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A Learning for Jobs Review of Austria

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Summary: strengths, challenges and recommendations

This review of vocational education and training (VET) in Austria is part of "Learning for Jobs", the OECD policy study of VET, a programme of analytical work and individual country reviews designed to help countries make their VET systems more responsive to labour market needs. The review of Austria assesses the main challenges faced by the VET system and presents an interconnected package of six policy recommendations. Each recommendation is described in terms of the challenge, the recommendation itself, supporting arguments, and issues of implementation.

Strengths of the Austrian VET system

- The dual system has many commendable features, with well-structured apprenticeships that integrate learning in schools and workplace training.
- Youth unemployment rates are low and the transition from education to first employment is smooth by international standards.
- Social partner involvement at all levels, in VET policy design and delivery, is strong, with effective co-operation between different stakeholders.
- The VET system caters for a broad range of needs, providing safety nets for those with weak school results or from disadvantaged backgrounds, but also offering five year VET college programmes providing high level technical training.
- The VET system offers different progress routes at various levels, avoiding dead-ends and linking VET to general tertiary education through the *Berufsreifeprüfung* (professional baccalaureate).
- The current teacher workforce in VET schools seems to be well prepared and industry experience is mandatory; many schools have flexible arrangements, with teachers working part-time in industry. Recent reforms have changed the requirements on VET teachers but the effects are not yet apparent.
- Completion rates in upper secondary education are high by international standards.

Challenges confronting Austria's VET system

- The VET system has a structural anomaly in the 9th grade, with a double transition for apprentices and some students spending a year in an inappropriate track.
- Some VET qualifications may be too narrow to provide an adequate foundation for a career as well as a first job.

- Quality assurance of apprenticeship training does not guarantee minimum standards.
- Workshop-based dual programmes (*Überbetriebliche Ausbildung*) are costly and risk reducing the incentives for employers to provide apprenticeships.
- Quality career guidance based on labour market information is not available to all VET students.
- Provision of basic literacy and numeracy skills to VET students is – particularly in the dual system - limited.

Recommendations

1. Reform the 9th grade, reducing double transitions and ensuring that all students are channelled into the right programme and receive appropriate preparation for their apprenticeship or full-time school-based VET course.
2. Use modules, training firm alliances and apprenticeship experiences as means to counter-balance the tendency of employers to create their own separately defined specific qualifications. Make the VET provision on the school side more flexible to allow for a more rational provision.
3. Enhance quality and ensure minimum standards in apprenticeship training in firms, through effective monitoring and support to training firms. Consider different self-assessment tools and the possibility to make some form of quality control (through the mid-term test or inspection) mandatory.
4. Keep the focus of *Überbetriebliche Ausbildung* courses on leading young people into regular apprenticeships. Redirect resources from such courses to preparing young people for regular apprenticeships.
5. Ensure that good quality career guidance is available to all. Focus the preparation of career guidance professionals stronger on labour market information and improve the availability and presentation of relevant evidence.
6. Introduce systematic assessment to identify basic skills gaps among VET students and target help at those who need it most. Strengthen the focus on literacy and numeracy in the VET system, and consider reforming the curriculum of vocational schools to this end using innovative teaching methods.

Chapter 1

Introduction

This chapter describes the OECD policy study of VET, the review of Austria, summarises the main features of the Austrian VET system and sets out an assessment of its strengths and challenges.

1.1 The OECD policy review of Austria

This is one of a series of policy reviews of vocational education and training (VET) in OECD countries (see Box 1.1).

Box 1.1 Learning for Jobs, the OECD policy review of vocational education and training

For OECD member countries, a well-skilled workforce is one of the main supports for prosperity and growth. Some skills come from general education, but specific occupational skills are also needed. Typically initial vocational education and training systems have a big part to play in supplying these skills. These systems are now under scrutiny to determine if they can deliver the skills required. Launched in 2007, *Learning for Jobs*, the OECD policy review of vocational education and training is designed to help countries with this task. The key policy messages are:

To meet labour market needs

- Provide a mix of VET programmes that reflect both student preferences and employer needs, and beyond secondary level, share the costs between government, employers and individual students according to the benefits obtained.
- Engage employers and unions in curriculum development, providing young people with the transferable skills to support occupational mobility, and the specific skills to meet employers' immediate needs.

To sustain the workforce of teachers and trainers

- In VET institutions, promote partnerships with industry; encourage part-time working and promote flexible pathways of recruitment for the workforce.
- Provide appropriate pedagogical preparation for trainers of trainees and apprentices in workplaces.
- Adopt standardised national assessment frameworks.

To promote workplace training

- Ensure there are sufficient incentives to participate in workplace training for both employers and students, and that the training is of good quality, backed by contractual frameworks for apprentices and effective quality assurance.
- Devise effective responses to the current economic crisis, to sustain workplace training, and cope with increased demand for full-time VET.

Develop tools for policy

- Construct effective mechanisms to engage employers and unions in VET policy and provision.
- Collect good data on the labour market outcomes of VET, and enhance the capacity to analyse that data.
- Provide careers guidance accessible to all, informed by knowledge of labour market outcomes.

Box 1.1 Learning for Jobs, the OECD policy review of vocational education and training (continued)

Methods and outputs

The OECD is conducting individual policy reviews in Australia, Austria, Belgium (Flanders), the Czech Republic, Germany, Hungary, Ireland, Korea, Mexico, Norway, Sweden, Switzerland, the United Kingdom (England and Wales), and the United States (South Carolina and Texas). Short reports on Chile and the Peoples Republic of China are also being published. Canada, Denmark, Finland and the Netherlands also provided voluntary financial contributions.

All reviews and working papers are published on the website. Working papers include reviews of previous literature, PISA data on VET, and a study of the effect of the economic crisis. The initial draft of the comparative report was published on the OECD website in late 2009. The final comparative report will be published as a book in September 2010.

For further information, publications and contacts *www.oecd.org/edu/learningforjobs*

The review follows the standard methodology established for the OECD policy review of VET. At the outset, two members of the OECD Secretariat visited Austria on 11-15 May 2009 for a preparatory visit to assemble information on the characteristics of VET in Austria and to identify the main policy challenges. Then the Austrian authorities were invited to complete a detailed questionnaire focusing on these challenges (BMUKK, 2009a). Equipped with the responses and other background information, three members of the Secretariat returned between 28 September and 1 October 2009 for a policy visit, conducting further interviews in order to develop policy recommendations (see Annex A for the programme of visits). This review presents the OECD recommendations, with supporting analysis and data.

The review deals with a deliberately limited set of issues on which the review could draw on international experience or could otherwise usefully add value to the domestic policy debate. The review concentrates on VET at secondary level, both the full-time vocational school and dual system apprenticeship training. It does not specifically address vocational programmes at higher levels, although some recommendations apply to the entire VET system. An earlier draft of this report was submitted to the Austrian authorities for verification of factual information.

1.2 The structure of the report

This first chapter places the Austrian review in the wider context of the OECD policy study of VET, presents the structure of the report, describes the main features of Austrian VET system, and examines its strengths and challenges. The second chapter proposes policy recommendations.

Each policy recommendation 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.
- *Implementation* – a discussion of how the recommendation might be implemented.

1.3 A snapshot of Austria's VET system

The role of VET in the Austrian education system

Among OECD countries Austria has one of the highest proportions of upper secondary students in vocational education and training (see Figure B.1 and Table B.1 in the Annex). Around 80% of each cohort enters a VET pathway after finishing compulsory education. About 40% take up an apprenticeship, 15% attend school-based VET (*Berufsbildende mittlere Schule*) and another 27% enrol in a VET college (*Berufsbildende höhere Schule*) where after five years they can acquire a double qualification, a VET diploma and the *Reifeprüfung* to enter university (Tritscher-Archan and Mayr, 2008). VET also takes place at tertiary level in the universities of applied science (*Fachhochschulen*), post-secondary VET colleges (*Akademien*) and in the form of post-secondary VET courses (*Kollegs*) (see Figure B.2 in Annex B for an overview of the education system). While overall participation in secondary education is high, the tertiary graduation rate remains lower than in many OECD countries (see Figure B.3 in Annex B) despite growing tertiary participation over the last 10 years (see Table B.2 in Annex B).

The single largest part of the VET system is the dual apprenticeship system. An apprenticeship can take between two and four years, but most last for three years. Approximately 75% of the time is spent in a training firm, the remaining 25% in a part-time VET school (this can vary across trades). Apprentices sign a contract and earn a salary that increases each year reaching roughly 80% of a starting wage in the final year. Salaries are determined in collective bargaining processes between employers and unions and might vary across occupations.

At the end of May 2009, 245 apprenticeship trades were registered with the Ministry of Labour. 'Ordinances' for each profession describe the profile of the occupation, the competencies to be acquired in each year and the regulations for the conduct of an examination. Framework curricula for the VET schools are developed in parallel. Ordinances and curricula are updated regularly at the initiative of the social partners, following an evaluation of needs by the Federal Advisory Board composed of social partners and VET school teachers (*Bundesberufsbildungsbeirat*) and are issued by the Ministry of Labour.

The professional baccalaureate (*Berufsreifeprüfung* or *Berufsmatura*), established in 1997, offers students access to both vocational and general tertiary education. The *Berufsmatura* exam covers German, maths, a foreign language and a technical subject related to their apprenticeship. In the academic year 2007/2009, 2 609 students received the professional baccalaureate certificate, about 2.7% of the age cohort (Klimmer, Schlögl and Neubauer, 2009). 45% of these students start a university programme, 23% go to a university of applied science, about 10% join a university college of education and 20% enrol in a VET college (Klimmer *et al*., 2009).

VET teachers and trainers

There are three types of VET teaching personnel: practical trainers for in-company training or in school workshops, teachers of theoretical aspects of vocational subjects in VET schools and colleges and teachers of general education in VET schools (for details see Table 1.1).

Table 1.1 VET teacher and trainer preparation

Function	Theoretical training	Practical experience
VET schools or colleges		
General education	University Masters degree finishing with national teacher examination	One year teaching practice following the university studies
Subject-related theory	University Masters degree in specialised field; additional pedagogical preparation at Pedagogical Universities	Between two and four years of relevant occupational practice
Training in workshops, kitchens, IT *etc.*	Upper secondary education with diploma (*Reife- und Diplomprüfung*) or master craftsmanship examination or equivalent plus pedagogical preparation at Pedagogical Universities (Bachelor degree)	Two or three years of relevant occupational practice
Vocational school for apprentices		
General education theory and subject related instruction (including theory)	Upper secondary education with diploma (*Reife- und Diplomprüfung*) or other form of VET and graduation at University colleges of teacher education (Bachelor degree, after three years of study)	At least three years of relevant work experience for vocational subjects
Practical training	Diploma from occupation-related VET programme and Craftsman Master Exam and graduation at University colleges of teacher education (Bachelor degree, after three years of study)	At least three years of relevant occupational practice
Training in the company		
Trainer at workplace (*Ausbilder*)	Either attend a 40 hour course or pass an exam organised by the economic chambers to prove pedagogical skills and basic legal knowledge	At least six years of relevant professional practice Title of Master craftsman (*Meister*)

Source: BMUKK (2009b), *Bildungswege im lehrenden Bereich*, *www.bmukk.gv.at/medienpool/6337/bwlehr.pdf*

Quality control and steering

Training firms have to obtain a license from the state-level Apprenticeship Office (*Lehrlingsstellen*). If they cannot fulfil certain standards (for instance because they are too small or too specialised to provide their apprentices with comprehensive training) they might form training alliances (*Ausbildungsverbünde*) to share apprentices. In the school year 2005-06 Austria launched a quality initiative (*Qualitätsinitiative Berufsbildung, QIBB*) with the aim of fostering quality management at school level.

Initial VET is regulated centrally by several ministries while execution is handled by the states (*Bundesländer*). The Federal Ministry for Education the Arts and Culture (BMUKK) is responsible for legislation on VET schools and colleges (Vocational Training Act) and the framework curricula. Regional Education Boards (*Landesschulräte*) are responsible for executing the national legislation at state level and supervising schools. Some specialised VET schools are within the competence of other ministries, including Health and Agriculture Ministries. The workplace training part of apprenticeships is managed by the Ministry of Economic Affairs and Labour (BMWA). At state level the Apprenticeship Offices (*Lehrlingsstellen*) appointed by the chambers have executive responsibilities, help students to find an apprenticeship place, supervise alliances of training firms and offer continuous training to VET staff.

Social partners are strongly involved in the steering and provision of VET in Austria. The initiative to update or introduce new VET 'ordinances' normally lies with the employers and they support the process by providing expert advice to the government

through the Federal Advisory Board on Apprenticeships (*Bundesberufsbildungsbeirat*) composed of the social partners and VET school teachers.

Funding of VET

Education expenditure by the public sector is above the OECD average; both in terms of spending per student and in relation to GDP per capita (see OECD, 2008, Table B1.1a and Table B1.4). In 2005, total education spending was 5.4% of Austrian GDP (Bayerl and Martinschitz, 2008; see also Table B.3 in Annex B). Total public expenditure per year and student for full time VET amounts to about EUR 9 000 – more than for general education. Apprenticeship funding is split between the government covering VET schools and the training firms which spend around EUR 13 000 gross per student year, *i.e.* not taking into account reimbursement through government subsidies or productive contributions of apprentices (Schneeberger and Novak, 2008). For each of the about 133 600 students of the part-time vocational schools for apprentices, around EUR 3 300 are spent by the government (Specht, 2009). Several funding incentives are available to firms (see Box B.1 in Annex B).

Recent VET policy developments

Austria has introduced a number of innovations in recent years. These include a modularisation of several (mostly technical) occupations and the possibility of "double" apprenticeships leading to two separate occupational qualifications (that together take no more than four years). Socially disadvantaged or academically weak students can take part in integrative vocational training which allows them to extend the normal training period or to complete only parts of the training but still receive a professional diploma. Since 2008 students have been able to combine an apprenticeship with preparation for the professional baccalaureate (*Lehre mit Matura*). And access to preparatory courses and the exam has now become free of charge.

Austria is currently in the process of developing a National Qualification Framework on eight levels, consistent with the European Qualification Framework (EQF). Recognition of non-formal and informal learning can now be used both to permit an earlier admission to the apprenticeship-leave examination and the master craftsperson exam (*Meisterprüfung*). This is intended to create more flexibility in the VET system. Other reforms, including the introduction of quality oriented employer incentives for training companies, "education standards" for several subjects at 4th and 8th grade and "apprenticeship experiments" (*Ausbildungsversuche*) are discussed in later sections.

1.4 Strengths of Austria's VET system

- The dual system has many commendable features, with well-structured apprenticeships that integrate learning in schools and workplace training.
- Youth unemployment rates are low and the transition from education to first employment is smooth by international standards. This can be attributed to a large extent to the well developed dual VET system (Quintini and Manfredi, 2009).
- Social partner involvement at all levels, in VET policy design and delivery, is strong, with effective co-operation between different stakeholders.

- The VET system caters for a broad range of needs, providing safety nets for those with weak school results or from disadvantaged backgrounds, but also offering five year VET college programmes providing high level technical training.
- The VET system offers different progress routes at various levels, avoiding dead-ends and linking VET to general tertiary education through the *Berufsreifeprüfung* (professional baccalaureate).
- The current teacher workforce in VET schools seems to be well prepared and industry experience is mandatory; many schools have flexible arrangements, with teachers working part-time in industry. Recent reforms have changed the requirements on VET teachers but the effects are not yet apparent.
- Completion rates in upper secondary education are high by international standards (OECD, 2008, Table A1.2a).

1.5 Challenges confronting Austria's VET system

- The VET system has a structural anomaly in the 9th grade, with a double transition for apprentices and some students spending a year in an inappropriate track.
- Some VET qualifications may be too narrow to provide an adequate foundation for a career as well as a first job.
- Quality assurance of apprenticeship training does not guarantee minimum standards.
- Workshop-based dual programmes (*Überbetriebliche Ausbildung*) are costly and risk reducing the incentives for employers to provide apprenticeships.
- Quality career guidance based on labour market information is not available to all VET students.
- Provision of basic literacy and numeracy skills to VET students is - particularly in the dual system - limited.

1.6 The economic context

While Austria has shown robust GDP growth in recent years, outperforming the euro area, the economy has slowed down due to the global crisis (OECD, 2009a). Youth unemployment in Austria used to be low by international standards (see Table B.4 on youth unemployment). But the recent crisis-induced developments have increased youth unemployment substantially The overall unemployment rate increased from 5.8% in March 2008 to 7.5% in March 2009 and was at 7.1% in the end of November 2009.[1] Demographic changes will lead to smaller numbers of young people in the future, but this is partly set off by rising numbers of immigrants (Statistik Austria, 2009a). Shrinking numbers of apprenticeship beginners, partly due to smaller cohorts, lead some commentators to predict major shortages of skilled workers in the future (Blum, 2010).

Currently, both apprentice graduates and graduates from VET schools and VET colleges appear very employable with only around 3.5% unemployed, which is about five percentage points below the unemployment rate of people without the post-compulsory diploma (see Table B.5 in Annex B on unemployment rate by education status). Labour

1. Austrian Labour Market Data, retrievable at: *http://iambweb.ams.or.at/ambweb/AmbwebServlet?trn=start.*

market prospects, however, vary across professions with technical professional being in shorter supply and higher demand than professions in fields such as textile or nutrition (Lassnigg and Vogtenhuber, 2007). Similar results have been presented recently for tertiary level graduates: while graduates in technical subjects and business have a very bright labour market perspective and there are even shortages of highly qualified technicians and managers, graduates from humanities or social sciences have much greater difficulties to find adequate employment and earn often less than a number of graduates from the higher VET schools (Schneeberger and Petanovitsch, 2010).

Transition results from initial education to the first job are good in Austria – like other OECD countries with strong apprenticeship systems (Quintini and Manfredi, 2009). In Austria it takes an average 5.7 months to find a first job after leaving education as compared to an average of 16.9 months in 12 other European countries. The share of youth aged 15-24 neither in employment, nor in education or training (NEET) is below the OECD average (at around 10% in 2006). In terms of its labour market regulation which has an impact on employment, Austria ranks on a middle position, between Germany with rather strong and Switzerland with rather weak regulations (see Figure B.4).

Perhaps the biggest challenge for Austria, as for other countries with a strong dual VET system is whether what is clearly an immediately effective transition from school to working life, based on partnership with employers, also translates into an adequate preparation of young people for a career. Modern economies are characterised by shifting career patterns, and rapid changes in skill requirements as a result of technological change. These are associated with the need for flexibility among all workers, and increasing skill requirements in nearly all jobs. Lifetime employment patterns will therefore typically include both sideways and upward moves, and further education and training.

Set against major international competitors the Austrian VET system (in particular its dual part) involves relatively early specialisation in occupationally targeted training and, following this specialisation, relatively limited investment in more academic learning including numeracy and literacy. By contrast, in many other contexts, a large measure of academic schooling is sustained longer at upper secondary level – either because schooling is comprehensive and lacks a formal vocational track at upper secondary level (as in the United States for example) or because upper secondary vocational schools have a more substantial academic component, as in the Nordic countries and other parts of Europe, in China, and indeed in Austria for those attending full-time vocational schools. This is a particular challenge when there is growing international evidence (discussed in later sections) that numeracy and literacy skills are of increasing importance in the modern labour market.

Our view, expressed in the sequence of recommendations presented in Chapter 2, is that the Austrian VET system can meet this challenge, but that it may require reform to do so. In particular, Austria needs to ensure that all those passing through upper secondary education, including the dual system, are fully equipped with the set of competences necessary to pursue a career in a modern economy, as well as the occupationally specific training which will facilitate immediate labour market entry. This will involve restructuring the transition into the VET system at 9th grade, finding ways to counter-balance the fragmentation of qualifications, ensuring quality of workplace training, redirecting resources for support of those with poor results, improving career guidance and counselling offers and equipping all students with minimum literacy and numeracy skills.

Chapter 2

Policy recommendations

VET has an important status in the Austrian education system, attracting almost 80% of the student population at upper secondary level. Austrian VET is strongly supported by social partners and offers a broad range of pathways at different levels, links to tertiary education and various safety nets for those with low levels of attainment.

But the VET system now faces several challenges and in particular it needs to adapt to the needs of a modern economy, preparing young people not just for their first job, but also for career development and lifelong learning. This chapter sets out six interconnected reform recommendations designed to meet that end: the 9th grade is a structural anomaly in the VET system and requires reform; VET qualifications need to balance breadth and transferable skills with the need to engage employers; there is a risk that a lack of systematic quality monitoring of workplace-training might lead to overly narrow training and variable quality; VET offers to at-risk students need evaluation to be well targeted and more cost–efficient; career guidance needs to be modernised; literacy and numeracy skills of VET students need to be taken more seriously and should be systematically assessed to identify gaps and target help.

2.1 Reform of the 9th grade

The challenge

Polytechnic schools deliver a good curriculum for pre-vocational preparation…

The polytechnic schools are designed to prepare students for an apprenticeship. Between 1996 and 2008, the numbers of polytechnic students have risen by around 22%. About 16% of polytechnic students are in a voluntary 10th school year (probably waiting for an apprenticeship place) and another 2% in their 11th school year (BMUKK, 2008a). The polytechnic curriculum (*www.eduhi.at/dl/PTSLehrplan_2008.pdf*) combines further general education with career guidance and orientation and basic technical education in a range of vocational trades. Students initially learn about the different career options and trades, and have several short one to two week trial periods with employers to see different professions. Students also receive training in basic vocational skills relevant to a number of trades such as technical drawing, IT, or accounting.

Recent evaluations of the polytechnic schools have assessed them positively (see summary in Weißenlehner, 2002). They point in particular to good transition results: 90% of students find an apprenticeship place upon finishing the polytechnic school. Nearly all students say they know what they want to do after finishing the polytechnics (Härtel and Kämmerer, 2007). Surveys of polytechnic students and employers attest satisfaction with how these schools prepare young people for an apprenticeship (Stampfl, 2003; Schneeberger, Kastenhuber and Petanovitsch, 2003; Grogger, 2002).

…but they reinforce a trend to segregate

In Austria pupils get tracked into *Gymnasium* and *Hauptschule* at the age of 10 – though recently reforms have been initiated to merge those into comprehensive schools (*Neue Mittelschulen*). Such early tracking has been extensively criticised in the literature and in previous OECD reviews as potentially undermining both equality of opportunity and technical efficiency in the education system (see for example Meier and Schütz, 2007; Field, Kuczera and Pont, 2007). The system also seems to concentrate disadvantaged people, like students with migrant background, into lower level education tracks (Herzog-Punzengruber, 2005).

On top of this early tracking, 9th grade students are further separated into four different school types. Around 20% of those entering apprenticeships do so through VET schools and colleges rather than through polytechnics. Stakeholders indicated that students with good results choose this route in preference to the polytechnic route. The attractiveness of polytechnics may depend on the region: while in urban areas greater educational choice tends to increase the social segregation of students, in rural areas polytechnics have a better standing. The share of migrants in polytechnics is higher than in other school types, particularly in Vienna (see Table 2.1).

Table 2.1 Students with non-German mother tongue in upper secondary schools

School year 2007/08

Type of school (selection)	Austria		Vienna		Other provinces	
	Number of students	Percentage of students with non-German mother tongue	Number of students	Percentage of students with non-German mother tongue	Number of students	Percentage of students with non-German mother tongue
Polytechnic schools	**21 338**	**20.6**	**3 013**	**57.7**	**18 325**	**14.5**
Academic Secondary schools, upper level	59 708	11.7	18 998	23.4	40 710	6.2
Vocational schools for apprentices	136 191	8.1	23 205	29.3	112 986	3.7
Intermediate technical and vocational schools	52 003	16.1	7 092	46.3	44 911	11.3
Higher technical and vocational colleges	135 658	10.5	22 876	27.6	112 782	7.0

Source: BMUKK (2009a), "Responses to the National Questionnaire, Learning for Jobs: The OECD Policy Review of Vocational Education and Training", unpublished; BMUKK (2009b), *Bildungswege im lehrenden Bereich, www.bmukk.gv.at/medienpool/6337/bwlehr.pdf.*

Data gaps make it difficult to assess the situation and progression of students at 9th grade

Current data do not allow students to be tracked through their education career. Even snapshot data are problematic because PISA data, assessing the performance of 15-year olds, are unavailable for most students in polytechnics who are typically only 14 years old. Since 2001, Austria has developed and piloted education standards for students at 4th and 8th grade, setting out the basic skills and competencies pupils should master at this level of education. But there are no such standards for 9th grade, the final year of compulsory education before students go off into more specialised training. This situation makes it difficult to assess the situation of students at this transition point.

Recommendation 1

Reform the 9th grade, reducing double transitions and ensuring that all students are channelled into the right programme and receive appropriate preparation for their apprenticeship or full-time school-based VET course.

Supporting arguments

There are three arguments in support of the recommended reform: first, the current arrangement imposes a disruptive double transition on would-be apprentices; second, polytechnic schools are sometimes only used as an entrance route for students who really want to go to VET school; third, students who want to avoid the polytechnic schools overcrowd and then drop out of full-time VET schools.

The 9th grade represents a structural gap and disruptive double transition for would-be apprentices

Hauptschule (lower level secondary school) ends at the 8th grade typically at age 14, but compulsory schooling runs until age 15. Labour legislation prohibiting the employment of young people before the age of 15 (including through an apprenticeship contract) means that would-be apprentices coming from *Hauptschule* have to spend one year in another institution before they can start their apprenticeship. As a consequence, a double transition is imposed on some students: typically, before starting apprenticeships students have to move from their lower secondary school to either a polytechnic school or a full-time VET school or college and spend 12 months in that institution, creating a disruptive double transition.

Polytechnic schools are sometimes used only as a stepping stone to enter VET schools and colleges

Admission to full-time VET schools requires successful completion of the 8th grade and students from the lower performance stream (*Leistungsgruppe*) in lower secondary school in one of the mandatory subjects have to pass an entrance examination. VET colleges require successful completion of 8th grade in the highest performance stream (*Leistungsgruppe*) or a result marked at least 'good' in the middle performance stream. But both these requirements are dropped once the student has completed one year in a polytechnic school, whatever the final result (see *www.bmukk.gv.at/schulen/recht/gvo/schog_02.xml#46;* Jäger, 2001). So students who want to enter a programme in VET schools currently have a strong incentive to enter polytechnics if their results do not permit them to enter directly.

While the first year in VET schools and colleges is sometimes used as an entrance route to apprenticeships

In 2002/03, 44% of all male (and 35% of female) first year apprentices spent their 9th grade prior to starting the apprenticeship in a polytechnic school (Table 2.2; see also Schneeberger and Nowak, 2008). A significant proportion – around 20% - of apprentices have entered apprenticeship directly from *Hauptschule*, probably because year repetition meant that they reached the required age by the end of *Hauptschule*. But more than 20% come from a full–time VET school.

Table 2.2 Previous education of students in part-time VET schools at 10th grade

School year 2002/2003

Education in the previous year	Grade 10 in %
Special schools and special classes	0.9
Hauptschule, not completed	1.0
Hauptschule, completed	18.7
Polytechnic school	40.9
Intermediate technical and vocational schools	12.3
Higher technical and vocational colleges, not completed	10.1
Academic secondary schools, not completed	4.8
Upper secondary higher level schools, completed	1.0
Other education	4.1
Vocational school for apprentices	6.4
Total	100.0
In absolute numbers	39 830

Source: Schneeberger, A. and S. Novak (2008), *Lehrlingsausbildung im Überblick. Strukturdaten und Ergebnisse europäischer Erhebungen,* iwb-series, No. 142, Vienna. Calculations based on data from Statistik Austria

Many students leave after a first year in full-time VET schools; in some schools the figure approaches 50% (Specht, 2009, Heffeter *et al*., 2008; Steiner, 2005). A survey of leavers suggests that many students choose the VET colleges as a bridge-year between compulsory school and apprenticeship and to avoid the polytechnics (Heffeter *et al.,* 2008). The visiting OECD team was told that very often these students, since they intend to enter apprenticeships, have little interest in the school and college programme, undermining the learning environment.

Implementation

The reform should reflect some clear principles

The reform should be cost efficient. The one-off costs of restructuring the system and the continuing costs of subsequently running it should be minimised. To this end, use should be made of already existing school infrastructure and teaching personnel. Reducing the number of separately defined pathways should help to save costs in the future.

Students should get appropriate teaching for their chosen pathways. Currently some students enrol in institutions which are not designed for their needs. The new institutional setting should make sure that all future apprentices take advantage of the three functions currently fulfilled by the polytechnics (*i.e.* career guidance, basic vocational training and further general education) to prepare them adequately. Students who aspire to a full-time school-based VET programme should be able to enrol without needing to spend time in another institution first.

Double transitions should be minimised. Transitions are always a challenge. None of the other dual-track systems imposes the same double transition from compulsory school into apprenticeships (see Box 2.1).

A study of transition in Germany from primary to secondary school suggests that especially pupils who have a weaker school performance show greater problems in

dealing with the school transition, including difficulties in getting used to new teachers, environment and learning pace (Koch, 2007). The orientation years at 5th and 6th grade (*Orientierungsstufe*) were abolished in some parts of Germany because they only added another transition without developing a separate identity that would justify the additional transition (Avenarius *et al.,* 2001). US research points to the importance of social relationships with both teachers and peers in school integration and academic success (Langenkamp, 2005). Similar peer effects are discussed in Schiller (1999) who found that performance by students with high levels of attainment improved and of students with low levels of attainment diminished if they are accompanied by a large number of Middle School friends when transiting to High School.

Box 2.1 Transition from compulsory schooling to apprenticeships in dual system countries

In **Austria**, compulsory schooling starts at the age of six and lasts for nine years, so that most pupils reach the age of 15 towards the end of compulsory education. At the age of 10, pupils are separated into two different types of school, *Hauptschule* and *Gymnasium*. *Hauptschule* comprises only four years, meaning that pupils typically graduate at the age of 14. Pupils wanting to enrol in an apprenticeship in the dual system first have to turn 15 and complete the 9th grade of compulsory schooling before they can sign their apprenticeship contract (Archan and Mayr, 2006, Table 9; BMWA/WKO, 2008).

In **Denmark**, compulsory education comprises 1st to 9th grade (until the age of 16). After that, pupils directly integrate into a combination of school-based and in-company training (Cort, 2002). VET students may choose whether they start out at school or in a company (DME, 2008).

In **Germany,** compulsory full-time education begins at the age of six and typically lasts nine years (in some *Länder* 10 years). While compulsory education in schools continues up to the age of 18, for students of the dual VET system learning in schools is only part-time between age 15/16 and 18 (Hippach-Schneider *et al.*, 2007). Having passed the first certificate of general education at the end of the 9th grade (*Hauptschulabschluss*), students may enter the dual system (Hippach-Schneider *et al*., 2007). Apprenticeships thus normally start at the age of 15 or 16 and transition between lower secondary and apprenticeship is direct (Eurydice, 2009).

In **the Netherlands**, full-time compulsory schooling starts at the age of five and lasts until the age of 16. Part-time compulsory education runs until the age of 17. Between 12 and 16 years, pupils wanting to enrol in VET programmes will normally start in a VMBO school, which is preparatory senior secondary vocational education. After its completion they continue with MBO (senior secondary vocational education) which can be taught full-time (school based training) or part-time (dual system) (Maes, 2004). However, Parliament has approved a proposal (which has now been implemented) to make school attendance compulsory until the age of 18 until the acquisition of a basic qualification such as an MBO level 2 certificate (Eurydice, 2007).

In **Switzerland**, compulsory schooling starts at the age of six and lasts for nine years. After the completion of the lower secondary education (lasting until 9th grade), pupils may – *inter alia* – choose to do an apprenticeship (EDK, 2009). There is no transition year involved.

The reform should promote equity and inclusion. Currently the 9th grade involves a set of selection processes which come on top of selective early tracking. The risk is that the current 9th grade further segregates students, and increases inequity.

As background, the OECD has recently recommended to Austria that the two lower secondary tracks should be merged into one track (OECD, 2009a), acknowledging efforts already undertaken by Austria to overcome premature streaming such as carrying out pilots to test the new comprehensive secondary school type, the *Neue Mittelschule*. But

comprehensivisation only really works if schools are all comprehensive schools, otherwise segregation is likely to continue with the academically most able students enrolling in *Gymnasia* and the rest enrolling in the (in this case only nominally) new comprehensive schools.

There are different structural alternatives to implement this reform

Implementing a reform of the 9th year is complex and involves institutional changes with related benefits and losses to various stakeholders. Several options are possible:

Option 1 – the most limited option - would be to leave structures in place but to reform selection arrangements. Current selection arrangements on entry to the 9th grade have the perverse effect of encouraging aspirant apprentices to enter VET schools and colleges for one year, and encouraging those aspirants for VET schools and colleges who do not have adequate school results for immediate entry to spend one year in the polytechnic schools. This undesirable crossover might be reduced by two measures. First, the entrance hurdles for VET schools and colleges might be eliminated. (There is little value and some cost in terms of perverse incentives in an entrance hurdle which can be overcome simply by spending time in a given institution). Second, all entrants to the apprenticeship track might be required to either go through polytechnics or take an additional preparatory course. This would make the polytechnic year broadly mandatory, while allowing some students to change their minds and enter apprenticeship subject to a modest hurdle. The objective would be to avoid double transitions and create a seamless curriculum for those on the apprenticeship track. The mandatory nature of the pre-vocational year would prevent would-be apprentices from enrolling in the full-time schools and would ease the transition between school and working life.

Option 2 pursues the logic of option 1, linking the polytechnic schools more firmly with apprenticeship training and would be an addition to it. Polytechnic schools would be merged as institutions with part-time vocational schools – ensuring coherence in the locally determined elements of teaching and training and institutional continuity for the students. In practice, initially at least, often this would involve common schools using the existing sites of polytechnic schools and part-time vocational schools.

Option 3 would be to prolong general lower secondary education (*Hauptschule*) by one year up to the age of 15 and to the end of compulsory schooling. This last school year should put a strong focus both on career guidance and basic skills, including targeted support for students with low levels of attainment. It would in effect be a version of the polytechnic curriculum. This option would be linked to assessments of the required curricula in the VET schools and colleges – with the aim of establishing whether the courses might be reduced in length accordingly, or maintained at their current length. Currently a number of students enrol in a voluntary 11th school year. This option should be maintained to allow students to improve their skills before they go on to apply for an apprenticeship and increase their chances to be accepted by a training employer.

The three school types currently functioning at 9th grade would all be affected by this reform. The aim of the reform would be to integrate the polytechnic schools currently established as separate institutions but to maintain their functions and make use of their teaching staff. The full-time VET schools and colleges would have to adapt their curriculum so that what is currently taught in technical subjects during the first year has to be shifted to later years. In exchange, the sound up-front basic skills training would allow more concentration on technical subjects in the later years.

2.2 VET qualifications: getting the balance right

The challenge

VET qualifications need to balance employer and student needs

In Austria, students can choose between 245 apprenticeship trades and over 600 full-time vocational school curricula at upper secondary level. There is no 'right' number of VET qualifications for a country but as a general principle, (in the interests both of the individual concerned and the economy) a qualification supported through public funding should be sufficiently broad to allow the qualified person to work in different firms and related occupations and to sustain flexibility throughout a career. In this way initial VET can reflect the expectation of lifelong learning and career development, as well as immediate transition into the labour market.

In apprenticeship training (on which this chapter mainly focuses even though the concerns for sufficient breadth and relevance of qualifications similarly apply in the school-based VET sector), this principle of breadth needs to be balanced against the need to engage the relevant industry sector. Much apprenticeship training is based on the initiative of individual guilds and other professional bodies with a strong desire to identify themselves with "their" apprenticeship. Over the last two decades fewer employers have offered apprenticeship places (Alteneder *et al.*, 2007) and more students are searching for an apprenticeship place. In September 2008, 7 470 young people were looking for an apprenticeship and 4 951 apprenticeship places were vacant (Schneeberger and Nowak, 2008). So maintaining sufficient numbers of apprenticeship places remains a concern.

Recommendation 2

Use modules, training firm alliances and apprenticeship experiences as means to counter-balance the tendency of employers to create their own separately defined specific qualifications. Make the VET provision on the school side more flexible to allow for a more rational provision.

Supporting arguments

There are three arguments to support the recommendation: first, the breadth of qualifications entails inefficiencies in the school teaching and a burden when it comes to updating individual qualifications; second, differences between some qualifications are more a matter of labelling than of substance; third, other countries have managed to reduce the number of separately defined qualifications.

The breadth of qualifications entails inefficiencies because schools have to cater for very small classes and individual qualifications have to be updated separately

In the apprentice track students are concentrated in only a few trades: 82% of apprentices enrol in the 50 most popular trades (Schneeberger and Novak, 2008). At the other end of the spectrum, in 2008, 81 trades had less than 20 apprentices, 23 with none at all (BMUKK, 2008b). Narrowly defined qualifications attracting few apprentices create difficulties for the part-time schools that have to provide the theoretical training for all

apprentices with some very small classes for specialised trades. Similar problems apply to full-time VET schools that have to manage small classes and teaching for specialised qualifications. Wasteful administrative burdens arise from updating specialised individual qualifications.

Differences between some qualifications are more a matter of labelling than of substance

The 82 trades with less than 20 apprentices should be systematically examined to see whether their existence is desirable. Maintaining them is unlikely to be cost-effective, unless the traditional crafts concerned are seen as having a particular cultural value which would justify keeping them as a separately defined profession even though only small numbers of students are prepared for this occupation each year.

On the other hand, where differences between qualifications are more a matter of labelling than of substance – for instance some (mostly technical) professions seem to overlap largely in content while being labelled individually and hence taught separately - ways should be found to merge those professions. For example the OECD team was told that the training for a cable car mechanic is largely the same as that for an ordinary mechanic. In this case their training might best be labelled as that for a mechanic with a cable car specialism, so that the transferable skills of those so-qualified can be properly recognised.

Other countries have managed to reduce the number of qualifications

Individual employers typically have an interest in developing their own specialised training offers to ensure that students are well prepared for their specific requirements. While employer influence on vocational programmes is generally desirable, it can become problematic when too narrow qualifications are the result. The development of the VET offer needs to be monitored carefully and if necessary counter-balanced by stakeholders like trade unions, the government and larger (sectoral or national) employer organisations who have a bigger picture and act less according to particular interests.

Other countries, including the UK, the Netherlands and Hungary, have successfully managed to reduce their number of VET qualifications through reforms supported by all stakeholders. Hungary for example has cut down the number of qualifications from 805 to 416 between 2004 and 2006 through the introduction of a new National Qualifications Register (*Országos Képzési Jegyzék*, *OKJ*). This reform was preceded by extensive studies of the labour market, supported through methodological guidance from the National Institute of Vocational Education (*Nemzeti Szakképzési Intézet, NSZI*) and supervised by a consulting board composed of representatives of government ministries and public authorities, economic chambers, employer organisations, trade unions, school providers, and professional institutes and associations (Bükki, 2008).

Implementation

Further proliferation of VET qualifications should be controlled by mainstreaming the use of apprenticeship experiments

Apprenticeship experiments (*Ausbildungsversuche*) currently being piloted in only a few *Länder*, are used to try out new professions, to check take-up of the new trade by

VET students and adjust them if necessary before they are rolled out in the whole country (see Box 2.2). Evaluations of these piloted new qualifications by the Austrian Institutes for Education Research (*Institut für Bildungsforschung der Wirtschaft, ibw* and *Österreichisches Institut für Berufsbildungsforschung, öibf*) are used to decide whether to proceed with a new or amended apprenticeship qualification (see for example Schwarzmayr, 2002). The main evaluation criteria are take-up of the qualification by apprentices and employers' satisfaction with the training content for their needs. This approach to developing new professions is currently only used when there is a conflict between the social partners in setting up a new qualification. However, it might be used more routinely and include paying attention to whether a new qualification is adding a real change in substance or is only a matter of giving an existing trade a new label.

Box 2.2 Apprenticeship experiments (*Ausbildungsversuche*) in Austria

In May 2009, 245 apprenticeship trades were officially registered; six of them had the status of apprenticeship experiments (*Ausbildungsversuche*). These experiments are pilot projects to test new or amended professions. The possibility of apprenticeship experiments helps the decision to introduce new job profiles as VET qualifications in the regular list of registered apprenticeship trades.

Apprenticeship experiments start with a proposal for a new or amended apprenticeship trade following the initiative of the Federal Ministry of Economic Affairs or the social partners. After an evaluation of the apprenticeship experiments the minister decides whether to include the respective job profile in the list of recognised apprenticeship trades or not. The restricted duration of training experiments lasts four to six years on average to take advantage of at least one training and examination period for observation and evaluation.

Modularisation might help to achieve balance between a need for breadth and efficiency on the one hand and keeping employers engaged on the other

An amendment of the Vocational Training Act in 2006 allowed certain apprenticeship trades to be offered in modularised form (full-time VET schools do not yet offer qualifications in modularised form). Modularised apprenticeships have been created in several mostly technical trades. They consist in a basic module (*Grundmodul*, basic tasks and skills, typically completed in two years) and several main modules (*Hauptmodule*, skills and methods for a chosen specialisation within one occupational group, taught in one year) or specialised modules (*Spezialmodule*, additional skills that are necessary for very specific products or services, completed within 6 to 12 months) that are taught over a period of a maximum of four years. Every student has to do the basic and one major module, and can choose to take an additional major module or specialised module (BMWA, *sine datum*.). The combination of modules has to be chosen when signing the apprenticeship contract and can be changed only through a change of the whole contract (BMWFJ, 2009a).

There has not yet been a systematic evaluation of the new system (Tritscher-Archan, 2009). But the approach offers some obvious advantages: while it allows employers to keep their separately defined trade (as part of the modularised larger trade), the common core topics can be taught across a number of professions, simplifying teaching and ensuring a broad basic foundation of skills in the beginning of the training. For the students this means the possibility to choose tailor-made training, a broad foundation of skills allowing for later professional flexibility and the opportunity for already acquired

qualifications to be recognised and validated more easily (ibw, 2009a; Archan, 2006). Instead of updating a whole occupation, updates can be limited to discrete modules.

Critics point out that learning goals in modules are not always formulated based on competencies and there is too little formal integration between curricula in school and at the work place (Schlögl and Gramlinger, 2009). The OECD visit team also heard concerns that the task of teaching a wide range of specialisms in a modular structure would be more complicated than in a previously unitary qualification and that modules risk fragmenting proper qualifications. Other countries have dealt with the challenges of introducing modules in different forms: in some Anglophone countries, VET modules are not only taught but also assessed separately while in other dual system countries the teaching is based on a modular form but only completion of whole qualifications is accepted and no certificates are given for parts of qualifications to maintain the status of a given profession (for examples see Box 2.3).

Box 2.3 Experience with modules in VET from other OECD countries

Germany. Certificates for initial VET can only be provided based on the completion of a full programme and not on particular modules (Rulands, 2009). Modularisation providing parts of qualifications is used for pre-vocational training and continuing vocational education and training.

In **Switzerland**, "Building blocks" (*Baukasten*) allow several modules in one professional group to lead to a number of different professional diplomas depending on their combination (Marty, 2009). However, curricula remain the basis for the formulation of occupational regulations (Marty, 2009). Module-based learning mostly concerns the areas of continuing VET and higher education rather than initial VET. Modules are designed according to competence definitions. Basic modules are followed by specialisation modules. The testing of qualifications allows for general and partial exams as well as the recognition of skills that have been acquired in a setting outside the current vocational training (Gonon, 2009).

Under the National Vocational Qualifications (NVQ) system in the **United Kingdom** trainees choose different modules according to the requirements laid down in the regulation of the respective profession (Zedler, 1996). Those modules provide partial qualifications which are summed up to a qualification level necessary to receive either a professional certificate or a professional position even without a formal diploma (Hammer, 1996). The whole system is geared towards on-the-job requirements rather than formal curricula, emphasising the evaluation of candidates' performance at the workplace (Otter, 1996). The focus on outcomes makes evaluation more complex as performance control is independent of the form of delivery (Sellin, 1994).

In **Spain**, modular structures have been introduced and developed since the beginning of the 1990s. Students may combine different modules in various ways (Sellin, 1994). Curricula are built up from modules rather than breaking down existing curricula into different modules, as in the Netherlands or Switzerland (Sellin, 1994).

Many training programmes (*inter alia* in the areas of media, merchandising, clothing, or construction; ibw, 2009a) are already linked through so-called "relationships" (*verwandte Lehrberufe*). This means that a person who changes their apprenticeship trade half-way through the programme does not have to start the new trade again from scratch but certain skills which have already been acquired are recognised. These links can be extended into modules. Likewise, double qualifications whereby students can learn two trades in only four apprenticeship years help to implement a modularised system. In 2007, around 8% of apprentices enrolled in a double apprenticeship (BMUKK, 2008b).

Support training firm alliances to broaden learning and to keep those employers engaged whose training is too specific for a full apprenticeship

To counter-balance the fragmentation of qualifications, alliances of training firms (*Ausbildungsverbünde*) should be encouraged to offer students a sufficiently broad firm-based training. Although a recent study suggests that training alliances are more a means to improve the quality than the quantity of apprenticeship provision (Lachmayr and Dornmayr, 2008) such alliances could also help to maintain the number of apprenticeship places available to students and prevent employers from disengaging if their very specific trade is merged with another qualification or taught as part of a larger module. In 2008, at least 5 000 training firms or 15 000 apprentices were already organised in training alliances (estimations in Lachmayr and Dornmayr, 2008). Financial support for the alliances is made available to a maximum of EUR 1 000 per apprentice or EUR 10 000 per year, see *www.lehre-foerdern.at*). Support is also provided by the Economic Chambers to find partners for firms willing to create new training alliances. Firms, in particular SMEs, may also need support with the administrative work associated with setting up a training alliance.

Allow more flexibility in the organisation of the schools side of the apprenticeship training

While employers are keen to keep their own separately defined trade, part-time VET schools face a challenge in providing teaching to very small classes. Some arrangements have already been put into place to centralise the school teaching for certain specialised trades and to offer financial support to those students who have to travel to and live in other *Länder* to attend the part-time school. But overly rigid rules, requiring students to attend a VET school in their district still hamper flexibility in providing the school part of the dual training. This requirement should be relaxed and centralised teaching of very rare trades (possibly in block course form) should be supported, including through subsidising travel and living costs to those students who have to commute or even leave their home town to attend the part-time school outside their district.

2.3 Minimum quality standards of apprenticeship training

The challenge

Ensuring quality in workplace training is a challenge – in particular for smaller firms

In Austria, where close to 70% of apprentices are trained in firms with less than 50 employees (Schneeberger and Nowak, 2008) some firms may not be in a position to provide adequate training and support to their apprentices. Research from Australia demonstrates that small firms are less likely to have dedicated training staff (Hawke, 1998) and the training offered tends to be unplanned (Vallence, 1997). Though the licensing procedure includes a check on the availability of dedicated training staff, there is a risk that such trainers may have their time dominated by production work.

Another risk is that training (in particular in SMEs) is informal and too firm-specific (Seagraves and Osborne, 1997). Some firms may see training just as a way increasing

their productivity (Cornford and Gunn, 1998; Kilpatrick, Hamilton and Falk, 2001; Smits, 2006). While workplace training should yield benefits to employers so that they have an incentive to offer training places, it should not be so firm-specific that it inhibits future professional mobility.

Attention to quality has increased in Austria

The Austrian government has given increasing attention to quality of VET in recent years, both of school-based VET (through the quality initiative *Qualität in der Berufsbildung, QIBB*) and of workplace training. Austrian firms have to fulfil a number of criteria to receive a training license. Drop-out numbers, final exam results, and labour market outcomes are regarded as the most relevant indicators for the quality of the apprenticeship system.

Overall, the indicators of quality are relatively positive. In 2008, pass rates of final tests have tended to be high, between 78% and 94% depending on the trade (Schneeberger, 2009). By contrast, according to the Economic Chamber, in 2007 about 17 000 of the 130 000 apprenticeship contracts were not completed (figure quoted in Schneeberger, 2009, p. 4). Of these 40% were terminated during the initial approbation period. About two thirds of such 'drop-out' apprentices immediately enrol in another training firm or another apprenticeship trade – suggesting that less than 10% of apprentices drop out entirely. According to a survey of students who dropped out of their apprenticeships (Arbeiterkammer Steiermark, 2008) 15% left their apprenticeship because of a "bad workplace", while nearly 20% stated that the occupation did not correspond to their expectations.

Labour market outcomes are largely positive. In 2008, 79% of apprenticeship graduates were employed as opposed to 50% of people without an apprenticeship and unemployment rates among apprenticeship graduates are much lower (3.2%) than for people without an apprenticeship (8.2%) (see Table 2.3). Earnings of apprentices are also higher: EUR 12.16 gross hourly wages as opposed to EUR 10.03 for people with compulsory education only (Specht, 2009, Statistik Austria, 2009a, Statistik Austria, 2008).

Table 2.3 Economic activity and unemployment rates by level of education, 2008

(those aged 15-64 years)

Level of education	% in employment	Number of active labour market participants	Unemployment in %
University, *Fachhochschule*	86.5	431 900	2.1
University-type institutions	85.6	107 800	1.1
BHS	81.6	424 800	2.8
AHS	64.1	234 800	3.9
BMS	77.5	548 500	2.6
Apprenticeship	**78.6**	**1 629 200**	**3.2**
Compulsory education	50.1	643 000	8.2
Total	72.1	4 019 900	3.8

Source: Schneeberger, A. (2009), *Einflussfaktoren und Gestaltungsfelder der Qualitätsentwicklung in der Lehrlingsausbildung.*

Since 2008, the government has offered EUR 3 000 per apprentice to firms if their apprentices pass a midway test, replacing the previous arrangement of a subsidy to all training employers. While the test is not mandatory, for those employers who opt in, all apprentices have to take the test. When apprentices fail, the company can still receive EUR 1 500 if the documentation of the training in the company proves that the apprentice has received adequate instruction. In addition to listing the skills conveyed during the first apprenticeship years, the documentation needs to record catch-up courses and regular appraisals. The Apprenticeship Office of the Regional Economic Chamber evaluates this training documentation. The Chamber of Labour has to be informed about the results of the evaluation and has the right to comment on them (Bundesberufsausbildungsbeirat, 2008).

But mechanisms of quality control remain insufficient

The main weakness in this arrangement is that it provides no guarantee of minimum standards, since the test is not mandatory. There remains a risk that quality may be inadequate in those training firms that choose not to pursue a mid-term test. In addition, the mid-term test evaluates only results and does not evaluate the process of training or the extent to which apprenticeship training adds value to the knowledge the apprentices might already possess prior to starting.

Recommendation 3

Enhance quality and ensure minimum standards in apprenticeship training in firms, through effective monitoring and support to training firms. Consider different self-assessment tools and the possibility to make some form of quality control (through the mid-term test or inspection) mandatory.

Supporting arguments

There are two arguments in support of this recommendation: first, ensuring a sufficient number of apprenticeship places is already a problem so quality assurance mechanisms should not have the effect of deterring employers from providing training; second, the heterogeneous apprentice population, including some with low academic attainment, presents a challenge which needs to be taken into consideration when designing tools to ensure minimum quality standards for training.

Quality assurance mechanism should not appear as an additional burden for employers

Maintaining a sufficient supply of apprenticeship places is a challenge. The propensity of employers to provide training has decreased over the past decade (see also section 2.2). Therefore, tools to monitor the quality of workplace training should not present an additional burden for employers discouraging them to provide training. Constructive quality monitoring systems are linked to incentives rewarding good performance and are designed as a means to identify needs and to channel support rather than to control and punish.

The student population is very heterogeneous and can include many at risk

Training employers have to deal with a very heterogeneous student population. Since apprenticeship training is the only post-compulsory education track without any formal requirements other than having attained 15 years of age and having completed nine years in schools, the sector faces the challenge of bearing the main burden of including young people at risk. The challenge is to ensure quality in workplace training without discouraging employers from offering apprenticeships, in particular those providing training to students with low levels of attainment. Therefore, it is important to monitor the training process, not only the outcomes of training and to identify whether performance problems are caused by the training firm or lie with the students. Thus, quality monitoring can also be used first to identify students at risk so that they can receive targeted help and second, help to maintain the regular VET system and avoid too many students ending up in the *überbetriebliche Ausbildung* courses (see section 2.4).

Implementation

Consider making the mid-term test mandatory and/or targeting inspection at firms that do not opt into the test

In the absence of mandatory arrangements, there is no real assurance of minimum standards. While voluntary tools like the mid-term test set incentives for good performers, bad performers are likely to opt out of the system. Consideration should be given to making the mid-term test and/or the documentation mandatory for all firms who train apprentices. Those employers with many unsuccessful apprentices should receive help from the local Chambers in order to detect the source of the problems, to see whether targeted help for individual students or indeed the training firm is necessary, and to encourage the creation of training alliances. However, this rather tight system of financial incentives on the one hand and targeted support on the other is very effective but rather costlier than the current arrangements. The cost at least for employers to provide the documentation could be reduced in the future if templates for the documentation were streamlined.

Alternatively, inspection might be targeted at those training firms that do not opt into the mid-term test to find out whether the firms respect quality standards or might need support. The aim would be to ensure that those firms not opting for the test are nevertheless delivering training of adequate quality.

Consider questionnaires and self-evaluation tools to support quality control

Some big training companies already experiment with yearly questionnaires to support training quality (Schneeberger, 1998). Previous apprentice surveys show that a majority of apprentices are satisfied with their work in the firm (ibw-Berufsschüler-/Lehrlingsbefragung 2002/03 in Schneeberger, 2009). But the results of these surveys are not attributable to individual employers, or used to target quality improvements.

A questionnaire could assess whether students are aware of what they should learn during their apprenticeship and whether they are satisfied with the training and supervision they receive. The resulting information could be made available to the local chambers which can intervene where necessary to deal with any problems. Publication of the results would be a sensitive issue, but might be considered. Among smaller employers

with only a few apprentices, it would be very difficult to anonymise the results and such a questionnaire might therefore not be desirable.

Some other countries have experience with the use of student questionnaires for quality control. In Germany, the *Berufsbildungsausschuss* (a committee formed by the Chamber of Commerce and Industry and the Chamber of Crafts) designed a questionnaire for companies concerning drop-outs (Ressel, 2008). In addition, a general questionnaire was created that has to be filled out by all trainers and apprentices in a company. Its design is based on the Swiss *QualiCarte* (see below). The questionnaire comprises questions regarding facilities, staff and content of the training. It is evaluated at company level, but an overview of the results has to be sent to the Chambers of Commerce and Crafts.[2] In Denmark, as part of the quality control, the Ministry of Education undertakes occasional surveys among trainees linked to the planning of major reforms and policy-decisions (DME, 2005).

The Swiss *QualiCarte* is a voluntary tool available to all employers, helping them to auto-evaluate their training (see Box 2.4). This tool provides a comprehensive list of quality criteria which help both the firm to design their training and apprentices (and their parents, teachers and other supervisors) to evaluate whether the training they receive is adequate.

2. A sample questionnaire can be viewed at *www.wir-gestalten-berufsbildung.de/betriebliche-berufsausbildung/material/?no_cache=1&cid=94&did=136&sechash=4a6a22ba*

Box 2.4 The Swiss *QualiCarte* - a self-evaluation tool to promote quality

To help companies improve the quality of their training, the Swiss Conference of VET/PET Agencies and employers', employees' and trade associations created the *QualiCarte* project. It provides a checklist of 28 quality criteria describing key aspects of workplace training. These criteria are used by companies for self-assessment. Individual quality indicators are spelled out and explained in a handbook (available online: *http://tool.qualicarte.ch/pdf/070825_handbuch_d.pdf*)

The criteria are (translation by the author):

1. The criteria determining the expected profile of the apprentice are defined.
2. Interviews are conducted with each of the applicants, in addition to other recruitment tools.
3. "Pre-apprenticeships" (short periods allowing potential apprentices to learn about the job) are organised.
4. The results of the application process are communicated clearly.
5. Information is provided on working conditions.
6. The terms of contract are explained to the apprentices.
7. The persons responsible for the apprenticeship are designated.
8. The apprentice receives a personal welcome.
9. Information on tasks and work environment of the education institution is provided.
10. The apprentices are informed about work, security, health and hygiene regulations.
11. A workplace equipped with the necessary tools is available to the apprentice.
12. The apprentices are informed about the importance of the training plan.
13. There is regular dialogue between the apprentice and supervisor during the probationary period. At the end of the probationary period a training report is written together with the apprentice.
14. The training of the apprentice provided by supervisors is embedded in the company/institution.
15. The training plan and other tools to support learning are used in an interactive way.
16. The supervisor defines clear and measurable objectives.
17. The different working methods and procedures are planned, demonstrated and explained.
18. Tasks carried out by the apprentice are subjected to qualitative and quantitative control.
19. The apprentice progressively becomes involved in the company's activities, with increasing autonomy.
20. The performance of the apprentice in the vocational school and industry courses is taken into account and discussed.
21. The supervisor supports each apprentice according to his/her potential and needs.
22. The supervisor prepares a training report at the end of each semester, according to relevant regulations.
23. The supervisor takes into account the feedback received from the apprentice as much as possible.
24. If the apprentice has difficulties, the supervisor contacts the parents, school or relevant VET office.
25. If there is a risk of breaking off the apprenticeship contract, the training company/institution immediately informs the relevant authorities.
26. The departure of the apprentice is in order.
27. The supervisor continuously updates his/her skills needed to support apprentices.
28. The company/institution provides the supervisor with the necessary time, financial and material resources.

Source: www.qualicarte.ch/

Foster indirect quality control through links with the part-time VET schools

Part-time schools can provide an element of indirect informal quality control, either through the students who can discuss problems with their school teachers or through direct contacts and visits to the partner companies which train their students (Schneeberger, 2009). Such co-operation not only improves the quality of learning but can also help to provide optimal support for students when it comes to assessing weaknesses and providing targeted support education to apprentices. It should be systematically promoted.

However, while big companies are able to co-operate with the part-time vocational school and other institutions concerned with training, small companies are often not in a position to ensure such links. One very useful role is played by the *Lehrlingswart* - an employer who is ready to engage in training matters and is able to support other training companies in solving problems with the part-time vocational schools or other VET institutions. Apprentices who are unhappy with their apprenticeship training can also turn to their teachers and the *Lehrlingswart* for support and mediation. Small firms should receive the right support to engage in co-operation with part-time VET schools and have access to a *Lehrlingswart* if they are not in a position to ensure co-operation on their own.

Involve social partners in the design and implementation of tools for quality control

Employers need to collaborate in the design and implementation of quality control mechanisms, so that the mechanisms are not perceived as an additional costly and time-consuming burden imposed on training firms. Support by experienced training employers in the development for instance of a questionnaire is also valuable to make its content relevant and to ensure that it tackles the critical aspects of training.

Monitor and evaluate the effects of quality control to detect undesired effects

Introducing a system of quality control might have undesired effects such as employers disengaging because they find the system too burdensome. Such potential effects need to be monitored regularly through a representative employer survey. Switzerland has introduced a system to closely monitor the demand and supply of apprenticeship places called the 'apprenticeship barometer' (*Lehrstellenbaromenter*). Such a system allows to detect changes in the provision early on and to react quickly to them.

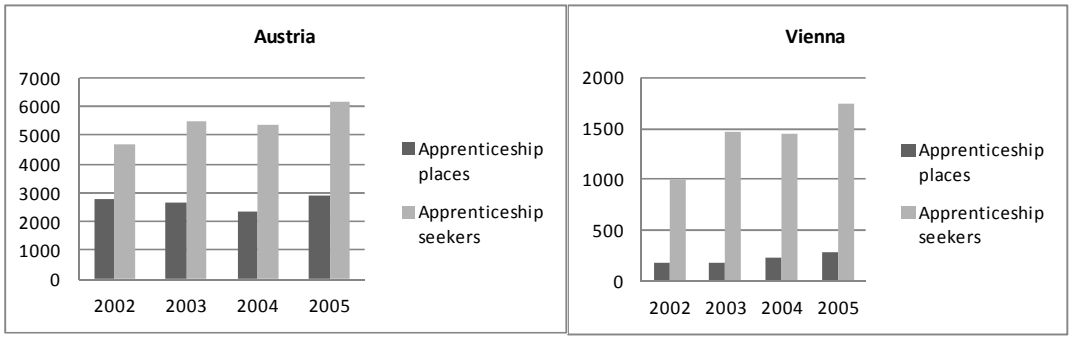
2.4 Provision for students who cannot find an apprenticeship place

Challenge

A number of students in each cohort cannot find a regular apprenticeship

Each year, many students are not able to find an apprenticeship place. The lack of apprenticeship places varies across regions but is most severe in Vienna (Figure 2.1, Annex B.5).

Figure 2.1 Apprenticeship places and apprenticeship seekers



Source: Heckl, E., C. Dörflinger and A. Dorr (2006), *Evaluierung der Wiener JASG-Lehrgänge,* KMU FORSCHUNG AUSTRIA, Vienna.

Several measures have been introduced to support these students

Several measures aim to tackle this problem. "Integrative" VET programmes, created in 2003, are designed for young people with particular disadvantages (*e.g.* special needs, no or negative certificate from lower secondary school) who cannot find an apprenticeship. These programmes allow them to complete a regular apprenticeship during a longer period, or to obtain a partial qualification. In addition, under the Youth Training Guarantee Act (*JASG* adopted in 1998), some special programmes were developed to help young people who could not find an apprenticeship place and since autumn 2009 a new training programme has replaced them, based on §30 of the Vocational Training Act. These *überbetriebliche Ausbildung* (*ÜBA)* courses (see Box 2.5) are now legally recognised as equivalent to regular apprenticeships and ÜBA apprentices also pursue the final assessment of an apprenticeship (*Lehrabschlussprüfung*). Although initially designed to lead young people into regular apprenticeships after one year, more and more young people stay in ÜBA centres for the entire period of training.

Box 2.5 *Überbetriebliche Ausbildung* (*ÜBA*)

ÜBA courses are delivered in two modalities. Modality 1 aims to provide a full programme in ÜBA centres and does not aim to find regular training places in companies for students. The Austrian Labour Market Service aims to offer this modality to half of the students who cannot find a regular apprenticeship, and train the remaining half under modality 2.

Under modality 2, most of the training is provided in simulated companies (*Praxisbetriebe*). In addition, students receive socio-pedagogical support from ÜBA centres and help to find a regular apprenticeship place. Under this modality, the training contract is for maximum of one year, as the key objective is to encourage students to migrate to regular apprenticeship places. About half of the students shift to a regular apprenticeship in the first year of training. Those who do not manage to find a regular apprenticeship can complete their training in the simulated companies.

Source: Austrian Labour Market Service (personal communication, 11 December 2009)

For those who cannot find a regular apprenticeship place, ÜBA courses have some advantages. They allow young people to receive dual training with a wage and either

transfer into a regular apprenticeship or obtain an apprenticeship certificate within the ÜBA centre. Requirements regarding the content of training, equipment and training personnel aim to ensure that the training is of high quality.

But ÜBA courses are costly…

At the same time, ÜBA courses face a number of challenges. The cost of providing practical training in workshops in any VET programme is high. ÜBA courses replicate the dual structure of regular apprenticeships, which means that a large proportion of the instruction time will include practical training, often using expensive equipment. Table 2.4 provides an overview of the estimated public cost of secondary VET programmes in Austria.

Table 2.4 Estimated annual public expenditure per student on VET programmes

In USD converted using purchasing power parity for GDB (reference year in brackets)

Programme	Average annual cost of the programme per participant
Regular apprenticeship (2006)	3803[1]
JASG/ÜBA apprenticeship (2006, 2008)	16724[2]
BMS and BHS (2006)	10235

1. This figure includes the cost of part-time vocational schools (but not public subsidies to training companies).

2. This figure includes the cost of part-time vocational schools (reference year 2006) and the average cost of provision in ÜBA centres (reference year 2008). The exact cost may vary according to the percentage of training provided in companies and according to the occupation.

Source: BMUKK (2009b), "Responses to the National Questionnaire, Learning for Jobs: The OECD Policy Review of Vocational Education and Training", unpublished.

…and lack some of the advantages of regular workplace training

Although the training provided in ÜBA centres is structured like regular apprenticeships and leads to the same qualification, it lacks some of the advantages of a regular apprenticeship and faces many of the challenges of school-based VET. The many advantages of workplace training are set out in the initial comparative report of the OECD policy review of vocational education and training (Field *et al.*, 2009). First, workplaces can provide a high quality learning environment, allowing students to acquire skills on up-to-date equipment with trainers who are familiar with the most recent technologies. In addition, soft skills are easier to develop in a real world environment than in school-based VET. Second, workplaces allow for a two-way flow of information between potential employers and employees, facilitating recruitment. Third, the willingness of employers to offer apprenticeship places is an indicator of labour market needs and can help adapt VET provision. Finally, apprentices in the workplace can make a productive contribution. Table 2.5 summarises this and shows how much of these benefits are realisable through ÜBA courses. In summary, although ÜBA courses replicate the structure of dual training, they do not provide all the benefits of regular apprenticeships.

Table 2.5 The benefits of workplace training and in ÜBA courses

Benefits of workplace training	Parallel benefits in ÜBA courses
High quality learning environment 1: up-to-date equipment and trainers who are familiar with the most recent technologies	May be possible but at a high cost
High quality learning environment 2: a real world environment, in which soft skills are easier to develop	Typically not possible
Facilitates recruitment: two-way information flow between potential employers and employees	Only possible in the workplace training element of ÜBA courses
Adapting VET provision: employer willingness to offer apprenticeship places is an indicator of labour market needs	Not a factor in ÜBA courses
Productive contribution of trainees	Only possible in some cases (*e.g.* practice restaurants), but less common than in regular apprenticeships

ÜBA courses may pose a threat to the dual system

While these limitations are significant, they might be accepted as the price that should be paid for including a larger number of young people in the dual system. But in addition to these limitations, there is a risk that ÜBA programmes reduce the incentives for employers to provide apprenticeships. This is because employers now have the alternative of recruiting graduates from ÜBA courses without themselves investing in their training, and because they have the option of taking them as apprentices once they have completed some training in ÜBA centres or to offer them short internships. The risk therefore, is that a well-intentioned initiative designed to supplement mainstream apprenticeships might end up undermining them.

Recommendation 4

Keep the focus of *Überbetriebliche Ausbildung* courses on leading young people into regular apprenticeships. Redirect resources from such courses to preparing young people for regular apprenticeships.

Supporting arguments

This recommendation is supported by three arguments. First, ÜBA courses may be exploited by employers who recruit apprentices after an initial training period; second, ÜBA courses reduce the cost of external recruitment to companies, by making already trained young people more easily available in apprenticeship occupations thus reducing the incentive for companies to offer apprenticeship training; third, resources might be better spent if focused on making young people "apprenticeship-ready" by the end of compulsory education.

ÜBA courses may be exploited by employers who recruit apprentices after an initial training period provided in ÜBA centres

This argument is particularly relevant to Modality 2 (as explained in Box 2.5). Although this type of training has the potential advantage that it leaves the option open for employers to take on the student, it risks being exploited by employers, as it allows them to "join in" at a point when the cost-benefit balance to them is more favourable.

A period of workplace training (*e.g.* apprenticeship, internship) offers various "recruitment benefits" to employers (see Table 2.6). They get an opportunity to learn

about the person's ability, after which they may decide to recruit them. In addition, the introductory training and the initial "learning by doing" period takes place while the person is still receiving an apprentice wage. A survey of employers in Austria showed that these benefits are important motives for employers to take on apprentices (see Table 2.6).

Table 2.6 Why do employers offer apprenticeships?

Percentage of enterprises that consider the point as 'very important' or 'important'

Aspect	Percentage
Recruitment of young workers who meet the enterprise's requirements	90.7
Possibility of employing the best apprentices as trained workers	74.4
Minimising the risk of wrong personnel decisions, which is always present when recruiting external workers	57.5
Saving high costs of initial period of externally trained workers	41.8

Source: Lassnigg, L. and P. Steiner (1997), *Financial Aspects of Apprenticeship in Austria Results of an Empirical Study*, paper presented at the European Conference on Educational Research (ECER '97), Frankfurt/Main, 24-27 September 1997.

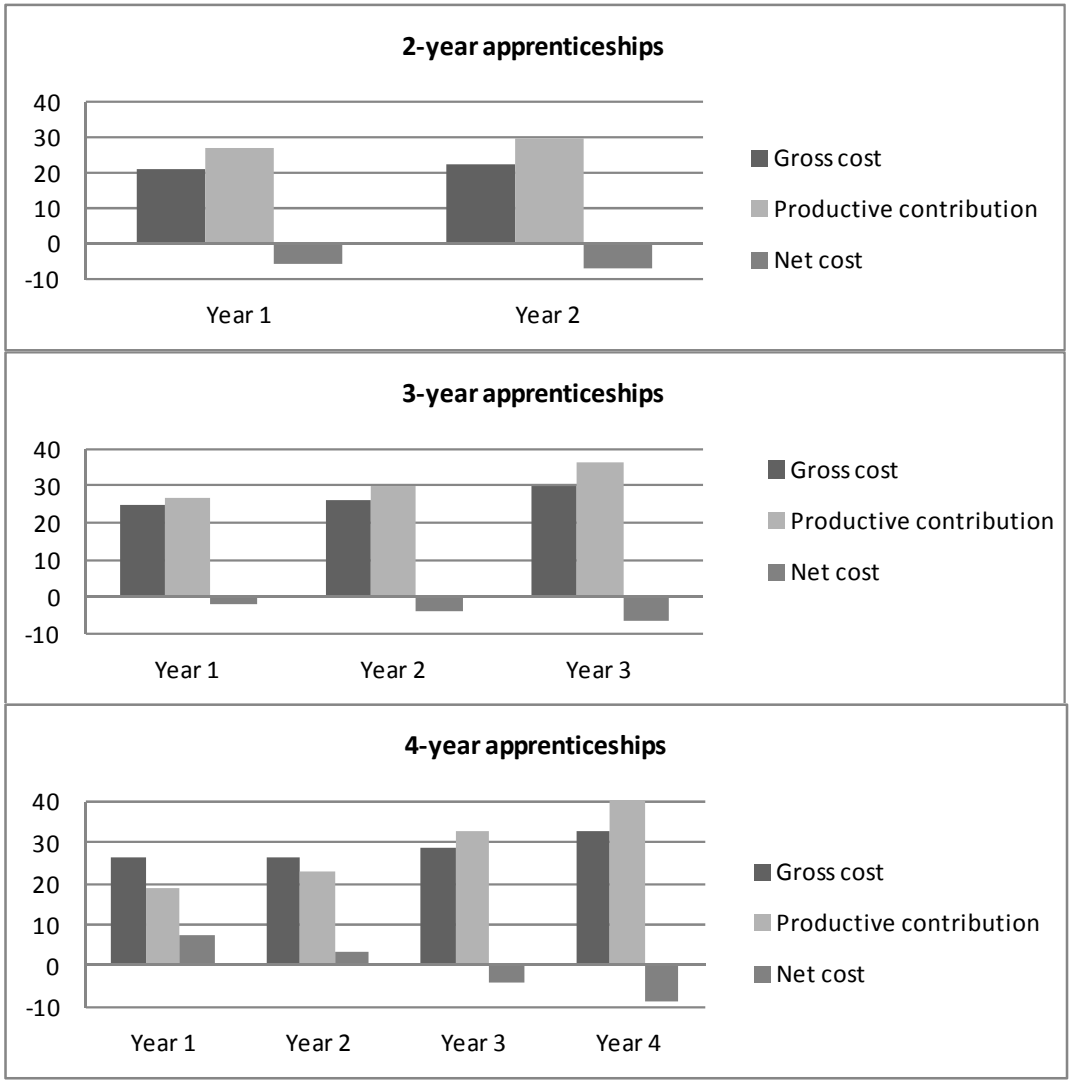
Traditionally employers had to take on apprentices to obtain these benefits, but ÜBA courses create a new option: that of training apprentices for a shorter period. Employers may take on apprentices from ÜBA courses either by offering them a period of internship as part of the ÜBA course, or by offering a regular apprenticeship to a student after basic training of a year or more. Both options may seem more attractive to employers than full regular apprenticeships, as they offer some similar benefits without the substantial upfront costs of initial training of the novice apprentices.

The net costs of an internship or partial apprenticeship to the company – for example after a first year in ÜBA - will be considerably lower than that of a full regular apprenticeship because such net costs will omit the first year when, typically, costs to employers outweigh benefits. During the first year apprentices have a low productivity and net costs for employers are therefore high despite lower apprentice wages, while in the later periods of apprenticeships employers reap more benefits. Empirical analysis from Switzerland (Wolter and Schweri, 2003) shows that as the training period advances, the net cost to employers decreases (see Figure 2.2). While such detailed cost-benefit analysis of apprenticeship training at different stages of training is not available in Austria, the tendency is likely to be similar. This creates an attractive option for employers to "join in" at a stage when apprentices are already more productive, while leaving the initial phases to be provided and funded by the public sector.

A comparison with Germany is instructive. In the German dual system, training firms in some trades are required to provide an initial year in a training workshop for apprentices before they enter the real workplace. While this process is somewhat similar to the experience of ÜBA in terms of the training delivered, the very big difference is that the cost of ÜBA falls on the government rather than the training firm. This is a very desirable arrangement from the firm's point of view, but a very undesirable one from the viewpoint of the Austrian taxpayer.

Figure 2.2 Net costs of apprenticeships in Switzerland by year of training

Thousands of CHF



Source: Muehlemann, S., *et al*. (2007), *Lehrlingsausbildung – ökonomische betrachtet. Ergebnisse der zweiten Kosten-Nutzen-Studie,* Rüegger Verlag, Zürich.

ÜBA decrease the costs of external recruitment to companies

One incentive for employers to offer apprenticeships is that it is a cost-effective method of recruitment (Acemoglu and Pischke, 1999). External recruitment involves some significant costs, such as the "search costs" of recruitment, and the cost of introductory training (Mohrenweiser and Backes-Gellner, 2006). These costs depend, among other factors, on the availability of suitable applicants on the external labour market. With fewer qualified workers on the external labour market, the number of job applicants will be smaller and the matches will be worse on average (Mohrenweiser and Backes-Gellner, 2006). Conversely, if suitable job applicants are readily available on the external labour market, the costs of external recruitment will be lower, and therefore the

incentive for companies to train apprentices reduced. According to an employer survey, 85% of companies in Austria considered that the recruitment of trained workers who are not available on the labour market was one main reason for offering apprenticeships (Lassnigg and Steiner, 1997).

Suppose a landscape gardening company is considering taking apprentices in Austria. For this company the pool of suitable job applicants will include former apprentices trained in landscape gardening, either within the company or in another company. ÜBA courses create a new group of potential applicants: young people who have followed the apprenticeship curriculum and have similar skills to those of apprentices trained in another company. As the number of ÜBA-trained landscape gardeners increases, it becomes easier for the company to find suitable external recruits, and reduces the incentives to offer regular apprenticeships. The proper aim of ÜBA centres is to equip young people with the same skills as a regular apprenticeship, but this means that the more effective ÜBA centres are, the more they reduce the incentive for companies to take regular apprentices.

Resources might yield better results if focused on making young people apprenticeship-ready

Given these disadvantages of ÜBA courses, resources would be better spent on developing and sustaining an apprenticeship system, rather than on workshop-based facilities for ÜBA courses. It would be unrealistic to suppose that all those who seek apprenticeships will be able to find them, and safety nets will always be needed to prevent students from dropping out and producing higher costs in the form of unemployment or other social benefits later on. But the aim should be to restrain growth in ÜBA courses and focus on measures that help sustain apprenticeship provision, gradually shifting resources from ÜBA centres to measures tackling the lack of apprenticeship places.

Implementation

Start support measures earlier on

Tracking the roots of the problem would help reduce the need for ÜBA courses. The causes for the lack of apprenticeship places are complex. According to a survey of Tyrolean training companies that have reduced apprentice numbers since 1999, lack of suitable applicants is one of the three main reasons (the other two are the difficulty to end an apprenticeship even if the apprentice proves unsuited and the costs of training). Almost 70% of the companies reported that they had difficulties in finding suitable applicants "sometimes or often" (Schneeberger and Nowak, 2007). Commonly mentioned weaknesses included applicants' performance at school, their willingness/readiness to learn and perform, and soft skills such as reliability and adequate manners. Companies reported a number of factors that would encourage them to take up more apprentices, such as the possibility of terminating the apprenticeship contract more easily, more public support and more suitable applicants. This suggests that dedicating more resources to making young people apprenticeship-ready would help tackle the problem of the lack of apprenticeship places. These might include offering literacy and numeracy support to students prior to application and during their apprenticeship (as argued in section 2.6

below) or devoting a mandatory pre-apprenticeship year to enhance the particular soft-skills employers expect from apprentices (as suggested in section 2.1).

A number of preventive measures already exist in Austria (such as the *Berufsfindungsbegleiter* in Styria). Those positively evaluated could usefully be expanded. Box 2.6 points to a good practice example from Switzerland.

Box 2.6 Case Management system in Switzerland

The Swiss case management system is designed to support students who are at risk of dropping out at the transition from lower to upper secondary education and leaving school without a secondary qualification. It was created in 2006 to contribute to reaching the target of increasing the number of students with a secondary II qualification form 89% to 95% by 2015. It aims to co-ordinate different actors and institutions involved in the support of at risk students and can kick in during the phase of professional orientation in the end of lower secondary school, during the transition phase from lower to upper secondary schools and during the basic vocational education before a post-compulsory qualification is reached.

Case management is preventive rather than reactive in nature. Students at risk need to be first identified and their development monitored. Identification takes place at 7th and 8th grade in compulsory school or later, when students cannot find an apprenticeship or drop out of an apprenticeship or school-based VET course. A network of competent actors (the case managers) are mobilised to support the student in different tasks leading up to a full post-compulsory qualification. Support is designed to be tailor-made and empowering and can include support in choosing a pathway or finding an apprenticeship place upon finishing compulsory education, in getting back to education after drop-out as well as a range of additional support measures for young people with more general educational and social problems. Duration of case management is variable and depends on individual needs.

The VET Offices in the Cantons (*Berufsbildungsämter*) are responsible for the implementation of the case management since 2008. They had to develop a concrete project proposal by 2007 which was approved by the Federal government (*Bundesamt für Berufsbildung und Technologie, BBT*) who funds the initiative.

Source: BBT, (*Bundesamt für Berufsbildung und Technologie*) (2007), Case Management. Grundsätze und Umsetzung in den Kantonen, BBT, Bern.

Consider other options to cater for students at risk

If growth in ÜBA centres is restrained, there will need to be alternative measures in place to ensure that all students receive appropriate training. Identifying alternatives that work is not an easy task. In Germany for instance, a 'transition system' to take care of low performing students at rsik of dropping out of education has developed into an intransparent 'jungle' of unrelated measures that often do not even lead to transition. The OECD Policy Review of Germany has criticised this arrangement as costly and inefficient (Hoeckel and Schwartz, forthcoming). It supports the German government in its major reform initiative called 'Education Chains' which aims to assist people at difficult transition points and provide a coherent support structure run by co-ordinated institutions with clear responsibilities.

One option for those who cannot find a regular apprenticeship could be to enter school-based VET. Although school-based VET, like ÜBA courses, does not provide

many of the benefits of apprenticeships, it does not carry the risks of ÜBA courses described above, and has a lower cost than ÜBA courses.

During the review visit some stakeholders argued that many students have financial difficulties and might drop out from school-based VET, as it does not offer them a wage. Others suggested that some more practically orientated students might be turned off by more academic forms of education. Some countries (*e.g.* Finland, Flanders and the United Kingdom) offer means-tested allowances to upper secondary students to retain them in education and training, and evaluation suggests that such measures can be effective. Austria could also offer such means-tested support to all students, regardless of the type of programme they follow, *i.e*. students in school-based VET would also receive financial support. In this logic, apprentices in ÜBA courses should receive a means-tested allowance contributing to subsistence costs rather than a wage-like support they receive currently,[3] reflecting the productive contribution of regular apprentices. Concerns with a disengagement of students from too academic forms of education can be addressed by integrating some practical elements including short work placements into the programmes of full-time VET schools from which also more academically focused students could take advantage.

2.5 Career guidance services

The challenge

Principles of career guidance

Career guidance has a twofold task. At school, students need **career education** as part of the curriculum to learn about the world of work and to provide them with the necessary background information to assist them with later career decisions. Secondly, they need **career counselling**, individual advice to choose career pathways. Both forms of career guidance should be based on up-to-date, well-presented **career information** on courses, occupations and career paths (Watts, 2009).

For VET students, career education and counselling are important at two stages: prior to entering the VET system (to choose a programme) and within VET programmes (to choose a job and plan the next stages of their career, including further education and training options). As there is a tendency for apprentices to work increasingly in other trades after qualifying, career guidance is becoming more important within the dual system.

Career guidance is available to all students in principle

Career guidance services are offered in several ways. In Austrian schools in grades seven and eight career education is mandatory and supported by a special curriculum.[4] It is taught as a separate class of 32 lessons per year (equivalent to one hour per week) in

3. The wage of ÜBA apprentices is EUR 240 per month in the first two years, EUR 555 per month from the third year on. This is lower than the regular apprentice wage, but similarly to apprentice wages, it increases over time.

4. *www.bmukk.gv.at/medienpool/899/hs35.pdf.*

most *Hauptschulen*, and as an integrated part of regular subject lessons in part of the *Hauptschulen* and in the *Gymnasia* (OECD, 2003). This often, but not always, includes a short work placement (*Schnupperlehre*), giving students the opportunity to see a workplace in action. Designated teachers with special training assist pupils in their educational and occupational decisions. The school psychology service is not specifically geared towards career advice, but may play a role in designing career guidance tests and is responsible for organising training programmes for student advisers (OECD, 2003). This service is staffed by qualified psychologists and caters mostly to students with emotional, behavioural or study difficulties.

Outside schools, the Federal Employment Office (*Arbeitsmarktservice, AMS*) provides career guidance services through regional offices and information centres (*Berufsinformationszentren, BIZ*) which school groups can visit and where individual students can obtain career information. There are also regional career information centres run by the Economic Chambers. School groups visit these centres regularly. The Apprenticeship Office (*Lehrlingsstellen*) attached to regional Economic Chambers provide information and guidance mainly on apprenticeships. Further education institutions, employers and trade unions give advice on the transition from apprenticeship to full-time work life.

Regional initiatives have also been launched including the Competence Centre for Career Orientation and Guidance (*Kompetenzzentrum für Berufsorientierung und Berufsinformation*) created in the Salzburg Region while in Tyrol a regional coordinator for career guidance (*Landeskoordination für Berufsorientierung*) provides support for schools, monitors quality in career guidance, and supervises career guidance related projects. In addition, three very large job and education fairs are organised each year, bringing together employers, trade unions, and educational institutions, thus covering the whole range of educational perspectives (OECD, 2003).

But actual provision is variable, depending on resources and counselling staff at individual institutions

While career guidance services are provided to all in principle, the visiting OECD team were told that the quality of actual services varies. Most teachers lack professional experience outside the school system and do not know enough about the labour market. Often there are no adequate premises available to provide face-to-face counselling (OECD, 2003; Tobisch, 2008). After compulsory schooling, little systematic career guidance is offered in schools (except in the polytechnic schools, see section 2.1). Some courses at full-time VET schools include career guidance but they are not mandatory. The Federal Employment Service (AMS) has become specialised on unemployed and at-risk clients and is at present only marginally concerned with the provision of career guidance to students (OECD, 2003; Tobisch, 2008).

Recommendation 5

Ensure that good quality career guidance is available to all. Focus the preparation of career guidance professionals stronger on labour market information and improve the availability and presentation of relevant evidence.

Supporting arguments

There are three arguments to support this recommendation. First, misguided career decisions are costly; second, limited use is currently made of labour market information for career counselling; third, preparation of career counsellors is rather cursory and too focused on psychological counselling.

Misguided career decisions are costly

Taking the wrong career choices leading to career changes and drop-out is costly for the government who finances education in schools and for students who incur the opportunity cost of prolonging their education. Drop-out happens most often during the first apprenticeship year (Gregoritsch *et al.*, 2008 quote three quarters during the first 12 months) which is expensive to firms because they have not had time to recoup their initial investment (see Figure 2.2 in section 2.4 using Swiss data). The risk of drop out is therefore one factor which as well as being disadvantageous for the student, also deters employers from offering workplace training.

Career information makes limited use of labour market information and struggles with some gaps in the data

To be effective, career counselling needs to be based on up-to-date information about education, careers and the labour market. Students need to know about the general and VET programmes available, the qualifications and jobs and wages to which they lead. Ideally, they should also be informed about the labour market outcomes among those who have successfully completed the programmes in the past – the current jobs of previous graduates, and whether they use the skills learned during their VET programme (Watts, 2009). Currently, such information is not used systematically enough and in some cases not even available.

Austria is working on improving the evidence base. The Vocational Training Act requires the Ministry for Economy, Family and Youth to produce a bi-annual research report on youth employment and the outcomes of the dual system and requires all authorities dealing with apprentices, employer and employee associations to provide data on apprentices to the Apprenticeship Offices and the Economy Ministry. Data on salaries (*Verdienststrukturerhebungen*) are collected every four years and a qualifications barometer (*Qualifikationsbarometer, www.ams.at/qualifikationsbarometer*) provides information on labour market developments. A pilot is being carried out to match registration with labour market data. But there is currently no national school leaver survey or other system to track all students throughout and after they finish education to establish long-term data and link information on education and later labour market careers. More could be done to fill current gaps and synthesise scattered disconnected information on labour market outcomes.

Preparation of career counsellors is too focused on psychological counselling

Some years have passed since the OECD review of career guidance in Austria criticised the preparation of teachers and counsellors as being cursory and insufficiently linked to knowledge of the labour market (OECD, 2003). Since then improvements have been made. Career advisors at schools are now trained according to standards published by the Ministry of Education (see

www.schulpsychologie.at/schuelerberatung/sbb_lehrgang.pdf). They receive a two-year training at the Pedagogical University (*Pädagogische Hochschule*) according to an established curriculum. The first phase concentrates on identification of the information needs in students and methods to advise them on educational choices and deal with problems. In the second phase candidates learn how to support students and parents in special cases and conflict situations and foster the personal development of individual students. Once a year, career advisors are required to attend further training sessions with content tailor-made for local needs, often concentrating on collaboration with external local career guidance institutions such as the Labour Market Service or career guidance offers from the social partners.

However, the career guidance profession is not regulated in Austria (Schlögl, 2006) and the preparation of career advisors is still too much dominated by a focus on psychological counselling. The task of dealing with problems and conflicts are intertwined with the role of providing professional guidance and career information.

Implementation

Provide good quality services to all students at different levels and key transition points

Career guidance, both career education and individual counselling should be available to all and be of good quality at different stages and should not depend on the resources available at individual schools. In order to make optimal use of available resources, an institutional design favouring separate but co-ordinated services might be desirable.

In such a framework, school teachers - not only in lower secondary schools but also crucially at 9th grade and in post-compulsory school education - can provide the basic career education (how to manage a career, teaching self-awareness to students) as part of the curriculum. Teachers know their students best but are often overwhelmed with the task of providing career counselling in addition to their regular teaching task and lack labour market experience outside schools. Moreover, merging the career and 'psychological problem' counselling roles entails the risk that labour market focus is crowded out by an attention to the problem students (Fretwell and Watts, 2004). Therefore, beyond imparting basic career management skills, teachers should serve as intermediaries between the individual student and various other institutions, including psychological counsellors, social workers, the AMS and other offers of the social partners providing a range of specialised independent forms of career guidance and counselling.

Prepare career counsellors adequately

A common problem observed in OECD countries is that most of the career counsellors in schools and other organisations are not trained in the VET system and not sufficiently acquainted with its specificities. Because of this, career guidance often favours general education (Watts, 2009). Therefore, preparation of career guidance personnel and further training should be sensitive to providing enough information on VET. To attract people with professional experience in the VET sector, an alternative entry route into the career guidance profession sector might be considered.

While training with a strong focus on psychology is adequate for the counselling of students with social, learning or other problems, the career counselling job is broader and

requires sound training in the use and interpretation of labour market information – or at least a firm knowledge of resources and outside institutions that provide such knowledge. Further training of career guidance personnel is essential to keep their knowledge up-to-date and should be mandatory for all. Some countries have developed systematic specialised training for career guidance personnel with a stronger focus on labour market information (see Box 2.7).

Box 2.7 Education of career advisors in England and Switzerland

In **England** the University of East London offers a Postgraduate Diploma in Career Guidance that can be passed by those with a recognised university degree or equivalent. It can be completed either in one year full-time, or in two to three years part-time. It trains people to work with a range of client groups.

The programme covers: theory and practice of career guidance, strategies to promote equal opportunities in a guidance context, labour market studies, education systems, and organisation of guidance structures (OECD, 2004).

Career guidance counsellors in **Switzerland** receive a specialised diploma from universities or other publicly recognised institutions. Students at universities have to attend 600 hours of specialised training; students from other institutions 1 200 hours. In addition, all students have to complete a traineeship of 12 months.

The studies include five areas: individual development (learning and developmental psychology); the individual in society (basic knowledge in sociology, law and economics); the individual and the world of work (the education system, education and professional career choice, occupational psychology, the labour market); work methods (diagnostics, career guidance, monitoring, documentation and public relations); professional ethics, professional identity and quality (Schweizer Bundesrat, 2009, §55-58).

Ensure that services at the AMS are systematically used and that labour market information is available

Teachers and in-house counsellors have two disadvantages: they are often overwhelmed with the task of providing good quality up-to-date information and they are often biased in favour of the institution they represent. Therefore, systematic use should be made of external career guidance experts at the Labour Market Offices. These are specially trained and have access to relevant information. They are not biased and can give more neutral advice.

According to Tobisch (2008) school teachers and personnel at the AMS do not co-operate as much as they could and co-ordination between different institutions is mainly based on individual initiatives. As attention of AMS personnel has shifted towards the increasing number of unemployed people, fewer resources are devoted to regular career guidance. In 2009, the BMUKK has developed a catalogue of mandatory measures in the fields of information, counselling and guidance which foresees binding rules to provide students with practical experience as part of career guidance as well as a visit to the BIZ. Schools have to develop an implementation plan and establish links to the AMS locally on their own. The government should ensure that these good intentions are put into action by all schools.

Career counsellors at schools and other institutions as well as the students themselves should be able to access relevant information readily. Some countries have developed very good online tools where all relevant labour market information can be accessed. The

Czech Republic, for instance, has created a website which provides information on educational options and their labour market outcomes in one place (*www.infoabsolvent.cz*). Website users can learn about the full range of programmes provided by secondary and tertiary institutions, including entry requirements, qualifications, and the jobs these programmes lead to. Information is presented about employment conditions and employee satisfaction in different occupations. This is supported by data on employment/unemployment rates and salary by educational attainment and field. Some countries have developed innovative methods to equip students with such information, for example in Mexico where a USB stick with up-to-date information is distributed to students and also available through the internet (SEMS, 2010).

2.6 Literacy and numeracy skills

The challenge

Some VET students perform poorly in literacy and numeracy skills

PISA results show that students with weak literacy and numeracy skills are concentrated in vocational programmes (see Table 2.7). Nearly 40% of students in part-time vocational schools had a low proficiency (*i.e.* proficiency level 1 or below) in reading in 2003. In particular boys have weak literacy skills: 2006 PISA data show that 43% of male apprentices have poor reading competencies compared to 30% of female apprentices (Schneeberger, 2009). The problems are also significant – although not nearly so severe - in intermediate full-time vocational schools.

Table 2.7 Distribution of students by levels of reading competencies

Distribution of students aged 15-16 by levels of reading competence in Austria, in %

Type of school	Proficiency levels, PISA 2003					
	5	4	3	2	1	<1
Academic secondary schools	23	39	27	8	2	0
Higher technical and vocational colleges	11	34	37	15	3	0
Intermediate technical and vocational schools	0	9	33	37	17	4
Vocational schools for apprentices (part-time)	0	5	21	35	26	13
Compulsory schools	0	2	11	33	34	20
Total	8	21	27	23	13	7

Source: Haider, G. and C. Reiter (eds.) (2004), PISA 2003 – *Internationaler Vergleich von Schülerleistungen; Nationaler Bericht – Mathematik, Lesekompetenz, Naturwissenschaft, Problemlösen*, commissioned by the BMBWK, Graz.

In mathematics, Austrian students score slightly above the OECD average overall. But some VET students have very weak results: in 2006 28% of students in part-time vocational schools scored level 1 or below. Girls scored worse (42% score at the level 1 and below) than boys (22% in level 1 and below). Students in intermediate VET schools scored even worse with 31% at proficiency level 1 or lower.

Table 2.8 Distribution of students by levels of mathematics competencies

Distribution of students aged 15-16 by levels of mathematics competence in Austria, in %

Type of upper secondary school	Proficiency levels, PISA 2006					
	5	4	3	2	1	<1
Intermediate technical and vocational schools	5	14	22	27	20	11
Vocational schools for apprentices (part time)	3	13	25	30	20	8

Source: Neureiter, H. (n.d.), "*Die Grundkompetenzen Deutsch und Mathematik in den Berufsschulen und Berufsbildenden Mitteleren Schulen*", bifie, *www.bifie.at/buch/322/7/5*

Employers complain about a lack of basic skills among apprenticeship beginners and some apprentices feel overwhelmed with the requirements of part-time VET schools

Employers complain about a lack of basic skills among young people and those starting as apprentices (see ibw-employer survey 2005, published in Schneeberger, Petanovitsch and Nowak, 2008). Poor mathematics skills were cited by a majority of the 305 employers who answered a survey in 2007 (Dornmayr, Wieser, Henkel, 2007).

About 90% of the employers consider targeted interventions to remedy these problems an important task for part-time schools and a majority are not satisfied with how schools meet these needs (ibw-Lehrbetriebsbefragung 2005, in Schneeberger, 2009). At the same time, a survey of apprentices in their first year reveals that a number of students feel they cannot cope with the requirements of part-time schools (ibw-Berufsschüler-/Lehrlingsbefragung 2002/03 published in Schneeberger, 2009). Male apprentices are more likely to report problems at school (12-18% of the respondents) than female apprentices (around 12%). The biggest problems are reported from the electrical and mechanical professions where over 20% of the apprentices report that they feel overwhelmed with the requirements of the part-time school.

Part-time VET schools devote limited attention to basic skills

The part-time school within the dual system aims to provide supplementary subject-related and occupation-specific training as well as general education including basic skills. The extension and development of social and soft skills are regarded as a priority. For this purpose, different learning methods, including team work, presentations and discussions, are used. Compulsory elements of the curriculum include: German and communicative competence, job-related foreign language, civic education, business studies and the necessary technical theory and practical subjects required for the apprenticeship trade.

Apprentices typically spend only 25% (altogether around 360 hours in three years) of their training in the part-time VET school; the rest is spent in companies. Typically, out of these 360 hours, 160 are spent on German, communicative competence and a foreign language, 120 hours (*i.e.* one hour per week) in applied mathematics.[5]

5. *www.abc.berufsbildendeschulen.at/upload/868_Allgemeiner%20Teil.pdf.*

There are only limited resources available for remedial education. Students in part-time VET schools can receive between six and 18 hours remedial education per subject for a minimum of eight students. Moreover, they are less likely to attend remedial education than students at full-time VET schools (Neureiter, (n.d), using PISA data), although the evidence suggests that they need it more. Few focused projects for remedial basic skills education are currently in place. Courses funded with money from the European Social Fund are offered jointly with the ministry (project '*Reduzierte Dropout Quote auf der 9. Schulstufe*') for students with migrant backgrounds. Some regional projects (for example in Tyrol) provide remedial education to boys who have literacy problems in the part-time schools (organised by the Chambers and provided by some private companies).

There is currently no systematic screening to identify basic skills gaps

Currently, there is no systematic assessment of literacy and numeracy skills at the 9th grade, at the end of compulsory education. Students are informally evaluated in schools and there are standards developed in the context of the quality initiative QIBB for the 4th and 8th grade; in January 2009 the ordinance for education standards was put into force[6] and first tests will be introduced in 2012/13. For all school types the evaluation instrument for German is already prepared; the one for English is being piloted and mathematics will be piloted in Autumn 2010. But the results of these tests (planned every three years) are not made available to teachers on an individual basis so they cannot be used to diagnose and resolve individual problems.

Full-time vocational schools could also invest more in basic skills

While most of the arguments set out in this section apply to learning in the dual VET system, full-time VET schools could also gain from investing more in basic skills. Currently, in the three year full-time VET schools students receive 40 hours general education, in the five-year VET colleges more, but from the third year onwards students have to study more occupation-related subjects. While stakeholders raised doubts about the scope to increase basic skills teaching in the general curriculum, VET schools nevertheless need to make sure that those students with basic skills weaknesses are identified and receive adequate support.

Recommendation 6

Introduce systematic assessment to identify basic skills gaps among VET students and target help at those who need it most. Strengthen the focus on literacy and numeracy in the VET system, and consider reforming the curriculum of vocational schools to this end using innovative teaching methods.

Supporting arguments

There are four arguments to support this recommendation: first, strong basic skills are essential for VET graduates to perform in the modern labour market; second, sound basic skills help prevent drop-out and prepare students for an apprenticeship; third, basic skills

6. *www.bmukk.gv.at/medienpool/17533/bgbl_ii_nr_1_2009.pdf.*

facilitate the transition to tertiary education and prepare for life-long learning; fourth, a systematic assessment is necessary to identify skills needs.

Strong basic skills are essential for VET graduates to perform in the modern labour market

As indicated at the outset, the dual system stands out against other upper secondary education and training arrangements in terms of the limited time available for basic skills of literacy and numeracy. The implication is that the dual system trained Austrian labour force of the future is likely to be significantly weaker in literacy and numeracy skills than comparable labour forces in competitor countries. This is likely to be a weakness in the Austrian economy, particularly in the context of any need to adapt and restructure the economy, when literacy and numeracy skills will be depended on to support the development of new skills.

A study from the United States (Autor, Levy and Murnane, 2003) argues that an increasing number of jobs, including blue-collar jobs require problem solving skills and complex communication skills. In a study of workplace literacy requirements in Central and Eastern Europe, Köllő (2006) argues that most marketable competences are developed through basic skills closely tied to literacy. An Australian study (Chiswick, Lee and Miller, 2002) found that about half of the total effect of education on labour market outcomes (labour force participation, unemployment) can be attributed to literacy and numeracy.[7] Evidence from the international adult literacy survey (IALS) shows that, other things equal, people with weak literacy skills are more likely to be unemployed. A study using UK data shows that literacy and numeracy has a significant impact on earning and that this wage premium has risen over time (De Coulon, Marcenaro-Gutierrez and Vignoles, 2007).

Research from other dual system countries suggests that while dual system VET graduates tend to have a smooth transition from initial education to the first job, they have greater difficulties later in their working life to remain successful in the labour market: Swiss data show that the gap in employment rates between graduates of tertiary and upper secondary VET programmes increases as workers approach retirement age (OECD, 2009b). Similar results are reported by Ludwig and Pfeiffer (2005) for Germany showing that the depreciation rate of human capital for individuals with vocational education is about 0.42%, whereas it is not statistically different from zero for university graduates. The depreciation rate for VET graduates appears to be increasing over time which the authors attribute to an increasing pace of organisational and technological change. VET graduates appear to be disadvantaged particularly in the case of a change in profession, when almost 80% of the knowledge learned in VET programmes becomes obsolete (compared to only 20% of knowledge acquired in university programmes).

Sound basic skills may prevent drop-out and make apprentices more attractive for employers

Some VET students in Austria who report feeling overwhelmed with the requirements of VET schools are at risk of dropping out if they cannot handle the requirements. International evidence suggests that there is a link between basic skill level and the

7. Adding literacy and numeracy to a regression of labour market status on schooling increases the explanatory power of the model.

likelihood of drop-out. A study from the United Kingdom (Basic Skills Agency, 1997) found that those who received basic skills support were three times less likely to drop out. They also had better completion (those on a two-year course) and qualification (those on a one-year course) rates than those who did not receive support.

Provision of basic skills as a means to improve apprenticeship-readiness might also help increase employer offers of training places. Evidence demonstrates that employers would be more willing to provide apprenticeship places if they were better prepared: an employer survey (see Schneeberger, Petanovitsch and Nowak, 2008.) reveals that 37% of the companies that do not train would take an apprenticeship if they could be sure that they get an 'apprenticeship-ready' student. In Germany, support programmes for apprenticeships (*ausbildungsbegleitende Hilfen*) are offered. These programmes include topics which go beyond the usual apprenticeship content as well as a socio-pedagogical mentoring and are designed to keep students in the regular system and ensue that they do not drop out. Several pilots testing the impact of apprenticeship support for students at risk and their employers have reaped positive results (Gericke, 2003).

Basic skills smooth the path to tertiary studies and lifelong leaning

Although skills requirements inevitably vary across professions, virtually all workers will need to acquire new skills during their career. In sectors facing rapid technological change, the ability to learn is crucial and the generic skills which underpin this ability are highly valued by employers (Smits, 2007). Labour markets change rapidly and often unpredictably, so skills like literacy, that assist the acquisition of new skills are particularly valuable in the long run (Kézdi, 2006).

Good general education is also a pre-requisite for students to enrol in higher education, including tertiary education at university and *Fachhochschule*, and the option to move into higher education is not only valuable in itself, it also directly confers status on VET programmes. Since 1997 VET students have had the possibility to obtain the professional baccalaureate (*Berufsreifeprüfung* or *Berufsmatura*) and in 2008 the possibility to combine an apprenticeship with preparation for the professional baccalaureate (*Lehre mit Matura*) was introduced and preparatory courses made free of charge. In the academic year 2007/2009, 2 609 students received the professional baccalaureate certificate, about 2.7% of the comparable age cohort (Klimmer, Schlögl and Neubauer, 2009). 45% of these graduates start a university programme, 23% go to a *Fachhochschule* science, about 10% a university college of education and 20% a VET college (Klimmer *et al*., 2009). Students who lack basic skills are unlikely to succeed in these pathways, which will be increasingly important in the modern labour markets.

Systematic assessment of performance is necessary to identify weak performers

International evidence provides two main arguments for systematic screening of literacy and numeracy difficulties among VET students: first, many people are unaware of their problems, and, second, some of those who are aware of it may be reluctant to admit it. British cohort studies show that many people with weak basic skills do not recognise that they have difficulties, particularly in respect of numeracy (Bynner and Parsons, 2006, Finnie and Meng, 2005). In the United Kingdom the stigma attached to poor basic skills, apparently sometimes becomes a deterrent to taking up basic skills support. Another barrier to seeking help was that many people did not know that basic skills were essential to the successful completion of their course (Basic Skills Agency,

1997). Bynner and Parsons (2006) found that once people were aware of weaknesses in their basic skills, they tended to be interested in improving them.

Implementation

Basic skills deficiencies are rooted in failure to provide these earlier in school

If students at 9th grade are evaluated not apprenticeship-ready and lacking basic skills, the reasons for such deficiencies are rooted in a failure of the school system to impart these skills. The VET system is not responsible for this failure. But as long as the problem exists, it needs to be tackled rather than perpetuated throughout vocational training which - unless students go on to higher education which is unlikely for weaker students – is the last chance to remedy the situation. Two forms of tackling the basic skills gaps are conceivable: first, provision of targeted support to students at risk based on an assessment of needs and second, an increase in the share of time VET students spend studying general basic as opposed to occupation-specific skills. Both methods have their merits but should be implemented carefully so that an increased attention to basic skills does not become an entry barrier for students with lower academic attainment for who the dual system traditionally also caters.

Systematically assess basic skills and target help to those who need it most

Assessment of basic skills is necessary to indentify skills gaps in students and target support measures. Tests should be designed as a tool for support, and should be administered a few weeks after students start a course rather than before they enrol in their specialised training (to avoid it being seen as a selective entrance test; Basic Skills Agency, 1997). Some VET institutions in Austria already carry out such tests, but this needs to be generalised. Resources might then be targeted to the neediest. Support measures should be accessible, adapted to individual needs particularly those with low motivation and limited independent learning skills, and marketed in a positive way to avoid stigma.

Students with migrant background are particularly concerned as they often have language problems. Support should be targeted specifically at those students who cannot cope with the teaching because of language difficulties. The VET system for many is the last chance to become integrated as a failure to catch up at this point often leads to unemployment and total disengagement and disintegration.

Increase the share of basic skills in VET making use of innovative learning methods

Another way of enhancing basic skills training in apprenticeships would be to increase the number of hours of general training in part-time VET schools. Currently, the very small percentage of time apprentices spend in general education including maths and literacy is the part of their time in which they are obtaining foundation skills for life, guaranteed to stay relevant, whatever career path they follow, and a key support for further education and training. Apprenticeships are also important for students with very weak academic skills; extending general skills requirements in the apprenticeship should not lead to crowding out students with lower levels of academic attainment but should be

combined with adequate support measures for those who have difficulties coping with the academic requirements.

At the same time apprentices (above all male apprentices who have the biggest problems especially with literacy) may have some resistance to additional academic teaching, while teachers may not be keen to teach basic skills to unmotivated students in part-time schools. People with low qualifications tend to be distinctive in their learning preferences learning more easily in an applied setting than abstractly or independently (see Table 2.9).

Table 2.9 Learning preferences by qualification level, 2003

(EU-citizens plus Norway and Iceland, aged 15+, n=18 007) in %

Preferred forms of learning	Highly qualified	Low qualified
Searching for information on something the person is interested in	38	12
Course at school, university or further education institution	33	15
Leading or training other people	25	10
Observation and analysis of a situation	23	18
Doing something new by using new machines or equipment	25	29
Doing things together with friends	25	27
Training at the workplace	16	23
Observation how other people do things and imitating them	11	23

Source: Data from Eurostat, Eurobarometer

One way to tackle this challenge is to integrate basic skills teaching into practical learning. The theoretical attractions of this approach are very substantial, and an example from the US demonstrates that it can also work well in practice (see Box 2.8). At the same time the approach is challenging. It requires careful preparation and planning linked to teamwork with general teachers working closely with teachers of practical subjects.

Box 2.8 Maths-in-CTE - Integrating basic skills in workplace training in the United States

The Math-in-CTE approach was developed from the idea that maths is present in all areas of career and technical education (CTE) but often implicit to both teachers and students. This approach aims to make maths more explicit as a necessary tool for solving workplace problems and help improve students' understanding of maths both in and out of context. It was developed by the National Research Center for Career and Technical Education and consists of teacher professional development and a pedagogical framework.

A research study (Stone *et al.*, 2006) tested this model in five occupational areas (agriculture, auto technology, business/marketing, health, and information technology). In the experimental group, each CTE teacher was partnered with a maths teacher to develop CTE activities that would enhance the teaching of maths skills for use in context. They built a curriculum that intersected maths concepts with CTE curricula, identified opportunities to emphasise maths in the curriculum, and developed lessons for implementing these based on a specific pedagogical framework. This framework makes explicit maths concepts in CTE courses by gradually moving from fully CTE contextualised examples to more abstract examples. For instance, learning about the T-square in a carpentry class is an opportunity to teach the Pythagorean theorem.

After one year of maths-enhanced lessons, the students in the experimental group performed better on standardised tests of maths ability. This was not detrimental to the learning of the vocational content – at the end of the year there were no differences between the experimental and control group in terms of occupational or technical knowledge.

A stronger focus on basic skills in the part-time vocational schools will need to be negotiated with the social partners and the staff of the part-time vocational schools. While in the short run there may be resistance from employers, as basic skills may be seen as competing in a crowded timetable with occupational skills, it is clearly in the long term interests of employers, unions, students and indeed Austria that the dual-trained workers of the future are able to compete effectively in terms of basic skills with the trained workforces of key competitor countries.

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Annex A
Background information

1. Programme of the review visit

Preparatory visit, 11-15 May 2009

Monday 11 May, Vienna

Meeting with national co-ordinator to discuss the programme
Meeting with VET steering group
Meeting with representatives of Trade Unions and the Chamber of Labour
Meeting with representatives of Trade Unions and the Chamber of Labour
Meeting with officials from the General Directorate for VET in the Ministry for Education, Arts and Culture (BMUKK)

Tuesday 12 May, Vienna

Visit to vocational school for apprentices (heating and air conditioning)
Visit to business school and college
Meeting with representatives of the Austrian Federal Economic Chamber and Industry Association
Meeting with official from the Ministry for Economy, Family and Youth and the Austrian Labour Market Service

Wednesday 13 May, Linz

Visit to technical college (construction and design)
Meeting with regional school board of Upper Austria
Visit to Pedagogical University

Thursday 14 May, Linz

Visit to apprenticeship training firm (painter)
Meeting with representatives from the Economic Chamber Upper Austria
Visit to apprenticeship training centre (*Ausbilungsverbund*)

Friday 15 May, Vienna

Meeting with VET experts and researchers
Meeting with the VET steering group

Policy visit, 28 September to 1 October 2009

Monday 28 September, Vienna

Meeting with national coordinator to discuss the visit programme
Visit to vocational school and college for business administration
Visit of workshop-based apprenticeships (*Überbetriebliche Lehrausbildung*) in cooking
Visit of workshop-based apprenticeships (*Überbetriebliche Lehrausbildung*) in metal industry, car engineering and electrical engineering

Tuesday 29 September, Vienna

Roundtable on VET offers at 9th grade with experts from the Education Ministry, the Institute for Education Research (ibw), and the Chamber of Labour
Roundtable on quality assurance in workplace training with experts from the Economics Ministry, the Chamber of Labour, the Institute for Education Research (ibw) and the Economic Chamber
Roundtable on VET qualifications with experts from the Education and Economics Ministries, the chamber of Labour, the Economic Chamber and the ibw
Meeting with legal expert from the Education Ministry on teacher employment
Visit to part-time vocational school for apprentices (gardening)

Wednesday 30 September, Eisenstadt

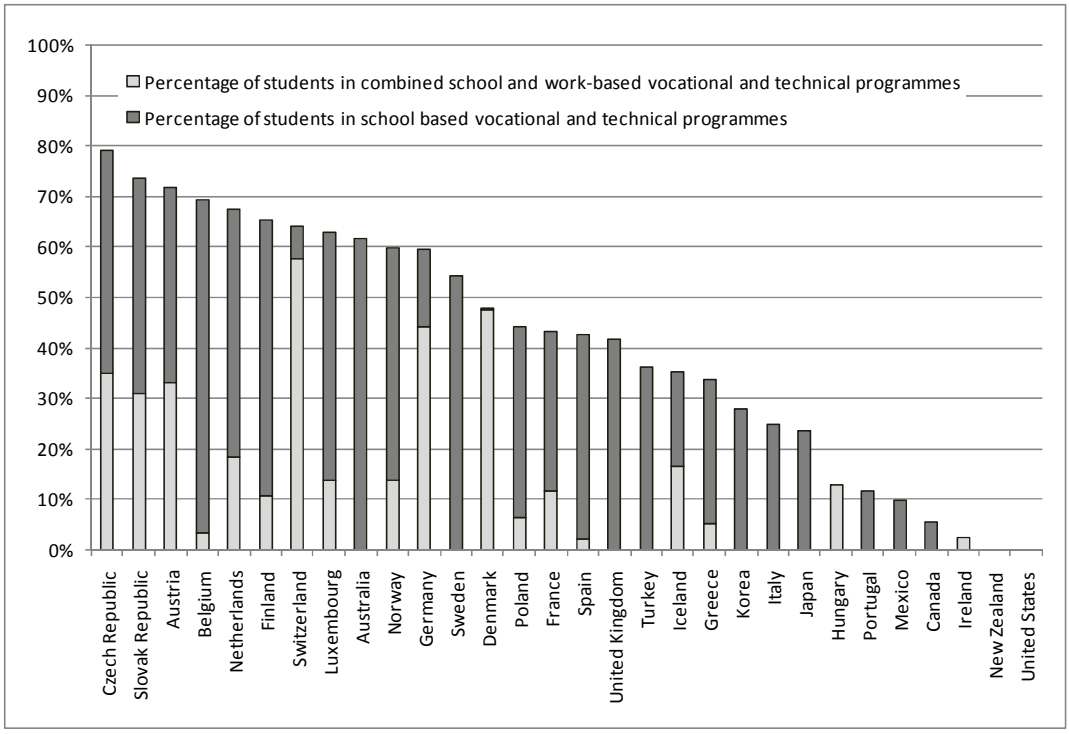
Visit to polytechnic school Eisenstadt
Meeting with the president of the regional school board Burgenland
Visit to technical and vocational school and college Eisenstadt

Thursday 1 October, Vienna

Final meeting with the VET steering group

Annex B
International and national statistics

Figure B.1 Vocational education and training as a share of the upper secondary sector



Note: Austrian data refer to persons aged 15 and over, see OECD (2008), Education at a Glance, Annex 3, p. 7; the international Standard Classification of Education (ISCED-97) is used to define the levels of education.
Source: OECD (2008), *Education at a Glance 2008*, *Indicators, Table C1.1*, OECD, Paris.

Table B.1 Enrolment rates by school type

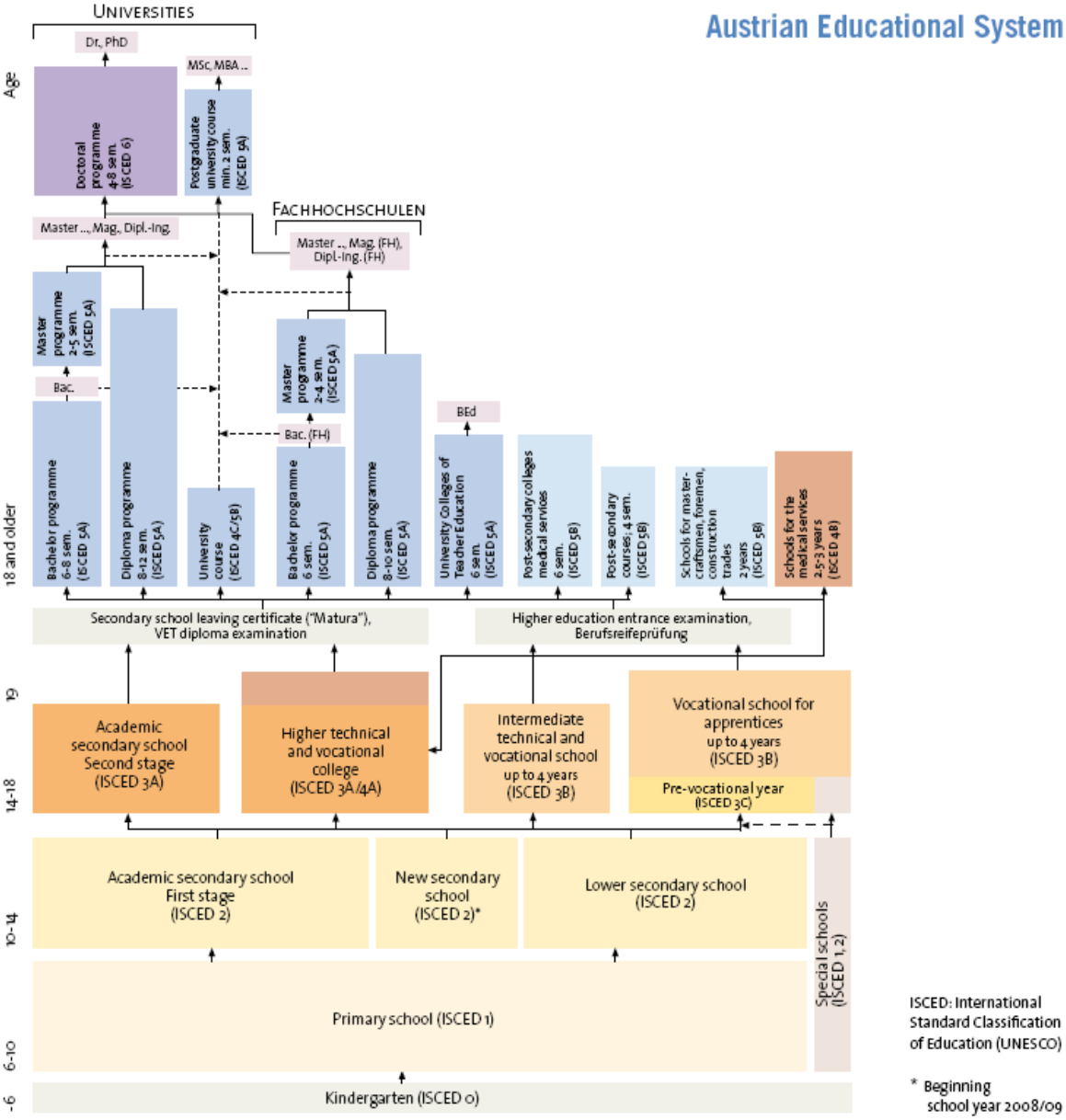
Proportions of school types, distribution of all pupils/students by type of school, school year 2007/08

Type of school	Primary schools	Lower secondary schools	Special schools	Poly-technic schools	Academic secondary schools	Part-time VET schools	Full-time VET schools	Full-time VET colleges	Higher colleges for teacher training	Total
grade 5-8	134	249,703	7,184	241	117,979	0	515	0	0	375,756
in %	0.0	66.5	1.9	0.1	31.4	0	0.1	0	0	100.0
grade 9	0	0	2.037	21.097	24.425	0	19.868	31.374	1.889	100.690
in %	0	0	2.0	21.0	24.3	0	19.7	31.2	1.9	100.0
grade 10	0	0	0	0	22.448	44.716	13.065	26.125	1.679	108.033
in %	0.0	0.0	0.0	0.0	20.8	41.4	12.1	24.2	1.6	100.0
grade 12	0	0	0	0	18.608	37.937	2.525	24.928	1.597	85.595
in %	0	0	0	0	21.7	44.3	2.9	29.1	1.9	100.0

Note: Healthcare schools and schools with a statute of their own are not included.

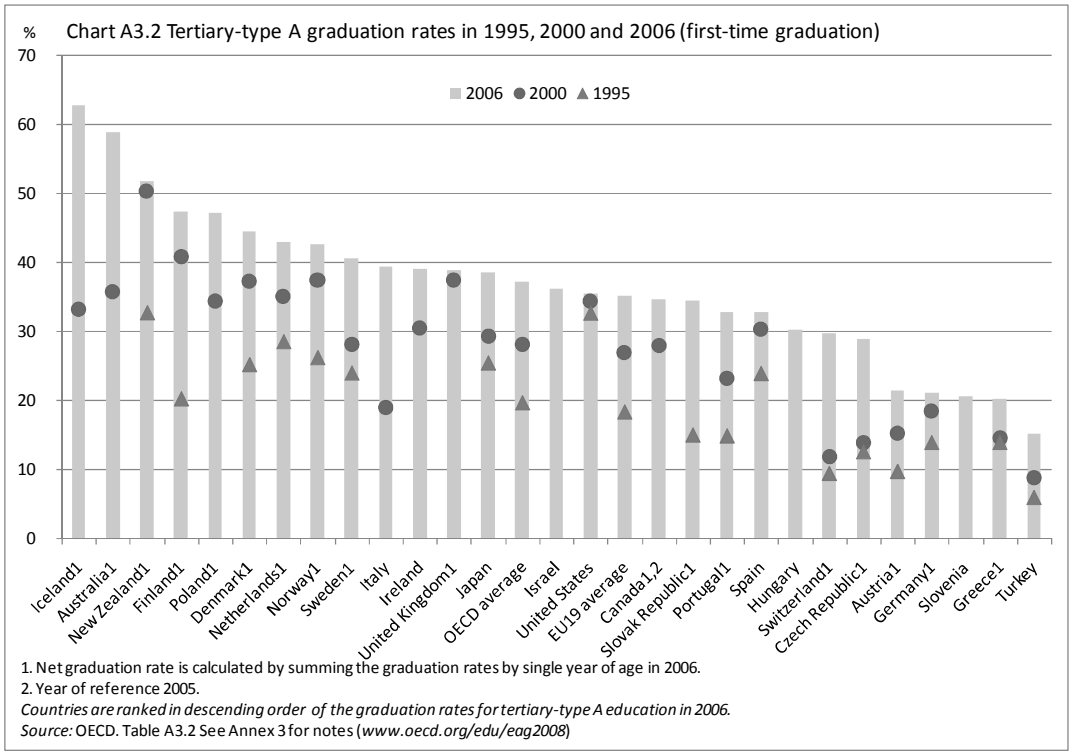
Source: BMUKK (2008a), *Statistical Guide: Key Facts and Figures About Schools and Adult Education in Austria*, BMUKK, Vienna.

Figure B.2 The Austrian education systems



Source: Archan, S. and T. Mayr (2006), *Vocational Education and Training in Austria, Short Description, Cedefop Panorama Series, 125*, Cedefop, Thessaloniki.

Figure B.3 Tertiary type A graduation rates



Source: OECD (2008), *Education at a Glance 2008, Indicators, Table A3.2*, OECD, Paris.

Table B.2 Highest qualification of the working population over time, in %

Highest qualification in %	1981	1991	2001	2006	2007
Univeristy, Fachhochschule	3.9	5.4	7.8	10.4	10.6
Akademie	0.8	1.8	2.5	2.8	2.4
Higher VET college	4	5.6	8.2	10	9.8
Gymnasium	3.4	4.3	4.8	5.9	6.1
VET school	11.8	13	13.1	13.6	13.1
Apprenticeship	35.5	40.5	40.5	40	39.8
Compulsory school	40.6	29.4	23.1	17.4	18.3
Total	100	100	100	100	100
In numbers	3 411.52	3 684.28	3 986.76	4 123.80	4 213.50

Source: Schneeberger, A. and S. Novak (2008), *Lehrlingsausbildung im Überblick. Strukturdaten und Ergebnisse europäischer Erhebungen,* iwb-series, No. 142, Vienna.

Table B.3 Public expenditure for VET in 1 000 Euro, 2006

Type of school	Personnel expenses	Material expenses	Investment	Total expenses in 1 000 Euro	Number of students	Expenses per student 2006
Pre-vocational schools: Polytechnic school	92 119	25 428	4 678	122 225	21 379	5 717
Vocational schools for apprentices	293 894	135 817	17 630	447 341	133 6252	3 347
Intermediate and higher technical and vocational schools and colleges	1 314 752	327 705	34 833	1 677 290	186 228	9 007
Crafts, technical and arts schools/colleges	466 160	142 390	11 120	619 670	59 844	10 335
Business administration	336 266	50 233	5 915	392 380	55 331	7 092
Tourism	61 172	12 538	1 026	74 736	10 644	7 021
Social professions	27 396	5 615	460	33 471	4 543	7 368
Management and service industries	260.777	53 448	4 375	318 600	39 562	8 053
Schools for agriculture and forestry	113 879	43 498	8 801	238 432	16 304	14 624
Colleges for agriculture and forestry	49 135	19 982	3 138	72 255		
Colleges for "Kindergarten" and social pedagogy	65 567	18 622	551	84.741	8 554	9 907

Source: Lassnigg and Vogtenhuber 2009; own calculations concerning vocational schools for apprentices (Schneeberger 2009)

Box B.1 Employer incentives in Austria

Since the mid-1990s a wide range of subsidisation schemes for apprenticeship posts have come into force. These range from tax reliefs for training enterprises (*e.g.* wage tax exemption for training relationships) and the subsidisation of training alliances, to financial incentives for the creation of additional apprenticeship posts for specific target groups. As a response to previous solutions being insufficient, in July 2005 a scheme involving the stepped-up promotion of company-based apprenticeship places was launched which is connected with the name of the Government Commissioner for Apprenticeship, Egon Blum (Wagner-Pinter, 2006). According to that scheme, training enterprises not only received EUR 1 000 of training premium per apprentice and apprenticeship year, but also – in the form of the so-called Blum Bonus – for every additional apprentice EUR 400 a month during the first apprenticeship year, EUR 200 during the second and EUR 100 in the third year (BMWA, 2006).

As a result of debates regarding the efficiency of subsidisations, the social partners put together a comprehensive Youth Training Package in the paper "Labour Market – Future 2010" (Österreichischer Gewerkschaftsbund, *et al.*, 2007). Many innovative elements (quality enhancement, CVET measures for trainers, additional training for apprentices, gender aspects) that fulfil increased demands on training were adopted in the form of legal amendments in late June 2008 (Bundesgesetzblatt I). In December 2008, the Federal Advisory Board on Apprenticeship adopted the Directive on support for company-based training of apprentices according to § 19 c of the Vocational Training Act (BAG). (Bundesberufsausbildungsbeirat, 2008).

The new system of company-related subsidies (apprenticeship relations effective as of 01.07.2008) on the one hand provides for basic subsidisation, implying amounts of aid that are differentiated by apprenticeship years: first apprenticeship year: subsidy to the amount of three remunerations for apprentices; second apprenticeship year: subsidy to the amount of two remunerations; third and fourth year: of one remuneration; and in case of 3.5 years' training duration: half a remuneration.

Box B.1 Employer incentives in Austria (continued)

In the guidelines of the Social Partners from 10 December 2008 reference average remunerations (taken from the ten most frequent apprenticeship trades) are published: first apprenticeship year: EUR 440, second apprenticeship year: EUR 690, third apprenticeship year: EUR 806 and fourth apprenticeship year: EUR 948 (Bundesberufsausbildungsbeirat 12/2008).

Apart from basic subsidisation, there is the option of additional corporate grants, which provide incentives to create additional apprenticeship posts as well as are oriented towards quality-related criteria (Blum bonus II). This bonus is granted until 2010 to all new start-ups where apprentices are trained for the first time or that re-enter apprenticeship training following an interruption of training.

To ensure that the intended quality enhancement is achieved, a quality bonus of EUR 3 000 per apprentice shall be granted to enterprises whose apprentices successfully take a quality test by the middle of the apprenticeship period. In the case of not successful practical tests the company can get EUR 1 500 if the documentation about the training in the company is able to prove sufficient instruction concerning the contents of the test and some other training attempts. Additionally the Apprenticeship Office of the Regional Economic Chamber has to evaluate the training documentation of the company. The Chamber has to be informed about the evaluation and has the right to comment it (Bundesberufsausbildungsbeirat, Guidelines, 10 December 2008).

Additional eligibility for these subsidisation options results from the following:

- CVET measures for trainers;
- premiums for apprenticeship-leave exams taken with excellent or good results;
- additional qualifications for apprentices going beyond the statutory occupational profile and thus raise their qualification level further;
- promotion of training alliances;
- promotion of young people with learning deficits through cost exemption for the acquisition of the vocational school qualification;
- regional support measures for occupations in which there is a skilled workers shortage;
- corporate measures aiming at equality of access by young women and young men to different apprenticeships.

The Federal Minister of Economy, Family and Youth is in charge of the apprenticeship training and its legal regulations. The Federal Minister of Labour, Social affairs and Consumer Protection is responsible for the labour market aspect of the apprenticeship training and especially the measures against the “lack” of training places. In a paper of 1 April 2009 the new minister made some statements about the public funding of apprenticeship training: On average each apprenticeship post is subsidised with EUR 230 per month. The Federal government invests EUR 357.1 million in subsidies for apprenticeship training this year, EUR 23.4 millions more than 2008. The Minister of Labour mentions a number of 8 000 young people trained in Überbetrieblichen Lehrwerkstätten which should increase to 12 000 in Autumn 2009 (BM R. Hundstorfer, 2009).

There are no comprehensive evaluations concerning past employer incentive mechanisms. The effect if the Blum-Bonus has been analysed by the Labour Chamber of Upper Austria (Wacker, 2007). The results demonstrate that a majority of the apprenticeships supported by the Blum-Bonus were actually not new ones (as intended by the subsidy) but ones that would have existed anyway, hence the measure cause a lot of deadweight.

Table B.4 Youth unemployment (age 20-24), 2006

	Young adults (20-24) unemployment rate (%)	Young adults (20-24) in unemployment as % of the population 20 to 24	Ratio of the unemployment rate of young adults (20-24) to those of adults (25-54)	Incidence of young adults (20-24) long term unemployment (6 months and over) (%)
Australia	7	5.7	1.8	27
Austria	7.5	5.6	1.8	33
Belgium	18	10.2	2.4	52
Canada	8.8	6.9	1.7	..
Czech Republic	14.5	8.3	2.3	65.5
Denmark	5.3	4.2	1.6	17
Finland	14.8	10.2	2.4	19.4
France	22.7	12.4	2.7	46.9
Germany	13.2	9.4	1.4	61
Greece	23.2	12.2	2.9	71.5
Hungary	17.2	8.1	2.5	54.6
Iceland[1]	4.9	4	2.5	3.6
Ireland	7.3	5.5	1.9	48.7
Italy	19.2	9.9	3.3	67.4
Japan	7.7	5.4	2	..
Korea	9.9	5.4	3.1	9.8
Luxembourg[2]	12.7	6.4	3.2	9.8
Mexico	5.7	3.5	2.2	3.5
Netherlands	4.9	4	1.4	44.1
New Zealand	6.4	4.9	2.4	18.4
Norway	6.8	5	2.3	20.9
Poland	29.6	16.9	2.4	59.5
Portugal	14.1	8.9	1.9	64.5
Slovak Republic	22.5	13.2	1.9	77.2
Spain	14.8	10.1	2	35.2
Sweden	16.6	11.8	3.1	19.3
Switzerland	7.6	6.2	2.2	..
Turkey	19.7	9.9	2.4	51.6
United Kingdom	10.9	8.3	2.7	34.6
United States	8.2	6.1	2.2	14.4
OECD total	11.3	7.5	2.1	38.7

1. Regarding the indicator "Incidence of young adults (15-19) long term unemployment (6 months and over) (%)", data only available.

2. 2005 is the year of reference for Luxembourg.

Source: OECD Stats 03_2008: Labour/Labour Force Statistics/LFS by sex and age.

Table B.5 Unemployment rates by education status, 2007, in %

University Fachhochschule	Higher VET college	Apprenticeship	VET school	Total	Gymnasium	Compulsory school
2.8	3.1	3.4	3.5	4.4	5	8.8

Source: Schneeberger, A. and S. Novak (2008), *Lehrlingsausbildung im Überblick. Strukturdaten und Ergebnisse europäischer Erhebungen,* iwb-series, No. 142, Vienna.

Figure B.4 Regulations on temporary forms of employment

Index scale of 0-6 from least to most restrictive

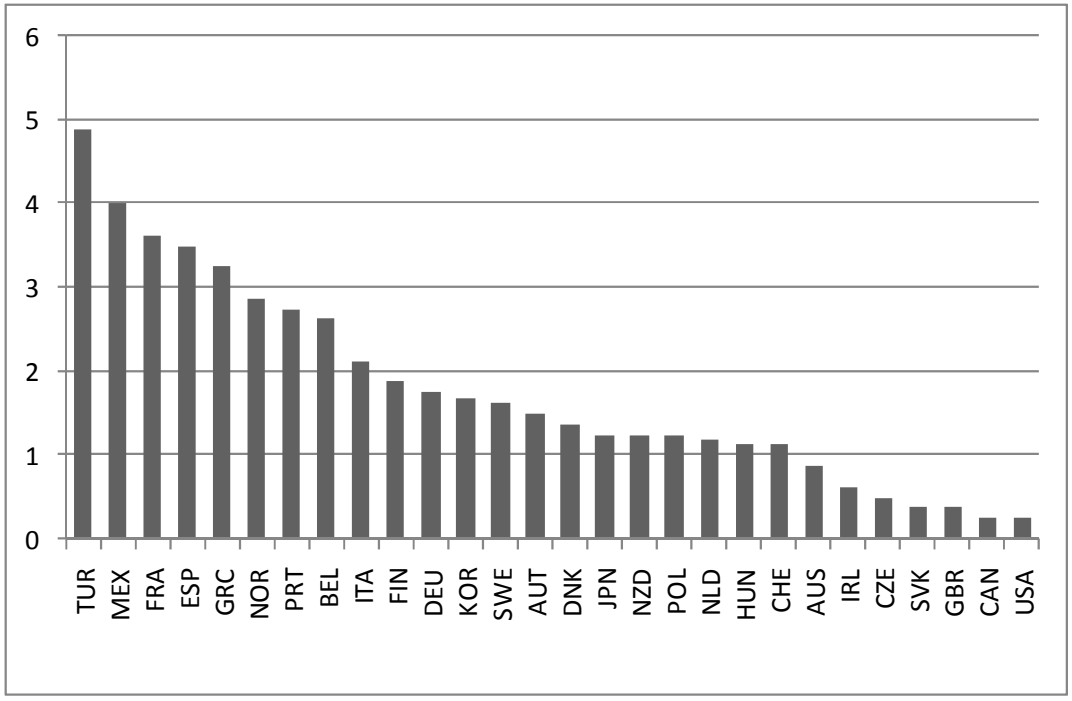


Table B.6 Distribution of students by levels of reading competencies

Distribution of pupils/students aged 15/16 by levels of reading competence in Austria, in % (row)

Year, type of upper secondary school	"Proficiency Levels" 5	4	3	2	1	<1
PISA 2000						
Academic secondary schools	18	39	31	10	2	0
Higher Engineering and vocational colleges	12	36	36	14	2	0
Intermediate technical and vocational schools	2	13	35	35	13	2
Vocational schools for apprentices (part-time)	0	7	24	39	23	7
Compulsory schools	0	4	17	37	28	14
Total	9	25	30	22	10	4
PISA 2003						
Academic secondary schools	23	39	27	8	2	0
Higher technical and vocational colleges	11	34	37	15	3	0
Intermediate technical and vocational schools	0	9	33	37	17	4
Vocational schools for apprentices (part-time)	0	5	21	35	26	13
Compulsory schools	0	2	11	33	34	20
Total	8	21	27	23	13	7

Source: Haider, G. and C. Reiter (eds.) (2001), *PISA 2000 – Nationaler Bericht; Beiträge zur vergleichenden Schulforschung,* Vol. 3; Innsbruck, Vienna, München, Bozen.; Haider, G. and C. Reiter (eds.) (2004), *PISA 2003 – Internationaler Vergleich von Schülerleistungen; Nationaler Bericht – Mathematik, Lesekompetenz, Naturwissenschaft, Problemlösen,* commissioned by the BMBWK, Graz.

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