

OECD reviews of vocational education and training

Learning for Jobs

POINTERS FOR POLICY DEVELOPMENT



Table of Contents

Key policy challenges	5
The vocational challenge	7
Meeting labour market needs	9
Career guidance	11
Effective teachers and trainers.....	13
Workplace learning.....	15
Tools to support the VET system	17
Strengths, challenges and recommendations	
Australia	19
Austria	21
Belgium (Flanders)	23
Chile	25
China	27
Czech Republic	29
England and Wales.....	31
Germany	33
Hungary.....	35
Ireland.....	37
Korea.....	37
Mexico.....	41
Norway.....	43
South Carolina.....	45
Sweden.....	47
Switzerland	49
Texas	51

The OECD's policy review of vocational education and training (VET), *Learning for Jobs*, comprises a programme of analytical work and individual country reviews and is designed to help countries make their VET systems more responsive to labour market needs.

Further information about the policy review and 17 country reviews of VET systems are available on the OECD website www.oecd.org/edu/learningforjobs.

Key policy challenges

PROVIDE THE RIGHT MIX OF SKILLS FOR THE LABOUR MARKET

- For vocational programmes beyond secondary level, share the costs between government, employers and individual students according to the benefits obtained.
- Provide a mix of VET training places that reflects both student preferences and employer needs. Achieve this through provision of workplace training and through planning and incentive mechanisms.
- Engage employers and unions in curriculum development and ensure that the skills taught correspond to those needed in the modern workplace.
- Through VET systems, provide young people with generic, transferable skills to support occupational mobility and lifelong learning, and with occupationally-specific skills that meet employers' immediate needs.
- Ensure all students in vocational programmes have adequate numeracy and literacy skills to support lifelong learning and career development. Identify and tackle weaknesses in this area.

REFORM CAREER GUIDANCE TO DELIVER EFFECTIVE ADVICE FOR ALL

- Develop a coherent career guidance profession, independent from psychological counselling and well-informed by labour market information.
- Provide adequate resources for career guidance and its pro-active delivery.
- Ensure an independent base to support objective career guidance.
- Provide good sources of information about careers and courses.
- Build a comprehensive framework of guidance through partnership with employers.
- Ensure that career guidance initiatives are properly evaluated.

ENSURE TEACHERS AND TRAINERS ARE WELL-PREPARED WITH INDUSTRY EXPERIENCE

- Recruit sufficient teachers and trainers for VET institutions, and ensure this workforce is well-acquainted with the needs of modern industry. To this end:
 - Encourage trainers in VET institutions to spend some of their time working in industry.
 - Promote flexible pathways of recruitment and make it easier for those with industry skills to become part of the workforce of VET institutions through effective preparation.
- Provide appropriate pedagogical and other preparation for trainers (including supervisors) of interns, trainees and apprentices in workplaces, adapting the level of preparation to the nature of the workplace learning being provided.
- Encourage interchange and partnership between VET institutions and industry, so that vocational teachers and trainers spend time in industry to update their knowledge, and vocational trainers in firms spend some time in VET institutions to enhance their pedagogical skills.

MAKE FULL USE OF WORKPLACE LEARNING

- Make substantial use of workplace training in initial VET.
- Ensure that the framework for workplace training encourages both employers and students to participate.
- Ensure workplace training is of good quality, through an effective quality assurance system and a clear contractual framework for apprenticeships.
- Balance workplace training by other provision (*e.g.* training workshops in schools) where other learning environments work better, or if workplace training is not available.
- Devise effective responses to the current economic downturn, to sustain workplace training, and cope with increased demand for full-time VET.

DEVELOP TOOLS TO ENGAGE STAKEHOLDERS AND PROMOTE TRANSPARENCY

- Engage employers and unions in VET policy and provision through effective mechanisms.
- Systematically engage with employers, trade unions and other key stakeholders to develop and implement qualification frameworks, supported by strengthened quality assurance.
- Adopt standardised national assessment frameworks to underpin quality and consistency in training provision.
- Strengthen data on labour market outcomes of VET, and provide the institutional capacity to analyse and disseminate that data.

The vocational challenge

WHY LOOK AT VOCATIONAL EDUCATION AND TRAINING?

- Global economic competition increasingly requires countries to compete on the quality of goods and services. That requires a labour force with a range of mid-level trade, technical and professional skills alongside the high-level skills associated with university education.
- Strains in existing vocational systems include lack of workplace training places and trainers. In some countries the rapid expansion of tertiary education has undermined school-based VET.
- VET has been neglected: it has received limited attention compared to other parts of the education system and is often seen as having lower status.

WHY IS INITIAL VOCATIONAL EDUCATION AND TRAINING NEEDED?

- Employees learn many skills in the workplace either informally or through formal training. But for several reasons, vocational training cannot simply be left to employers.
 - Firms provide firm-specific training to their employees, but they have little incentive to provide training for general skills. Firms may also face barriers or be too small to provide effective training.
 - Employers may be reluctant to recruit young people unless they are “job ready”, especially where hiring young inexperienced people is expensive (e.g. because of employment rules)
 - Those with lower levels of education, who would benefit the most from additional skills, are less likely to develop new skills once in the labour market.
 - A high-skilled labour force may encourage investment in the country, increasing economic growth, while an employee’s skills may promote the skills of workmates (*i.e.* creating positive “spillovers”).
 - Vocational programmes can pay off in the labour market, with studies showing good rates of return for upper secondary VET.

HOW INITIAL VET DEPENDS ON LABOUR MARKET CHARACTERISTICS

- In deregulated labour markets employers can recruit young people at low wages, train them, and retain the most productive as long-term employees. But young people may also find themselves trapped in low-skilled, poorly paid or unattractive jobs.
- In more regulated labour markets, with wage minima and strong employment protection, young people may need to rely more on formal pathways to employment, such as apprenticeships.
- Small and medium-sized enterprises (SMEs) may pursue little employee training: initial VET can compensate for the market failures that lead to an undersupply of training among adults.
- Many other factors also influence the supply of skills, including informal learning, migration flows, and labour force participation. Some labour market needs may be better met by other policies rather than through initial VET and this requires high-quality co-ordination across relevant policy areas.

ADAPTING VOCATIONAL PROGRAMMES TO THE MODERN WORLD

- Strong vocational programmes increase competitiveness but many programmes fail to meet labour market needs.
- In the 21st century, those entering the labour market need immediate job skills, but they also need the career and cognitive competences to handle different jobs and to sustain their learning capacity.
- Many skills requirements are volatile and driven by rapid technological change while technological advance has increased the demand for higher level technical skills, including at tertiary level.
- Many of those now participating in upper secondary vocational programmes do not expect to enter the labour market directly, but instead go on to post-secondary and tertiary education. Vocational programmes at upper secondary level come to fill a dual role.
- High-skilled blue-collar occupations include traditional apprenticeship trades like plumbing and electrical trades. But most OECD countries are also developing vocational programmes in new technical white-collar occupations including healthcare and computing.
- National systems of vocational education and training are very diverse – in some countries it makes little sense to refer to it as a single ‘system’. Within families of VET systems many differences are strongly reflected in labour market structures and in cultural attitudes (*e.g.* occupational aspirations).
- Countries vary on when vocational specialisation starts. VET can engage young people who are less academically minded in practical tasks, sustain their motivation for learning, and support their transition to work. But it is difficult for adolescents to make considered career choices and they risk closing off their options if they change their mind later.
- The risk that practical training crowds out broader academic skills and limits pathways can be managed if programmes involving early specialisation also require sufficient attention to numeracy, literacy and other general academic skills, as well as other wider soft competences.

MAIN POLICY DIRECTIONS

- Provide the right mix of skills for the labour market
- Reform career guidance to deliver effective advice for all
- Ensure teachers and trainers are well-prepared with industry experience
- Make full use of workplace learning
- Develop tools to engage stakeholders and promote transparency



Meeting labour market needs

VET PROGRAMMES MATTER FOR ECONOMIC COMPETITIVENESS

- To compete on the quality of goods and services, countries require a well-skilled labour force. This includes a range of mid-level trade, technical and professional skills as well as those high-level skills associated with university education.
- Although strong vocational programmes increase economic competitiveness, many vocational programmes currently:
 - fail to meet labour market needs
 - do not adequately prepare young people for jobs
 - are separated from the fast-changing world of modern economies
- Countries with strong initial VET systems have been relatively successful in tackling youth unemployment, even during the recent economic crisis.

BALANCE STUDENT PREFERENCES AND EMPLOYER NEEDS

- Three main factors determine the mix of VET programmes:
 - what students want to study
 - what employers need
 - what can be provided, given capacity constraints
- Reflect the benefits realised by both students and employers to achieve an effective VET system. The relative weight given to students versus employers in determining provision depends on:
 - who pays
 - age of student
 - breadth and orientation of programme
 - predictability of labour market outcomes
- Share the costs between student, employers and the government so as to achieve the optimal mix of programmes. Different approaches can be used but whatever approach is taken, VET funding needs to be consistent with the principles used to fund broader education.
- Use mechanisms to help in balancing student preferences and employer needs, such as:
 - linking programmes and places to employers' willingness to provide workplace training
 - assessing future skill needs through consultations with employers and unions and/or through systematic forecasts or assessments
 - providing effective career guidance that includes good information about labour market prospects
 - using financial incentives to encourage students to train in specific areas, to boost the amount of workplace training offered, or to expand off-the-job training opportunities to address demand
- Ensure that VET providers have both the incentive and the means to respond to new and emerging labour market needs. Financial incentives or competition between providers can stimulate a quick response although obtaining new equipment and qualified staff may be expensive and take time.

PROVIDE A BROAD RANGE OF SKILLS IN VET PROGRAMMES

- Ensure that VET students develop wider competencies alongside immediate job skills so they can more easily move from one job to another over their working life or shift to another career path.
- Blend school and workplace learning together, which is a powerful and effective method for:
 - developing many soft skills
 - preparing young people for jobs
 - smoothing initial transitions into the labour market
- Ensure sufficient attention is given to general academic skills as well as practical skills, since upper secondary vocational programmes often need to prepare students for further study as well as for jobs.
- Strengthen numeracy and literacy skills, which are often weak for students in vocational programmes and are increasingly important in the labour market.

PROVIDE THE RIGHT MIX OF SKILLS FOR THE LABOUR MARKET

- For vocational programmes beyond secondary level, share the costs between government, employers and individual students according to the benefits obtained.
- Provide a mix of VET training places that reflects both student preferences and employer needs. Achieve this through provision of workplace training and through planning and incentive mechanisms.
- Engage employers and unions in curriculum development and ensure that the skills taught correspond to those needed in the modern workplace.
- Provide young people with generic, transferable skills to support occupational mobility and lifelong learning, and with occupationally-specific skills that meet employers' immediate needs.
- Ensure all students in VET programmes have adequate numeracy and literacy skills to support lifelong learning and career development. Identify and tackle weaknesses in this area.

Career guidance

PROVIDE EFFECTIVE CAREER GUIDANCE

- Recognise that rapidly evolving jobs and careers have expanded career opportunities, but choices are becoming harder, and career guidance is therefore becoming both more important and more demanding. If young people choose the wrong career, the costs of later changes can be high.
- Provide reliable and impartial sources of guidance so that young people do not have to rely on informal sources of guidance, such as family and friends, which have their strengths, but may only offer choices that are familiar.
- Develop effective guidance services that can yield large returns by developing the career-related skills, self-awareness and self-esteem which lead to rewarding choices.
- Tackle weaknesses in existing provision, including:
 - staff providing career guidance sometimes deal inadequately with labour market issues
 - services may be fragmented and under-resourced
 - advice often lacks objectivity
 - relevant labour market information is not always available
 - career guidance initiatives are often not effectively evaluated

ESTABLISH A COHERENT, INDEPENDENT AND COMPREHENSIVE GUIDANCE PROFESSION

- Develop a separate profession of career advisors. Too often the career guidance profession is assimilated into psychological counselling, distorting and marginalising its role..
- Ensure that career advisors have:
 - a good knowledge of labour markets, careers and learning opportunities
 - the capacity to identify further relevant sources of information to provide more specific advice
 - the ability to draw out from young people their interests, aptitudes and objectives so as to help them make choices which are both realistic and fulfilling
 - the competencies to help individuals to manage their own careers
- Design training for career advisors to provide these competences
- Develop a qualification system for career advisors that covers not only those in schools but also other guidance professionals working in tertiary education and in employment offices and other services for adults. This would facilitate recognition and transferability of career advisor skills across institutions.
- Preserve their independence of guidance professionals from the institutions (such as schools) in which they are based. This could be achieved in several ways including:
 - externally managing a professional career guidance service that functions in schools
 - training teachers as guidance professionals, held accountable to standards agreed with the external guidance service, and with a fixed time allocated to guidance work
- Embed individual career guidance within a comprehensive career guidance framework, including a systematic career education programme to inform students about the world of work and career opportunities.

- Encourage an understanding of the world of work in schools from the earliest years, backed by visits to workplaces and workplace experience.

SUPPORT GUIDANCE WITH RESOURCES, INFORMATION AND EVALUATION

- Provide adequate resources for guidance services and protect them against the risk of being squeezed because they are resourced at the margins of an activity such as regular teaching.
- Deliver key elements of guidance pro-actively to all students, so that students can be supported by one-to-one guidance by professionals when they make key career decisions.
- Regularly update information sources to identify emerging occupations and areas of skills shortage, as well as current and potential areas of skills oversupply and redundancy. An important function of guidance personnel will be to guide individuals in their use of all these information sources.
- Properly evaluate career guidance initiatives to establish the case for effective resourcing and identify how best to employ those resources.

Effective teachers and trainers

SUPPORT EFFECTIVE LEARNING THROUGH THE QUALITY OF TEACHERS AND TRAINERS

- Ensure that all teachers and trainers in VET systems are able to support effective learning, whether they are:
 - *vocational trainers* in VET institutions or workplaces, mainly responsible for practical vocational skills
 - *vocational teachers*, primarily responsible for theoretical vocational skills
 - *general teachers*, responsible for general subjects, such as mathematics or second languages
- Tackle recruitment difficulties arising from ageing workforces in VET institutions.
- Encourage workplace experience for teachers and trainers in VET institutions.
- Strengthen workplace training.

MANAGE WORKFORCE IN VET INSTITUTIONS MORE FLEXIBLY

- Develop diversified routes into the profession to encourage more people equipped with practical workplace skills to become trainers in VET institutions. This includes:
 - Allowing and encouraging staff to work part-time as trainers and part-time in industry
 - Using alternative certification systems to attract highly qualified candidates to the profession
- Provide flexible pedagogical training suited to the different roles of teachers and trainers.
- Develop better data collection systems on the vocational teacher and trainer workforce.

STRENGTHEN PEDAGOGICAL SKILLS OF TRAINERS IN INDUSTRY

- Equip supervisors of apprentices and trainees with the necessary pedagogical skills and specific competences to:
 - pass on practical skills
 - transmit theoretical knowledge
 - help apprentices and trainees get used to the social codes of the workplace
- Ensure minimum standards of trainer preparation, including pedagogical training or relevant management competences, linked to the level of workplace training responsibility.

STRENGTHEN LINKS BETWEEN VET INSTITUTIONS AND INDUSTRY

- Foster closer collaboration and exchange between VET institutions and industry.
- Promote flexible career pathways between industry and the trainer profession in VET institutions.
- Encourage trainers in VET institutions to work temporarily in companies to update their vocational competences.

Workplace learning

WORKPLACE LEARNING IS A POWERFUL TOOL IN VOCATIONAL EDUCATION AND TRAINING

- Workplace learning includes a diverse set of practices, including:
 - Job shadowing in which students “shadow” a worker to learn about their job
 - service learning voluntary work by students, typically in non-profit organisations
 - internships in which students work for a firm for zero or nominal wages
 - apprenticeships which provide more structured long-term workplace learning, typically over a period of years, leading to a qualification
- Workplaces provide a strong learning environment because they offer real on-the-job experience that makes it easier to acquire both hard and soft skills.
 - Hard skills may require practical training on expensive equipment. Up-to-date equipment is already available in firms, along with people who know how to use it and can explain associated techniques.
 - Soft skills – like problem solving, conflict management and entrepreneurship – are more effectively learnt in workplaces than in classrooms and simulated work environments.
- Workplace learning facilitates a two-way flow of information between potential employers and employees about each other, making later recruitment much more effective and less costly and usefully complementing career guidance.
- Employer willingness to offer workplace training provides a signal and verification that a VET programme is relevant and has labour market value. When workplace learning is a VET programme requirement, it can help to keep student places aligned with likely future employment demand.
- Trainees in the workplace can make a productive contribution to the output of the firm and to the economy as a whole, if the workplace learning environment is structured to facilitate this.

BALANCE WORKPLACE LEARNING WITH OTHER TRAINING SETTINGS

- Combine workplace training with other training components. Theory components often best learned in a classroom setting and some practical skills can be more effectively learnt off the job:
 - where equipment is expensive or dangerous, simulated work environments may be more cost-effective
 - off-the-job training can operate at a slower pace and provide students with time to initiate their skills
 - economies of scale may favour teaching some basic practical skills collectively in training workshops
- Use off-the-job training to minimise potential gaps in skills arising because of variations across local employers who may not provide the same workplace learning opportunities.
- Adapt the timing of workplace and classroom components to best suit each occupation. Some require substantial theoretical and practical training before workplace learning while for others, parallel classroom and workplace learning is more appropriate.

ENSURE QUALITY IN WORKPLACE LEARNING

- Ensure that apprentices, employers and VET institutions share a common understanding of the training, as well as clearly defined roles and responsibilities.

- Ensure workplace trainers are well-prepared and can respond to the strong demands and expectations for training provided on the job.
- Provide a good range of vocational skills through workplace learning, including both hard and soft workplace skills, and offer an effective route into the relevant job.
- Require apprentices and trainees to perform a variety of tasks that increase in complexity over time and allow trainees to work autonomously and practice their skills. This can take place either within a single firm or by rotation across firms.
- Exercise careful quality control in apprenticeships and traineeships to ensure that the employers involved deliver on their training responsibilities.
- Provide a clear contractual framework for apprenticeships and an appropriate legal framework to underpin other forms of workplace learning.

DEVELOP APPROPRIATE INCENTIVES FOR EMPLOYERS AND TRAINEES

- Ensure that employers know that they can expect to obtain net benefits from providing workplace training places. Studies on the full spectrum of costs and benefits can encourage employers to take trainees and apprentices, by demonstrating the real economic returns to them.
- Provide government incentives for workplace training within VET programmes in line with the spillover benefits to other employers and to society at large. But incentives should be carefully designed to avoid two potential weaknesses, namely:
 - subsidising places that would have been offered without the subsidy (so-called deadweight losses)
 - encouraging firms to reduce other types of training that are less generously subsidised (so-called substitution effects)
- Sustain incentives for employers during an economic downturn, where economic pressures would otherwise limit the active participation of employers. Measures to cushion apprenticeships and other forms of workplace training from severe economic downturn could include:
 - Careful use of temporary subsidies for apprentice starts
 - Creation of more apprenticeship places in the public sector
 - Some means of sharing risks between different employers for taking on an apprentice
 - More practical training in VET institutions to compensate for the loss of workplace training
 - Postponing shift from general education to occupation-specific training in education and training systems
- Ensure that the benefits of workplace training remain attractive to potential apprentices, relative to the alternatives of an academic track in tertiary education, or direct entry into the labour market.

Tools to support the VET system

ENGAGE EMPLOYERS AND UNIONS

- Engage employers, unions and other stakeholders to strengthen links between vocational programmes and labour market needs.
- Draw on employers' perspectives and capacity to:
 - assess whether the content of curricula and qualifications meet current labour market needs
 - guide their adaptation to emerging requirements
 - develop qualifications and workplace training arrangements
- Establish appropriate bodies for engaging employers and unions in vocational programmes at national level, regionally, according to industrial sectors, or at the level of the individual institution. Taking account of the broader country context, they may have an advisory role or a decision-making one.
- Ensure that institutions and mechanisms to engage employers with the VET system represent the diverse perspectives and opinions found within employers' groups.
- Recognise that employers and unions have mixed incentives:
 - Employers as a whole have very strong interest in general transferable skills, while individual employers and sectoral groupings often have narrower interests.
 - Trade unions can voice the student and employee interest in transferable as well as firm-specific skills. They have incentives to ensure that existing workers have access to good-quality training and have transferable skills but also have incentives to limit access to occupations.
- Find the appropriate role for government that supports the interests of students and balances the perspectives of employers and unions.

MAKE CAREFUL USE OF QUALIFICATION FRAMEWORKS

- Design qualifications frameworks to meet clear goals:
 - Unify the vocational education and training system by locating diverse qualifications within a common framework
 - Increase transparency, so that the value of different qualifications can be more clearly recognised by students, employers and other stakeholders
 - Facilitate lifelong learning, and improve access to higher-level education for all, by clarifying access requirements in terms of a 'level' in the qualifications framework
- Recognise the key elements required for qualifications frameworks to be effective. They need to be:
 - underpinned by a strong methodology for allocating qualifications to levels
 - supported by key stakeholders
 - backed by complementary measures to unify the education and training system and improve transitions
- Embed the qualifications framework within a wider approach to ensuring quality and coherence.

ADOPT STANDARDISED NATIONAL ASSESSMENT FRAMEWORKS

- Provide a systematic means of ensuring that all those seeking the same qualification are assessed against the same standards and criteria through a standardised national assessment framework that:
 - ensures consistency in the mix and level of competences acquired
 - allows competences to be acquired in diverse ways, and encourages innovation and efficiency in the acquisition of skills
 - provides a clear basis for recognition of prior learning

STRENGTHEN DATA AND THE CAPACITY TO USE DATA

- Ensure that good data on the labour market outcomes of vocational programmes is available to:
 - underpin evaluations of whether programmes meet labour market needs
 - inform student career choice
 - adjust provision in vocational programmes and government funding priorities
- Develop data sources such as:
 - Systematic surveys of those who have recently left vocational programmes
 - Census and survey data relating labour market information to vocational qualifications
 - Sample longitudinal surveys, that follow a cohort of young people through vocational programmes and later transitions
 - Full longitudinal datasets that link vocational programme administrative records to later experience, including employment experience through an individual reference number
- Establish research centres to support policy development on vocational programmes through better data, research and analysis.

STRENGTHS

Australia has a very well developed VET system, which enjoys a high degree of confidence. In particular:

- Engagement of employers is strong.
- The national qualification system is well established and understood.
- The VET system is flexible and allows for a fair amount of local autonomy and innovation to adapt learning to local circumstances.
- Data and research on most VET issues are good.

CHALLENGES

- The division of responsibilities between the Commonwealth and state and territory governments is unclear.
- Principles underpinning funding are not apparent and nor consistent with human capital policies and principles.
- The use of skills forecasting creates some difficulties.
- There are some weaknesses and gaps in the relevant data.
- Apprenticeships are rigid and seem to depend on duration rather than competence.
- Training package development and implementation processes are inefficient.
- The ageing of the teacher labour force is a serious problem.

RECOMMENDATIONS

1. Commonwealth, state and territory governments should seek to agree common principles for VET funding and provision and to achieve as much administrative consistency as possible, bearing in mind the appropriate interests of local democracy in a context of devolved government. Costs and benefits arising from local variations and from duplication of responsibilities should be quantified.
2. Students should be entitled to pursue VET qualifications without charge up to the level normally attained at the end of schooling, that is, up to Certificate II or III. Fees for higher-level VET qualifications should be levied on the same broad basis as for higher education and defrayed through HECS income-contingent loans.
3. Students entitled to funding should be able to choose VET providers. Open competition should be accompanied by support measures designed to ensure that a good range of provision is accessible to all, including disadvantaged groups, that better information is available to potential students on the quality of providers, and that different types of providers can compete on a fair basis.
4. Skills forecasts are often unreliable and should not be the foundation of central planning. In future, there should be more emphasis on a system driven by student demand balanced by employer willingness to offer workplace training.
5. A broader range of quality and outcome data at the provider level should be developed and made available. This will support student choice and provision driven by student demand. Data should become a systematic

element of programme and policy decision making. Efforts should be made to fill the data gaps, including an extension of the Student Outcome Survey.

6. The commendable reforms that base apprenticeships on competencies now need to be translated into action, allowing flexibility in the length of apprenticeships and supporting that through a common procedure for their assessment. Costs and benefits of apprenticeships should be analysed, reforms should be evaluated and the results used for policy planning. Ways of integrating apprentices into the production process earlier during their training should be explored.
7. Training packages should be replaced by simple and much briefer statements of skills standards. Consistency in standards throughout Australia should be achieved through a common assessment procedure to determine whether the necessary skills have been acquired.
8. Initiatives in which trainers work part-time in VET providers and part-time in industry should be encouraged. Innovative strategies are necessary to sustain the numbers and skills of the teacher and trainer labour force in providers. Better data on VET teachers and trainers should be systematically collected, published and used for planning and evaluation purposes.

STRENGTHS

The Austrian VET system has a number of strengths:

- 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 *Berufsreifprüfung* (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

- 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.

Belgium (Flanders)

STRENGTHS

- There is a good range of vocational options at different levels. Initial secondary education offers full-time and part-time programmes, while continuing VET provides further learning and second chance opportunities in centres for adult education, and training centres of the Flemish Employment and Vocational Training Agency (VDAB) and the Flemish Agency for Entrepreneurial Training (*Syntra Vlaanderen*).
- The average performance of 15-year-olds in reading, mathematics and science is very strong by international standards, as indicated by PISA assessments, in which Flanders has been consistently among the best performing countries.
- A commitment to universal upper secondary education is embedded in compulsory education up to age 18, with the possibility of part-time education from age 16.
- Policy development is dynamic, as illustrated by the recent green paper entitled “Quality and opportunities for every pupil”, the “Competence Agenda” and the “Pact 2020” agreement concluded between the government and social partners. Evidence is used extensively in reforms.
- The Flemish VET system gives commendable attention to entrepreneurial training through *Syntra Vlaanderen*, which offers flexible routes to acquire entrepreneurial competences.

CHALLENGES

- A proportion of students have weak literacy and numeracy skills.
- Students are tracked at a young age (14, with institutional transition at age 12) and there are limited opportunities for upward progression between secondary tracks.
- The share of unqualified school leavers is high. In 2006, 12.4% of 18-24-year olds did not have a secondary qualification and did not follow secondary education.
- Some parts of the VET system make limited use of workplace training, and the effectiveness of quality assurance mechanisms for workplace training also varies.
- The mix of provision is dominated by student preferences in school-based VET, with limited mechanisms to take into account labour market needs.
- The quality of career guidance provided in compulsory education, including collaboration between schools and pupil guidance centres, is variable. Sources of career information are fragmented.

RECOMMENDATIONS

1. Strengthen the core general skills component in programmes that currently contain limited general education, in particular in BSO (vocational secondary education), DBSO (part-time vocational secondary education) and *Syntra* apprenticeships. For those who wish to obtain general education beyond the core general skills component, create options to do so.
2. Systematically identify those with literacy and numeracy problems at the beginning of VET programmes and provide targeted support to those in need. Enhance data and research on the achievement of the final

objectives and on ways to achieve these. We welcome the ongoing sample-based standardised assessment of the final objectives and recommend extending this approach.

3. Postpone tracking at least until the age of 14 and make education in the period preceding tracking fully comprehensive.
4. Sustain and further develop workplace training. Ensure the quality of workplace training, by controlling its content, strengthening the assessment of competences and providing an appropriate level of preparation to those who supervise students.
5. Ensure the mix of provision is more responsive to labour market needs by taking the availability of workplace training into account to balance the influence of student preference in upper secondary VET. This should be complemented with high quality career guidance. Reform the elements of funding that risk distorting the mix of VET provision.
6. Strengthen and develop career guidance by:
 - Ensuring that career guidance receives attention, separately from psychological counselling, and is not submerged by it. Consider the establishment of a separate career advisor profession.
 - Ensuring that individuals receive guidance that is objective and independent from the providers of education and training programmes.
 - Creating a comprehensive website with career information about all levels of education and training.

STRENGTHS

The Chilean VET system has a number of strengths:

- It has been underpinned by a dynamic economy, with GDP growth averaging 6% over the last two decades – but Chile has not escaped the global economic slowdown in 2009.
- Society places a high value on education and training, with strong social demand for education, and fast-increasing participation in post-compulsory education; upper secondary graduation rates are up from 46% in 1995 to 71% in 2007 (EAG, 2009).
- Efforts to improve schooling quality may be paying off: the reading performance of students in PISA improved between 2000 and 2006 (PISA, 2006).
- The government's commitment to develop and reform the VET system is illustrated by the recent work of the VET Commission and the creation of the National Council for VET.

CHALLENGES

Among the challenges faced by Chile:

- The various elements of the VET system are weakly connected to each other, both in institutional and curricular terms. The initiative to create a qualifications framework is a welcome attempt to address this challenge, but its implementation faces a number of obstacles.
- The literacy and numeracy skills of 15 year olds in Chile are not as strong as they should be, and this is likely to be a particular problem among those in vocational education and training programmes.
- Workplace training, as part of VET programmes, is weakly developed. Many upper secondary VET students do not participate in workplace training and the mechanisms to assure its quality of are weak.

AMONG THE REPORT'S POLICY OPTIONS

- Systematically engage with employers, trade unions and other key stakeholders to develop and implement the qualification framework. This may involve a gradualist approach to implementation, to ensure the full buy-in of all stakeholders.
- Strengthen quality assurance throughout the VET system to support the qualifications framework – within tertiary education ensuring that the existing quality assurance arrangements can address the specificity of VET.
- Ensure that VET programmes devote sufficient space in the curriculum, and sufficient good quality teaching, to the acquisition of hard and soft general skills.
- Identify particular numeracy and literacy weaknesses among students in VET programmes and target help to those who need it.
- Starting with the initiative to set up the National Council, establish systematic architecture for consultation between the VET system and industry, allowing for consultation at sectoral and regional levels.

- Make systematic efforts to encourage workplace training in all parts of the VET system, building partnerships between VET institutions and industry; establish effective quality standards for the workplace training.

STRENGTHS

Many strengths are apparent in the Chinese system for vocational education and training in upper secondary schools. The strengths include:

- The establishment of 9 year schooling with almost all children in China now completing lower secondary education.
- A rapidly increasing number of young people now stay on in upper secondary education – now around three quarters of the cohort, and fast increasing numbers of young people in tertiary education. At upper secondary level about half the cohort (as a matter of policy) enter upper secondary vocational schools – with more than 20 million students now in vocational schools.
- A strong and simple model for upper secondary vocational education – involving a range of specialisms, a good percentage of general academic skills underpinning all the programmes, and a commitment to workplace training and close relationships with employers.
- Upper secondary education typically requires fees, but the government has introduced a number of measures, both at national and provincial level to try to overcome financial barriers and ensure that as many students stay on in school – this includes a national scheme to offer a CNY 1500 (Yuan renminbi) per year subsidy to students in VET schools, largely covering their fees, and from 2009 an initiative to make tuition free for upper secondary vocational school students.
- China has strong arrangements to ensure that teachers in vocational schools remain abreast of the requirements of modern industry. Teachers in vocational schools are required to spend one month in industry each year, or two months every two years. In addition, many schools employ a significant number of part-time teachers who also work in industry.

CHALLENGES

Workplace training

- Workplace training is actively encouraged by government subsidies and current policy is that each student should spend one year on workplace training during their upper secondary programme. But co-operation with employers is variable. But there are few quality standards for workplace training and few regional, sectoral or national bodies to engage employers and link them to the VET system.

Resources and standards

- While there are some compensatory arrangements, to a great extent the resources of any school depend on the resources of the province and county/district of which they are part. Given China's rapid but uneven economic development, the effect is to leave schools in some rural areas and poorer provinces under-resourced. There are few clear minimum standards for vocational schools in terms of equipment, teachers and so on. While there are some national guidelines, they are only implemented where resources are available. One of the main standards is that of 'key national schools', but this appears, by design, to require resources not available to most schools.

Planning and co-ordination

- Planning to meet labour market needs is insufficient. Provinces manage some schools directly through the education commission, some through other government bodies such as the agriculture bureau, while many schools are also managed at district and county level. This creates a formidable co-ordination problem. On the demand side, data on labour market demands are often lacking.

AMONG THE REPORT'S POLICY OPTIONS

Workplace training

- Create a standard expectation of a minimum period of workplace training as an element in upper secondary vocational education and training.
- Consider carefully the use of financial incentives taking into account the limited evidence of useful impact.
- Develop a standard agreement or contract for workplace training to confirm the rights and obligations of trainees and training firms.
- Establish standards for workplace training in consultation with employers.
- Encourage local associations of training firms to manage and support workplace training offers for vocational schools.
- Develop mechanisms to engage employers at regional and sectoral level to plan provision, agree curricula and support workplace training.

Resources and standards

- Overall expenditure on education, including VET, should be increased, as recommended in previous OECD reviews of China.
- Given big regional discrepancies in available funding on education, extra resources should be allocated to the poorest localities in order to remove financial barriers to participation in VET and to improve its quality. Mechanisms to this end might include:
 - Centrally allocated per capita funding support for upper secondary education, provided by the national government directly to the counties where upper secondary (including VET provision) is most limited, and where quality (measured in terms of teacher indicators such as pupil-staff ratio and teacher qualifications) is weakest.
 - More fundamentally, enhanced fiscal transfers to ensure a stronger funding base for education at provincial and county level.
- Establish minimum quality standards for schools that all regions of China and all schools can reasonably aim for, instead of, or in addition to, the standards of key national schools. Such quality standards might be linked to resource reallocation.

Planning and co-ordination

- Provide a mix of VET programmes that reflect both student preferences and employer needs.
- Develop planning arrangements to manage the mix of skills provision in consultation with employers while recognising the information challenges.
- Use workplace training and employer willingness to provide it as a guide to the appropriate mix of provision.
- Improve co-ordination in the provision of VET across different levels of government and VET providers.



Czech Republic

STRENGTHS

The Czech VET system has a number of strengths:

- The average academic level of 15 years-old measured by PISA is good.
- The majority of students complete their upper secondary studies; the dropout rate from this level of education is below the OECD average.
- The Czech Republic has a very impressive data base on education and labour market outcomes of education, one of the best the OECD team has seen.
- Many reforms have been launched recently, including: the setting up of a new qualification system; the introduction of a national standardised exam in apprenticeship programmes, the launch of a major new adult education initiative, and new tools to improve career guidance.
- The government is actively fostering stronger participation of social partners in VET. Sector Councils provide a good example of the co-operation between social partners and policy makers.

CHALLENGES

- The performance of students and the quality of teaching in apprenticeship programmes (*střední odborné učiliště – SOU*) is low in comparison to general and technical programmes (*střední odborné školy - SOS*) leading to the maturita exam.
- Governance of upper secondary VET at regional level lacks the transparency and accountability mechanisms that would ensure a match between labour market demand and student choice, and secure quality standards across the country.
- The provision of training is highly variable in terms of the number of students participating, length and quality; it depends on the sector and individual schools. Participation of companies in work place training provision is low.
- The institutional system for social partners' involvement in VET is fragmented. Not all VET related areas are subject to social partners' consultation.
- Initial and in-service education and training of upper secondary school counsellors focuses more on pedagogical and psychological counselling than on career guidance. School counsellors combine career guidance with teaching other school subjects, and providing guidance for personal problems and study difficulties.
- Career guidance is under the responsibility of two Ministries: the Ministry of Education, Youth and Sport and the Ministry of Labour and Social Affairs, which might contribute to the fragmentation of the system.

RECOMMENDATIONS

1. Improve teaching and systematically assess the quality of general education in VET programmes, particularly in the apprenticeship programmes. Targeted help should be directed at weak performers.

2. Improve the quantity and quality of career guidance in basic education by:
 - Splitting counselling from career guidance, which would become the responsibility of a ‘career advisor’.
 - Introducing a focus on career guidance and more flexibility in the initial training of career advisors alongside better access to good quality in-service training for existing staff.
 - Diversifying forms of career guidance provision.In the longer run similar reforms should be introduced in career guidance offered in upper secondary VET.
3. Establish clearer procedures and more transparent criteria covering the development of regional education plans. These should strengthen the involvement of employers and give more weight to student preferences in planning the mix of upper secondary provision.
4. Systematically enhance the quantity and quality of workplace training in both apprenticeship and technical programmes through the establishment of a national framework for workplace training. This should involve well-targeted incentives for schools, employers and students and the establishment of national workplace training standards, backed by effective quality assurance.
5. Introduce a standardised assessment covering the practical elements in technical programmes.
6. Employers and unions should be more engaged in VET. To this end there should be some simplification and rationalisation in the arrangements for social partners’ involvement in VET with enhanced and clearly defined responsibilities for the bodies concerned.



England and Wales

STRENGTHS

- England and Wales are committed to a step improvement in the level of workplace skills.
- Substantial resources have been made available for this task.
- The conscious attempt to engage employers is commendable.
- VET policy making in England and Wales is self-evidently dynamic and innovative.
- The system is flexible and allows for tailor-made training solutions for employers.

CHALLENGES

- The meaning of employer engagement is very fluid.
- Few countries have achieved strong employer engagement without an equally strong apprenticeship system, which remains elusive in England and Wales.
- In spite of the government's declared intention to have much VET employer-led, the delivery of the Leitch targets will require a very strong lead from government.
- Policy structures are both more complex and more unstable than in most other OECD countries, and this inhibits employer engagement.
- A demand-driven system may imply more of a market in providers. But attempts to open up the market have been halting and the effects uncertain.
- While there is a substantial base of data and analysis, it remains fragmented, with inadequate attention to international experience.
- The current sharp economic downturn is imposing a number of pressures on the skills system.

RECOMMENDATIONS

1. Priorities for employer engagement should be clearly defined and the rationale for seeking that engagement should be set out by the governments of England and Wales. Evidence on employer engagement should be further developed. Fragmented surveys should so far as possible be consolidated and co-ordinated.
2. Given that complexity and volatility in the VET system hinder employer engagement, the institutions of the VET system should be simplified and stabilised. We welcome and support the proposals of the UK Commission for Employment and Skills (UKCES) in this respect. These proposals need to be sustained and further developed.
3. As a way to engage employers so as to reach the skills targets identified in the Leitch report, governments in England and Wales should explore measures including those designed to reduce the cost of training, the establishment of a stronger evidence base to encourage employer support for training, and, possibly, the use of compulsive measures including training levies.

4. Attempts to foster employer engagement in England and Wales should be closely linked to the development of the apprenticeship system.
5. Governments in England and Wales should take account of previous experience, including international experience, when extending the market in VET provision. In particular users need good information about the quality of different programmes and institutions.
6. England and Wales should take account of international evidence more routinely in its policy-making process. Consider the establishment of a national VET institution to oversee VET research and analysis.

STRENGTHS

- Vocational education and training is deeply embedded and widely respected in German society. The system offers qualifications in a broad spectrum of professions and flexibly adapts to the changing needs of the labour market.
- The dual system is especially well-developed in Germany, integrating work-based and school-based learning to prepare apprentices for a successful transition to full-time employment.
- A major strength of the dual system is the high degree of engagement and ownership on the part of employers and other social partners. But the system is also characterised by an intricate web of checks and balances at the national, state, municipal, and company levels that ensures that the short-term needs of employers do not distort broader educational and economic goals.
- The VET system as a whole is well-resourced, combining public and private funding. Germany has maintained strong financial support and maintained the apprenticeship offer for the VET system even during the crisis.
- Germany has a well-developed and institutionalised VET research capacity, including the Federal Institute for VET, (*BIBB*), and a national network of research centres that study different aspects of the system to support continuous innovation and improvement in the VET system.

CHALLENGES

- The transition system, now serving nearly as many young people as the dual system, suffers from undue fragmentation and an absence of transparency. Despite the very substantial resources devoted to the system, too few programme participants make a successful transition into the regular VET system.
- Career guidance seems highly variable across the *Länder*, with no single agency responsible for assuring delivery of quality information and guidance services to all students.
- Some students leave compulsory school with weak core academic skills. The VET system is not currently organised to ascertain whether this is in fact a problem or, if so, to address it.
- The evaluation of dual system students at the end of their apprenticeship is dominated by the Chamber exam. Because their school performance does not count in the Chamber exam, students may not take their schooling seriously, thereby limiting their ability to participate successfully in some form of tertiary education.
- Although Germany has recently opened more pathways from upper-secondary VET to tertiary education, to date very few VET graduates have made use of those pathways.
- Shrinking cohort numbers due to demographic decline is providing an important contextual challenge.

RECOMMENDATIONS

1. Create a coordinating committee for the transition system within each Land to improve co-operation between stakeholders and make transition offers more transparent. Evaluate the cost-effectiveness of individual transition measures and roll out the most promising initiatives to the whole country.

2. Reform the career guidance system to deliver well-informed guidance to all. Fix lead responsibility for career information and guidance in a single governmental agency. In the longer run, consider structural reform of the dual system to facilitate effective career choice.
3. Assess the literacy and numeracy skills of all students entering the transition system, and those entering apprenticeships without a school leaving certificate from a Realschule or Gymnasium. Provide explicit basic skills instruction for those in need of remediation. Place greater priority on general education and broad academic skill development in the part-time vocational schools.
4. Make inclusion of the school mark in the final certificate mandatory and include an explicit assessment of literacy and numeracy skills in the final school exam. In the longer run, merge the Chamber exam and the school exam into a single final assessment. Strengthen collaboration between schools and employers through an integrated assessment process.
5. Open access to tertiary education further and address transition barriers perceived by students. Design adequate guidance, induction and financial support measures for less academically trained people wanting to attend university. Promote dual universities and dual programmes at regular universities and encourage more flexible, part-time university offers and the recognition of prior learning and experience.



Hungary

STRENGTHS

- Since 1989, Hungary has made significant efforts to restructure its VET system to face the challenges of the market economy. It has implemented major reforms to improve the ability of VET to meet labour market needs.
- The training levy provides a significant and reliable source of funds for VET and played a crucial role during the transition years.
- The Hungarian VET system can rely on a strong national qualifications framework.
- The number of 15-to-19- year-olds is set to decline sharply; this presents both an opportunity and a challenge for the Hungarian VET system.
- Policy makers' strong commitment to reform shows Hungary's will to address the challenges faced by VET.
- In the medium term, Hungary's GDP per capita is expected to converge to the EU average (ECB, 2008), and its economy is expected to grow by around 4% even though the current economic context is difficult.

CHALLENGES

- The current VET system is strongly school-based with relatively few links to the labour market.
- The Hungarian school system's early tracking and multiple selection mechanisms potentially raise problems of both efficiency and equity.
- Data available are insufficient in several important respects, such as the labour market outcomes of different VET programmes, the various funding sources of VET and the use of funds from the training levy.
- Many trainers are approaching retirement and there are few young trainers.
- VET has relatively low status and many students are oriented to VET because of poor academic performance.
- Hungary's employment rate is low by international standards. Compared to other European countries, the economic inactivity rate of young people is particularly high.

RECOMMENDATIONS

1. Standardise the transition to all types of secondary school after the 9th grade, rather than the 8th grade, a including in vocational training schools and start practical training in the 10th grade rather than in the 11th grade. These two elements should be implemented as a package.
2. Collect and publish Information on the labour market outcomes of VET on a school and programme basis, starting with a pilot survey of students leaving VET programmes.
3. Adequately prepared advisers should provide systematic career guidance in all elementary schools on the range of secondary level programmes available and their respective outcomes. Students in vocational training and vocational secondary schools should receive comprehensive, impartial and reliable information on all the occupations available to them.

4. All VET programmes should provide a substantial amount of practical training in the workplace or in an environment closely related to a workplace.
5. Regularly publish information about the rules of the levy in a form comprehensible to employers and collect and publish data about the revenues collected through the levy, how it is spent and the outcomes achieved. This would provide an essential basis for reviewing the operations of the levy.

STRENGTHS

The Irish VET system has a number of strengths:

- There is a good range of provision of different types of VET at post-secondary level, targeted at a wide range of different client groups, including those in and out of work and with second chance opportunities.
- The national qualifications framework is comprehensive, integrating both vocational and general qualifications and includes a strong commitment to the avoidance of dead-ends and pathways of progression.
- Collaboration with social partners is well-established and takes place at most relevant levels.
- The apprenticeship system is well-structured with a systematic blend of on and off-the-job elements.
- At high level there is good co-operation between the two lead departments, with little sense of rivalry. The National Skills Strategy (www.skillsstrategy.ie) provides for common objectives.
- There are some innovative ways of engaging employers in a bottom-up approach to provision, such as Skillnets – an initiative widely supported by employers.

CHALLENGES

- The current economic crisis is making intense demands on the system to provide education and training for a sharply increasing number of people and poses serious challenges in particular to the apprenticeship system.
- Apprenticeships are limited to a narrow set of occupations. Workplace training is insufficiently used in many VET programmes.
- Many of those looking after VET students, in particular those in companies, lack pedagogical training.
- Weak literacy and numeracy are serious problems among many learners but problems are often not identified in time or adequately addressed.
- FÁS (Foras Áiseanna Saothair), the Irish National Training and Employment Authority, is a large body with multiple missions. Evaluations and data to assess its efficiency and effectiveness are lacking.
- Data on labour market outcomes are fragmented and research on VET is scarce. The wide range of VET programmes has not been systematically evaluated.
- Career guidance services are fragmented and weakly underpinned by information on labour market opportunities.

RECOMMENDATIONS

1. Review the apprenticeship system to improve its efficiency and fairness in addressing the skills needs of the labour market. Make extensive use of workplace training in all VET programmes building on the existing types of provision and the experience with apprenticeship.
2. Respond to the crisis, both modifying and reinforcing existing measures.

- Offer differentiated support to redundant apprentices, depending on their occupation and how far they have already progressed in their apprenticeship.
 - Review, immediately, the Employer Based Redundant Apprentice Rotation Scheme with a view to shifting the resources involved to more cost-effective across-the-board measures in support of redundant apprentices.
 - Consider measures to retain young people in education and training where the benefits outweigh costs.
 - Carefully target education and training programmes for adult learners at their particular skills needs as well as the needs of the labour market.
3. Conduct a review of FÁS training services to enhance mechanisms for accountability and quality improvement. This would involve an improvement in the quality of data and evaluation, and consultation with employers.
 4. Systematically identify the literacy and numeracy problems of those who come into contact with training services and provide basic skills support to those in need.
 5. As a means of enhancing the competences of the VET workforce ensure that all teachers, trainers and instructors have some pedagogical training, and as a longer term goal offer pedagogical training to supervisors of VET students (e.g. apprentices, trainees) in companies. Encourage convergence in the qualification requirements for teaching in different sectors of the VET system.
 6. Create an instrument to track progression through the education and training system, undertake routine evaluation of programmes and pursue economic analysis such as cost-benefit studies of apprenticeships. Encourage more research on VET. Create a comprehensive website with career guidance information.

STRENGTHS

- The level of educational attainment among young people is very high: 97% of 25-to-34-year-olds have completed upper secondary education and 53% have tertiary education.
- Education is highly valued by all parts of Korean society.
- 15-year-olds perform very well in numeracy, literacy and science, as illustrated by PISA results.
- The government is committed to increasing employer involvement in VET policy development and implementation, as illustrated by the recent creation of sector councils and Meister schools.
- The tertiary VET sector is well developed; around 32% of tertiary students are enrolled in junior colleges and polytechnic colleges.

CHALLENGES

- VET institutions often see themselves as having a largely academic orientation but they are expected to provide job-ready recruits for industry. This is a dilemma.
- School-industry partnerships are typically established to satisfy the needs of local firms rather than to provide broader occupation-specific and transferable skills. Beyond such local initiatives, there is little employer engagement in the initial VET system.
- Notwithstanding the broad guidelines provided by the Ministry of Education, Science and Technology (MEST), individual VET institutions typically develop their curricula and provide the qualifications for meeting labour market needs. This leads to a duplication of effort.
- Workplace training is not systematically provided in VET programmes and quality standards for workplace training are weak.
- VET teachers have strong academic and pedagogical preparation, but often lack practical work experience in their field.
- Co-ordination among ministries responsible for VET policy is weak.
- VET degrees obtained in high schools and junior colleges are not systematically aligned with the national technical qualifications (and underlying standards).

RECOMMENDATIONS

1. Provide an institutional framework for enhancing industry participation in VET. Under the framework, permanent bodies should engage industry stakeholders at all levels in the development and implementation of VET policy. All relevant ministries should be represented in these bodies.
2. Improve the provision, quality and relevance of initial workplace training by strengthening incentives for partnerships between VET institutions and firms and by developing and implementing quality standards.

3. Encourage newly-recruited VET teachers to have relevant prior work experience particularly for high school VET. Require all VET institutions to ensure that VET teachers regularly update their skills in the vocational area, including their knowledge of technologies and working practices.
4. Derive the vocational part of the curriculum used by VET institutions from, or at least adapt it to, national technical standards of high quality which are relevant to industry needs. Students should be able to obtain two certificates: a graduation degree from a VET institution; and a technical qualification based on a national technical qualification (NTQ) examination. Given mixed evidence on the effectiveness of current NTQs, NTQs should be evaluated by the Ministry of Labour (and reformed if necessary).

STRENGTHS

- Mexico's will to address the challenges faced by VET is illustrated by numerous recent initiatives, such as reform of the technological baccalaureate (bachillerato tecnológico) and creation of trainee grants (becas de pasantía).
- VET in Mexico plays an important social role by providing learning opportunities to students at risk of dropping out. Various initiatives, such as "mobile training units" (unidades móviles) reach out to students in remote regions with limited opportunities for learning.
- In some fields and subsystems of upper secondary VET, Mexico has excellent data on the labour market outcomes of VET graduates through the Labour Market Observatory (Observatorio Laboral).
- Encouraging measures have been taken to integrate VET into a broad framework of lifelong learning, including the elimination of dead-ends (e.g. introduction of the baccalaureate in CONALEP) and recent reforms aiming to facilitate mobility within the educational system.
- There are some excellent examples of collaboration between VET schools and employers, such as the Playa del Carmen project.
- Many VET teachers and trainers have work experience in their field and often continue to work in industry part-time, which should help to keep their vocational skills up-to-date.

CHALLENGES

- Effective coordination and coherence within upper secondary VET remains a challenge. The subsystems of upper secondary VET sometimes have divergent interests, hindering effective policy development.
- Linkages between the VET system and employers are relatively weak, illustrated by the low level of involvement of employers in VET policy development.
- VET qualifications are not regularly updated and have limited recognition in the labour market.
- The pedagogical preparation of some VET teachers and trainers is insufficient.
- There is wide variation both in the quantity and quality of workplace training for VET students.
- There are weaknesses in the availability and use of data for policy making purposes and to inform stakeholders.

RECOMMENDATIONS

1. Integrate consultation between employers and upper secondary VET within a single coherent set of consultative arrangements. Include all subsystems in this framework to facilitate a collaborative approach to policy development.
2. As a long-term strategic goal, create quality standards for workplace training and a traineeship contract to expand workplace training and improve its quality.

3. Ensure that VET teachers and trainers receive pedagogical training before or shortly after entering the profession and provide some training to workplace supervisors. To improve the vocational skills of the VET workforce, make relevant work experience a prerequisite for trainers and require schools to develop strategies to update the vocational skills of VET teachers and trainers.
4. Explore options to develop a national vocational qualifications framework.
6. Improve data on labour market needs and labour market outcomes of VET. Develop capacity to use data for policy making and to inform stakeholders. Improve career guidance for prospective and current VET students.

STRENGTHS

Norway has a well-developed upper secondary VET system linked to apprenticeship, which enjoys a high degree of confidence among stakeholders. In particular:

- There is strong tripartite co-operation at national, county and sectoral levels.
- The VET system is supported by a high level of trust among stakeholders.
- By international standards, the system is relatively inclusive and little stigma is attached to VET tracks in upper secondary education.
- In the current exceptionally tight labour market employers are keen to attract apprentices.
- The literacy level of the adult population is high by international standards (IALS, ALLS).

CHALLENGES

- Student choice may limit the responsiveness of VET to the labour market.
- Dropout is a problem.
- The ageing of school-based trainers makes it difficult to recruit new trainers fast enough to match the retirement rate.
- Quality assurance mechanisms for VET are inadequate.
- There are no qualification requirements for enterprise-based trainers and career counsellors.
- The available data are insufficiently exploited and gaps in the data need to be filled.
- PISA results indicate that the basic skills of those entering the VET system are relatively weak.

RECOMMENDATIONS

1. To improve the match between VET provision and labour market needs, student choice should be better guided and channelled. Planning of VET provision should take account of the availability of apprenticeship places; counties should reduce programmes that attract few apprenticeships. Students should receive good quality career guidance from well-qualified staff in lower and upper secondary school.
2. To tackle dropout, strengthen interventions in the early childhood and school systems to assist those at risk of dropping out. Use the system's flexibility to keep VET students in school while avoiding initiatives that might increase inequity. Collect better data on the flow of students through education and on the labour market performance of dropouts.
3. Norway's employers receive relatively substantial subsidies for apprenticeship training. Steps should be taken to ensure that the quality of the training provided is commensurate. Undertake a systematic study of the costs, benefits and quality of apprenticeships .
4. The introduction of the Knowledge Promotion Reform provides a useful opportunity to reinforce assessment procedures. Introduce a standardised national assessment of apprentices' practical skills.

5. Workplace supervisors and trainers of apprentices should receive some obligatory training.
6. Enhance data and analysis relating to VET and employ them more routinely in developing policy and career guidance. Consider the establishment of a dedicated centre for VET data and analysis



South Carolina

STRENGTHS

The South Carolina career and technology education (CATE) system has many strengths:

- CATE programs are provided within high schools and career and technology centers, and enjoy relatively high status.
- Strong general skills are embedded in CATE and all high school students are expected to be college ready upon high school completion.
- South Carolina has launched an ambitious set of reforms in CATE and other parts of the education system initiated by the 'Education and Economic Development Act'. The Act aims to improve skills in South Carolina's workforce.
- Career and counseling guidance is exemplary in many respects. It encompasses all education levels, involves various stakeholders and agencies, and has a clear objective of improving career information and career awareness in students.
- There are numerous pathways leading to a CATE teacher profession that help to attract the best people to the field.
- Employers are actively involved in CATE.
- South Carolina has a strong technical college system.

CHALLENGES

Some challenges remain. Many of them are related to a wider context that bears on CATE and on skills development in the state – in particular high levels of poverty and school standards in the US as a whole which are relatively weak for an advanced country. More specifically, the challenges for South Carolina include:

- The resources of any school depend to a large extent on the resources available to the locality (school district) and are collected through local taxes. This arrangement contributes to an unequal distribution of resources across districts and schools. The state compensates for the differences in local wealth by allocating more resources to poor districts. But this allocation may be undermined by the current recession and severe budgetary cuts.
- Very few high school students receive extensive work experience during their high school studies. While a high school model with extensive work experience provided to most students is not necessarily a desirable route to follow for South Carolina, some students could benefit from more diversified options for work experience.
- Too many students leave high school without sufficient basic skills for either the labour market or postsecondary education. As a result, many students in technical colleges need remedial courses to catch up and develop skills that should have been developed in high school.
- Many adults also lack basic literacy and numeracy skills. Division of responsibilities for adult education and training across different agencies may lead to duplication of efforts and overlap of services. The current recession will potentially reduce the provision and availability of adult education and training.

RECOMMENDATIONS

1. Monitor the impact of budgetary cuts on CATE provision in poorer districts and schools, take remedial action if necessary and ensure that funds are invested efficiently through careful evaluation of initiatives. Ensure that teacher allocation policies support this objective.
2. Provide high school students who wish to enter the job market directly with more substantial work experience while in school. Make targeted efforts to ensure that students from disadvantaged backgrounds have such access. Take action to increase the level of co-operation across school district boundaries in the provision workplace learning opportunities.
3. Sustain the effort to improve literacy and numeracy and preparedness for college in high school CATE students, in particular among disadvantaged students. Strengthen co-operation between academic teachers and CATE teachers to this end.
4. Maintain efforts to ensure that all adults without basic skills have an opportunity to develop their knowledge and skills. While recognising the priority attached to basic schooling, give particular attention to the needs of young adults. Enhance co-ordination between different agencies dealing with adult education.

STRENGTHS

Sweden's upper secondary VET:

- Builds on strong compulsory school performance by international standards at age 15.
- Displays a modest rate of dropout.
- Has relatively high status.
- Allows room for local innovation.

CHALLENGES

- Youth unemployment in Sweden is relatively high.
- The number of 15-19 year-olds is set to decline sharply.
- Upper secondary VET does not attempt to make students 'job ready' – leaving a potential mismatch with a labour market governed by collective agreements in which employers may be reluctant to take on such young people.
- More than half of VET trainers are over 50.
- The separation of school-based VET from a fast-changing and technology-driven workplace makes it hard to keep up with labour market needs.
- Currently, the social partners have limited influence over upper secondary VET.
- Data on labour market outcomes of VET are inadequately exploited – e.g. to provide better information to students choosing courses.

RECOMMENDATIONS

1. Maintain the current non-selective arrangements for upper secondary school programmes.
2. Establish a National Commission for VET composed of different government ministries and the social partners to provide a stronger mechanism through which employers and employees' representatives can convey labour market requirements to VET providers.
3. Competition between schools needs to be fair and to be seen as fair: scrutinise the regulations to ensure that public and independent schools experience the same regulatory regime.
4. Publish information on the labour market outcomes of VET a school and programme basis. The National Register should be fully exploited, and possibly supplemented by regular surveys of recent leavers.
5. The 15-week work placement that is part of upper secondary VET should be subject to quality control and made mandatory for all upper secondary VET programmes. Only VET programmes capable of attracting work placements should be provided, linking the provision of VET skills to labour market requirements more closely.

6. Develop an apprenticeship system to complement school-based VET jointly between the government and the social partners and take full account of international experience.



Switzerland

STRENGTHS

Switzerland's highly developed VET/PET system has many strengths. In particular:

- The system is strongly employer and market driven.
- The partnership between Confederation, cantons and professional organisations works well.
- School and work-based learning are well integrated; workplace training (which Switzerland refers to as in-company training) is not too company-specific.
- Switzerland's VET/PET system is well-resourced and able to include up-to-date equipment.
- Switzerland's apprenticeship-based VET programmes pay for themselves, in the sense that benefits to most employers outweigh the costs.
- Tertiary VET is strong; there is a broad spectrum of tertiary VET offerings.
- Flexible pathways have been introduced to allow for mobility and avoid the risk of dead-ends.
- Vocational teachers and trainers, examiners and directors are well prepared.
- Quality control is ensured and national assessment procedures are in place.
- Career guidance and counselling is systematic and professional.
- Evidence is well developed and routinely used to support policy arguments.

CHALLENGES

- The global recession might have negative effects on VET, in particular the provision of apprenticeship places.
- Demographic changes with shrinking cohort numbers may sharpen competition between academic and vocational education; VET faces competition from academic tertiary education.
- Entry of international companies without a training tradition threatens the Swiss dual-track learning arrangements.
- Several equity concerns are confronting the VET system.

RECOMMENDATIONS

1. Switzerland should accompany its justified pride in a high quality VET system with practical measures to maintain its strengths. This requires, among other matters, high quality data and analysis. Review whether the current mix of VET and academic education for young people matches labour market needs.
2. Aim to reinforce equity throughout the VET system: ensure that dropout is minimised and that those who do dropout are supported adequately; ensure common funding principles to underpin the level of subsidy granted to VET and university forms of education; and use VET to build the skills and labour force participation of women. Monitor the system closely in support of these objectives.

3. Develop a contingency plan to cope with any sharp reduction in employer willingness to provide in-company training as a result of the economic crisis.



Texas

STRENGTHS

The Texas career and technical education (CTE) system has many strengths:

- There are flexible pathways of entry into the CTE teaching profession; part-time teachers are used constructively to tackle the challenge of recruiting CTE teachers.
- Texas has a strong system of university and community college education.
- There are promising initiatives to ensure a well-articulated CTE system, linking high school CTE to postsecondary level CTE. In postsecondary CTE state standards allow students to move easily from one institution to another in the state while retaining earned credits.
- There are various initiatives to increase performance in CTE, including the “AchieveTexas” and “Closing the Gaps” initiatives.
- The benefits of contextualizing learning and integrating general education into CTE are widely recognized by schools and policy makers.
- There are good data in many areas of CTE.
- Encouraging participation in some form of postsecondary education is a key policy goal in Texas. At the same time, achieving this is a major challenge.
- The Texas economy is doing relatively well despite the global economic downturn.

CHALLENGES

Some challenges remain.

- Quality assurance in the career-specific element of CTE is weakly developed.
- Career advice is often marginalized in school counseling and it is not ensured that all students receive high quality career information.
- High school CTE makes limited use of workplaces as a learning environment and employer engagement with the CTE system is highly variable according to local circumstances.
- While Texas has achieved progress in academic performance among high school students, many young people still do not have sufficient basic skills.

RECOMMENDATIONS

1. Establish a state-wide CTE quality assurance framework to increase attention to the quality of career-specific learning, support quality improvement and underpin accountability. The framework should involve employers and draw on quantitative indicators as well as qualitative assessments.
2. Strengthen and develop career guidance by:
 - Ensuring that career guidance receives sufficient separate attention and resources relative to other forms of school counseling.

- Strengthening the career guidance element in the initial and in-service training of counselors. Ideally, a career advisor profession should be established, which would be separate from psychological counseling.
 - Clearly setting out the career advice responsibilities (for school counselors, or career advisors if a separate profession is established).
3. Increase the use of work-based learning opportunities in high school CTE, providing substantial work-based learning opportunities to those following a CTE *program of study* and those likely to seek employment directly after high school.
 4. Sustain the effort to improve literacy and numeracy in high school, enhancing teacher quality and promoting good practices.
 5. Sustain the effort to make postsecondary education available to all, by ensuring that all high school graduates are college-ready and, while that is not yet achieved, supporting students who are not college-ready.
 6. Assess whether the current balance between support for basic skills in school as opposed to developmental postsecondary education represents an optimal use of resources.