010.

Source: OECD (2013), *Education at a Glance 2013: OECD Indicators*, Table A3.2, OECD Publishing. (www.oecd.org/edu/eag2013)

Later on in life, adults may catch up in response to missed opportunities in initial education, augment basic skills with additional qualifications, and attain higher level qualifications. In 2007, 45% of 25-64-year-olds in Germany participated in formal and/or non-formal training, slightly above the OECD average of 41% (OECD, 2012b). As in other countries, those working full-time and those with higher level qualifications are much more likely to participate. In 2007, 53% of employed adults and 27% of the unemployed took part in formal and/or non-formal education (OECD, 2013, Table C5.2a). Participation was above the OECD average for all levels of education except for adults with below upper secondary educational attainment (see Figure 1.2).

Figure 1.2 Adults' participation in formal and/or non-formal education, by education attainment

Participation rate of the 25-64-year-old population, 2007



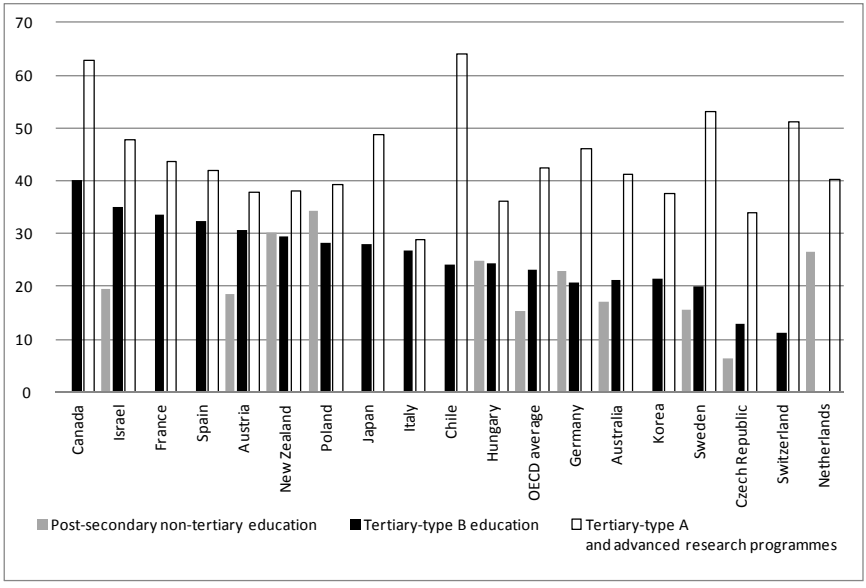
Notes: 1. year of reference 2005; 2. year of reference 2006; 3. year of reference 2008. Countries are ranked in descending order of participation in formal and/or non-formal education, for all levels of education.

Source: OECD (2010a), *Education at a Glance 2010: OECD Indicators*, Table A5.1b, OECD Publishing. doi: http://dx.doi.org/10.1787/eag-2010-en (www.oecd.org/edu/eag2010).

In Germany, like most countries, annual expenditure by educational institutions per advanced vocational (tertiary 5B) student, expressed as a percentage of GDP per capita is, at 21%, much smaller than per tertiary 5A student (46%) (see Figure 1.3).

Figure 1.3 Annual expenditure by educational institutions per student for all services relative to GDP per capita

By level of education, based on full-time equivalents, 2008



Source: OECD (2011a), *Education at a Glance 2011: OECD Indicators*, Table B1.4, OECD Publishing. doi: http://dx.doi.org/10.1787/eag-2011-en (www.oecd.org/edu/eag2011).

Labour market indicators

Both the youth unemployment rate (people aged 15-24 years) at 9.7% and the overall unemployment rate at 7.2% were below OECD averages for 2010 (see Table 1.1). Germany is one of only eight OECD countries where the youth unemployment rate is below 10%, partly thanks to its well-established dual VET system. However, long-term unemployment (12 months and over) as a percentage of total unemployment was considerably higher (47%) than the OECD average (32%) and both temporary (15%) and part-time (22%) employment were above the OECD averages (12% and 17%).

Table 1.1 The German labour market

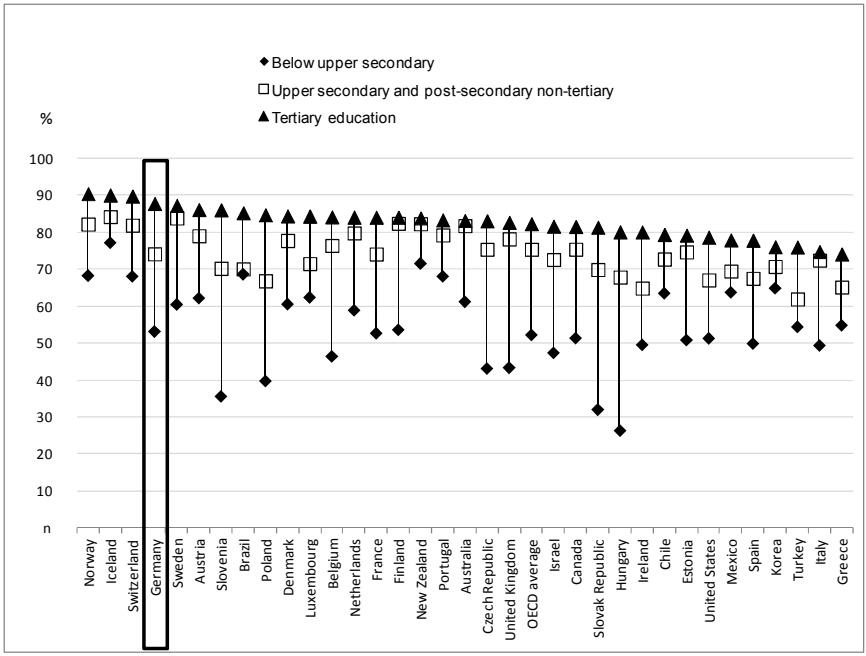
	Unit	1994	2009	2010	2010 OECD Average
Total unemployment	% of total labour force (15-64)	8.5	7.8	7.2	8.5
Youth unemployment rate	% of youth labour force (15-24)	8.2	11.0	9.7	16.7
Unemployment	% of labour force (25-34)	8.1	7.3	6.6	7.5
Long-term unemployment (12 months and over)	% of unemployment	44.3	45.5	47.4	32.4
Employment rate of women	% of female population (15-64)	54.7	65.2	66.1	56.7
Temporary employment	% of dependent employment	10.4	14.5	14.7	12.4
Part-time employment	% of total employment	13.5	21.9	21.7	16.6
Growth of real GDP	% of change from previous year	2.5	-5.1	3.7	3.2

Source: OECD (2011b), *OECD Employment Outlook 2011*, OECD Publishing. doi: http://dx.doi.org/10.1787/empl_outlook-2011-en

Across OECD countries, employment rates of tertiary graduates are approximately 10% higher than for upper-secondary graduates (OECD, 2012b). Similarly in Germany in 2011, the employment rate of 25-64-year-olds was 88% for those with tertiary attainment compared to 74% for those with upper-secondary or postsecondary non-tertiary educational level, and 53% for persons with below upper secondary educational level (OECD, 2013) (see Figure 1.4).

Figure 1.4 Percentage of 25-64-year-olds in employment, by level of education

2011



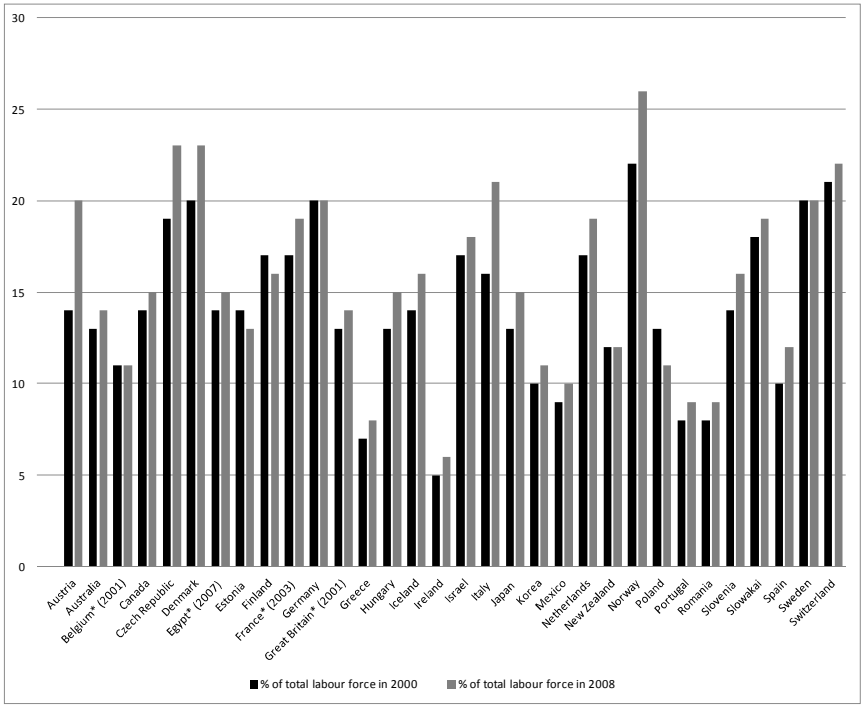
Note: Countries are ranked in descending order of the employment rate for individuals with tertiary education.

Source: OECD (2013), *Education at a Glance 2013: OECD Indicators,* Table A5.1a, OECD Publishing. (www.oecd.org/edu/eag2013)

In Germany many people work in jobs that require postsecondary VET qualifications. These include the jobs of technicians and associated professionals (see Figure 1.5). While this points to some distinctive features of the German economy and labour market, it may also reflect a supply-side effect, i.e. a well-developed postsecondary VET sector providing this labour force, helping to foster industries that require such skills.

Figure 1.5 Percentage of technicians and associate professionals in the labour force

In 2000 and 2008

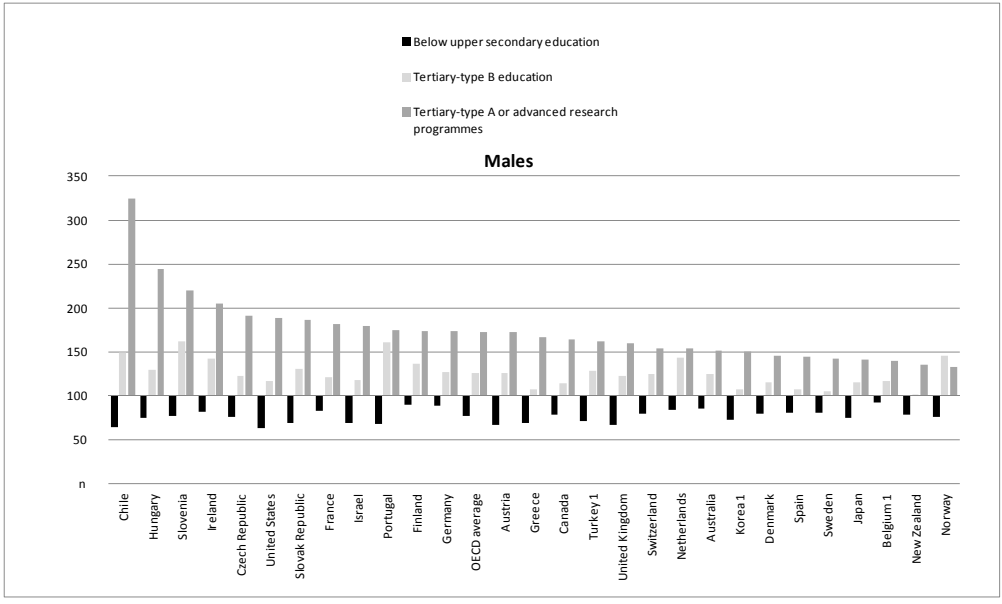


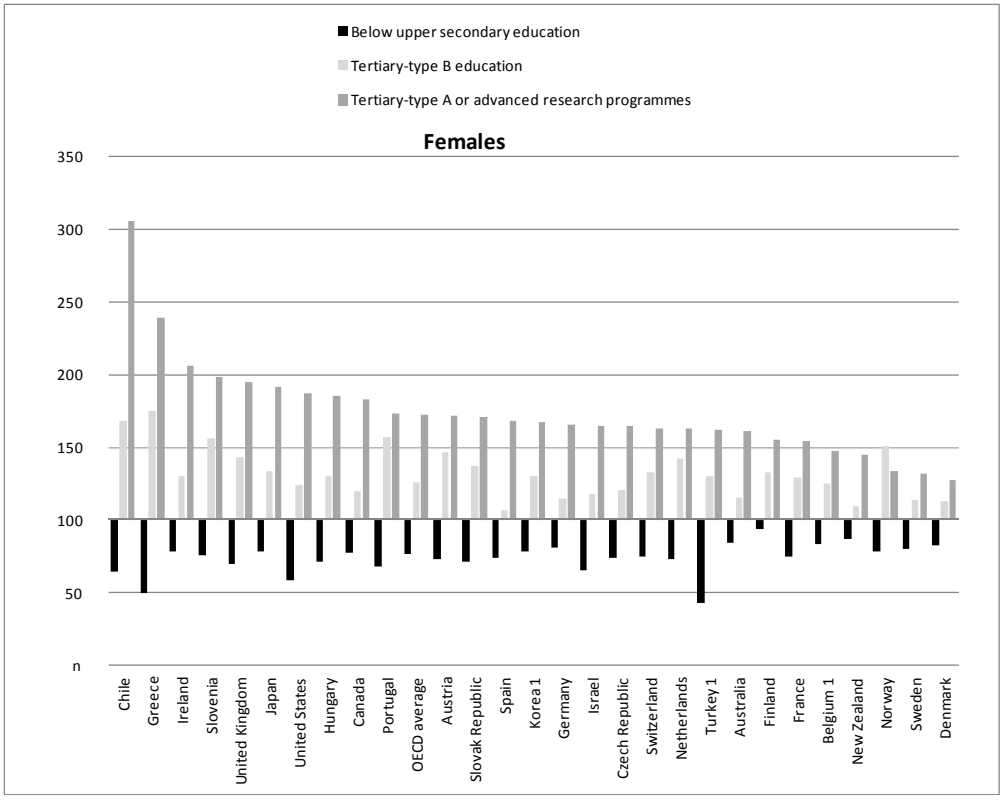
Source: International Labour Organization (2011), *ILO Department of Statistics, Laborsta Internet*, http://laborsta.ilo.org, accessed August 2012.

Earnings differentials are key measures of the financial incentives on individuals to invest in further education. In all countries, graduates of tertiary education earn more than upper-secondary and postsecondary non-tertiary graduates (OECD, 2010a) (see Figure 1.6). In Germany in 2008, tertiary A graduates earned twice and tertiary B graduates one and a half times as much as those with upper secondary qualifications (OECD, 2012b, Table A7.1). As in other countries, in Germany earnings differentials are more pronounced between graduates of tertiary education and upper secondary degree holders than between upper- and lower-secondary educational attainment. This suggests that upper-secondary education forms a dividing line beyond which additional education attracts a particularly high premium.

Figure 1.6 Relative earnings from employment

2011, or latest available year





Notes: Canada, Ireland, Netherlands, Norway, Portugal, Spain and Sweden refer to 2010. Australia, Finland and France refer to 2009. Japan refers to 2007. Turkey refers to 2005. All other countries refer to 2011.

1. Belgium, Korea and Turkey report earnings net of income tax.

Countries are ranked in descending order of the relative earnings of the population with a tertiary-type A (including advanced research) level of educational attainment.

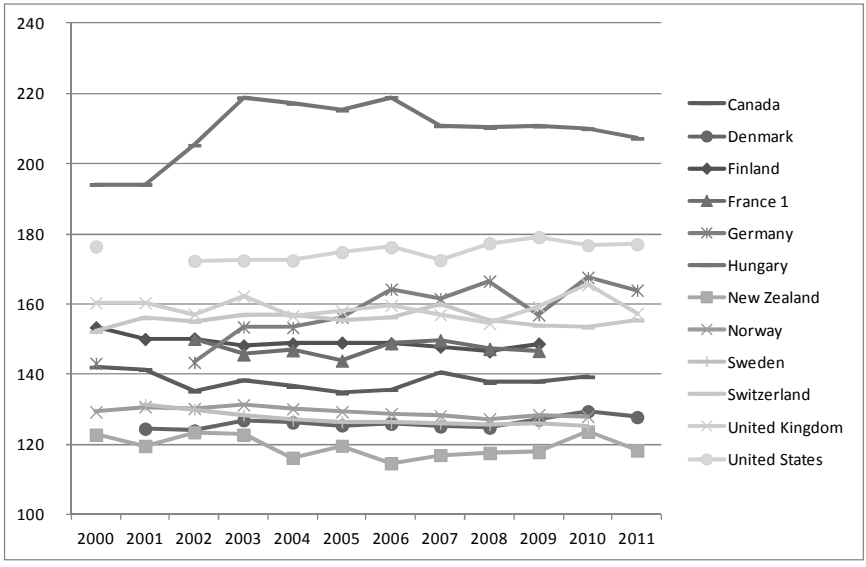
Upper secondary and post-secondary non-tertiary education = 100%.

n = magnitude is either negligible or zero.

Source: OECD (2013), *Education at a Glance 2013: OECD Indicators*, Table A6.1, OECD Publishing. (www.oecd.org/edu/eag2013)

The earnings premium for graduates of tertiary education have increased in most countries since 2000, indicating that the demand for more educated individuals still exceeds supply in most countries (see Figure 1.7). For the period 2000–2011 in Germany, like in other countries, tertiary attainment has been associated with relative constant increases in earnings (see Figure 1.7).

Figure 1.7 Trends in relative earnings of population with tertiary attainment



Notes: Upper secondary and postsecondary non-tertiary education = 100%.

1. Break in the series between 2007 and 2008, change in the data source.

Source: OECD (2013), *Education at a Glance 2013: OECD Indicators*, Table A6.2a, OECD Publishing. (www.oecd.org/edu/eag2013)

Previous OECD analysis and recommendations bearing on postsecondary VET in Germany

Previous OECD studies relevant to postsecondary VET in Germany include the Learning for Jobs review of Germany (Hoeckel and Schwartz, 2010), and the economic surveys of Germany (2008; 2010b and 2012b). Some of the OECD recommendations reviewed here may have already been addressed by policy initiatives.

The OECD review of upper-secondary VET in Germany (Hoeckel and Schwartz, 2010) makes five recommendations of which four also bear on the postsecondary sector. First, given the variability of career guidance across the *Länder,* the report suggests a structural reform to fix lead responsibility for career information and guidance in a single governmental agency. Second, to reinforce core academic skills, the report recommends an assessment of the literacy and numeracy skills of all new upper-secondary VET students not holding a school leaving certificate from *Realschule* or *Gymnasium* and to put more emphasis on general skills education in

part-time vocational schools. Third, the report welcomes Germany's recent attempts to open new pathways from VET to tertiary education, but notes that they have been little used. To facilitate the transition to university, the report recommends the inclusion of school marks in the final VET certificate and to merge the chamber and the school examination into a single final assessment. Fourth, the report recommends a further widening of access to university by recognising prior learning and experience, providing better guidance and financial support, encouraging more dual and part-time university programmes, and promoting dual universities.

The 2008 OECD economic survey of Germany (OECD, 2008) notes that, while the postsecondary non-tertiary graduation rate is higher than the OECD average, tertiary attainment among younger generations is below the OECD average (22% for the 25-43-age group compared with an OECD average of 32%). In spite of recent increases in tertiary graduation rates, tertiary attainment in Germany may fall even further behind the levels in most other OECD countries (OECD, 2008). The survey recommends making tertiary education more attractive and responsive to labour-market requirements and the introduction of tuition fees on a cost recovery basis.

The 2010 OECD economic survey of Germany (OECD, 2010b) argues that, despite major educational reforms, Germany needs to do more to satisfy an increasing demand for high-skilled workers adaptable to changing economic conditions, particularly in manufacturing. A growing shortage of highly qualified personnel is likely in the coming years because of ongoing technological changes and population ageing. The survey proposes three reforms: first, increasing the attractiveness of tertiary education through institutional improvements; second, better adaptation of VET programmes to changing labour market needs and improved general skills provision, covering such matters as IT knowledge and foreign languages; third, more evaluation of initiatives such as the voucher schemes, in support of adults' participation in lifelong learning activities.

The 2012 OECD economic survey of Germany (OECD, 2012b) encourages the continuation of education reforms, noting that stronger education outcomes contribute to labour force participation over a working life. The survey argues that recent measures to facilitate tertiary education entry for VET graduates have started to show results and should continue. Efforts to increase the labour participation of females and older workers should be stepped up, by improving further education offers and lifelong learning activities.

Appreciation of the German approach to postsecondary VET – key strengths

The social partners are extensively engaged in the system

Across OECD countries

The engagement of employers and unions is necessary to ensure that the organisation and the content of vocational programmes meet the need of employers and the wider economy. Policy development in vocational education and training offers particular challenges because of the wide range of different stakeholders involved. Alongside the students, teachers and parents that play a role in all education systems, labour market actors such as employers and unions are critically important. Nationally and regionally the involvement of the social partners helps to ensure that the overall design of the system, the content of programmes, and the mix of training provision meet labour market needs. But the level of engagement in VET policy varies markedly among countries. At the national level social partner engagement in policy development is essential if policy is to be successfully implemented, since social partners that bought into policies during their development will be much readier to collaborate in their implementation (OECD, 2010a).

But the level of engagement varies markedly among countries. Organised social partnerships and strong apprenticeship systems often support high levels of engagement. At postsecondary level, additional challenges emerge because postsecondary institutions often have high levels of autonomy, and distinctive missions may leave local employer requirements somewhat marginal.

In Germany

Labour market actors are remarkably well integrated both into the system of advanced vocational examinations and *Fachschulen*. The qualifications offered are largely determined by labour market associations, most importantly chambers, with employer and professional organisations mainly defining the content of advanced vocational examinations as well as *Fachschule* courses (Hippach-Schneider et al., 2012). Advanced vocational examinations are organised by chambers contributing to the high quality of graduates' skills. Many employers also actively support their employees during their postsecondary VET studies financially, and/or through time off work to attend courses (DIHK, 2011). The chambers provide some grants to students in need and also provide preparatory courses.

The responsiveness of the postsecondary VET systems examined in this OECD study to labour market needs depends, among other factors, on the way in which many working students pursue their studies with the full support of existing employers. Most students have previous work experience and work alongside their studies. The content of every examination is regularly reviewed by the relevant labour market organisations to ensure that it remains up-to-date.

Policy leadership is strong with a clear division of responsibilities

Across OECD countries

VET policy development offers particular challenges because of the wide range of different stakeholders involved, and this is further complicated in federal and decentralised countries (such as Germany) where much responsibility for VET is held locally or regionally. (For a discussion of this challenge in Austria, see Musset et al., forthcoming). Some degree of consensus among the different stakeholders is important, but needs to be balanced by effective leadership to ensure that consensus does not become a formula for inertia, with a multiplicity of stakeholders each holding an effective veto on any reform.

Managing multiple vocational institutions and programmes to deliver strategic coherence and co-ordination without damaging diversity and innovation is a major challenge. Institutional autonomy, while promoting local innovation, can add to the challenge of coherence and co-ordination. There are particular challenges for vocational programmes because of the additional need to engage social partners with their different agendas. Potential problems include:

- Unclarity for potential and actual students in the face of multiple pathways and sometimes competing offers.
- Unclarity for employers about the function and value of different qualifications.
- Difficulties in articulation and transitions between different institutions and programmes.

In the face of these challenges, OECD countries often maintain co-ordination bodies designed to provide an overall steer for the VET system. The frameworks in Denmark and Switzerland build on strong industrial bodies (employer organisations and trade unions) and a long tradition of engagement in VET. The industry-led UK Commission for Employment and Skills (UKCES) in the United Kingdom involves high

profile representatives of large and small employers (including CEOs of large companies), as well as other stakeholders.

In Germany

At all levels, collaboration between government and major stakeholders is well institutionalised and functions effectively. Responsibility for educational and cultural matters in general rests with the *Länder* in Germany, but federal co-ordination of policies takes place through the *Kultusministerkonferenz* (Standing Conference of the Ministers of Education and Cultural Affairs of the *Länder*) incorporating *Land* ministers of education and culture (Hoeckel and Schwartz, 2010). At the federal level, the Federal Ministry of Education and Research provides strategic leadership and facilitates innovative policies (BMBF, 2012). The *Kultusministerkonferenz* also encourages voluntary co-ordination among *Länder* in issues of national interest such as framework regulation of *Fachschulen* and planning VET teacher numbers (Kultusministerkonferenz, 2002; 2009b). *Länder* employ different regulations to steer postsecondary VET while, at the local level (*Stadt-* or *Landkreis*), investment, curriculum and further policy implementation (e.g. conducting advanced vocational exams) takes place with strong involvement of labour market associations. This multi-level governance arrangement of sharing responsibilities and decision powers ensures that there are sufficient checks and balance at each level for balancing short and long term needs as well as demands of various actors.

Smooth school to work transition provides a strong basis for future upskilling

Across OECD countries

School to work transition was often a challenge even before the global economic crisis (OECD, 2010c). Youth unemployment and its distribution across social groups is clearly affected by education and training policies, but also on how they interact with labour market conditions (OECD, 2010d). In countries with regulated labour markets and strong apprenticeship systems, such as Germany, about three quarters of school leavers succeed in integrating into the labour market. Such countries contrast with others having regulated labour markets but without strong work-based training sufficiently integrated into the formal school system, such as Italy and Spain where more than a third of young people end up in unemployment or inactivity (Quintini and Manfredi, 2009).

Against a background of growth in university enrolment, and some degree of standardisation of expectation around bachelor degrees in many countries, it is sometimes hard to retain an independent role for one and two year postsecondary vocational programmes. This is unfortunate, since shorter programmes have a natural place in any system of education and training.

In Germany

Transition from school to work is remarkably smooth, over 90% of 15-24 year–olds found their way into employment or education in 2008, a high percentage by international standards (OECD, 2010c). A well-developed apprenticeship system with relatively low levels of drop-out allows young people to enter the labour market well-prepared and to find jobs matching their field of studies and level of skills (Quintini, 2011). While some problems remain for those who do not enter apprenticeships, but instead enter school-based VET, the system works very well by international standards. These good outcomes for upper secondary VET provide a particularly strong basis for future upskilling, most importantly postsecondary VET.

Labour market outcomes of advanced vocational examinations and **Fachschule** *programmes are strong*

Across OECD countries

Postsecondary VET programmes usually lead to high wages and often better employment prospects than for those with only upper secondary qualifications, but the magnitude of difference varies across countries. The unemployment rate of men with tertiary B degrees varied between 1.5% and 11.5% in 2009 across OECD countries (OECD, 2011c) potentially reflecting variations in the quality of postsecondary VET, among other factors. In countries with well recognised postsecondary VET systems such as Austria, Denmark, or Spain, holders of tertiary B degrees are more likely to work in highly skilled professions than upper secondary school graduates and in some cases even more than tertiary A graduates (Field, Kis and Kuczera, 2012).

In Germany

There is clear evidence that the skills provided by the programmes under examination are in high demand by the German economy and the qualifications are well regarded by German industry. The unemployment rate for tertiary B degree holders is among the lowest in the OECD both for

men and women (OECD, 2011c). Private as well as public rates of return are positive for advanced vocational examinations and *Fachschule* degrees (Anger, Plünnecke and Schmidt, 2010). There is strong demand for skills in the range of professions where postsecondary VET graduates work, there are signs of current and potential future skills shortages (McKinsey, 2011). The advanced vocational examinations are devised by industry, assuring a good fit to labour market needs. Two-thirds of examination graduates experience improvements in their career such as better pay or a higher position (DIHK, 2011).

The advanced vocational exams effectively link upskilling to recognition of prior learning

Across OECD countries

Across OECD countries many professions organise examinations designed either to allow initial access to a profession, or to achieve a higher level within the profession. In the Germanophone countries such examinations are used in particular to provide higher level technical and commercial qualifications, and "master craftsman" qualifications to qualified apprentices with some years of work experience in their trade who want to run their own small business. While such industry-led examinations are regulated in the Germanophone countries, they are quite unregulated in the United States, where such exams (or "certifications") are very common. In some cases the examinations are linked to licensed professions, such as electricians, where passing the exam is legally required to work in the profession, or to run a small business. Typically those examinations are tests of competence. While examinees very commonly pursue a course designed to prepare for the exam such courses are not usually obligatory. Examinations of this type therefore have the attractive quality of avoiding the normal constraints of educational programmes of requiring fixed "seat time" to acquire the qualification. They can also provide a practical way of recognising prior formal and informal learning, often acquired on the job. Recognition of prior learning is the process of "certifying" pre-existing skills and knowledge, including those acquired informally, and on the job. Its many potential benefits are well-known: by making acquired skills more transparent, it improves the efficiency of the labour market; and it supports adults in the advancement of their careers.

In Germany

Advanced vocational examinations have traditionally been offered in areas of trades and crafts, but increasingly commerce, manufacturing, agriculture, and services are now covered. These exams are typically

pursued by graduates of apprenticeships and VET schools, and represent an effective system for upskilling for these groups, a route to higher earnings and more senior positions in enterprises, as well as a route to independence, as owner-managers of small businesses (DIHK, 2011).

Since the advanced vocational exams are competency-based and closely related to actual workplace practice, skills acquired on the job can be granted recognition through the examination. Many students only attend some of the preparatory course modules depending on their prior experience and knowledge. The combination of flexible course provision and competency-based exams allows prior learning to be recognised, augmented by targeted provision of additional skills, according to the needs of the individual student.

Fachschule *programmes have a recognised place in the system, with a clear value both for students and employers*

Across OECD countries

Against a background of growth in university enrolment, and some degree of standardisation of expectations around bachelor degrees in many countries, some countries have found it hard to retain an independent role for one and two-year postsecondary vocational programmes. This is unfortunate, since shorter programmes have a natural place in any system of education and training.

In Germany

Fachschule programmes have a clear and recognised role in the German education system as they effectively build on upper secondary VET qualifications and work experience of graduates. Often, *Fachschulen* are part of a larger vocational school (*Berufliche Schule*) sharing equipment and teaching labour force with secondary and other vocational education institutions contributing to more efficient resource use in German VET. The programmes are valued by students and employers as *Fachschule* graduates frequently take up leadership roles in their enterprises.

Postsecondary VET programmes are well-articulated with upper secondary VET providing avenues of progression attractive to students as well as meeting labour market demand

Across OECD countries

Across OECD countries, VET systems face the challenge of ensuring that graduates of the initial VET system have access to further learning

opportunities. Such opportunities are desirable because growing technological complexity is increasing the demand for higher level skills, because students themselves are aspiring to higher level qualifications and because the absence of such opportunities tends to leave initial VET pathways as low status dead ends. There is evidence that students are more willing to pursue shorter VET programmes if they know that such programmes offer a route to more advanced studies (Dunkel and Le Mouillour, 2009). In different countries graduates of upper secondary vocational programmes often pursue two sorts of upskilling – first higher level or more specialised professional training, such as the master craftsman qualifications often offered to qualified apprentices and linked to the ability to run a small business and manage staff; second, more academic qualifications at bachelors or master level that may open up different or wider career opportunities.

In Germany

Progression from upper secondary to postsecondary VET is a clear and well-regulated pathway. The advanced vocational examinations and the *Fachschulen* provide a complementary set of avenues for upskilling so that most VET graduates can find appropriate opportunities either for further specialisation in their vocation or for taking up managerial positions. Such good articulation helps to maintain the high status of the vocational track. Postsecondary VET graduates can often compete for the same jobs as graduates of UASs or universities and often obtain senior management positions.

The government has been actively opening up avenues of progression from vocational to academic education

Across OECD countries

While it is not realistic or desirable to imagine that a very large proportion of initial VET graduates will enter academic tertiary education, the steady increase in the level of skills required in modern labour markets imply that efforts should be made to open up tertiary institutions to the greatest extent possible. Switzerland has been relatively successful at opening *Fachhochschulen* to graduates from the dual system through the creation of a specific vocational matriculation examination (the *Berufsmaturität*), to be completed in parallel to the VET track and that provides access to tertiary education. Today, around 12 % of all VET graduates obtain the *Berufsmaturität,* representing half of the students in the *Fachhochschulen* (Hoeckel, Field and Grubb, 2009). Austria, similarly, introduced the *Lehre mit Matura* in 2008. In Denmark, throughout

2005-2007, 8-11% of graduates from academy professional programmes started an academic higher education degree within 27 months (Danish Agency for Higher Education and Educational Support, 2012).

But OECD countries sometimes find it difficult to facilitate such transitions especially in cases where the two educational tracks are very distinct. OECD reviews of postsecondary VET have identified permeability as a challenge in a number of other countries. Reform efforts encompass the creation of a specific higher education entry qualification for VET such as *Berufsmaturität* in Switzerland (Hoeckel, Field and Grubb, 2009), or implementing a state-wide articulation system designed to facilitate course exemptions for VET graduates entering bachelor studies, for example in Florida (Kuczera and Field, forthcoming).

In Germany

The government has worked hard to open up pathways into academic tertiary education for postsecondary as well as secondary VET graduates. Entry into tertiary A institutions without a higher education access qualification was significantly eased in 2009 (Kultusministerkonferenz, 2009b). New regulations permit those who pass an advanced vocational examination (e.g. *Meister*) a general entrance to academic higher education, while holders of other vocational qualifications a subject-specific higher education access if some further conditions are fulfilled. To support progression from VET into academic higher education a range of measures have been piloted or implemented more widely such as ANKOM or Advancement Scholarships (BMBF, 2012) or bilateral credit transfer systems between individual *Fachschulen* and universities of applied science (UASs).

Challenges

Despite all the manifest strengths of the German postsecondary VET system, there remain, inevitably, some significant challenges. These challenges are set out below in summary. What might be done to address them forms the subject of chapters 2-7.

- Despite recent reforms, the route from postsecondary VET to academic higher education remains rarely travelled, and not all the obstacles on the route have yet been removed.
- Weak information on quality and price of preparatory courses for professional exams combined with very little external quality control means that student choice of preparatory courses is difficult, and

incentives on providers to provide good courses at a modest cost are insufficient.

- The regulation of exam quality varies greatly in Germany, and there is limited evidence of adherence to clear standards.
- Rapid changes in technology and labour market demand, and somewhat inflexible employment arrangements, make it challenging for *Fachschulen* to keep their workforce skills up-to-date.
- Workplace training is not extensively employed in *Fachschulen* despite its many potential advantages.
- While *Fachschulen* provide qualifications of value, the evidence base on skills needs, and mechanisms to respond to that evidence, could be improved.

Notes

1. In Bavaria, *Fachschulen* are called specialised academies (*Fachakademien*).
2. Currently, there are multiple titles for examinations certificates beyond *Meister* such as *Fachberater*, *Kfz-Techniker*, *Fachwirt*, *Fachmeister*, *geprüfter Betriebswirt* which denote different levels and fields of study.

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Chapter 2

Transition to academic higher education

Transitions from postsecondary vocational education and training (VET) to academic higher education have remained limited despite recent reforms. This could reflect the continued attractiveness of VET tracks despite increasing competition from academic education, but other barriers may also be an issue. This chapter argues that Länder *and the federal government should encourage credit transfer to facilitate the transition, recognising that a combination of academic and vocational studies can lead to desirable labour market outcomes.*

Challenges: Increasing competition and meeting strong demand for transition

Transitions from postsecondary VET to academic higher education present three challenges. First, an intensified competition for a declining pool of young people may be expected between VET and academic education. Second, despite recent reforms, transition rates from postsecondary VET to academic higher education have remained low. Third, existing obstacles to transition could damage the overall reputation of the VET track as well as holding back the upskilling crucial for economic growth.

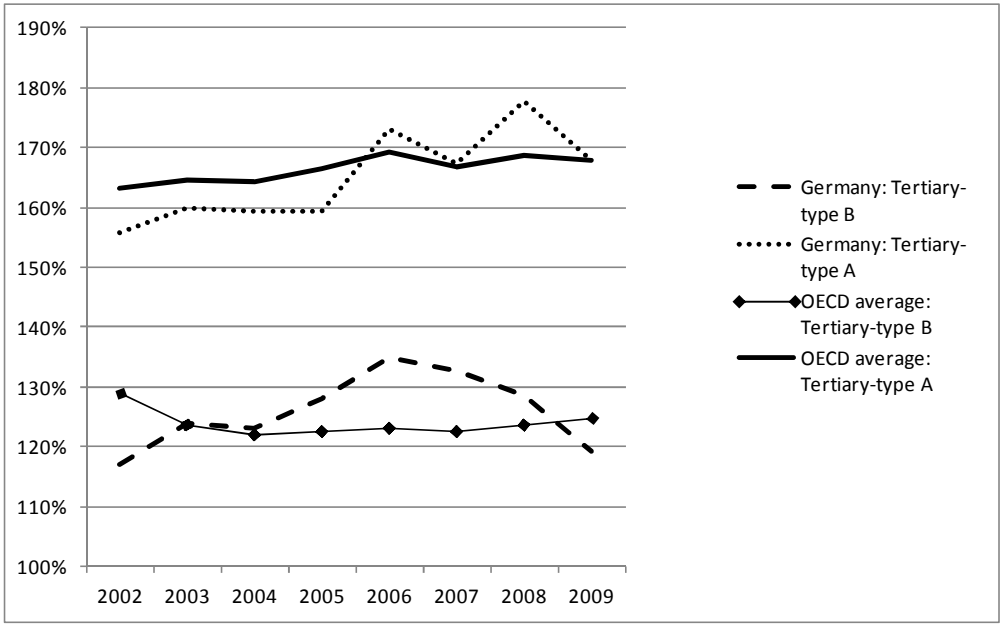
Demographic decline and competition from academic education

The number of young people is falling in Germany (as in many OECD countries (OECD, 2012)) particularly in Eastern *Länder* (Kultusministerkonferenz, 2011a). This decline will accelerate in the coming decade, creating significant challenges for the supply of skills, and economic growth (McKinsey, 2011). With falling student numbers, competition for students may intensify not only across institutions within each education track, but also between the VET and academic tracks. For example, the number of unfilled apprentice positions has increased lately due to an increase in employer demand and decline in student numbers (BMBF, 2012a). The German government and the social partners recognise this challenge and continue to take counter-measures (BMBF, 2010).

Growing competition from academic education amplifies the impact of demographic decline. According to BIBB-IAB forecasts, the qualification with the steepest decline in the labour force will be ISCED 3b and 4 encompassing apprenticeship qualifications underlining the need to maintain the attractiveness of the VET track in the medium term (Helmrich and Zika, 2010). One potential indication of changes in the attractiveness of educational tracks is the relative earnings of their graduates even though earnings themselves are influenced by the number of graduates, thus attractiveness (Lasonen and Gordon, 2009). In Germany, the relative earnings of those with both tertiary B and A qualifications have been increasing slightly (Figure 2.1).[1]

Figure 2.1 Relative earnings from employment among 25-64-year-old men (compared to secondary school leaving certificate)

2002-2009



Note: 100% = average annual earnings with a secondary school leaving certificate.

Source: OECD (2005), *Education at a Glance 2005: OECD Indicators*, OECD Publishing. doi: http://dx.doi.org/10.1787/eag-2005-en; OECD (2006), *Education at a Glance 2006: OECD Indicators*, OECD Publishing. doi: http://dx.doi.org/10.1787/eag-2006-en; OECD (2007), *Education at a Glance 2007: OECD Indicators*, OECD Publishing. doi: http://dx.doi.org/10.1787/eag-2007-en; OECD (2008), *Education at a Glance 2008: OECD Indicators*, OECD Publishing. doi: http://dx.doi.org/10.1787/eag-2008-en; OECD (2009), *Education at a Glance 2009: OECD Indicators*, OECD Publishing. doi: http://dx.doi.org/10.1787/eag-2009-en; OECD (2010a), *Education at a Glance 2010: OECD Indicators*, OECD Publishing. doi: http://dx.doi.org/10.1787/eag-2010-en; OECD (2011), *Education at a Glance 2011: OECD Indicators*, OECD Publishing. doi: http://dx.doi.org/10.1787/eag-2011-en.

Participant numbers have been falling for examinations for more than a decade while *Fachschule* student numbers have been stable in spite of large growth in healthcare and child care professions (for more on this see Chapter 1). The combination of demographic decline and competition from academic education together could lead to sharply declining numbers of entrants into postsecondary VET which is also likely to have negative consequences for economic growth as labour shortages in postsecondary VET jobs increase (see Chapter 1 on labour market developments).

Transition rates from VET to higher education remain low

Following recent policy reforms, there are four major paths into academic higher education in Germany:

1. The traditional route into academic higher education is the completion of *Gymnasium* or similar institution such as *Berufliches Gymnasium* by obtaining the *Abitur*.
2. A qualification granting access to higher education (*Hochschulzugansberechtigung*) can be obtained in vocational schools (including *Fachschulen*) in addition to the VET qualification.
3. The "second educational path" allows students to obtain the higher education access qualification in special evening courses and similar programmes.
4. Certain graduates of VET may enter academic higher education without a higher education access qualification (the "third educational path").

In Germany, there are also vocationally oriented tertiary education institutions such as *Berufsakademien* and *Duale Hochschulen* which provide dual study courses for many initial VET graduates often leading to a recognised bachelors degree (BMBF and BIBB, 2011). The student numbers in such institutions are steadily growing making them an important additional pathway from initial VET to tertiary education beyond those analysed here.

The "third educational path" above, i.e. without higher education access qualification, was substantially opened up in 2009 (Kultusministerkonferenz, 2009); 15 out of 16 *Länder* had implemented national rules by 2011 (Kultusministerkonferenz, 2011b). New regulations permit those with an advanced vocational qualification (e.g. *Meister*) general access to academic higher education and holders of other vocational qualifications a subject-specific access to higher education.[2] To support those pursuing this pathway a range of measures have been piloted or rolled out nationally and initiated locally such as ANKOM or Advancement Scholarships (BMBF, 2012b) or bilateral credit transfer systems between individual *Fachschulen* and universities of applied science (UASs).

Prior to these reforms, the relative weight of non-traditional access to academic higher education increased only slightly in the last decade (Table 2.1). In 2010, only 2.1% of all entrants entered academic higher education without a higher education entrance qualification, up from 0.7%

in 2000. But entrants from *Fachschulen* are also few: for UASs 1.3% in 2000, compared to 1.5% in 2010.

Table 2.1 Entrants to universities and universities by form of access

Percentage

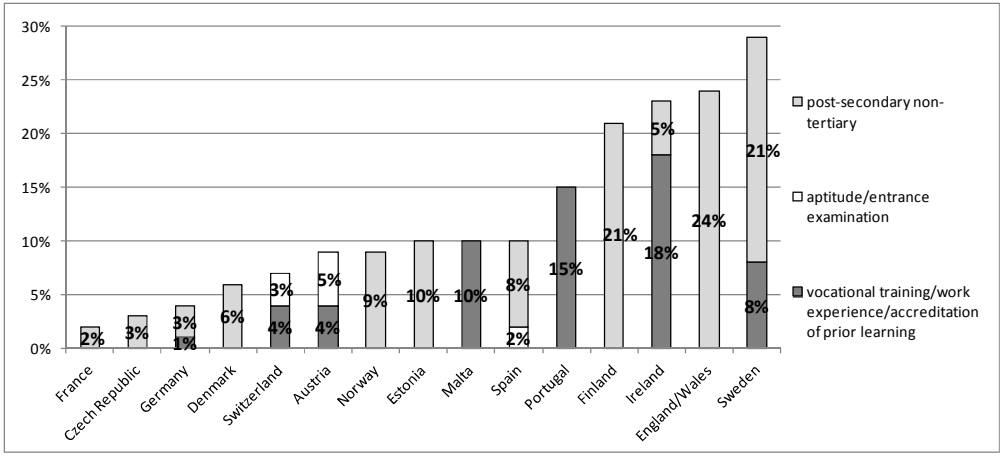
Access to higher education through	Total higher education				Universities				Universities of applied science			
	2000	2005	2009	2010	2000	2005	2009	2010	2000	2005	2009	2010
Gymnasium, *Fachgymnasium, Gesamtschule*	81.6	76.9	76.9	75.6	93.4	92.1	91.5	90.0	55.2	46.0	53.3	52.1
Vocational schools-other than *Fachschulen*	12.2	16.1	14.5	15.2	1.9	3.0	3.2	3.5	35.1	42.7	33.2	34.3
Vocational schools-*Fachschulen*	0.4	0.5	0.7	0.6	0.1	0.1	0.0	0.1	1.1	1.3	1.6	1.5
Second educational path	2.6	3.3	3.4	3.6	1.8	2.1	2.1	2.0	4.4	5.6	5.6	6.3
Third educational path	0.7	1.0	1.4	2.1	0.5	0.6	0.6	1.9	1.1	1.9	2.5	2.5
Other	2.6	2.2	3.0	2.8	2.3	2.1	2.6	2.4	3.1	2.5	3.8	3.4
Column total	100	100	100	100	100	100	100	100	100	100	100	100

Source: Leszczensky, A. et al. (2012), Bildung und Qualifikation als Grundlage der technologischen Leistungsfähigkeit Deutschland, Bericht des Konsortiums „Bildungsindikatoren und technologische Leistungsfähigkeit, HIS:Forum Hochschule 1/2012, Hannover. www.e-fi.de/fileadmin/Innovationsstudien_2012/StuDIS_01_HIS_NIW.pdf, p.39 (accessed 2 August 2012) and special data release of the authors (unpublished).

Of course, many of those with vocational, and particularly higher vocational qualifications, do not want or need higher education qualifications. The high wages they command mean that they have limited need of further qualifications, and face increased opportunity cost of study. But there is some evidence of unmet demand. For students in upper secondary VET in Germany, the most important reason cited for choosing a profession is the opportunity for further qualifications, including academic higher education, mentioned by one-third of the students (Fuchs, 2012). In a 2010 survey of graduates of advanced vocational examinations, 23% expressed a wish to study in academic higher education (DIHK, 2011).[3] Germany has a relatively low transition rate through non-traditional paths even when comparing it to countries with similarly strong VET systems such as Austria or Switzerland (Figure 2.2).[4]

Figure 2.2 Students entering higher education through an alternative route by type of route, as a percentage of all entrants

2009



Source: Orr, D., C. Gwosc, and N. Netz (2011), *Social and Economic Conditions of Student Life in Europe. Synopsis of Indicators, Final Report*, Eurostudent IV 2008–2011, Bertelsmann, Bielefeld, www.eurostudent.eu/download_files/documents/EIV_Synopsis_of_Indicators.pdf

Obstacles to transitions may harm both VET and the economy

Young people will be more willing to enter vocational programmes if they are confident that their future options to enter academic education will remain open (Dunkel and Le Mouillour, 2009). Any obstacles to postsecondary transition are therefore damaging – not only do they directly limit the upskilling of the German labour force essential for the country's long-term growth (Leszczensky et al., 2012), they may also inhibit young people from entering VET programmes in the first place, even when those programmes are desirable for the student and needed by the economy.

Recommendation: Facilitating credit transfer

Encourage credit transfer arrangements that facilitate the transition from postsecondary VET to academic higher education.

Supporting arguments: Positive economic payoffs and international examples

There are three main arguments for this recommendation. First, combining vocational and academic studies can bring benefits both to the

individual and to the economy. Second, a credit transfer system across qualifications can remove unnecessary barriers to transition. Third, the co-ordination of vocational and academic programmes presents challenges, but soft regulation facilitating voluntary co-ordination may be effective.

Mixed education pathways can pay off for students as well as the whole economy

In countries with distinct vocational and general education pathways such as Germany, both pathways can lead to valued outcomes. But, mixed pathways offer additional benefits at least for some groups, and are becoming increasingly common at postsecondary level (Lasonen and Gordon, 2009). By blending practical, technical and more academic competences they allow individuals to better react to the challenges of technological change and support the entrepreneurship crucial for national innovation systems and job creation (Backes-Gellner, Tuor and Wettstein, 2010). Evidence on Switzerland suggests that returns to mixed education pathways are positive in spite of the longer study time, which may be partly due to barriers to transitions (Tuor and Backes-Gellner, 2010; Fazekas and Field, 2013). In Germany, research suggests that mixed pathways lead to higher job satisfaction and a higher subjective perception of job security (BMBF, 2011). The increasing popularity of dual study courses also provides an indication that German students see great value in blending vocational and academic studies (BMBF and BIBB, 2011).

Credit transfer systems across qualifications can be effective in removing unnecessary costs of transition

Even if access routes into academic higher education are open for postsecondary VET graduates and a range of supporting instruments are in place such as career guidance and preparatory courses for non-traditional entrants, weak credit transfer arrangements impose unnecessary costs on students and therefore lower transition rates (for the full range of policies facilitating transition see Box 2.1). Course repetition and lengthened study time due to insufficient credit transfer arrangements across formal qualifications are a common challenge in many OECD countries such as Austria (Musset et al., forthcoming).

Box 2.1 Main elements of a policy package facilitating transitions between vocational and academic education

OECD countries employ a range of policies to facilitate transitions from postsecondary VET into academic higher education. These policies often reinforce each other. The main policies across OECD are:

1. *Creating the opportunity*: Allowing postsecondary VET graduates to enter academic higher education without obtaining any of the "traditional" entry qualifications such as an academic upper secondary qualification is the precursor for widening access. VET graduates are often granted study-field specific entry based on their work experience, vocational qualification, demonstration of skills or any combination of these (Orr, Gwosc and Netz, 2011). A key policy choice is whether to make entry automatic or leave some discretion in academic higher education institutions.
2. *Making opportunities known*: Transition from postsecondary VET to academic higher education typically involves moving between segments of an increasingly complex education system with very different institutions, rules, and expectations (OECD, 2010b). Therefore, career guidance is essential in making VET graduates aware of their opportunities and the associated requirements. Countries often employ targeted career guidance schemes for VET graduates.
3. Supporting *transitions:* Postsecondary VET graduates naturally tend to be stronger in practical subjects but sometimes weaker in academic subjects than their counterparts from general education. They will therefore often require additional support at the outset of their academic studies. Preparatory courses before entering academic higher education (e.g. as additional courses in vocational schools) or targeted remedial courses at the beginning of academic studies are common (Musset et al., forthcoming).
4. *Lowering study costs and recognising prior learning:* Entrants often dispose of vocational skills and knowledge which overlap with courses of academic studies. Granting exemptions for courses whose content they already know can shorten study time, and overall study costs. In general, countries can choose to intervene in the course exemption decisions of academic higher education institutions in three ways: *i)* increasing transparency by mapping course content using a modular approach both on the VET and academic sides and making learning outcomes comparable; *ii)* based on a transparent course comparison map, obliging academic higher education institutes to grant automatic access to equivalent courses; and *iii)* ensuring a course harmonization programme across VET and academic training providers.

Box 2.1 Main elements of a policy package facilitating transitions between vocational and academic education *(continued)*

5. *Meeting atypical student demand*: Students entering academic higher education through the VET route often have substantial work experience so the opportunity cost of studies is high for them. Therefore, education provision which allows studies and work to be combined is essential. In many OECD countries, most academic higher education institutions offer courses in the traditional full-time format; encouraging part-time, modular and distance learning options is important.
6. *Setting institutional incentives right*: In many OECD countries, academic higher education institutions are financed according to a formula which rewards institutions according to the length of student studies is discouraging them from offering course exemptions. Countries can fund academic higher education institutions at least partially based on completions rather than the length of time spent at the institution.

In Germany, while course exemptions through credit transfer can in principle cover up to 50% of course content in academic higher education (Kultusministerkonferenz, 2002), these depend on the decision of individual institutions. This has led to a patchwork of bilateral agreements between vocational and academic institutions. Some *Fachschulen* found it easier to collaborate with foreign rather than German universities to realise effective transfers. International evidence, mainly from the US, suggests that localised student transfer policies are less effective than a comprehensive policy even when holding academic standards, curricula, and student background constant (Moodie, 2008, Chapter 9).

Although the evidence is limited, it allows for some tentative conclusions applicable to Germany. First, articulation policies such as automatic credit transfer arrangements are no panacea on their own. A range of supporting measures are also necessary such as targeted career guidance, and effective preparation in sending institutions (Roksa and Keith, 2008). Second, certain features of the articulation policy are crucial to its effectiveness. These include the breadth of the policy (i.e. proportion of institutions covered) and whether the scheme is mandatory or voluntary. Third, even well-designed schemes may impact only on specific student groups with low initial transfer rates (Gross and Goldhaber, 2009). Finally, how policies are implemented is critical, as academic tertiary institutions can still create a range of micro barriers, for example by accepting students to the institution, but not to the department of choice.

Successful implementation depends on persuading autonomous institutions to work together

Implementation crucially hinges upon the collaboration between academic higher education institutes with curricular autonomy and postsecondary VET institutions. But, academic higher education institutions can perceive credit transfer as a threat to the integrity of course and university standards (Bandias, Fuller and Pfitzner, 2011). Such opposition could hinder effective implementation (Gross and Goldhaber, 2009). A flexible system advancing transparency and equal treatment of every student with some discretion in individual cases may work better. Transparency could be achieved by mapping the course content of postsecondary VET institutions and academic tertiary institutions according to a common framework. The results of the mapping exercise could be binding on institutions so that they would not be able to make students repeat a course if it is recognised as equivalent to a previously completed course (Box 2.1, policy tool no. 4). A common framework would also motivate institutions willing to facilitate transfer to harmonise their courses. Such a system would build on existing German experiences, for example ANKOM (BMBF, 2012b), and can be informed by international experience such as the course numbering arrangements in Florida (Box 2.2) or PERMEVET (Kristiansen, 2011).

Box 2.2 Florida's State Course Numbering System

Florida's unique articulation arrangement makes postsecondary career and technical education (CTE) programmes comparable across institutions and creates pathways across degrees and levels. Programme comparability is achieved through identification of course content within the State Course Numbering System. Courses that have the same content and are taught by teachers with comparable credentials receive the same number and are considered equivalent.

Institutions therefore award the same amount of credit for equivalent courses regardless of the provider. This means that institutions cannot discriminate between internal and external students. All public institutions are required to comply with state-defined programme lengths and programme standards reinforcing comparability of programmes.

Source: Kuczera, M., and S. Field (forthcoming), *A Skills beyond School Review of the United States*. OECD Reviews of Vocational Education and Training, OECD Publishing.

Notes

1. Although, pre-crisis developments of relative earnings followed a somewhat different path (OECD, 2008a).
2. In the latter case additional conditions apply: *i)* at least two years of relevant initial VET; *ii)* at least three years of relevant work experience; and *iii)* passing an aptitude test or completion of a probationary year.
3. The comparable figure in 2008 was 14.5% (DIHK, 2008).
4. When comparing the proportion of graduate cohorts entering academic higher education, German *Fachschulen* appear to be one of the major entry routes. 13% of *Fachschule* graduates entered academic higher education within six months of graduation in 2010, down from 28% in 2006 (although figures are only approximate due to small sample sizes) (HIS, 2012). By way of comparison, in Denmark, throughout 2005-2007, 8-11% of graduates from academy professional programmes started an academic higher education degree within 27 months (Danish Agency for Higher Education and Educational Support, 2012).

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Chapter 3

Better information on preparatory courses for examinations

An open market in preparatory courses for examinations has many positive features. But it needs to be backed up by better information on preparatory course quality and price. This chapter argues that the government should collect and disseminate better information on courses and encourage industry self-regulation. Better data facilitate informed student choice improving market mechanisms, while industry-self regulation can increase quality by enforcing minimum-standards for every course.

Challenges: Lack of transparency and varying course quality

There are two main challenges. First, the information available for students and applicants about preparatory courses for examinations is often insufficient to make good choices, weakening the incentives on providers to deliver quality training. Second, the lack of external quality control on preparatory courses is a problem, given the varying quality of examinations.

Lack of information about preparatory courses weakens markets

Given that the quality of education provision is not readily observable, information on course and provider quality is an essential element of well-functioning education markets (OECD, 2008, Chapter 3; Cabrera and La Nasa, 2002). In the context of vocational programmes, such information might include indicators of course quality, including student achievement, the labour market success of graduates and drop-out rates.[1] In the absence of such information students will rely on word of mouth assessments, which are often incomplete and biased, unevenly available across social groups, and adjust to change in school quality only slowly. (Cabrera and La Nasa, 2002). These challenges are even more pronounced in the case of diverse training providers offering preparatory courses with different methods of instruction such as distance learning or class teaching (DIHK, 2011).

Finding the most suitable advanced vocational exam can be a challenge in itself, but identifying a corresponding high quality preparatory course is even more difficult. In 2010, there were 212 federally regulated advanced vocational examinations and 3 112 examinations regulated by individual chambers which are applicable only in the given chamber's area and often overlap with other chambers' exams in content (BIBB, 2011). This extensive set of choices is moderated for each individual by geography and professional field. For any given exam, applicants can choose to prepare without a formal course (although only 2-6% of all examinees did so (DIHK, 2011)), pursue a course offered by the chamber, or choose a private provider. Surveys in the industry and commerce sectors show that over half of all examinees attended a course provided by a chamber of industry and commerce (DIHK, 2011; 2008). According to those interviewed by the OECD, the position is similar for courses run by chambers of crafts and trades where about 500 training centres offer preparatory courses (HWK, 2012). There are no comprehensive statistics on the number and composition of providers of preparatory courses, but according to the most complete survey there were more than 15 000 providers of continuing vocational education and training (VET) in 2008 across Germany, although not all of these providers will offer preparatory courses. As the density of

providers varies across the country, some applicants may face a limited choice of options in their area (Dietrich, Schade and Behrensdorf, 2008).

While systemic data are lacking, a general population survey, the Adult Education Survey of 2010 (TNS, Bilger, and von Rosenbladt, 2011), can be used to gauge the views on the continuing education market of typical preparatory course participants (participant profile can be inferred from DIHK, 2011). About one-quarter of potential participants of preparatory courses would like to see more information on training and education opportunities and more than a third finds the overview of continuing education as insufficient (Table 3.1).[2] In a similar vein, among those who considered taking part in continuing education, but did not do so, about one-fifth did not take part because they lacked sufficient information.

Table 3.1 Available and desired information about continuing education courses

(N=2751)

		Overview of the continuing education opportunities		Total
		good	not good	
More information and counselling on continuing education is desired	yes	12%	14%	26%
	no	48%	23%	70%
Total		60%	36%	96%
Missing values				4%

Source: Author's calculations using the Adult Education Survey of 2010. TNS Infratest Sozialforschung, F. Bilger, and B. von Rosenbladt (2010), *Weiterbildungsverhalten in Deutschland 2010 (AES 201, Materialband 2: Personenbezogene tabellarische Auswertungen*, BMBF, Berlin.

Notes: The table describes a restricted sub-sample of the Adult Education Survey of 2010. Only those respondents are included here who match a typical preparatory course participant profile: VET education with apprenticeship training, employed, not working for the army or the state, and at least 20 years-old.

International evidence on comparable markets provides useful insights. In Switzerland, according to a survey of postsecondary VET students following preparatory courses for Swiss professional examinations or programmes of professional colleges (BASS, 2009), the second and third most frequently cited reasons for choosing a provider is high reputation and that the provider is well known. But pass rates are quoted only by about every tenth respondent of the survey. Reputation and the knowledge of the provider point to the importance of informal knowledge sharing (Waslander, Pater and van der Weide, 2010). The relatively low weight assigned to pass

rates in determining the choice of provider could suggest that such rates are largely unknown and therefore cannot significantly affect preferences.

In Germany, some national and local information sources may assist potential preparatory course participants, but they are often limited in terms of courses covered and information provided (Dietrich, Schade and Behrensdorf, 2008). For example, the webpage of the *Bundesagentur für Arbeit* called KURSNET (http://kursnet-finden.arbeitsagentur.de/kurs/) offers information on course and qualification content as well as some of the costs (e.g. exams costs are often excluded), but it only covers some of the providers. Another frequently used information source is the continuing education portal of the German Chamber of Industry and Commerce called WIS (http://wis.ihk.de/). Pass rates, and quality of instruction vary a lot across providers according to the views expressed to the OECD by different stakeholders. Weak information on these issues is therefore worrying.

Lack of external quality control for preparatory courses is a challenge

In the absence of federal requirements, *Länder* may stipulate requirements for preparatory course providers; but this is unusual. If the market mechanism is imperfect as in this case, the absence of quality control on providers may permit low quality provision and the existence of preparatory course providers of poor quality was raised by some of the stakeholders interviewed by the OECD. In practice, many providers seek an external quality assurance licence or certification such as AZAV on a voluntary basis as certification is a prerequisite for receiving public funding for example from *Bundesagentur für Arbeit* (Ambos et al., 2010, DQS, 2012) or support for individuals attending their courses (see for example student funding according to the Upgrading Training Assistance Act (AFBG); Hippach-Schneider et al., 2012). In addition, advanced vocational exams are subject to various quality assurance frameworks leaving their quality varying too; hence, exams may not be able to serve as a final quality check in all cases (for more on exam quality and regulations see Chapter 4).

Recommendation: Information provision and industry self-regulation

Collect and disseminate better information from preparatory course providers on course quality and costs. Encourage industry self-regulation of preparatory courses to ensure high and consistent standards

Supporting arguments: Better informed student choice and assuring minimum standards

Implementation of this recommendation would improve the market mechanism for preparatory courses in at least two major respects. First, better data on providers would help student choice and therefore improve provider quality. Second, industry self-regulation of preparatory courses would increase quality by setting minimum standards and supporting quality improvement without the excessive burden of government regulation.

Better data would help student choice and improve provider quality

In education more widely, when information is available in a standardised and accessible format such as school league tables or university rankings published on the Internet, the majority of students make use of such data. The impact on choices depends on factors such as the availability of alternative education providers, but on average it is only modest. This is because students rely on a mix of information sources among which official performance data is only one (Waslander, Pater and van der Weide, 2010).

Better data on course providers would be helpful both to students and other stakeholders, including employers. As many informal networks conveying information on courses and providers tend to be local in nature, the provision of performance and cost data on all preparatory courses and providers would also help geographical mobility and strengthen competition among providers. It would also contribute to the evidence-base of tertiary education policy making.

Indicators to be collected and published might cover:

- pass and dropout rates;
- total training costs for students as well as provider costs;
- basic data on provision (e.g. type and number of courses delivered);
- basic data on students (e.g. gender, educational background);
- additional data on training quality.

Data collection from providers is standard practice in other parts of postsecondary VET, for example data on *Fachschulen* is collected by the Federal Statistical Office (see for example Statistisches Bundesamt, 2011). Moreover, chambers already collect a range of data on exam pass rates including preparatory courses of exam takers and a close to comprehensive list of all German continuing education providers exists (Dietrich, Schade and Behrensdorf, 2008). Hence, Germany is very well placed to implement

such a data collection exercise. To ensure that all providers of preparatory courses are accounted for a simple registration procedure could be required as a precondition for providers to offer courses.

Dissemination might be pursued in a number of ways. One option would be to charge a federal public organisation with data dissemination. In tertiary education some OECD countries publish performance data regularly to aid student choice; see for example the United Kingdom and Poland (OECD, 2008, Chapter 5). In the field of VET the publication of institution-specific performance data is less common (OECD, 2010)[3] although not unknown, as in the case of the further education colleges in England as discussed earlier. An alternative option would be to provide data and perhaps a measure of support to other bodies already offering data and advice. These bodies should not be providers of preparatory courses to avoid conflict of interest. Such data would help students to avoid weak courses and prefer stronger ones. This in turn would strengthen the incentives on providers to improve course quality overall.

Industry self-regulation could improve quality without burdensome government regulation

Many OECD countries regulate the market entry of training providers using rules regarding, among other things, the number of academic programmes offered, the student-teacher ratio, and the proportion of full-time professors and their academic qualifications (Spain) (OECD, 2008 Chapter 3). But such arrangements typically regulate inputs rather than outputs. Ideally regulation should be a route to quality improvement, and support peer learning by providers.

The freedom to offer a course has created a dynamic market for preparatory courses populated by a mix of private, public, and semi-public providers (Ambos et al., 2010). Exams, in principle, represent the final check on the students' knowledge so there are good arguments for avoiding heavy-handed regulation of preparatory courses. But the vast majority of those who take a professional exam attend a preparatory course (DIHK, 2011) and so it is in the public interest that courses attended are of adequate quality.

The current diverse certification and licensing arrangements used in a large section of the market for continuing education courses already impose a regulatory burden on providers (Ambos et al., 2010) and excessive burdens clearly need to be avoided. But, there are alternative routes to good regulation including industry self-regulation (OECD, 2002). Self-regulated professions could ensure minimum standards for preparatory courses by providing guidance for the worst-performing providers and facilitating peer

learning. A starting point for such minimum standards could be the recommendations for training curricula developed by the Chambers in co-operation with Germany's trade and employers' unions.

As a number of employer and professional organisations maintain their own providers of preparatory courses, industry self-regulation would need to be organised to avoid favouring these "insider" providers.

Notes

1. There is at least one important difference between a preparatory course market and education markets in school education and academic tertiary education: preparatory course applicants and students are already active on the labour market before and typically also during their training. Applicants and students therefore have a fairly good understanding of labour market demand and their career prospects and their employer can often provide direct information on the value of a qualification.
2. For results on the whole German population see Kuwan (2012).
3. One example of institution specific performance data published alongside occupation specific information on a VET career guidance site can be found in Hungary (see MKIK GVI, 2012).

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Chapter 4

Quality of examinations

While specific evidence is scarce, the system for regulating exam quality varies greatly in Germany and there are few clear standards. This chapter invites the federal government to explore the option of a framework regulation of all examinations, linked to clear standards, to support quality. Such regulation would increase exam quality and therefore the value and positive outcomes of the exam system.

Challenges: Exam quality and occupational licensing

Alongside the many qualities of the German advanced vocational examinations system, it faces some challenges. First, the system of regulating exam quality varies greatly. Second, difficult exams could be used as a tool for dampening competition in regulated occupations, an issue which may require further scrutiny.

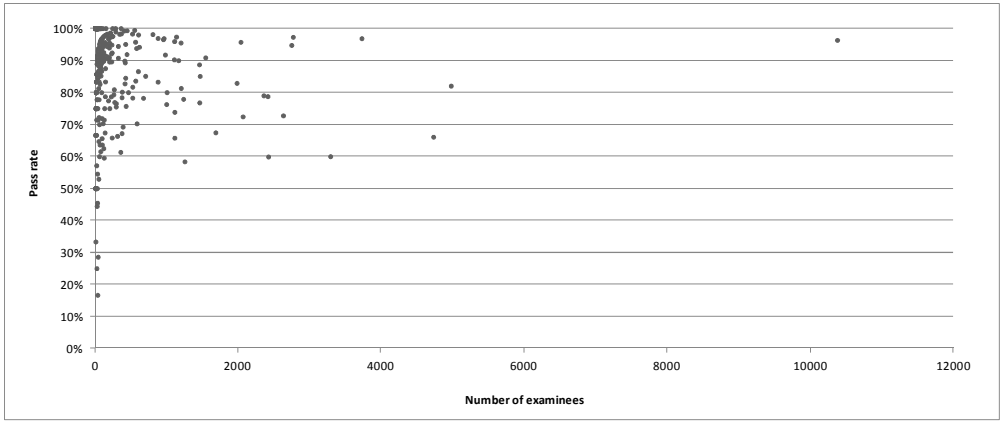
Regulation of examinations greatly varies across Germany

The federally regulated advanced vocational examinations must be distinguished from the examinations regulated by the chambers (Hippach-Schneider et al., 2012). In the case of federally regulated exams, the content of examination and the methods of examining are uniform across Germany and the relevant regulations are issued by the government. Certification of adequate standards is mandatory for these exams (Pfeiffer et al., 2009). Examination committees are composed of representatives of employees, employers, and teachers who typically come from different parts of Germany (BIBB, 2011). The content and method of examinations regulated by the chamber are defined by the local chamber following the national legal framework and broad guidelines of the national chamber associations (DGB and KWB, 2008). While there are certification schemes available for these exams (e.g. *Grundnorm zur Personenzertifizierung 17024*.), participation is voluntary. Examination procedures tend to be local with examiners mainly coming from the local economy and training system. As pointed out by interviewees of the OECD, this regulatory framework produces examinations of varying quality and difficulty, so that some exams may not fully serve the interests of the regional or national economy. As regulations are more lax for examinations regulated by chambers, this challenge is likely to apply more to them than for federally regulated exams.

One indication of varying exam difficulty is exam pass rates across professions even though pass rates may also reflect factors other than exam difficulty.[1] The latest statistics of exam pass rates indicate that there is a wide variation across professions (Figure 4.1): 17% to 100% among all the professions and 60% to 97% among professions with at least 1 000 examinees (patterns are consistent for the last five-eight years where data is available).

Figure 4.1 Number of examinees and pass rate per profession, advanced vocational examinations

2010



Source: Author's calculations using Table 4 from Statistisches Bundesamt (2011), Weiterbildung, www.destatis.de/DE/Publikationen/Thematisch/BildungForschungKultur/Weiterbildung/BeruflicheWeiterbildung5215001117004.pdf?__blob=publicationFile, accessed on 27 August 2012.

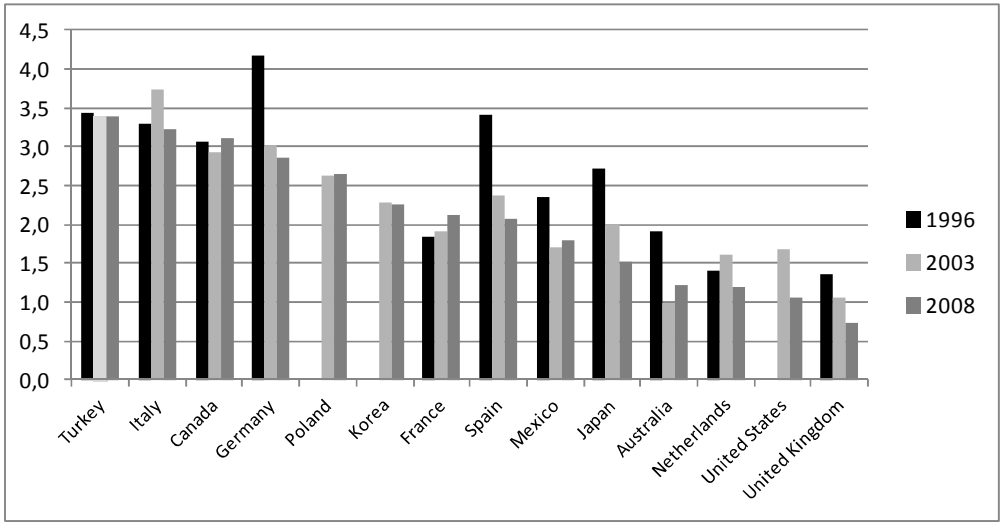
Varying exam quality, especially exam difficulty, may dampen competition

For a number of regulated professions, passing the examination is a legal requirement to practise the profession. According to international evidence, licenses to practice in general, and exams leading to licenses in particular, have a strong impact on product quality, earnings, labour supply, and labour market flexibility (Kleiner, 2006). For example, in the US, licensing increases wages by about 15% (Kleiner and Krueger, 2010) while this impact can be smaller when complementary regulations such as price fixing are in place too (Kleiner, 2006). Barriers to entry have also slowed down employment growth in the French retail sector (Bertrand and Kramarz, 2001) and in a range of US licensed occupations where average employment growth was as much as 20% higher in non-licensed occupations (Kleiner and Krueger, 2011). There is also evidence suggesting that partial deregulation of licensed occupations may even increase the quality of services (Pellizzari and Picca, 2011). Exam difficulty is related to labour market supply as well as salaries and was positively correlated with entry level salaries for lawyers in the US (Pagliero, 2010). It was also related to the supply of examinees suggesting that the exam was used to shelter the labour market from as much as 50% of increases in labour supply (Pagliero, 2011).

There is little evidence on occupational licensing in Germany. The existing research suggests that entry regulations shielded labour markets from competition including those arising from an inflow of Eastern Germans into Western German *Länder* in the early 90s (Prantl and Spitz-Oener, 2011). Kleiner (2006) suggests that the earnings impact of occupational licensing in Germany may be substantially lower than in the US due to additional regulations on prices, organisation, and advertising. According to OECD data and analysis, Germany's professional services markets are among the most heavily regulated (Figure 4.2) even after deregulation efforts of the early 2000s as for example the remaining regulated professions (41 out of 94) encompass 90% of craft businesses and 85% of handicraft workers (OECD, 2004). Positive impacts could be observed in deregulated professions such as increased firm creation (OECD, 2006). Taken together, it is conceivable that some of the examinations are used for shielding markets from competition by making exams excessively difficult which has a wider impact on the Germany economy.[2] This argument may also apply for those non-licensed professions where the exam carries a positive product market signal leading to higher respect among consumers.

Figure 4.2 OECD professional services market regulation scores

1996, 2003, 2008



Source: OECD (2012), "Indicators of regulatory conditions in the professional services", www.oecd.org/eco/regulatoryreformandcompetitionpolicy/indicatorsofregulatoryconditionsintheprofessionalservices.htm, accessed 24 August 2012.

Recommendation: Framework regulation and clear standards for examinations

Explore the option of a framework regulation and clear standards for all examinations, to support their quality

Supporting arguments: Clear standards, drawing on international experience

This recommendation is supported by three arguments. First, a framework regulation coupled with clear standards would represent an effective policy tool raising exam quality while preserving the chambers' powers in defining exam content crucial for labour market responsiveness. Second, better quality exams would contribute to improved economic outcomes both in terms of labour market performance and individual training costs. Third, existing international examples may help policy formulation and implementation.

An effectively implemented framework regulation for all exams can tackle quality issues while preserving autonomy of chambers

Chambers and professional associations have the right expertise to define the content of advanced vocational examinations. The value of this arrangement is echoed across Germany by stakeholders and is also reflected in labour market outcomes (DIHK, 2011).

At the same time, a national framework regulation of exams could improve the quality of examination procedures (as opposed to their content). Such a framework regulation could define minimum standards for every advanced vocational examination - following ISO standards for example (see Box 4.1).

Box 4.1 An International Standard in Examinations for professional certification (ISO/IEC 17024)

This international standard has been established by an international working body through the International Standards Organisation. It aims to set out clear standards governing the integrity, impartiality and credibility of examination systems used for professional certification. It covers matters such as:

- Consistency and transparency of the examination criteria.
- Impartiality of the examiners – avoidance of conflicts of interest.

The issues that ISO 17024 tackles can be summarised as:

- Defining what it is you examine (the competencies).
- Knowledge, skills and personal attributes.
- Examination must be independent.
- Examination must be a valid test of competence.

A revised and updated version of the standard was published in 2012.

To ensure that examination boards comply with established standards, an effective yet not burdensome external audit system could be put in place. For example in the United States professional examinations are not regulated by government but some (a minority) of those examinations are accredited by the American National Standards Institute (or by other bodies) in terms of the processes and institutions involved.

Better quality exams may contribute to improved economic outcomes

Where examinations are high quality, not just in terms of their vocational content, but also in terms of their capacity to set transparent standards which are applied with absolute fairness, this will attract more students to pursue the exams, make it easier to prepare for those exams, and grant employers more confidence that those who have succeeded in the exam are the best of the candidates, and that they have been appropriately tested on all relevant knowledge and skills. This will increase employer confidence in the exams and hence increase the labour market value of the associated professional qualification, further increasing the attractiveness of the qualification to potential examinees.

International examples can inform policy development

Policy development can be informed by the experiences of countries that pursue an extensive and well-developed examination system at postsecondary level, such as the Swiss professional examinations or the US personnel certification system (see Box 4.2).

Box 4.2 Exam certification systems: United States and Switzerland

American National Standards Institute (ANSI)

While there is no accreditation procedure in the US which would cover all examinations, ANSI plays a significant role. The goal of ANSI accreditation of an examining body and an examination is to increase integrity of and confidence in the certification process in accordance with ISO standards (ISO/IEC, 2012).

ANSI publishes accreditation criteria and procedures along with assessment results. A typical assessment involves inspection of written documents as well as on-site visits looking at examination practice and organisational processes. By implication, ANSI inspects not only the conformity of organisational rules with pre-defined criteria, but also the application of those rules to organisational practice. Certified organisations have to be reassessed about 12 months after the initial assessment. At the end of each assessment period ANSI makes recommendations to certified bodies, which they shall implement in order to obtain or maintain their certification.

Source: ANSI (American National Standards Institute) (2012), *Policies and Procedures*, www.ansica.org, accessed 3 September 2012.

Swiss advanced professional examinations

In Switzerland, there is an industry-led, but federally regulated system of professional education and training examinations which has many similarities with the German advanced vocational exam system. The definition of each exam sets out the professional content of the exam (competency profile), but it also contains detailed guidance and prescriptions on:

- How the exam should be conducted (e.g. main parts of the exam, their relative weight in the final score, types of assessment).
- Who the examiners should be (e.g. experts coming from outside the professional association).
- What level of competency the examinees should demonstrate.

The Federal Office for Professional Education and Training checks the quality of examination documentation and monitoring of exam procedures also takes place at the local level.

Source: Fazekas, M. and S. Field (2013), *A Skills beyond School Review of Switzerland*, OECD Reviews of Vocational Education and Training, OECD Publishing. doi: http://dx.doi.org/10.1787/9789264062665-en

Notes

1. In fact, exam pass rates across examination locations would be even more informative, but such data could not be obtained.

2. Although aggregate success rate data do not directly support this concern as exams in licensed occupations have high success rate. In order to clarify this issue detailed time-series data on exam difficulty and success rates is necessary per each exam rather than national level aggregates. Moreover, to arrive at an accurate account of the interplay between exam difficulty and constraints on competition, additional factors would have to be taken into account too, such as exam preparation practices or product market regulations.

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Chapter 5

Teachers and trainers in *Fachschulen*

Rapid changes in technology and labour market require additional efforts for Fachschulen *to maintain and update the skills of their workforce. This chapter argues that* Länder *should allow* Fachschulen *more flexibility in employment and should encourage full-time teachers and trainers to spend some time in industry.*

Challenges: Flexibility and updating skills

There are three interwoven challenges. First, the current arrangements in most *Länder* concerning *Fachschule* teachers and trainers may not be sufficiently flexible in the face of changing labour market demand. Second, technological and organisational change at the workplace make it important for teachers and trainers to update their skills. Third, rapid changes in the labour market affect the demand for *Fachschule* graduates requiring schools to rapidly change the quantity and mix of courses offered.

Current staffing arrangements may not be sufficiently flexible

In Germany, public *Fachschulen* typically employ full-time teachers and trainers whose main and usually only job is to teach. As private *Fachschulen* have to comply with the same regulations as public schools, this is also by and large true for them. Teachers in *Fachschulen* whose main job was other than teaching accounted for no more than one tenth of teaching hours in 2010/2011 in Germany as a whole, with *Land* averages varying between 3% and 20% (Statistisches Bundesamt, 2011, Table 8.1). Relying on full-time teachers is a familiar arrangement in many OECD countries, as for example in Denmark (Field et al., 2012). German *Fachschulen* typically have limited flexibility in changing the composition of their teaching workforce in response to swings in demand due to regulations on hiring and firing of teachers and trainers in most *Länder*. For example, in all but four *Länder,*[1] *Fachschulen* employ teachers and trainers primarily as civil servants often leaving less than 5% of the teaching workforce without such status (DBB, 2012). As most *Fachschulen* are part of a multi-purpose *Berufliche Schule* which shares teachers and trainers across its member institutions such as *Berufliche Gymnasium*, *Fachschule* can also respond to fluctuations in demand to some degree by reshuffling teachers and trainers across schools within the larger *Berufliche Schule*.

Most teachers and trainers in *Fachschulen* enter the profession after having completing a relevant University or University of Applied Science course and 12 months of work experience in their respective fields (Kultusministerkonferenz, 2007). While this guarantees some real-life experience for teachers and trainers of vocational subjects at the start of their career, this experience needs periodic updating. In Germany, a range of mechanisms can help. First, in most *Länder*, *Fachschule* teachers also teach in the linked *Berufschule* (often on the same site) where they can gain first-hand experience of the day-to-day working of enterprises. Second, *Fachschule* teachers are required to regularly attend courses aimed at updating their skills and knowledge (e.g. Ministerium für Kultus, Jugend

und Sport, 2009) sometimes organised by enterprises which are interested in ensuring high quality *Fachschule* graduate supply.[2] Third, teachers of vocational subjects supervise student projects linked to the workplace, granting the teachers an indirect experience of workplace requirements. Fourth, teachers and trainers regularly participate in examination committees for initial and advanced vocational examinations allowing them to observe up-to-date vocational practice. Finally, in a few cases, teachers and trainers take up three to four week-long internships in industry alongside their teaching jobs, but that these are relatively unusual. This is a pity as they are a particularly effective means of updating knowledge of industry (OECD, 2010; Parsons et al., 2009).

There are some teachers and trainers in *Fachschulen* who come from industry in mid-career bringing considerable practical knowledge with them, but this remains an atypical pathway in most *Länder*.

Rapid workplace change requires teachers and trainers to regularly update their skills

High quality programmes require teachers and trainers with good technical vocational skills, and updating those skills is a challenge (OECD, 2010). This is mainly due to the rapid change of production technology and workplace organisation, and only to a smaller degree due to the additional roles VET teachers and trainers are increasingly required to perform such as career counselling (Parsons et al., 2009). These workplace changes involve, for example the use of new machines and software, or novel flat organisational structures.

For these reasons, even those with considerable work experience at the outset of their teaching careers find it challenging to regularly update their skills over decades of teaching without some direct connection to the workplace. Hiring skilled practitioners is also increasingly difficult in the context of a demographic downturn and acute skills shortages in key professions (Parsons et al., 2009) as confirmed by interviewees of the OECD team.

Changing labour market demand requires **Fachschulen** *to adapt quickly*

In Germany, labour market demand is increasingly volatile both in terms of the mix and content of professions and this volatility has been further increased by the economic crisis (Busemeyer and Iversen, 2012). If *Fachschulen* are to fulfil their mission they need to adapt to these changes quickly (for more on *Fachschule* responsiveness to labour market need in general see Chapter 7).

But, rapid adaptation is hampered by a shortage of teachers in some professions and by restrictions on hiring in *Fachschulen*. Hiring part-time teachers can enhance the ability of *Fachschulen* to draw on the existing local knowledge of industry in response to the changing content of professions.

Recommendation: More part-timers and better skills updating

Länder should seek to allow Fachschulen the flexibility to employ more part-time teachers and trainers who also work in industry. Full-time teachers and trainers should be encouraged to spend some time in industry throughout their careers to sustain and update their knowledge and skills.

Supporting arguments: Better response to industry needs

There are three arguments supporting this recommendation. First, a larger role for part-timers would allow *Fachschulen* to benefit from enhanced knowledge transfer from industry and manage their provision more flexibly. Second, for full-time teachers, regular periods of working in enterprises throughout their teaching career would be beneficial. Third, Germany's extensive experience of partnership between VET and industry, notably through the apprenticeship system, should support this reform.

More part-timers allow for better knowledge transfer and greater flexibility

The main benefit of a stronger reliance on part-time teachers and trainers who also work in industry is that they would bring high quality practical experience that not only benefits the students, but also fellow teachers and trainers, contributing to skills-updating more broadly. Higher quality of training would also be recognised by employers as they tend to attach more value to those VET courses where trainers are required to have workplace experience (Spark, 1999 in Dalton and Smith, 2004).

A larger role for part-timers would also allow *Fachschulen* to adjust their provision more flexibly in response to swings in labour market as well as student demand. As the shortage of teachers is acute in some professions already and is likely to worsen in the future with a retirement bulge, more flexibility in staffing arrangements would help to alleviate skills shortages. For example, in Norway, VET institutions and local enterprises co-operate to address shortages in VET teachers and trainers both in the short and the medium term (OECD, 2010).

Regular placement in industry helps to update skills

While a number of mechanisms already exist to update the skills of full-time teachers and trainers throughout their teaching career, sufficient hands-on experience is sometimes lacking. For these reasons internships or part-time work in an enterprise are desirable for teachers and trainers (OECD, 2010).

However, the simple opportunity for teachers and trainers to engage with industry may not be sufficient as Dalton and Smith (2004) observe of Australian vocational teachers that they often consider themselves to be too busy to update their skills and knowledge unless training is formally integrated into their job and recognised as part of their workload. Hence, there is a need for an effective framework recognising teachers' and trainers' efforts as well as motivating them and the receiving enterprises. There are numerous initiatives in various *Länder* in Germany pointing at this, and well-established international examples which can be drawn upon (see Box 5.1 on Finland, or Kuczera and Field, 2010 on China).

For German *Länder*, it would be beneficial for their full-time teachers and trainers of vocational subjects in *Fachschulen* to regularly have workplace experience. This expectation should be mandatory.

Box 5.1 Teacher-worker pairing: Co-operation between VET institutions and industry in Finland

The Telkkä programme in Finland was based on close co-operation between teachers and workplace trainers. It aimed to improve the ability of VET to respond to the needs of working life. The programme included a two-month on-the-job period for teachers, during which teacher-worker pairs were formed. This offered an opportunity for teachers to update their professional skills and for workers who also work as workplace trainers to improve their pedagogical skills. The training period was preceded by a seminar and planning (to clarify goals and expectations) and followed by feedback from teachers and workers and dissemination to the broader community.

Teachers reported a wide range of benefits, such as: increased familiarity with recent work practices and requirements and the equipment used; easy access to firms for study visits; the contacts necessary to invite people from industry to give lectures at their VET institution; increased confidence; respect from students; and motivation. The training period also allowed teachers and workers to discuss issues related to workplace training for students and improve training plans and assessment methods. Participants improved their skills and self-esteem, and disseminated knowledge to other colleagues. This exercise was evaluated by the Economic Information Office in Finland as one of the best ways of developing teachers' professionalism.

Source: Cort, P., A. Härkönen and K. Volmari, (2004), *PROFF – Professionalization of VET Teachers for the Future*, CEDEFOP, Thessaloniki.

Policy implementation barriers can be overcome by relying on existing experience

These proposals would clearly present implementation challenges. Any weakening of the civil servant status of teachers and trainers could be seen as a challenge to the established system. Many *Fachschulen* are linked to *Berufliche Schulen* and they commonly share teaching staff, so changing the status of teachers and trainers or encouraging them to take on internships would have wider ramifications. But the benefits accruing to *Fachschulen* would also have a positive impact on the vocational institutions linked to them as part of a *Berufliche Schule*. These implementation challenges will more easily be overcome if existing experience within Germany is drawn upon.

Teachers at preparatory courses for VET examinations employed by chambers of commerce and industry or chambers of crafts tend to come from industry and teach only part-time. Chambers typically use a pool of practitioners with adequate teaching skills to quickly respond to the demand for their courses. Furthermore, there is a good supply of apprentice supervisors at upper secondary VET level some of whom might be interested in part-time arrangements at *Fachschulen*. Finally, there are already some *Länder* that adopt a more flexible approach to hiring staff, and others where there are initiatives for supporting full-time teachers in engaging in internships and working directly with industry.[3]

Notes

1. *Länder* where teachers and trainers are not required to be employed as civil servants are: Berlin, Mecklenburg-Vorpommern, Sachsen, Thüringen.
2. One interesting example of industry training provision can be found at Kultusministerium Bayern (2012).
3. See for example the Bayerisches Staatsministerium für Unterricht und Kultus (2011) on the co-operation of the Land Ministry of Education and Siemens.

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Chapter 6

Workplace training at *Fachschulen*

This chapter argues that Länder *should make some form of workplace training mandatory in* Fachschule *programmes, linking it to students' project work and developing a supportive framework to link workplace experience to the school curriculum. A supportive framework aiding every student taking part in workplace training facilitates knowledge transfer from classroom to practice and helps companies to provide placements.*

Challenges: Making full use of workplace training in support of learning goals

There are two main challenges. First, while work experience has a different role for *Fachschulen* entrants than for young apprentices, it remains important and its relative absence in programmes is a concern. Second, relying on school-based training in practically every vocational subject may not represent the most efficient way of teaching these subjects.

While students normally have work experience, their backgrounds are changing

Access to *Fachschule* courses requires graduation from a relevant apprenticeship with at least one year of work experience in the relevant profession, or alternatively another secondary school leaving certificate plus at least five years of work experience (*Kultusministerkonferenz*, 2002).[1] This guarantees that students entering *Fachschulen* have at least a minimum level of work experience and hence a basic knowledge of their profession and general workplace skills. But, as the starting age of *Fachschule* training has fallen and the proportion of students with more general prior education (e.g. university entrance qualification) has increased in the last decade, the work experience possessed by *Fachschule* entrants has fallen significantly (Table 6.1).

Table 6.1 Age distribution and prior qualifications of *Fachschule* entrants

2003/2004 - 2010/2011

	03/04	04/05	05/06	06/07	07/08	08/09	09/10	10/11
age distribution of *Fachschule* entrants								
29 or more	32%	28%	25%	23%	23%	22%	22%	23%
26-28	14%	15%	14%	14%	15%	15%	15%	15%
23-25	23%	24%	25%	25%	25%	25%	26%	26%
20-22	22%	23%	25%	26%	27%	28%	29%	29%
17-19	9%	10%	11%	11%	10%	10%	8%	7%
prior qualification of *Fachschule* entrants								
Hauptschule certificate	15%	12%	11%	11%	11%	13%	12%	11%
Realschule certificate or equivalent	60%	61%	61%	59%	58%	57%	56%	57%
University entrance qualification or equivalent	15%	17%	18%	21%	22%	21%	21%	21%
Other certificates	11%	10%	9%	9%	9%	10%	11%	11%

Source: Author's calculations based on Statistisches Bundesamt (2012), Berufliche Schulen - Ältere Ausgaben. Ältere Ausgaben der Fachserie 11 Reihe 2: Berufliche Schulen, www.destatis.de/DE/Publikationen/Thematisch/BildungForschungKultur/AlteAusgaben/BeruflicheSchulenAlt.html, accessed on 16 July 2012.

Only about one third of *Fachschule* students had studied in part-time training programmes over the last decade (32-35% according to OECD calculations based on Statistisches Bundesamt, 2012).[2] According to the OECD's interviewees, this typically implies full-time work combined with evening and/or weekend classes. Among those who study full-time, it is common to also work part-time to finance studies. These jobs are often with the student's previous employer, or in a job which is less skilled than the level of current studies (e.g. working as a waiter when studying hotel management). But in the absence of specific evidence such as a student survey, the exact magnitude and nature of *Fachschule* students' work arrangements are unknown.

The current system does not make sufficient use of workplace training

The mission of *Fachschulen* is to equip students with additional skills allowing them to fill leadership positions in companies or to exercise their profession autonomously (Kultusministerkonferenz, 2002). So *Fachschulen* should aim to extend the knowledge of their students beyond the profession they already know. Linking theoretical knowledge acquired in school to the practical world is a key learning objective; it involves the capacity to think reflectively about work practice (OECD, 2010). In German *Fachschulen* this link should be forged in two ways: *i)* through the project undertaken at the end of their programme; and *ii)* by working parallel to studies.

Student projects are a requirement in most *Fachschule* programmes and are undertaken in the last semester of the course.[3] They require students to solve novel and practically relevant problems either individually or in small groups and are typically completed in collaboration with an enterprise where students receive advice and guidance. The final use of projects often lies with the same enterprise. While this is commendable practice, it is typically undertaken away from the workplace.

Working while studying is typical practice for many students, but, there is no general supporting framework linking what happens at work to the *Fachschule* curriculum. Country experience suggests that in the absence of such a framework, students might not be able to develop skills relating to a range of positions within the company or they might learn only firm-specific skills (OECD, 2010; Smits, 2006). For the full-time students who do not also work, workplace experience is limited to the project undertaken at the end of their studies so they cannot readily try out their newly acquired theoretical knowledge in practical contexts.

Heavy reliance on school-based learning is often not the most efficient way of teaching vocational skills

In the absence of the strong reliance on workplace training pursued for example in Swiss professional colleges (Fazekas and Field, 2013), *Fachschulen* have to teach many skills in workshops in the school. These workshops are well placed to develop some basic skills that are difficult to learn systematically in a busy workplace. But many soft skills highly valued by employers such as problem-solving and conflict management are more effectively learnt at the workplace (Aarkrog, 2005; Lasonen, 2005). Facilitating these skills remains a crucial task for *Fachschulen* as their students are often typically aiming to move from narrow skilled jobs to more generalist positions requiring a broad skills mix.

Recommendation: Mandatory internships

Fachschulen should make some form of workplace training a mandatory part of their curriculum. This could be linked to students' project work. They should also develop a framework linking workplace experience to the school curriculum.

Supporting arguments: Higher training quality and ample support for implementation

This recommendation is supported by three arguments. First, mandatory short internships would increase training quality by facilitating knowledge transfer from the classroom to work practice for students and by advancing teachers' and trainers' links to industry. It would also contribute towards greater labour market responsiveness. Second, implementation of the recommendation could rely on existing practice within, as well as outside, Germany. Third, mandatory short internships could be fitted into the existing curricula of *Fachschulen* without wide-ranging reorganisation.

Workplace training increases training quality and supports labour market responsiveness

For students who do not undertake work during their studies, making an internship mandatory would provide the crucial link between their newly learnt theoretical knowledge and workplace practice. Short internships would help to preserve a good balance between learning in the workshop, classroom, and at the workplace, in line with international evidence (Robertson et al., 2000).

For all the students who already work while studying, the introduction of a support framework should improve what is learnt at the workplace (OECD, 2010). Such a framework would help to align learning goals at the workplace with the school curriculum, facilitating knowledge transfer. An expectation that students would report back to peers about their workplace experience linked to newly acquired knowledge would also encourage peer learning and support classroom teaching. If internships are in an enterprise other than the previous or current employer it could also advance the acquisition of transferable and non-firm specific skills and potentially contribute to labour market mobility (of course such an internship may be harder to organise). A support framework can also encourage companies to offer internships, by clarifying roles and responsibilities for each party among other matters.

Mandatory internships could also help to update teachers' knowledge base as they would create an additional avenue for full-time teachers to learn about the latest industry developments (for more on teachers and trainers in *Fachschulen* see Chapter 5).

Mandatory internships would also allow employers to influence the mix of *Fachschule* provision. With an eye on recruitment, employers naturally offer internships in professions with skills shortages and less readily in professions oversupplied in the labour market. So internships would help to align the mix of training provision with labour market needs (for more on this see Chapter 7).

Building on existing experience within and outside of Germany

Implementation is often the most difficult part of education policy reform (Barber, 2011). But Germany can rely on experience with workplace training at home as well as on international examples of institutions similar to *Fachschulen*.

In Germany, workplace training, especially as part of the dual system, is deeply entrenched (Hoeckel and Schwartz, 2010). This means that *Fachschulen* should find it easier to establish employer support. The design of the internship system should ensure that company benefits outweigh costs. There are, of course, already some *Fachschule* professions such as health and social care where workplace training is already mandatory (Kultusministerkonferenz, 2002). International examples such as Swiss professional colleges or Danish two-year academies provide further guidance on how a mandatory internship system can function and what issues arise (see for example Box 6.1 and Field et al., 2012 respectively).

Box 6.1 Workplace training at Swiss professional colleges

The OECD review of the Swiss postsecondary vocational education and training system identified the workplace training component of professional colleges as one of the system's strengths.

The workplace component of Swiss professional college studies is realised either through an internship or a regular job. Internships are normal for full-time students where they form an integral part of the programme. This is most typical in healthcare professions and hoteling/catering. Part-time students continue to work in regular jobs alongside their professional college studies, but in this case the student's work has to be related to the studies.

Students commonly have to try out techniques and apply concepts learned in the study programme at the workplace. Subsequently, they report back on their experiences which are discussed in the classroom to solidify the learning experience. These ways of integrating work-based learning into professional college studies are effective in the view of most stakeholders.

Source: Fazekas, M. and S. Field (2013), *A Skills beyond School Review of Switzerland*, OECD Reviews of Vocational Education and Training, OECD Publishing. doi: http://dx.doi.org/10.1787/9789264062665-en

Internships can easily be fitted into the current curricula of Fachschulen

Short internships as part of the *Fachschule* curriculum could be realised most easily by linking them to the existing project arrangements. This would imply that students complete an internship at the same company where they conduct their project work, not only providing a more thorough basis for the project, but also offering a wider basis of workplace experience. As the project and regular work would require most of the students' time during this period, coursework would have to be cut somewhat in compensation. But combining work with the student project would allow for additional time savings and benefits, for example students would gain a deeper understanding of the challenges an enterprise might face in implementing their project. Internships would also help to strengthen the existing links between *Fachschulen*, students, and companies.

Notes

1. Even though there are *Land* and branch specific exceptions and additional requirements.
2. This proportion is higher in technical, engineering professions (about 50%) while it is substantially lower in all other professions such as services or agriculture (OECD calculations based on Statistisches Bundesamt, 2012).
3. There is no federal regulation on *Fachschule* student projects, hence actual practice differs from *Land* to *Land*.

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Chapter 7

Fachschule provision and the labour market

Although Fachschulen *generally provide qualifications with good labour market value, their responsiveness to labour market demand could be further improved. This chapter argues that evidence on the demand for* Fachschule *provision could be further developed, and, (building on the two previous chapters), the combination of more flexibility to manage and greater use of evidence would allow for more effective local responses.*

Challenges: Labour market imbalances and diverse governance

There are three challenges. First, the German labour market is changing fast both in terms of job content (which is often becoming more technical) and the mix of jobs offered (e.g. industrial restructuring). This puts pressure for change on *Fachschulen*. Second, *Fachschule* governance arrangements are diverse and sometimes not particularly well equipped for managing change. Third, there are signs of under as well as over-provision at *Fachschulen*.

Labour market restructuring creates adjustment pressures on Fachschulen

The German labour market has performed well through the global economic crisis, but long-term challenges remain (OECD, 2012). The demand for medium and high level qualifications (where German postsecondary VET graduates are positioned on the labour market) is expected to rise considerably in the next ten years (Table 7.1 and Maier, 2012). This implies continued strong demand for labour force upskilling including *Fachschule* courses as well as advanced vocational examinations.

Demand for highly qualified personnel depends heavily on the sector.[1] In some areas skills shortages already exist (McKinsey, 2011) while in others they are expected to arise - for example in the "MINT" (i.e. mathematics, information technology, natural sciences, and technology) occupations, and in hoteling and catering (Bott, Zika and Helmrich, 2011; Zika and Helmrich, 2011). Skills shortages may have contributed to the sharp rise in relative earnings of tertiary B graduates (OECD, 2010, Table A7.1). Recognising this challenge, a number of strategies have been pursued at the national (BMAS, 2011) as well as *Land* levels (SSMWAV, 2012), and through the involvement of the social partners (BMBF, 2010).

Table 7.1 Employment predictions up until 2020 by occupational group and qualifications level in Germany

Years / Occupation (ISCO) / Qualifications (ISCED)	2000	2005	2010	2015	2020
Germany	39 144	38 835	40 490	40 704	40 247
All occupations					
High	9 823	10 015	10 839	10 956	10 886
Medium	22 497	22 686	23 823	24 091	23 912
Low	6 824	6 134	5 828	5 657	5 449
Major occupation groups					
0 Armed forces	219	172	134	111	89
1 Legislators, senior officials and managers	2 367	2 260	2 354	2 312	2 244
2 Professionals	5 282	5 741	6 235	6 472	6 598
3 Technicians and associate professionals	7 948	8 296	8 703	8 857	8 828
4 Clerks	5 215	5 020	5 044	4 886	4 675
5 Service workers and shop and market sales workers	4 796	5 062	5 433	5 549	5 520
6 Skilled agricultural and fishery workers	773	722	733	734	721
7 Craft and related trades workers	6 368	5 539	5 501	5 362	5 187
8 Plant and machine operators and assemblers	2 833	2 696	2 683	2 648	2 577
9 Elementary occupations	3 344	3 326	3 670	3 773	3 807

Source: OECD calculations based on CEDEFOP (European Centre for the Development of Vocational Training) (2011), "Medium-term Forecast of Skill Demand and Supply in Europe: Country Workbooks".

Notes: High=ISCED 5-6; Medium=ISCED 3-4; Low= ISCED 0-2.

Fachschule *governance arrangements are diverse and may be equipped for steering through change to varying degrees*

Currently, the financing and governance arrangements for *Fachschulen* follow a national framework which allows *Länder* to determine the mix of VET provision and set the incentive structure for schools (Hippach-Schneider et al., 2012). Often, the *Land* pays the salaries of teaching personnel, while the local authorities (*Stadt-* or *Landkreis*) cover capital and administrative costs. Contributions either from students or enterprises also cover some costs such as expensive machinery, especially for private providers.

Decisions on the number of training places in different programmes are typically the responsibility of *Land* governments in consultation with local authorities and *Land*-level committees for vocational training (*Landesausschuss für Berufsbildung*). In practice, student demand appears to play a large role, recognising that such demand is often facilitated by an employer through their willingness to offer time off for participation. At the same time, at least in the short term, the supply of training places is fixed by the amount of resources allocated to each school. There are informal channels through which local economic interests can be taken into account, but practice remains highly variable.

There are some signs of mismatch between **Fachschule** *provision and labour market demand*

The labour market performance of those who graduate from *Fachschulen* is good on average. A *Fahchschule* degree or an advanced vocational examination increase expected earnings compared to any secondary school-leaving certificate (Hippach-Schneider et al., 2012; Anger et al., 2010), among older as well as younger workers (Anger et al., 2012). These returns motivate employees to undertake *Fachschule* training or pass examinations (Walter and Mueller, 2012). But, these aggregate figures potentially mask profession- and area-specific variations.

There are signs of shortages of some types of *Fachschule* graduates (McKinsey, 2011) and these shortages are predicted to worsen in the coming years (Bott, Zika and Helmrich, 2011; Zika and Helmrich, 2011).[2] Due to budget restrictions in most *Länder* and limited capacity for rapid adaptation, *Fachschulen* are unable to fully respond to increasing demand not only on the labour market, but also on the students' side. This has led to waiting lists in some professions of two or three years according to stakeholders interviewed by the OECD. The increasing relative earnings from postsecondary VET degrees and falling student numbers also suggest there may be a shortage of provision (OECD, 2008). There have been some

suggestions that some particular *Fachschule* degrees, for example in the retail sales field, have less direct labour market value, but we have not seen any quantitative evidence that could bear one way or another on these suggestions.

Recommendation: Systematic use of evidence and enhanced flexibility

Further strengthen the evidence on demand for Fachschule provision and encourage greater flexibility for Fachschulen to respond to that demand.

Supporting arguments: Better recognition of mismatch and greater capacity to respond

This recommendation builds on the two previous chapters which looked at teachers and trainers and workplace training. First, a structured and institutionalised use of evidence on labour market demand and *Fachschule* outcomes would constructively guide the actions of all stakeholders. Second, mandatory workplace training would link provision to employer demand. Third, employing a greater number of part-time teachers and trainers would allow *Fachschulen* to respond more flexibly and tackle bottlenecks.

A stronger evidence base would help in tackling skills mismatches

There is already a rich evidence base in Germany which can be further developed and systematically linked to *Fachschule* provision and used to inform stakeholders:

- Skills forecasts both at the level of the EU (CEDEFOP, 2010) and Germany (Zika and Hemlrich, 2011; Lichter, Peichl, and Siegloch, 2012) which forecast broad trends according to job categories and qualifications levels up until 2020.
- The chambers of industry and commerce maintain a range of analyses monitoring local level over- and under-supply of skilled labour for each *Land* up until 2025 (e.g. IHK-NRW, 2012).
- Some individual research studies allow an analysis of individual and social rates of return of *Fachschulen* as well as advanced vocational examinations across Germany (e.g. Anger, Plünnecke and Schmidt, 2010).

At present there is no school leavers' survey for *Fachschule* graduates. This gap in the evidence base could be filled by launching a survey similar

to the further education colleges destinations survey in England (The Skills Funding Agency, 2012), or the survey of graduates of advanced vocational examinations in Germany (DIHK, 2011). Such a survey could be cheaply administered across all *Fachschulen* following a uniform template. The results could be directly fed back to each school as well as to higher level governing bodies – publication of results on a website might also be considered – there are pros and cons to be considered here, as with schools performance tables.

National and local skills strategies tend to concentrate on stimulating student demand in relation to continuing VET.[3] So existing evidence, perhaps augmented by a destinations survey could be used more fully.

Systematic evidence use could be facilitated through regular meetings of key stakeholders to encourage knowledge transfer and using the evidence to steer provision (for an international example see Box 7.1) potentially within the framework of the national teacher demand and supply planning exercise (Kultusministerkonferenz, 2009). The evidence base might also be used by authorities responsible for steering provision. For example, cost-benefit analysis of providing additional places in high labour market demand professions might justify targeted public investment in particular *Fachschule* programmes.

Mandatory workplace training provides an additional feedback mechanism

Mandatory workplace training in *Fachschulen*, as discussed in Chapter 6, could represent an important additional mechanism through which enterprises express demand and guide provision through their willingness to offer workplace training in areas of shortage.

Greater flexibility for **Fachschulen** *increases their capacity to respond to demand*

Fachschulen already have the freedom to negotiate 20% of the curriculum with local employers and other stakeholders. But as described in Chapter 5, *Fachschulen* in most *Länder* have quite inflexible staffing arrangements. Public *Fachschulen* also have to keep their courses practically free of charge limiting their ability to expand provision in times of austerity. Increased autonomy for *Fachschulen* in relation to staffing and fees would allow them to adjust provision more rapidly in response to demand.

Box 7.1 An innovative regional approach in Austria

The Lower Austria region has launched an initiative (the *Netzwerkstatt*) aiming to better match VET provision to regional labour needs. It has the following objectives:

- Develop a qualitative mechanism of anticipation of skill needs in addition to forecasts.
- Create a regional "think tank" of actors from employment innovation systems.
- Analyse relevant issues in a framework combining research and practice.
- Provide feedback to the *Fachhochschulen* and the regional education and training system.

Workshops are organised twice a year on selected topics. Around 60 regional actors, with two thirds coming from strategic enterprises from different sectors, have been participating in the workshops. In 2011, the workshop also included for the first time the Economic Chamber of Lower Austria and the Industrial Association of Lower Austria.

Source: Lassnigg , L. (2006), "Approaches for the anticipation of skill needs in the "Transitional Labour Market" perspective – the Austrian experience". www.siswo.uva.nl/tlm/confbuda/papers/papers_files/anticipation%20of%20skill%20needs-lassniggfinal.pdf;

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Notes

1. There are also important geographical aspects so demand in different parts of Germany varies a lot (Koscheck, 2012).
2. For more on this see also the various "*Fachkräftemonitor*"-s of German *Länder* and chambers.
3. See for example BMAS (2011) Section 3.4, or SSMWAV (2012) pp. 20-22.

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Contents

Chapter 1. Introduction and initial assessment

Chapter 2. Transition to academic higher education

Chapter 3. Better information on preparatory courses for examinations

Chapter 4. Quality of examinations

Chapter 5. Teachers and trainers in *Fachschulen*

Chapter 6. Workplace training at *Fachschulen*

Chapter 7. *Fachschule* provision and the labour market

Further reading

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See also ***www.oecd.org/education/vet***.

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