

INTERNATIONAL LABOUR ORGANIZATION
Sectoral Activities Programme

**Teachers and trainers for the future –
Technical and vocational education
and training in a changing world**

**Report for discussion at the Global Dialogue
Forum on Vocational Education and Training
(29–30 September 2010)**

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Executive summary

The “macro” environment in which technical and vocational education and training (TVET) for skills development operates is characterized by relatively stable demand as defined by enrolments throughout the world. Although enrolments and therefore provision of TVET services are high in some countries and regions, female enrolments lag behind general education in regions with traditionally low gender equality. Greater access, particularly in low-income developing countries, depends in the first place on ensuring access and quality in basic education. Private TVET provision – both institutional and other providers – is growing.

Financing of this level of education, considered to be more costly than general education, remains low, and is increasingly compromised by lowered development assistance and the general impact of the current economic recession on government budgets and fiscal capacity. Long-established public–private partnerships provide a source of much needed financing and may be emulated more broadly in the future. Accountability measures to ensure more efficient and effective use of available funds are growing, with performance-based funding mechanisms increasingly taking the place of inputs-defined criteria, often in combination with decentralization and greater TVET institution autonomy. Finding new, innovative and at the same time equitable funding tools is one of the biggest policy challenges in all countries.

Employment and workplace challenges, adult and youth unemployment, new forms of work organization, sustainable development, etc., are driving a renewed search for balanced skills development that responds more closely to real workplace needs. This in turn creates a need for closer cooperation between enterprises, schools and other stakeholders to deliver and assess outcomes. Sectoral-based strategies and those developed by major groups of countries such as the G20 have emerged in response to the challenges.

Within the “micro” environment of TVET systems and institutions, public sector dominance has given way to more diversified provision and thereby created strong trends towards more institutional autonomy. Reforms in teacher training, especially to ensure better in-service training or continual professional development (CPD), more relevant curricula, training materials and dynamic teaching methods for better learning outcomes, represent major challenges to better delivery of services. More active engagement of social partners – employers’ and workers’ organizations – will be a key to increased relevancy and effectiveness of TVET programmes that meet workplace needs. A host of conceptual and structural innovations have emerged to meet these challenges.

In the field of teacher training and professional development, the increasingly multi-functional roles and responsibilities of teachers and trainers have led to new learning approaches with greater autonomy for programme decisions and outreach to the world of work. In parallel, the need for greater involvement of teachers and trainers in professional development decisions has become clear. Criteria for “good” teachers that respond to increased expectations include strong knowledge bases and a range of teaching competencies for enhanced teaching practice and learning outcomes.

Teacher training is increasingly diversified also. Initial training standards at tertiary level up to master’s degrees remain high in developed countries, with developing countries moving towards such standards, including greater reliance on certification to increase professionalism. A wide range of countries now require significant non-academic work experience as part of training and certification in efforts to break down divides between TVET institutions and workplaces. CPD remains a weak element of teacher/trainer preparation, ad hoc, underfunded and not universally accessible. Teacher assessment mechanisms are increasing as part of reforms to prepare teachers for TVET jobs.

Employment of TVET teachers and trainers to meet demand varies over time by country, but has shown strong growth in some. Within the broader trends, the employment of women in TVET has demonstrated strong positive growth in recent years, breaking down, albeit slowly, the traditional under-representation of women teachers in the sector. Long-standing guarantees of job security (tenure) in the public TVET systems are eroding, with more emphasis on merit than seniority considerations. Though not clearly supported by the relatively weak database on employment and conditions of work in TVET, high-income countries especially preoccupied by actual or looming teacher shortages have adopted a range of measures to address this issue, including cross-national recruitment, “fast track” training and recruitment policies and greater recourse to part-time and flexible working arrangements that favour more employment mobility between TVET system and workplaces. Career structures are also evolving and becoming more diversified in response to overall reforms and needs.

Externally and internally driven change – roles of providers, institutional modernization increased emphasis on diversified competencies and higher professional standards – are altering the terms and conditions of employment for TVET staff. Remuneration levels and structures are more susceptible to competition from private enterprise than other education sectors, and within TVET between public and private providers, requiring changes and improvements to ensure adequate recruitment, retention and professional commitment. Performance-related pay schemes are not yet widespread but are more likely to be a policy issue in the future. Trends in wage levels are not uniform across countries – substantial increases operate parallel to declining pay packages in even like-minded countries – and are another area of concern requiring more and better comparative data as a policy tool. Likewise, continued gender-based remuneration gaps require improved human resource planning and measures to ensure equity and supply of quality teachers and trainers.

With due concern for lack of reliable information, comparative trends in workload show no consistent patterns, including in hours of work or the impact on teacher job satisfaction. Where pupil–teacher ratios and average class sizes have increased, they have reportedly led to deterioration in learning outcomes, but this measurement of workload and learning quality is itself changing under the impact of new technologies and approaches to instruction. Provision of adequate and well-adapted infrastructure and equipment remains a major problem to good learning outcomes, particularly in underfunded low-income systems. Health and safety issues in TVET are not well-researched but there are signs of increased impact on job satisfaction and teaching capacity due to stress and student indiscipline in some mainly high-income countries.

The increasing and constant changes affecting TVET and its relationship to the world of work have rendered social dialogue – all forms of information sharing, consultation or negotiation, including collective bargaining – ever more relevant to the search for policy solutions. While still limited by institutional and capacity constraints, social dialogue with employers, enterprises, workers, trade unions and other stakeholders is growing, notably in the framework of public–private partnerships. Tripartite councils or other advisory or decision-making mechanisms, national, regional or sectoral, are spreading. Social dialogue within TVET institutions is much less developed compared to general education and is still characterized in many countries by top-down approaches in which change is “done to” teachers and trainers rather than with them. There is more evidence at least in European countries of TVET staff participation in teacher professional development issues, whereas the evidence base on the use of negotiations and collective bargaining to decide terms and conditions of employment is much more circumspect. There are nascent movements towards transnational social dialogue, notably in Europe. Social dialogue in TVET overall, however, is constrained by poor or non-existent institutions or mechanisms and lack of capacity to engage in it on the part of TVET actors. This remains one of the most timely, even urgent policy issues in TVET reform.

Introduction

Background

In November 2008, the Governing Body of the ILO approved recommendations of its Committee on Sectoral and Technical Meetings and Related Issues (STM) for the ILO to convene the Global Dialogue Forum on Vocational Education and Training. The focus of the Forum would be on employment and the working environment, as well as the larger lifelong learning framework to which public and private vocational education and training contribute. Informal consultations through the Advisory Body for the Education and Research grouping in November 2009 helped to guide the ILO preparation for this work by recommending more detailed terms of reference for the research and discussion at the Forum. These terms of reference focus on: the contributions of public and private providers of vocational education and training services; training, remuneration and the teaching and learning environment of teachers and trainers in vocational education and training; and related social dialogue mechanisms. Moreover, the preparation of the report benefitted from the Global Dialogue Forum on Strategies for Sectoral Training and Employment Security that was held in Geneva in March 2010, part of the ILO's contributions on skills strategy to the G20.

The present report responds to the terms of reference agreed in 2009. Chapter 1 outlines major challenges facing technical and vocational education and training, as well as public and private service provision. Chapter 2 looks at the structure of teacher and trainer education, initial and continual, and reforms to meet new challenges. Chapter 3 considers the employment situation within systems and institutions, shortages of qualified instructors, job security and career structures. Chapter 4 reviews remuneration and incentive packages and the teaching and learning environment as determined by factors such as workload, class sizes, infrastructure and health and safety issues. Trends in the use of social dialogue mechanisms both for overall policy, organization and financing of vocational education and training and the means by which terms and conditions of teaching and other work are determined within institutions and national systems are explored in Chapter 5.

Scope and definitions

A review of vocational education and training (VET) requires some definition that distinguishes the various terms and concepts used to depict this very complex level of education. Many terms describe one or more elements of what may be conceived as comprising VET. Terms commonly used in different contexts and countries include:

- apprenticeship programmes;
- vocational education;
- technical education, or technical and vocational education and training (TVET);
- occupational education (OE);
- career and technical education (CTE);
- workforce or workplace education (WE) and workforce development (WD).

Given the diversity, participants at the UNESCO-convened Second International Congress on Technical and Vocational Education, held in Seoul, Republic of Korea in 1999, agreed that the best, most comprehensive term to use is “technical and vocational education and training (TVET)”. The *Revised Recommendation concerning Technical and Vocational Education* adopted by the General Conference of UNESCO (2001) refers to “technical and vocational education” as the principal conceptual term to describe the range of vocational education and training programmes covered by the international instrument. The ILO participated in the Seoul Congress and confirmed its acceptance of this broader definition in a joint publication with UNESCO (2002), part of the continuing collaboration between the two organizations under the framework agreement on cooperation in this field (ILO, 1954). As this term has come to be widely used at international level in the last decade, for purposes of this report vocational education and training will be understood to mean technical and vocational education and training (TVET), and the understanding of this concept as set out in the 2001 Recommendation guides the report:

... “technical and vocational education” is used as a comprehensive term referring to those aspects of the educational process involving, in addition to general education, the study of technologies and related sciences, and the acquisition of practical skills, attitudes, understanding and knowledge relating to occupations in various sectors of economic and social life.

In the broad definition used in this report, TVET refers to a range of learning experiences that are relevant for employability, portability of competencies and qualifications and recognition of skills, decent work opportunities and lifelong learning in and related to the world of work. The concept embraces the importance of innovation, competitiveness, productivity and the growth of the economy, considering that innovation creates new employment opportunities and also requires new approaches to education and training to meet the demand for new skills. These concepts are set out in the Human Resources Development Recommendation, 2004 (No. 195) (R195), adopted by the International Labour Conference in 2004 (ILC, 2004). The learning experiences may occur in a variety of learning contexts, including private and public training institutions, workplaces and informal learning places, but the focus of this report will be on formal education and training sites.

In this report, moreover, lifelong learning, of which TVET is one component, “encompasses all learning activities undertaken throughout life for the development of competencies and qualifications” as set out in R195. It is also understood to mean “the comprehensive provision of purposeful learning opportunities throughout every individual’s lifespan”, that are designed to “fulfil many social justice and sustainable economic development objectives, including employment” (ILO, 2000: 32).

The scope of the report extends to education levels from secondary (including lower secondary) to first level tertiary with a focus on occupationally specific skills geared for entry into the labour market. The levels correspond to levels 2 to 5b of the International Standard Classification of Education (ISCED – UNESCO–UIS, 2006). The report does not seek to cover high-level professional training at tertiary or post-graduate level, designed to prepare individuals for careers as highly trained specialists (general education and health sector professionals, engineers, lawyers, etc.). However, high-level professional training at tertiary and post-graduate level for TVET teachers and trainers forms an integral part of the report.

The report’s scope also does not extend to two large and important areas of skills development – informal education and training and workplace-based learning. The first is dominant in many least developed countries, especially in Africa. The second, one of the essential functions of most if not all enterprises, is intimately linked to skills development generally, and often parallels or complements education and training provided through the formal TVET system. Despite the central place that these forms of skills development have

in societies, the complexity of the subjects does not permit treatment in this report, although where workplace-based learning programmes are integrated with formal TVET provision (for example in dual training systems) they will be referred to in that specific context.

In terms of this report, a sharp line defining “teachers” and “trainers” and the various terms employed in many different country contexts is not practical given the diversity of orientation among TVET systems. A recent OECD report (2009a) refers to vocational trainers as those who are primarily responsible for imparting practical vocational skills, whereas vocational teachers are those primarily responsible for theoretical skill instruction. Other distinctions between “trainers” and “teachers” draw the line between the former doing their work in workplace-based training in enterprises governed by economic, largely profit-making considerations and the latter serving in largely non-profit, public schools (CEDEFOP, 2008). Still another typology refers to four broad categories: teachers of basic or general education subjects within vocational institutions; teachers of theoretical or knowledge-based components of vocational programmes, the kinds of practitioners that might be the closest to those considered as “professional” TVET teachers; teachers, trainers and instructors of practical exercises/programmes (“practicums” in some contexts), apprenticeships or internships in others) in vocational or work preparation and awareness programmes, or in some dual systems as apprenticeship and internship instructors or supervisors; and trainers, training coordinators or training advisers working to integrate skills training and knowledge-based learning for work-based learners, typically working for employers (Parsons et al., 2009: 79).

Given that different country systems and institutions have one or more of the above, even require or encourage a combination of the theoretical and practical, or the general (languages, maths, sciences, etc.) and technical/vocational subjects to be taught by the same individual, for purposes of this report teachers and trainers are understood to apply equally to staff in a TVET system or institution who are responsible for instruction of learners, whatever the subject or instructional orientation. The term “teacher and trainer” encompasses terms such as “tutor”, “lecturer” or “instructor” used in various national contexts.

1. Challenges facing TVET and lifelong learning schemes: Contributions of public and private providers

The “macro” environment: Organization and provision of TVET

Demand for TVET

The extent of TVET service provision is a function of many factors, one of the most important being demand for it as defined by the number of learners enrolled or seeking to enrol in a formal system or institution. In 2007 (latest year available) more than 54 million students were enrolled in upper secondary TVET institutions, representing over 10 per cent of all enrolments worldwide at this level of education (UNESCO, 2010, Statistical Tables). The figures in relation to general secondary education were declining in virtually all regions of the world a decade ago (UNESCO-UIS, 2005, cited in McLean and Wilson, 2009). Percentages nevertheless remain relatively high in some regions, notably Europe, where more than 50 per cent of all secondary students in European Union countries are enrolled in vocational programmes, and slightly less in all OECD countries, where nearly 15 per cent of students are enrolled in combined school and work-based programmes (CEDEFOP, 2009; OECD, 2009b). Within regions or groupings of countries enrolments and formal TVET provision may vary enormously, for instance in OECD member countries from almost zero (United States) to nearly 80 per cent in school-based or combined school and work-based programmes of the Czech Republic (OECD, 2009a).

Female students constituted 46 per cent of the worldwide totals in 2007, less in developed countries and countries in transition, more in developing countries. Among OECD countries, 43 per cent of 2007 pre-vocational and vocational programme graduates were female, but in regions traditionally weak on gender equality such as South and West Asia and sub-Saharan Africa, enrolments of girls in TVET programmes are significantly lower than for general secondary education (OECD, 2009b; UNESCO, 2010, Statistical Tables). Programmes to address under-enrolment of girls in secondary education in such regions, such as the Female Secondary School Assistance Programme, financed by the International Development Association (IDA), have generated substantial attendance rates, often surpassing those of boys, and could represent models for targeted TVET programmes to remedy low participation (IDA, cited in ILO, 2008a).

In OECD countries comparable estimates for enrolments in post-secondary tertiary programmes that have a TVET orientation (ISCED 5b) have declined or stagnated over time whereas demand for tertiary academic programmes (ISCED 5a) has increased. In 2007 an estimated 56 per cent of young adults in OECD countries entered tertiary-type academic programmes, up from 37 per cent in 1995, whereas on average only 15 per cent of young adults entered tertiary programmes with a TVET-type orientation and direct access to labour markets, a decline from 18 per cent in 1995. Yet, in a few countries (Chile, Republic of Korea, New Zealand) tertiary programmes with a TVET orientation enrol nearly 50 per cent of the young adult age cohort (OECD, 2009b). Part of the reason for such differences derives from the relatively smaller and less developed nature of the TVET-type programmes, but the long-term trends also point to the continued progression of academic over TVET choices among students. Questions may also be raised about the country policy and investment choices that underline such decisions. These are not immutable, and may be altered in favour of more tertiary TVET-type programmes, as is forecast in the future in the Netherlands where enrolments are expected to increase with the introduction of a new programme of “associate degrees” (OECD, 2009b). Where such

changes are not made, TVET-type provision may be expected to remain small, even continue to decline.

A greater percentage of students – 25 per cent of tertiary enrolments – in developing countries, rising to 35 per cent on average in Asian and Latin American countries, take up course work in non-academic tertiary fields (ISCED 5b). Yet, despite impressive enrolment gains in the last decade in all types of tertiary education (doubling between 1999–2007), participation in any kind of tertiary education in large parts of the developing world remains small for the eligible age group. Whereas two-thirds of the eligible population in developed countries are enrolled in some form of tertiary education, less than one in five persons (18 per cent) in developing countries participate, a figure that plummets to 6 and 7 per cent respectively in sub-Saharan Africa and the Caribbean (UNESCO, 2010).

Barriers to greater coverage find their roots in basic education. In regions such as South and West Asia and in sub-Saharan Africa only 1–2 per cent of the secondary school age group are enrolled in TVET, largely due to the fact that many young learners barely or never complete lower secondary education. The average 15 year-old in South and West Asian countries can expect to have one more year of schooling (compared to seven years on average in OECD countries); the average sub-Saharan youth is no longer in school at age 15 (UNESCO, 2010). Lacking basic literacy and numeracy skills and without access to schooling, many young people in developing countries have no hope to accede to TVET at whatever education level. Breaking down such barriers and increasing TVET capacity and impact thus passes through fundamental improvements in quality and access to primary and secondary education, a confirmation of the integrated nature of the learning chain (ILO, 2000: 32–33; ILO, 2008b: 2).

Although it is understood that TVET remains a largely publicly organized and financed system in most countries, international statistics on the relative size of public and private TVET provision and comparable data on the extent of enrolments, institutions and provision of TVET at the secondary and non-academic tertiary level programmes covered in this report are not generally available except at country level in some instances. As one indicator, private secondary institutions accounted for 11 per cent of overall general secondary education enrolments in 2007, ranging from an average of 7 per cent in developed countries to 15 per cent in developing countries as a whole (UNESCO, 2010, Statistical Tables).

Private TVET provision is nevertheless expanding and such schools provide the majority of training in some countries and regions such as Peru in Latin America. In addition, particularly in recent years, as Gallart (2008) points out, private sector training offers by for-profit or not-for-profit, non-governmental organizations have greatly increased in specific technical fields, especially new ones such as information technology. In some countries they are regulated by the State, in others not. Demand may be heavy where public provision – or other forms of private training – are limited. The United Kingdom and Nigeria (box 1.1) illustrate some of these trends in major English-speaking countries.

Box 1.1
United Kingdom and Nigeria: Growth of private TVET provision

United Kingdom

The growth of the private sector and the introduction of more competition in provision have provided an impetus for the public sector to respond with shorter courses, variable start dates and external delivery. Typically TVET teachers/tutors may spend part of their time on employer premises, though most provision still involves an element of off-the-job provider based activity. However, this has been taken further with recent developments that permit large employers to award their own qualifications following training in association with the awarding bodies.

Nigeria

Responding to a lack of tertiary education capacity to accommodate growing numbers of secondary school leavers and the low participation of the private sector in skills training, the Federal Ministry of Education recently decided to approve the establishment of private sector-led vocational enterprise institutes (VEIs) and Innovation Enterprise Institutes (IEIs). The major aim is to widen access to TVET and serve the needs of industry and citizens.

Sources: United Kingdom: UKCES, 2009; Nigeria: NBTE, 2010.

In summary, as a measure of demand, need for provision and therefore the size of the sector, enrolments in TVET programmes over time do not show clear growth patterns everywhere, and face considerable structural barriers to their increase. Nevertheless, TVET provision remains an important, even growing part of education systems in some regions or countries within regions. In complement to the still largely public provision of formal TVET opportunities, private institutions and work-based programmes as part of dual systems may also play a significant and growing role depending on the country.

Financing challenges

The great diversity of training provision renders a clear picture of investment in TVET nearly impossible. Funds allocated to general education do not usually distinguish the resources devoted to TVET, especially where systems or institutions offer both general and TVET programmes, be they secondary or tertiary. Some financing of public provision is obtained from private sector resources through formal public–private partnerships or informally, for example through equipment donations. Employers’ levies derived from payrolls or other sources represent a major source of public formal TVET financing in dual systems especially (Gasskov, 2006; UNEVOC and UIS, 2006; UNESCO, 2010). In some countries public financing subsidizes the construction and infrastructure of private schools or pays the salaries of teachers, for instance in Bangladesh, where enrolments in private institutions reportedly exceed 60 per cent of the total, in part due to the support of public subsidies for teachers’ salaries in non-government institutions (ADB, 2008: 89).

Bearing in mind this cloudy picture, estimates of the relative weight of public and private financing at secondary and post-secondary but non-tertiary education (largely technical and vocational in nature, including apprenticeship programmes) in countries which provide such figures show that public financing accounts for 1–3 per cent of GDP in funds for institutions, whereas private sources (including individuals) represent 0.1–0.6 per cent according to the country (UNESCO-UIS, 2007). A recent survey of some OECD countries with dual (combined school and work-based) systems reveals that between 0.3 and 0.5 per cent of GDP is spent on the work-based component of the programmes (OECD, 2009b; box 3.1). Tuition and fees paid by individuals are estimated to cover 25 per cent of recurrent costs in sub-Saharan African countries, but this kind of financing raises equity questions for the poor in the absence of government compensatory measures (Johanson, 2004).

Comparable overall figures for developing countries as a whole are not available. In the 1990s, estimates for selected African countries put the investments in financing of TVET as a percentage of public education expenditures in a range from 1 to 12 per cent, though even those estimates were somewhat questionable. Formal TVET provision is rather weak in African countries, where informal training and apprenticeship programmes tend to prevail (ILO, 1999; UNEVOC–UIS, 2006).

Even though public training policies in many countries are under pressure to shift towards a greater encouragement of TVET (see below), constraints on public spending make it difficult for governments to finance even the training for which they are in charge of, especially in low-income countries. This occurs in a context where the evidence suggests that TVET is more costly than general education in developed and developing countries alike (Johanson and Adams, 2004; OECD, 2008; World Bank, 2008). Recent data on development assistance indicates that the relatively paltry commitment to TVET by OECD bilateral donors will not fill the gap for developing countries: from 2002 to 2008 on average only 2 per cent of bilateral donor development assistance to education went to TVET, whereas it received only 1 per cent of education funding assistance from multi-bilateral donors (development banks and the United Nations). On average about 40 per cent of the development assistance for TVET goes to low-income countries with 60 per cent going to middle-income countries (OECD, 2010a).

The current economic recession has not made things easier, as mounting public deficits and limited fiscal capacity restrict needed investment in TVET along with other levels of education. The medium- and long-term prospects are not encouraging either. At the end of 2009 one forecast estimated a possible loss in funding for education of nearly US\$5 billion in the African region through 2010 as a result of slower growth and declining public revenue, twice the current amount of international aid to basic education in the region (UNESCO, 2010). If realized, the knock-on effects for TVET, already substantially underfunded, are likely to be high.

In this context, new ways of funding sustainable TVET schemes have been examined in recent years whether public, private or in combination of both (public–private partnerships). One of the most widely regarded national training systems, SENAI of Brazil, provides an example of a long-standing public–private association (box 1.2).

Box 1.2
SENAI of Brazil

Parallel to federal technical institutes in Brazil, the National Industrial Training Service (SENAI) began in the 1940s with industrialists playing an important role. From the start it has been financed through a payroll tax levied on industry, and it is managed by employers, with enterprises playing an important role in identifying training priorities and course design. SENAI administration and standard-setting activities associate the national and regional governments and trade unions, which also facilitates recognition of qualifications and competencies across states and between employers. More than 2 million learners are registered and trained in 700 schools and centres throughout the country each year. The SENAI concept of training for specific industries has spread to other sectors such as agriculture (SENAR), transport (SENAT) and commerce and services (SENAC). Similar institutions, with their own individual characteristics, have been set up in most of the countries in the Latin American region, in many cases with ILO support.

Sources: Gallart, 2008; SENAI, 2010; UNESCO, 2010.

As part of efforts to meet financing challenges, during the past decade accountability measures for skills training have been increasingly put into place in TVET systems in order to ensure more efficient and effective use of funds in institutions. Recommendations have been made in the Asian and Pacific region for TVET institutions to be given more financial autonomy and incentives to generate and keep income from services and fees rather than returning resources to the general treasury (ADB, 2008: 108). Bangladesh has adopted a new skills strategy based on performance-related outcomes and funding that aims towards such an approach (box 1.3).

Box 1.3
A switch to more performance-based funding in Bangladesh

TVET in Bangladesh was traditionally delivered through 51 vocational training institutes (VTI) operated by the Ministry of Education and 11 technical training centres (TTC) run by the Ministry of Labour and Employment. These were supplemented by NGOs and private training providers, but the system was highly centralized and state controlled, resulting in mismatches between skills supply and industry needs.

Under a new skills development strategy covering the period 2010–15 developed with EU and ILO support, a National Skills Development Board and separate Industry Skills Committees have been established to refocus provision so that it is more demand driven. Public and private training organizations will undergo more quality control of their provision through a performance monitoring mechanism and must demonstrate that they have the necessary equipment and trained staff to meet the skill standards set by industry. Training providers will effectively become accredited if they meet the new standards.

Performance-based funding will be introduced in place of inputs-driven criteria (student and staff numbers) and financial and administrative authority is to be decentralized so that college principals are more able to form effective local working partnerships with industry.

Source: GOB, 2009.

But for the future, establishing quality TVET schemes that truly respond to the demand side will almost certainly require a shift towards investigating new and creative financing tools, such as financing through cost recovery, through demand-driven ways of service delivery and other means (Gasskov, 2006). The challenge is greater in the current difficult economic climate. An independent review in the United Kingdom (Banks, 2010: 3–4) has recommended a substantial shift in policy to a new government that has announced deep cuts in public spending to reduce high public deficits. In a public–private TVET system already heavily demand driven (OECD, 2009a; NIACE, 2009) the recommendations include better prioritization of funding choices by government and providers, focusing on the principles of co-investment (public funding matching individual and employer contributions up to a maximum contribution), equity and transparency in funding and training costs and a loan programme linked to a learning accounts system in the long term.

Employment and workplace pressures for change

More than ten years ago, the ILO in its *World Employment Report: Employability in the global economy – How training matters* (1999) estimated that, out of a world labour force of 3 billion people, 25–30 per cent were underemployed and about 140 million workers were fully unemployed. The ILO further estimated that 60 million young people between the ages to 15 and 25 were in search of work but could not find it.

In 2010 the situation does not look much better. At the beginning of 2010, the ILO (2010a; 2010b) estimated the number of unemployed persons at 212 million in 2009 (6.4 per cent of a world labour force of some 3.3 billion people), with an increase of almost 34 million over the number of unemployed in 2007, most of this increase occurring in 2009 following the world’s financial crisis and the subsequent worldwide recession. The number of unemployed youth increased by 8.5 million between 2008 and 2009 (and by more than 10 million since 2007), the largest year-on-year increase in at least ten years. Projections for 2010 were likely to be higher in the absence of a strong recovery. In this environment, as the ILO’s Global Jobs Pact (2009a) sets out, one of the key policy solutions to ending the worldwide jobs crisis will be equipping the workforce with the skills needed for employability. How TVET systems can contribute to improving this situation, particularly in reducing the number of inactive young people – those not in employment, education or training – and reducing social marginalization for all population groups has become a priority question for decision-makers.

Against the sombre economic backdrop, TVET systems worldwide are under pressure to deal with a host of other employment and workplace challenges (created by, for example, changing technologies, shorter product cycles, new forms of work organization, sustainable development and green jobs) in a creative and employment-driven way. In view of these far-reaching developments, using TVET policies in the most effective way in support of enhanced education and skills levels of workers has become of prime importance in economic, employment and social integration strategies worldwide.

The skills challenge

Balancing supply of skills with demand in the labour market constitutes one of the fundamental issues in skills development policy. Historically, however, since economic and technological change worldwide accelerated in the 1980s the inability of most TVET systems to adequately respond to these challenges can mostly be seen as a major skills mismatch due to an insufficient demand orientation in TVET. This is even more troublesome, since the demand for skilled labour has risen significantly as a result of globalization, changes in technology, the organization of work, new development policies, including the transition to a low carbon economy, and the recent international financial crises and subsequent worldwide recession.

In this present environment, many observers contend that different individual skills sets are needed. A more complete skills mix incorporates many generic skills such as the ability to think logically, to plan precisely, to anticipate difficulties and to be innovative and creative so as develop and update the “necessary capacities and skills [individuals] need to enable them to be productively employed for their personal fulfilment and the common well-being” (ILO, 2008b: 9). This skill mix in turn forms an essential component of a sustainable institutional and economic environment in which public and private enterprises enable growth, the generation of greater employment and income opportunities for all citizens, and whereby societies achieve their goals of economic development, good living standards and social progress. Consequently, there is a demand for a more skilled labour force, with more autonomous, adaptable and multi-functional workers. But the question remains: what incentives can be established to encourage training providers to organize training around this enhanced labour market and societal orientation?

The concept of competency-based TVET training tends to put more emphasis on the more traditional notion of skills, largely technical in nature, whereas many employers place more importance on the overall competence of individuals and especially on their ability to communicate, to solve problems, and to work in teams, in addition to technical skills, all part of a skills package. In many countries, nevertheless, most skills gained during TVET training are too narrow in scope and lack overall context, whereas competencies acquired over a work lifetime are still very often developed on the job, in both the formal and the informal economy.

In addition, more effective delivery of TVET as well as assessment of its functional outcomes through cooperation in TVET systems between enterprises and schools and with other stakeholders is still far from generally applied. The sharing of responsibility with employment stakeholders, especially when it comes to certification, measuring output-orientation of learning and better recognition of prior learning can still be much improved (Allais, Raffe and Young, 2009; Gallart, 2008).

Instead, in many countries, TVET and existing labour market policies do not always facilitate the school to work transition, thereby handicapping young people especially in obtaining a head start in working life. For TVET systems to become more flexible and responsive to new skill demands, which tend to be difficult to foresee and increasingly diversified, there must be certain incentives for the stakeholders in the training system as well as those in key employment planning and decision-making roles. The latter would include employment services, a labour market institution that is a crucial link between the

training provided, labour requirements and responsiveness to labour market conditions, therefore also for teachers/trainers and students in order to make informed choices in the teaching/training dynamic. The key questions accordingly are what kinds of reforms are needed to address the lack of cooperation and create greater synergies between training and skills development producers, and employers, public and private, in ways that render the transition from education and training to employment more responsive to labour market needs. In so doing, gender issues should also be considered; evidence from ILO school to work transition surveys shows that in a number of countries young women have a more protracted and difficult transition to working life than young men.

One set of responses has been provided in a recent ILO policy dialogue forum on sectoral training strategies (see box 1.4), while another has been the parallel development of an ILO training strategy for the G20 countries. Examining global drivers of long-term change that bear on the provision of training and skills, a strategic framework that creates bridges between training and the world of work, and the essential building blocks of a robust training strategy, the strategy emphasizes the cornerstones of policies to expand skills and broaden access to skill formation:

- quality education as a foundation for future training;
- a close matching of skill supply to the needs of enterprises and labour markets;
- enabling workers and enterprises to adjust to changes in technology and markets; and
- anticipating and preparing for the skills of the future.

The strategy insists that, when applied successfully, this approach nurtures a virtuous circle in which more and better education and training fuels innovation, investment, economic diversification and competitiveness, as well as social and occupational mobility – and thus the creation of more but also more productive and rewarding jobs (ILO, 2010d: 20). The G20 welcomed a training strategy prepared in collaboration with the OECD “that will help equip the workforce with the skills required for the jobs of today and those of tomorrow” (G20, 2010: 14).

Box 1.4
Strategies for sectoral training and employment security

A Global Dialogue Forum on sectoral training strategies in relation to economic recovery and employment security reached consensus in late March 2010 on the desirability of a strengthened sectoral approach to training based on close collaboration with social partners at national and local level. Among elements to be implemented in such a strategy would be:

- *Partnerships for training design*: Establishing bipartite or sectoral councils, including training providers, to ensure better matching between demand for skills in sectors and training provision, anticipate future labour market and skills needs, assess the quality and relevance of training programmes and improve delivery of training, including for small and medium-sized enterprises.
- *Skills, employment and growth linkages*: Linking sectoral (including cross-sectoral) approaches to skills development within long-term national growth strategies to build coherence between skills development and labour market policies, technological innovation, public services delivery, trade and investment.
- *Theoretical and practical training*: Combining classroom with work experience through apprenticeships and other traineeships to ease labour market transition.
- *Skills and labour markets*: Greater reliance on sound labour market information and analysis on both demand and supply through closer cooperation between governments, sectoral social partners and labour market stakeholders to identify skills gaps and matching, especially at the sectoral level; with career guidance and vocational counselling as an important element of such a strategy.
- *Targeted skills strategies*: More inclusive skills programmes targeting disadvantaged groups.

Source: ILO, 2010c.

The “micro” environment of TVET systems: Internal organization and provision

Governance and management

The traditional dominance of the public sector in establishing and managing TVET systems based on schools and specialist colleges has given way in the last two decades at least to a much more diversified system of provision, more decentralized and with greater private provision, including workplaces (Loveder, 2005). The National Training Information System in Australia uses a typology with 16 subcategories to distinguish private training providers from the public tertiary and further education (TAFE) institutions; these other providers include adult education centres, apprentices’ colleges, and enterprise-based organizations. In some cases, as in Latin America, this diversification has increased or maintained the status and quality of TVET, in other countries, the quality of institutions has declined due to a number of factors, including lack of policy coherence in reforms, under-funding and the failure to be fully integrated with the world of work (Gallart, 2008). In India, a major emerging economic power, a World Bank (2008) review has pointed to a system fragmented between national and state authorities with little coordination, lack of institutional managers’ authority to adapt to changing needs of enrolments, curricula and quality standards and, until recently, the limited participation of employers in defining training policies and helping to develop courses. Decentralization and more institutional autonomy may often be introduced in rather radical ways as the case of Zambia at the beginning of the decade indicates (box 1.5).

Box 1.5

Zambia: Autonomy for public training institutions

A decade ago, the Government of Zambia changed its role from provider of training to financier, regulator and coordinator. As part of the reform, the Government transferred control of public training institutions to autonomous management boards, part of a broader central government devolution of authority to local authorities. The new management boards were given responsibility for curriculum decisions, maintenance of training standards established by the TVET authority (TEVETA), and institutional administration. Staff members of public training institutions were removed from the government payroll, though over a two- to three-year period the Government agreed to continue paying the salaries of staff members opting to continue working under the autonomous management boards. Thereafter, formerly public training institutions were expected to compete for financing on the basis of quality, cost-effectiveness and responsiveness to demand.

Source: Johanson, 2004.

Increasingly, some TVET institutions have been given the means and freedom to achieve agreed outputs and benefit from improved efficiency. Operational autonomy for TVET institutions implies that their managers know what they have to do and how to do it if they are to achieve objectives and maintain long-term institutional viability in a resource-poor and highly competitive environment. In autonomous public TVET institutions, a new sense of institutional ownership that differs from traditional government ownership is emerging. Greater institutional autonomy helps inspire motivation and encourages TVET managers and staff to improve their capabilities in order to achieve better results (Gasskov, 2006: XII). Reforms in recent years to increase school and teacher autonomy in Slovenia TVET programmes reportedly have been supported by the majority of teachers because the reforms strengthened teamwork and more flexible programming (Grašič and Zevnik, 2006: 7; CPI, 2007: 29–30). Nevertheless, the impact of such decisions concerning teacher/trainer education, professional development and terms and conditions of employment remains to be fully explored (see also Chapters 2–4 below).

Teacher training, curricula and pedagogical challenges

Demand and supply perspectives are equally pertinent at the micro level of human resources and learning environments in TVET, notably teacher and instructor training, and

the relevance of curricula, teaching and training materials and teaching methods (see Chapters 2 and 3 for more detailed treatment of these issues). Conceptually, TVET teacher and instructor training in many countries is seen as something that “people will learn on the job”. Yet, very often there are no career paths for becoming a teacher or trainer in TVET and there are no clear stages of teacher training either. Pre- and in-service programmes for teachers and instructors are often not in place, creating difficulties for personnel working in a sector such as TVET, which is highly dependent on innovations and technology driven, to function effectively without their own training support framework. Innovations also require very close contacts with enterprises and other stakeholders, including employment services, labour market institutions and other social partners, with other vocational teachers and of course with TVET students, for purposes of effective teaching/training, career guidance and more. Already in the 1960s the international standards on teachers called for programmes to include practical experience acquired in industry, commerce and agriculture (ILO and UNESCO, 1966: 21(2)). Yet, these aspects of training of teachers and trainers too often remain a missing link in designing innovative schemes in TVET (Grootings and Nielsen, 2005).

Vocational curricula represents another weak point in the learning chain. In some countries government officials with little or no exposure to the world of work still tend to prepare and set curricula. Even worse, previously adopted curricula are extended by incorporating new content without scrapping outdated, irrelevant material. Thus the gap between the TVET training system and employment needs and opportunities keeps widening when the question of “What to train?” is defined by closed-circuit training provider systems (Axmann, 2004).

Teaching and training materials are often outdated and not relevant to what is needed for specific skills development. Too often teaching and training materials are of little relevance for what the students have to face in the world of work after they leave their “refuge” of (mostly) government-run technical vocational schools and institutions (Johanson and van Adams, 2004). More relevant labour market approaches would go beyond developing pure occupational standards (as for example in DACUM¹ exercises), but would rely on real work and business processes as the basis for TVET learning. In a modern labour market with permanent innovations and the requirement for lifelong learning, the ability to self-learn in a team approach is equally or even more important than having a broad range of technical and vocational know-how learned from theoretical coursework and imitation of skills by learners.

Yet, in many countries, generally more so in transition and developing countries, there is still a strong tendency to equate teaching and training in TVET with pure lecturing. This is often the least suitable preparation for lifelong learning where new problems and as yet unknown job and skill requirements will require ongoing problem solving without external coaching, underlying again the critical role played by teamwork and self-learning capacity for present and future workplace responses. The opening up of the pedagogical “method box” in TVET and effective application of new teaching/learning approaches therefore could be a means of liberalizing learning for teachers and trainers. It also offers a much more relevant and effective way of acquiring competencies that is appreciated by enterprises, students, teachers and trainers and trade unions, precisely because of its

¹ DACUM stands for “developing a curriculum” and is a method first developed in Canada that is frequently used in carrying out occupational analysis and in developing curricula and occupational standards. This work is done in a one- or two-day exercise that provides a picture of duties, tasks, knowledge, skills, traits and in some case work and business processes in specific occupational fields. These exercises can also be carried out on a tripartite basis. For more information see www.dacum.org, visited on 26 May 2010.

relevance and validity for the transition from TVET institutions to work (see also Chapter 2 on new learning approaches and teacher skills criteria).

Social partners and TVET

One of the strengths of successful demand-driven schemes in vocational education and training is the active participation of social partners in the design and the implementation of programmes. Involving employers and trade unions by institutional means in assessing rapidly changing requirements of labour markets (active labour market policies – ALMP) and designing programmes that respond to employment and workplace protection needs (in the international context, ILO-initiated country-level Decent Work Country Programmes – and responses to the Global Jobs Pact noted above) is widely perceived to be necessary to TVET system responsiveness (CEDEFOP, 2009; ILO, 2008c 2010c and 2010d, OECD, 2009a).

A strategy on skills development and lifelong learning prepared by employers' representatives for the G20 in 2010 emphasized the importance of employers' contributions to such policies, notably by: providing training; encouraging policies that match education and training to the needs of the labour market; encouraging and supporting lifelong learning; and maintaining the relevance of continuous learning through education and training by means of constant evaluation and system improvements. The strategy calls for: governments to create more vocational education and training schools or options within mainstream schools, better integrated in education systems with bridges to universities; more enterprise-based apprenticeships; active engagement of businesses in vocational education and training programmes by means of industry advice, work placements and participation in management boards; public–private partnerships to maximize use of resources and expertise, especially in developing countries; and more research on vocational training as a basis for future-oriented policies (IOE and BIAC, 2010: 3).

As for the workers' representatives' engagement in TVET planning and application, their competence and their ability depend largely on the strength of the labour movement, but cases show that they can play a very active role, especially in TVET systems of European and other OECD countries (Egger and Sengenberger, 2003; OECD, 2009a). Trade unions have called for: government policies to include a clear focus on vocational training, an essential element to ensure full participation in work and life for young workers in particular; international development agencies and banks to prioritize support for vocational training for young workers; and trade unions to campaign for transition from the educational system to work and trade union participation in educational activities during the final school years (ITUC, 2010: 2). The international organization of teachers, Education International (EI), has stressed that governments should invest in vocational education and training as part of the response to the global economic crisis, creating more not fewer opportunities to train young people, up-skill the current workforce, and encourage lifelong learning across society (EI, 2009a). As with employers and enterprises, however, greater efforts are needed to get trade unions involved in actively designing TVET policies by means of social dialogue.

Major innovations in TVET provisions – Private and public

Providing background information and a detailed discussion on the many innovations in TVET provisions (both private and public) in the last decade exceeds the scope of this report. For purposes of the report, trends and issues listed below may be used as a starting point (see inter alia: CEDEFOP, 2009; Grootings and Nielsen, 2005; ILO, 2008a, 2008b and 2010c; OECD, 2009) for considering the contextual background that is shaping policy consideration around major trends and innovations in training and employment of teachers

and trainers in TVET institutions and systems, and which is outlined in more detail in later chapters.

Among the most creative and most important innovations in TVET provisions in recent years are:

- Increased understanding that TVET can only be reformed within an integrated labour market-centred approach, including employment services, TVET and career guidance, labour market analysis (LMA) and labour market information systems (LMIS).
- Enhanced role and functions of qualification frameworks in TVET provisions as one tool within the building blocks for TVET reform.
- Increased responsiveness to technological changes in TVET provisions.
- Growing importance of appropriate combinations of school and work-based TVET, including formal and informal apprenticeship programmes.
- Shift from a concept of “trainability” to “employability” in TVET.
- Innovations in new learning theories (learning in “holistic” real-work and real-life contexts) with implications for TVET students, teachers and managers.
- Development of core skills as building blocks for lifelong learning in TVET and the capability to a change.
- Incorporating entrepreneurship in TVET, including for women entrepreneurs, so as to build awareness of self-employment and small business development as post-training livelihood options.
- Increased importance of vocational research, e.g. for shaping TVET policies.
- Importance of TVET institutions’ autonomy in the delivery of relevant TVET linked with accountability for training results.
- Capabilities to anticipate future skills needs and to adjust existing TVET systems to prepare for future jobs, including institutions to link employers and training providers and to integrate education and training in national and sector development strategies.
- Social dialogue in the process of establishing and reforming TVET systems.
- New concepts in training of teachers and trainers for TVET.

2. Initial education and professional development of teachers and trainers in TVET

Technical/vocational teacher training in TVET reform processes

In the last ten years the roles and responsibilities of teachers and trainers in TVET have changed considerably in a wide range of countries, becoming multi-functional and combining many professional elements with those of active stakeholders in TVET (CEDEFOP, 2009; ETF, 2006; Grootings and Nielsen, 2005; OECD, 2009a). The changes have challenged teacher training programmes to adapt to change via new policies and structures so as to prepare trainers for their new and constantly evolving roles.

New learning approaches: Influences on teachers' roles and training

As demands for innovation and systemic reform have increased, so has the need for changes that create new opportunities for TVET teachers and trainers to work more closely with key beneficiaries of their services, not least enterprises and their representatives by:

- enabling schools at the local level to open mutually beneficial bridges to enterprises and communities;
- letting teachers and trainers take the initiative in establishing local TVET education, training and employment partnerships and TVET networks, including placements of teachers with local industry and services, public and private; and
- combining autonomy for schools and teachers with improved accountability towards stakeholders, including students and parents.

Such changes imply reform strategies that combine vertical decentralization of decision-making on at least some teacher training and curricula matters (from central/ministerial to local/institutional level) with horizontal network building at community level. It also implies the transformation of TVET schools as autonomous professional organizations, subject to the overall regulatory role of governments/public agencies, and the involvement of teachers as individual professionals in greater decision-making, with the positive and motivational incentives for teachers derived from:

- increased competencies through direct enterprise/workplace contacts and internships;
- collection of ideas for training assignments and projects with local enterprises; and
- career structures that permit recognition of updated training and competencies, combined with career promotions based on these contacts and the resulting improvements in teaching performance and learning outcomes.

New learning theories, which advocate the active involvement of learners in regulating their own learning progress, underpin arguments for a different role of teachers and trainers (as individuals and as staff members in professional organizations). These learning theories are based on new insights from a variety of disciplines into how people deal with new information and develop new knowledge and competencies (Hmelo-Silver, 2004). These learning approaches argue that in order for effective retention and use, new

information must be meaningful, and meaningful information is developed in concrete contexts, for example in TVET in whole work and business processes. The new learning theories have also gained in popularity for very practical reasons: the volume of new knowledge and changes in the workplace have made it increasingly difficult for individuals to obtain all the knowledge and skills they require at one particular stage of their (work) life, because there is simply too much to absorb at one go (Lee, et al., 2004).

The concept of lifelong learning as noted in Chapter 1 goes even further. Lifelong learning emphasizes the acquisition of key competencies, such as the ability to learn continually, to solve problems in varied situations and to function in team-based environments. The rapid increase in alternative sources of knowledge as a result of developments in information and communication technologies (ICT) on the other hand makes it less important for people to acquire all information in one learning sequence, as long as they are able to find information and select what is necessary for them for a specific (work) situation, for meaningful sequences of work situations and for whole work and business processes. Such developments imply that rather than becoming obsolete, teachers' and trainers' roles are evolving from traditional roles as lecturers in domain-specific expert knowledge towards that of facilitators and coaches of learning processes in skills development (Grootings and Nielsen, 2005: 13).

Teachers and trainers in TVET who are trained to meet these new challenges and who are used as key agents of change in reform processes contribute to designing new classroom and workshop learning in TVET schools. They also give feedback about training in enterprises and other workplaces. For these reasons, involving teachers, trainers and instructors in designing appropriate learning environments that contribute to the development of improved TVET systems, and in the process recognition as full stakeholders in TVET reform along with acceptance of their own changing professional roles, has become one of the fundamental discussion threads in debates around evolving roles and responsibilities (Grootings and Nielsen, 2005: 14; Nielsen and Nikolovska, 2007). As part of this process, new TVET teacher training approaches are needed to accompany and support these changes.

Change and the decision-making process: Involving the teachers and trainers

One of the principal theses of this report is that fundamental TVET reform, particularly in transition and developing countries, will only be successful and sustainable if TVET policy development, formulation and implementation are firmly based on clear ownership and fit within existing TVET institutions. The concept applies as well to teacher training. In particular, reforms must draw on the experience of teachers and trainers in propelling change towards new levels of learning experiences and quality outcomes that take account of the evolving nature of learning noted above, through creative teacher training and innovations at institutional and systemic levels. In many countries, there has been a growing awareness that teachers and trainers need to be included among the key stakeholders for purposes of deciding on and implementing reforms and innovation, not the least teacher preparation and professional development. This comes from a better understanding of why so many education reforms across the world often have failed in the past. The exclusion of teachers and trainers in TVET as stakeholders from the reform process has repeatedly led to a failure of national reform policies to trigger real changes in TVET (Grootings and Nielsen, 2005: 12; OECD–CERI, 2009: 75–76), mirroring findings made for education and teaching at all levels (ILO–UNESCO, 2007; 2010), a subject explored in more depth in Chapter 5.

International standards on teacher preparation that also cover TVET staff at either secondary or tertiary level in fact call for the input of future and current teachers and

teachers' organizations in teacher preparation programmes and institutional decision-making, both initial and further education (ILO and UNESCO, 1966; UNESCO, 1997). TVET staff have increasingly been recognized as key agents for successful TVET reforms in their professional roles/capacities as organizers of learning (Grollman and Rauner, 2007). However, fully engaging teachers and trainers in this process involves much more than only letting them know what is expected of them, and/or simply training them to implement new policies. Effective participation in designing new teaching and learning programmes goes to the core concept of involving teachers as professionals, since they often know what will work best in meeting the particular skills needs for student populations in relation to occupational profiles in their own TVET schools, classroom environments, and the vital networks with employers and unions, parents and local school authorities/municipalities.

Their experience is therefore of utmost importance for translating general TVET policy initiatives into very divergent and vibrant real-life and real-work contexts. TVET policy-makers are advised to keep in mind that a better understanding of the roles of teachers and trainers in this all important transformation process will likely have positive impacts on implementation of reform policies and for the process of TVET policy development and formulation. If such concepts are applied, TVET policy-makers will find that they have “natural allies” in the teaching and training community.

At the same time, such engagement should not be unconditional. One particular risk is that teachers and trainers, especially in many transition countries and developing countries, often lack practical work experience and a thorough understanding of the work environments in which their students might find themselves when leaving TVET schools for work. Given that one of the core objectives of TVET reform is to link institutions more closely to the qualification needs of enterprises and other workplaces where this is not already the case, relying on teachers and trainers without this vital understanding to design and carry out programmes can have a negative impact on programme outcomes.

Moreover, employment security and tenure, important for issues of academic freedom, professional responsibility and stability in learning environments (ILO and UNESCO, 1966; 2007; 2010; UNESCO, 1997), may raise barriers to reforms if TVET systems do not also encourage and recognize the willingness and ability of teachers and trainers to adapt to change. Usually, after two or three years of teaching, TVET personnel in public institutions are given lifetime tenure if they satisfy established criteria (see also Chapter 3). However, such guarantees are helped by accompanying them with strong appraisal systems to ensure respect for professional standards and a certain measure of accountability to institutional norms and student expectations so as to strengthen good teaching and learning environments. This is an area where engaging teachers and trainers through their organizations via strong social dialogue mechanisms (see Chapter 5) in designing and putting into place appraisal and accountability measures helps to achieve the right balance.

Recently, the OECD highlighted a clear incoherence in systems of TVET (including teacher training aspects), which emphasize greater accountability and increased assessment of system outcomes yet lack research evidence and stronger feedback in the evaluation processes from key actors, notably teachers and students. Citing previous research, the OECD report noted that teaching staff are less resistant to change than is often assumed, indeed a widespread “resistance to change” view is not supported by evidence and often held as a self-evident truth, because innovation literature is produced mostly by the designers of innovation and excludes the perspective of the teachers who implement it. They may as well resist reforms out of a sense of positive commitment to the values and mission of the TVET institution, notably their own professional development and the learning outcomes of students, particularly where reforms are imposed from the top with little or no consultation (Vähäsantanen and Eteläpelto, 2009: 30). Since new ideas are the

lifeblood of innovation, the OECD report calls for more space for idea generation and design of new approaches that draw on the insights of front line actors, such as teachers, trainers, learners, and business leaders. In particular, mechanisms need to be established between policy-makers, researchers and teachers and trainers to encourage innovation in institutions and programmes, notably those engaged in initial and continuous TVET teacher training (OECD–CERI, 2009: 13, 54, 66, 95–96, 257).

Criteria for “good” teachers and trainers in TVET: The training challenges

In response to the challenges facing TVET systems and their staff, as well as their initial and further preparation for evolving roles, an effort is made below to set out some criteria for excellence – what some might term “good” teachers – as a prerequisite for defining the necessary training and qualification system that responds to such objectives.

Bearing in mind that such criteria cannot be overly prescriptive nor considered exclusive in view of the great diversity of country systems and the complexity of needs, “good” teachers and trainers may be understood as those who meet a certain number of professional criteria (ILO, 2000: 34-35; Nielsen, 2007: 58), tangible and intangible, including:

- extensive knowledge in one or more subjects or fields of learning;
- a high degree of functionality in ICT and technological processes;
- general understanding and ability to share larger economic and social realities with students;
- capacity to impart generic learning skills to students through their instruction and organization of learning processes;
- ability to function collaboratively in a team;
- research, reflection and change as necessary in teaching practice (teacher as learner);
- ability to communicate and empathize with students;
- capacity to innovate and impart innovation in learning.

Depending on the national TVET context, teachers and trainers will have gone through a number of different stages of training and have developed skills that can be measured both quantitatively and qualitatively. Among the possible stages are:

- initial university, post-secondary or tertiary studies of from one to three years on average;
- non-academic work experience for example in internships or other alternatives;
- industry and/or service work experience of varying duration;
- pre-service teacher training in addition to disciplinary studies;
- ongoing in-service teacher training (continual professional development – CPD).

These different stages in teacher training might be done in various combinations, although non-academic work or industry/service work is increasingly considered an

essential component of TVET preparation, as is some grounding in pre-service pedagogical training and lifelong access to CPD following concepts of lifelong learning for all and the crucial need for TVET teachers to renew their skills set in the course of their teaching career. A set of possible competencies acquired at these different stages is set out in Appendix I.

Transition from universities and other institutions to TVET schools

Initial university or other tertiary programmes for TVET personnel

Many university or other tertiary programmes exist to prepare TVET personnel for their tasks. Programmes range from doctoral programmes, to master's, bachelor and associate degrees.

Some master's degree programmes specialize in TVET teacher training culminating in government certification of successful completion, for example specific state board exams for TVET staff in countries like Australia (see box 2.1), Denmark, France, Germany, Ireland, New Zealand and the United Kingdom.

Box 2.1

TVET teacher training in Australia: Becoming a teacher/trainer in a TAFE college

Training and further education (TAFE) is Australia's largest provider of vocational education and training in a learning environment different from university. The network of TAFE colleges across Australia offers courses designed for young people preparing for their first job, people looking to train or retrain and those preparing for university studies. TAFE courses provide students with practical skills transferable to the workplace and are usually set around industry training packages. Most TAFE courses are developed with industry and tuition fees are charged.

Courses are taught by certified teachers and trainers in the TAFE system. For example in the state of South Australia, in order to become a teacher in a TAFE college, teachers/trainers are required to:

- undergo university studies to master's degree level in their field of specialization;
- complete an approved teacher education programme in Australia;
- have between three and six years of vocational experience and/or experience above the minimum vocational and/or industrial experience prescribed for the teaching position;
- take a selection of ongoing in-service teacher training programmes offered by the respective Departments of Labour in each Australian state.

Source: GSA-TAFESA, 2010.

Master's degree programmes in Australia and in some of the other countries mentioned above usually combine theoretical studies of a vocational discipline, for example in electrical engineering, with general and/or vocational pedagogy. Other programmes at the master's degree level are not necessarily designed specifically for TVET teaching and training, for example those in engineering, and the graduates of these programmes may only decide on a career in TVET after graduating from university. Such entry paths were previously the rule in many south-east European countries before reforms in vocational teacher training beginning in the 1990s (Nielsen, 2007: 68).

As a consequence of the Bologna Declaration of June 1999, the European Union (EU) took the initiative to create a European Higher Education Area (EHEA) with comparable degrees organized in a three cycle structure of bachelor (three to four years) – master (one to two years) – doctorate. The initiative was also driven by EU vocational training policies

with a focus on the Lisbon objectives and the Copenhagen process, with the result that European countries have increasingly developed bachelor programmes for TVET teaching and training in the last ten years. These combine theoretical studies in a vocational discipline with an accompanying syllabus in pedagogy and other studies and cover a three-year period of university studies (European Commission, 2010).¹

Associate degrees (for example, two-year programmes within a bachelor's degree programme) mark the lowest academic university programmes for TVET teaching and training at least in developed countries. Combined with relevant work experience in a specific vocational discipline they can nevertheless lead to entry level qualifications for TVET teaching and training, for example in community colleges in the United States.

Developing countries at the same time are increasingly looking to upgrade pre-service training standards. In Ethiopia, Indonesia and Malaysia, for example, PhD programmes in TVET are currently being discussed and efforts made to develop transnational standards for PhD programmes in TVET research for technical and vocational education and training with a focus on multidisciplinary and industrial orientation (TT-TVET, 2008).

Initial education standards and programmes for entry into TVET

In many countries, candidates for initial entry into the TVET system as teachers and trainers are required to have qualifications at the bachelor's degree level, for example currently in countries as divergent as Indonesia, Saudi Arabia, Serbia and the United States. The requirements regarding the formal entry qualification for TVET teaching positions are normally set by national legislation. A licensing procedure for career and technical education (CTE) can be seen in box 2.2.

Box 2.2

United States: Licensing and credentialing of teachers in Career and Technical Education (CTE)

In the United States, all 50 states and the District of Columbia require public school CTE teachers in middle and secondary schools to be licensed. Usually licensure is granted by the state board of education or a licensure advisory committee. All states require teachers to have a bachelor's degree and to have completed an approved teacher training programme with a prescribed number of subject and education credits, as well as supervised practice teaching. Some states also require technology training and the attainment of a minimum grade point average. A number of states require teachers to obtain a master's degree in education within a specified period after they begin teaching. Almost all states require an applicant for a teacher's licence to take a competency test, and most states require teachers to complete a minimum number of hours of continuing education to renew their licence. Many states have reciprocity agreements that make it easier for teachers licensed in one to become licensed in another.

However, there are alternative routes to licensure which allow those who did not go through a traditional teacher preparation programme to become licensed CTE teachers. Often this requires work experience in addition to a high school diploma or a bachelor's degree without teacher preparation. The educational requirement varies depending on the state and the amount of an applicant's experience.

Source: USA-BLS, 2009.

Vocational training reform in many European and OECD countries has led to a redefinition and diversification of TVET teacher and trainer functions. Following descriptions of the changing roles of teachers and trainers above, in modern vocational training systems effective TVET teaching depends not only on academic experience and teaching skills but also on the ability to work in a team, to reflect and to reconceptualize

¹ A new EHEA was launched in March 2010 in the Budapest/Vienna Declaration by EU Ministers.

vocational training and to understand the reasons for change. An OECD expert description of European countries' adjustment to teaching and learning approaches within the Lisbon framework sums up the change process in terms of a "knowledge-rich education system, in which teachers and trainers and school principals act as partners and have the authority to act, with the necessary information to do so, and with access to effective support systems to assist them in implementing change" (Schleicher, 2006: 3).

In many countries, however, university teaching and research capacities are not integrated with TVET development, one reason for a somewhat uncoordinated approach to teacher training within developing and transitional countries. Many of these countries often depend on the expertise of TVET professionals from more or less innovative TVET traditions in some of the more developed countries to advise on strengthening training systems. A better integration of the national scientific and technical infrastructure – largely based in the universities – with national TVET development constitutes the main policy reform needed to overcome this dilemma. The development of targeted master's degree programmes for TVET teaching personnel in Ethiopia provides an example of one current reform (box 2.3).

Box 2.3

TVET teacher training in Ethiopia: Bachelor and master programmes in TVET teacher training within the Ethiopian Engineering Capacity Building Programme (ECBP)

Within its development cooperation programme with Ethiopia, the Government of Germany is supporting the ECBP. In this context Ethiopia has under consideration proposals to establish TVET teacher programmes at universities as part of its university reforms.

Besides technical modules in electrical, metal and civil engineering, the proposed new study programme would include modules in vocational pedagogy, subject-related didactics, general sciences and humanities. Different bachelor's and master's degree programmes would train young people at vocational colleges in levels three and four within the five level Ethiopian TVET Qualifications Framework (ETQF). The modules in vocational discipline concentrate on work – and business processes, quality management and project management within an occupational specialization.

The master's degree programme would focus on vocational management and vocational research to facilitate work as teachers in leading positions within TVET institutions such as principal or head of department. These skills are also designed to prepare students to plan, carry out and evaluate research work in the vocational fields in enterprises as well as in private and public TVET institutes. Management modules have been designed on human resources, organizational management, and financial and material management, in addition to modules in the area of vocational research such as work process analyses, field research, and vocational education policy analysis.

As part of the bachelor's degree studies, fewer practical experiences in vocational colleges are planned, whereas the master's degree programme is designed to have modules for internships in vocational institutions, including internship preparation and evaluation. In the initial phase, the Government of Ethiopia is focusing on integrating more practical elements into teacher training, such as internships for teachers and students.

Source: ECBP, 2010.

Non-academic work experience

In a few countries an additional entry qualification for TVET teaching has been introduced in the form of significant non-academic work experience, for example participation in internships or apprenticeship programmes. This is a requirement, for example, in Australia, Austria, Germany, New Zealand and the United Kingdom and is being introduced in others, varying between 12 months' and six years' experience as the minimum entry requirement for a TVET position.

Some countries require the combination of a master's degree plus non-academic work experience, for example, Austria, Denmark, Germany and Luxembourg. On the other hand, future TVET instructors, i.e. those with considerable work experience in technical

disciplines as master artisans need to take additional pedagogical training. Furthermore, a few countries have started to develop specific teacher training programmes for up-skilling of individuals with industry experience (for example, mid-career engineers) and have designed programmes for the transition of individuals with industry experience into the TVET teaching profession. Among these countries are Denmark, Germany, Ireland and the Netherlands. In Germany, a reform in the Vocational Training Act in 2005 now allows for engineers and technicians to enter the TVET teaching profession (BMBF, 2005: 9–10; BMBF, 2010).

In summary, initial education standards and entry programmes vary by country and at least in developed countries range from an upper level requiring a master's degree from a university plus up to six years of academic or non-academic work experience to a bachelor's or even an associate's degree with little or no work experience. No evidence was found that any countries other than OECD countries require non-academic experiences as a requisite for teaching and training in TVET.

Trends in TVET teacher training in OECD countries, especially in the European countries, seem to indicate that university programmes are becoming shorter (due to the reorganization of master's and the introduction of more bachelor programmes, including in TVET (Grollman, 2009), and that some countries tend to deal with immediate TVET personnel shortages by designing specific programmes for individuals with industry experience, as mentioned above.

Pre-service teacher training for TVET personnel

Pre-service training for teachers and trainers in TVET remains the exception rather than the rule in preparing for TVET teaching jobs. Nevertheless, some countries and institutions emphasize such preparation as a foundation of their training policy as, for example, an innovative vocational teacher training module, Duale Trajecten BE, developed by the teacher training college, Fontys, in the Netherlands in 1997 (Cort, Härkönen and Volmari, 2004), a strong TVET pre-service teacher training tradition in Germany (box 2.4) and a diversified programme in Saudi Arabia (box 2.5) tied to an ambitious recruitment programme (see Chapter 3), as well as ETF experiments with pre-service vocational teacher training reform in Macedonia based on the Fontys model in the Netherlands (Nielsen 2007: 61).

The objective behind a solid pre-service training for TVET teachers and trainers is to lay the foundation for the building of professional capabilities in TVET teaching, including self-organization, combining practical and theoretical aspects of teaching and practising multi-disciplinary teamwork. Where they exist, these programmes can vary in length from three months to two years and are usually looked upon as a training or apprenticeship period for future TVET teachers and trainers. The focus of such pre-service teacher training usually is placed on developing professional skills, among other areas of learning:

- vocational pedagogy and didactics;
- selecting and mastering appropriate work forms and media;
- improving professional communication (with students, teachers, employers, unions, etc.);
- accompanying individual and social processes of students, e.g. peer group learning and learning groups;
- non-instructional aspects (such as TVET administration, time management, contacts with stakeholders, counselling, vocational guidance, etc.).

Box 2.4

TVET teacher training in Germany: Emphasis on pre-service training

Teacher training in TVET in Germany is composed of different stages:

- University studies of at least three years in a vocational major (e.g. electrical engineering) and a non-vocational minor subject (e.g. Spanish), as well as in pedagogy.
- Obligatory 12-months' work experience.
- A two-year pre-service teacher training programme at a vocational education teacher training institute (VETTI) combining work as a vocational school teacher with seminars in the major and minor areas of specialization.
- Ongoing in-service training programmes in technical areas, vocational pedagogy and new technologies.

The first three stages can be combined in different ways. However, the two-year pre-service teacher training programme always completes the initial TVET teacher training chain and finishes with an external state board exam for TVET teaching.

The final two-year pre-service teacher training (some states (Länder) have one-year programmes) brings together the theoretical experiences from university studies with TVET teaching and training in schools by developing the identity of the teachers as experts in vocational teaching. It emphasizes reflective learning, project work, work- and business-process related learning, development of occupational competencies, trial-run teaching situations, "micro-teaching", * self-organized learning and innovative teaching methods. An external second state board exam rounds off the first three phases and, if successfully passed, marks the entry into TVET teaching and training.

Following the Bologna Declaration, new models of pre-service TVET teacher training in Germany are under discussion (see Bünning and Shilela, 2006).

Source: Axmann, 2002.

* Micro-teaching are peer teaching experiments carried out in the presence of other teachers for short sequences (e.g. 15 minutes) in teacher training situations.

Box 2.5

Saudi Arabia: A diversified teacher/trainer programme

The three-year bachelor programme in Saudi Arabia combines a theoretical component in one of the six targeted "vocational disciplines" (business administration, information technology, electrical technology, mechanical technology, automotive technology and construction technology) with vocational pedagogy (learning how to teach technical subjects and carrying out micro-teaching situations in front of other teachers), company field practice (internships for teachers in enterprises), vocational field practice (trial-run teaching situations in real TVET classes) and a practical bachelor project (e.g. planning, carrying out and evaluating sequences of teaching or planning tracer studies for students from TVET schools).

The technical subjects in the vocational discipline streams are carried out in three stages: basic modules of the vocational field (e.g. research methodology in business administration); basic specialties (e.g. marketing project in accounting); and advanced specialties (e.g. international marketing). The more practical elements of company-based field practice and vocational field practice balance theoretical and practical elements of the teacher training programme. Vocational pedagogy focuses on the main elements of work- and business-related processes relating to occupational challenges within each vocational discipline.

Source: TTC, 2010; Saudi Arabia GDDDC, 2010.

The organizational framework for preparing TVET teachers in pre-service programmes usually combines time spent as prospective TVET teachers in vocational schools and in vocational education teacher training institutes with a focus on the experience of teaching situations, mixing teaching supervised by experienced TVET teachers and in group situations with peers. A strong emphasis in pre-service teacher training is usually put on trial-run teaching situations in vocational disciplines, where teaching takes place in front of teacher trainers and peers with the results discussed at the end of the trials.

Completion of TVET pre-service teacher training is then sometimes validated by state board licensing (such as in Austria and Germany) which verifies and to what extent the prospective TVET teachers are qualified to actually teach. The exam(s) yield an accreditation to the new TVET teachers in the form of a grade, which in part determines (and perhaps significantly) their future career path in the TVET system.

Continual professional development and in-service teacher training

As in general education, continual professional development (CPD), which encompasses but may go beyond in-service training, constitutes a fundamental and increasingly important link in the TVET teacher/trainer learning chain. International standards on further and in-service education (ILO and UNESCO, 1966: 6–7; ILO, 2000: 35) stress the necessity, even professional obligation, of such lifelong learning opportunities for all teaching professionals in the interests of education and teaching quality, including the need to integrate the latest educational research into successful programmes, establishing incentives for teachers (financial but also timetabling and delivery modes) that will permit teachers to take advantage of opportunities or meet regulatory obligations and exchanges with enterprises and other non-school workplaces.

The relevance of CPD, in-service or otherwise, to TVET is accentuated by the technological basis for much of such training, its complexity and constantly evolving nature. ICT-based learning is a case in point. Teachers and trainers are increasingly required (by policy or necessity) to incorporate ICT techniques in classroom or Internet-based learning approaches and to organize participatory learning with “remote” (distance-learning) students who may in addition comprise a more diverse group in terms of age, ethnicity and educational background than they would normally be accustomed to teaching. Exploiting the new approaches requires new or upgraded skills, hence the importance of training to cope with these demands. In Hungary, ICT capacity is now a requirement of all industrial and vocational teachers, supported by a special information technology programme in vocational schools, curricula and training to support virtual learning environments (CEDEFOP, 2005; 2009: 95; ETF, 2006).

Without continual updating of knowledge, skills and competencies, TVET teachers and trainers run the risk of rapidly becoming obsolete in their teaching capacity. Yet, as with general education, there may be good reasons to suspect that CPD constitutes the weakest link in the teacher/trainer learning chain, often ad hoc, with little input from teachers and not linked to career progression nor collaborative networking possibilities (ILO and UNESCO, 2010: 20). Some countries, largely high-income countries, have specifically targeted such gaps, for example, France, Hungary, Italy and Ireland, the latter with a dedicated institute whose mission is to support vocational research as well as in-service teacher training in this area (CEDEFOP, 2009: 95, 111). Australia provides a glimpse into the breadth and remaining gaps in CPD provision in a country with a highly developed TVET system (box 2.6). Universal and sustained access of TVET teachers and trainers to CPD is not a given, even in developed countries.

Box 2.6
CPD in Australia

In Australia, CPD is rather extensive across the range of providers. Staff development provision in some public sector providers (Institute for Technology) is considered good for full-time staff but less so for part-time and session staff. Private providers cater for full-time staff with individual training budgets and part-time staff on a pro-rata financing basis but session staff receive no financial incentives. A percentage of the salary package (6 per cent) is dedicated to continual training provision for tertiary TVET staff in remote areas and TAFE institutions devote two weeks per year to professional development for all staff, though contract and session staff do not receive full benefits. Despite the range of provision, the latest survey of TVET training (2010) found that current professional development opportunities meet only 55 per cent of the professional requirements of TVET trainers and assessors.

Source: Harris et al., 2006; Mitchell and Ward, 2010.

In many countries, in-service teacher training for TVET personnel is a very practical solution for increasing TVET teachers' and trainers' professional levels, and to flexibly respond to teacher needs. In addition to the crucial importance for national systems, such training is also a part of the technical cooperation work of international organizations interested in TVET questions, including the ILO's work on skills development (see, for example, Bangladesh – ILO, 2010f) and European Union support to prospective candidate countries (among which at various stages Bosnia and Herzegovina, Croatia, Estonia, Latvia, Lithuania, The former Yugoslav Republic of Macedonia, Serbia, and Slovenia) through programmes such as CARDS and TACIS² (Grootings and Nielsen, 2005; Nielsen and Nikolovska, 2007).

These programmes may be organized as short-term and as longer-term courses. In their short-term versions, they can usually be very cost-effective and are an efficient tool to promote TVET personnel human resource development at regular intervals. The programmes assist new teachers and trainers in the transition from universities to TVET institutions, whether they are public or private and are usually able to quickly respond to changing roles and professional development needs of TVET personnel. Countries noted above that have implemented in-service teacher training programmes for TVET staff at national level have systems that usually operate either within the framework of ministries of education (exceptionally also with ministries of labour), with national TVET centres or as part of national or regional centres for teacher training. National centres often play an important role in supporting teachers with training that enhances their capacity to adapt to change and increase professional development (for example, in Slovenia, see: CPI, 2007). Programmes may also be implemented in cooperation with enterprises that offer their premises in order to improve the quality of TVET training and in trades where employers are anxious to ensure a supply of promising future graduates for booming industries or services. One of these in-service initiatives within the EU cooperative process is described in box 2.7.

² CARDS stands for Community Assistance for Reconstruction, Development and Stabilization and TACIS for Technical Assistance to the Commonwealth of Independent States, both of which were EU reform programmes in the countries of former Yugoslavia and the former countries of the Soviet Union (Commonwealth of Independent States).

Box 2.7

TVET teacher training in Serbia: In-service TVET teacher training reforms within a CARDS project of the European Union (EU)

In recent years a traditionally university-heavy technical and pedagogical training programme for future TVET teachers, with little or no non-academic work experience prior to teaching in the more than 300 TVET schools in Serbia, has begun to be reformed by the Ministry of Education (MoE) in Serbia in close collaboration with the EU and with other bilateral partners.

The reforms included introducing a new system of in-service teacher training, which was only offered sporadically up to 2000. In 2006 and 2007 a comprehensive in-service TVET teacher training programme was set up in three sectors of TVET (wood processing, catering and tourism, and information technology) and eight occupationally specific courses consisting of general courses on vocational pedagogy and didactics, sector specific training for TVET instructors and organized internships for teachers in those three sectors. The MoE reforms focused on new and better TVET teaching methods, greater attention to innovation, fund-raising, improving communications and relations between schools and their "clients" (such as local businesses, local municipalities, labour market offices and employment services, parents, students and other regional stakeholders).

Job placement, job guidance (including tracer studies), skills and training needs analysis and regional labour market analysis were also part of the reform approach. More than 1,000 TVET teachers out of a total of about 15,000 TVET teachers in Serbia have been trained under this programme based on a package of 27 in-service teacher training days. These were jointly developed and carried out by more than 40 master trainers who now serve as a pool of experienced TVET teacher trainers in Serbia and work very closely with the MoE and the national TVET centre.

Source: Ministry of Education, Republic of Serbia, 2010.

As with pre-service education, in-service teacher training courses vary greatly from country to country in terms of their length and subject matter, deal with a variety of different technical topics and specific training issues and can also include non-training aspects. A typical list for in-service teacher training in TVET might include different packages and expected learning outcomes as set out in Appendix I.

If designed and implemented properly, in-service teacher training can be adapted quickly to changing needs, can be delivered to different target groups (even to a whole TVET school) and can be delivered in different modules. In some countries (such as, for example, Austria, Denmark, Finland, Germany, Luxembourg) a certain number of in-service teacher training days in TVET are required by national TVET legislation and are linked to career paths and advancement with the profession.

Assessment of TVET personnel

One of the critical, but often overlooked aspects of professional development is teacher appraisal. International standards and recommendations of the ILO set a conceptual goal for teacher appraisal in terms of encouragement and help to teachers, those in general education as well as in TVET, to effectively carry out their professional performance in ways that do not diminish their "freedom, initiative and responsibilities" (ILO and UNESCO, 1966: 8). The standards moreover set out basic criteria of objectivity, transparency, communication with teachers and rights of appeal of unfavourable assessments in the evaluation process. ILO constituents have agreed that such appraisal should be largely diagnostic and formative, identifying weaknesses so as to improve performance for the benefit of learners, based on holistic criteria that reflect all the variables in a school setting which affect teaching and learning (ILO, 2000: 35).

In principle, assessments can be made at each level of the training and employment cycle for teachers and trainers in TVET. University degrees are completed and assessed within the tertiary system of education and are brought to TVET institutions as initial

qualifications for entry into the system. Work experience for TVET teaching can be counted in terms of qualitative and/or quantitative work certificates received for internships, for apprenticeship programmes or for other extended work experiences.

At the end of pre-service teacher training programmes, a final exam may be carried out and builds the basis for career paths and professional development of TVET teachers and trainers. Pre-service teacher training can consist of a combination of the following assessment tools:

- graded teaching samples of TVET teaching in real class situations;
- written and oral exams in applied vocational teaching;
- planning, carrying out and evaluation of a sequence of lesson planning (usually documented in a thesis format, for example as a state board exam thesis in Austria).

In many, if not all TVET systems, regular assessments usually continue after the entry qualifications into TVET teaching have been met and are usually embedded in systems of regular visits of TVET teachers and trainers that occur every three to five years. Assessments may lead to tenure in TVET teaching and usually serve as a basis for career positions. In some countries they are carried out by the respective Ministries of Education or by pedagogical institutes and may be carried out by teacher supervisors or by directors/principals of TVET institutions. In many cases they are the basis for promotion and career development within the system of TVET teaching and training.

TVET teacher training and recruitment reforms in a number of countries in recent years have been based on a shift towards higher levels of certification as part of increased professionalism. The proposed national skills strategy in Bangladesh (GOB, 2009: 22–23) is a good example. It calls for a new national system of training and certification for instructors and trainers to deliver a more strategic approach to the development of the training workforce. The objective is to ensure that common standards, programmes and qualifications apply to all instructors and trainers working in the public and private sectors delivering programmes recognized by the Government for these purposes. If fully implemented, the system will feature: a national and integrated network of instructor training centres; a national pool of certified master trainers; review of instructor and trainer technical qualifications to ensure minimum technical and industrial standards; incentives to encourage private sector trainers to gain certification under the new system; and professional development plans for all public sector instructors and trainers to ensure they maintain skills up to date.

3. Employment of teachers and trainers in TVET

The employment numbers

There is no systematic collection of internationally comparable data on employment of teachers and trainers in TVET, no doubt due to the diversity of provision at different levels of education and the decentralized nature of data collection, often reliant in large part if not entirely on institutional rather than nationally centralized data. This data gap would be an area for further international cooperation as a basis for cross-country information sharing and policy planning. Information from OECD, national sources and UNESCO nevertheless provide a partial picture of employment in the sector.

Despite overall enrolment trends noted in Chapter 1, OECD (2010b) and United States Department of Labor statistics (USA-BLS, 2009) covering selected high- and upper-middle income OECD member countries show that some countries have made considerable efforts to increase the numbers of TVET teachers and trainers in recent years. For example, there has been significant growth of TVET personnel in Finland, Poland and the United Kingdom, but overall numbers of TVET personnel have fallen in France and Mexico. Austria, Germany and the United States have had more or less stable numbers of TVET personnel over this period (see table 3.1).

Developments in individual countries do not necessarily reflect higher or lower political priorities in TVET teacher engagement and development, but take into consideration capacity to finance employment in TVET and perhaps other policy considerations, which may differ quite significantly among countries. Furthermore, the figures may not reflect the full picture of TVET provision in terms of numbers of teachers/trainers compared to students/trainees. The increasing importance of information and communications technologies (ICT) in education delivery, whether purely distance-based or a combination of institutional and distance teaching/learning exchanges, means that fewer teachers may educate greater numbers of students, subject to infrastructure constraints, such as Internet access, dispersion of provision in countries with large rural and remote areas and similar factors.

Table 3.1. TVET teachers and trainers (pre-vocational and vocational programmes) in upper secondary education and post-secondary non-tertiary education, head counts, selected OECD countries, 2005–07

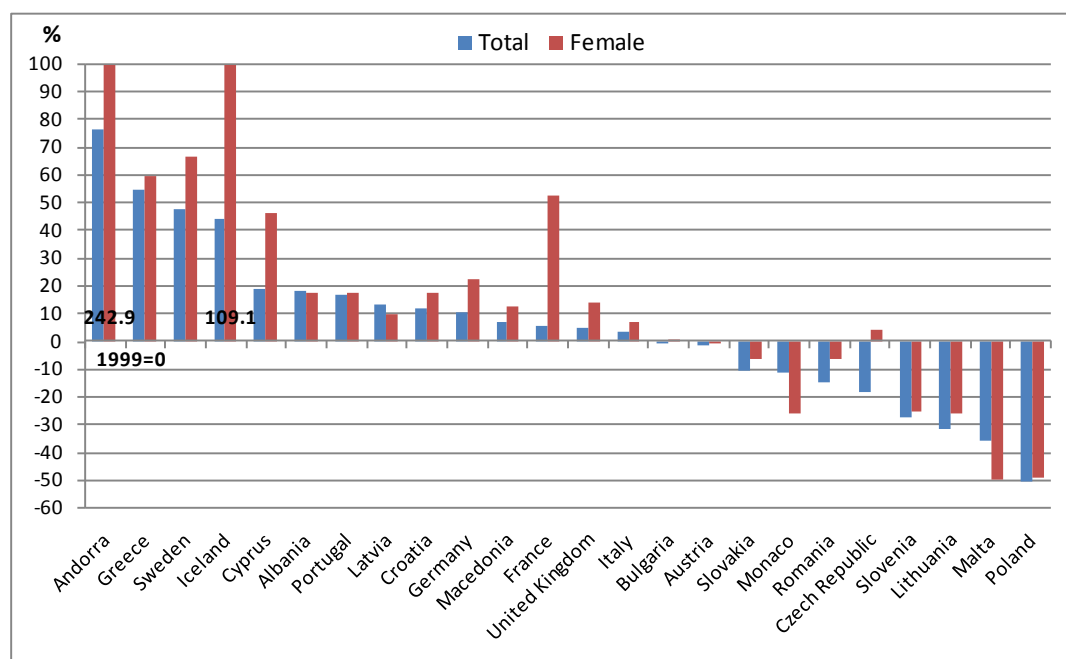
Country/year	2005	2006	2007	2008	Change 2005–07 %
Austria	26 811	26 767	27 233	n.a.	+1.60
Finland	14 015	15 665	16 346	n.a.	+16.60
France	92 826	77 083	78 604	n.a.	-15.30
Germany	99 949	100 760	101 757	n.a.	+1.80
Mexico	29 823	29 956	28 260	n.a.	-5.24
Poland	98 573	95 177	105 305	n.a.	+6.82
United Kingdom	167 376	162 142	185 064	n.a.	+10.56
United States *	110 885	111 109	113 144	115 100	+2.06

Sources: OECD, 2010b; USA-BLS, 2009.

* US figures are for lower and upper secondary (middle and high) schools. Because of the different reporting base, these numbers may seem low compared to other OECD member countries in the table.

A different data set on secondary TVET available from UNESCO over a longer reporting period indicates that of the 23 European countries for which comparable data is available (figure 3.1), more than half have substantially or slightly increased the numbers of secondary level teachers employed in TVET in recent years, while the remainder have reduced this number, sometimes by a large percentage. Although the data provide some rough idea of trends over time, because of the different reporting periods, definitions of programmes and inclusion of full- and part-time teachers, such data should be treated with caution as to trends and related country policies. Nevertheless, the data clearly indicates that even countries at similar socio-economic levels have not been moving in the same direction in TVET provision during the first years of this century.

Figure 3.1. Trends in TVET teaching employment in selected European countries, total and female, 1999–2007 (or latest available year) ¹



Source: UNESCO-UIS, 2010.

Some high-income and transition countries forecast steady growth in employment numbers in coming years as policies or practices are targeted towards meeting expected enrolment growth or continued expansion of TVET opportunities. Employment in the sector often accompanies efforts to reform and adapt provision to changing national needs, especially in the context of the economic recession. Serbia and the United States illustrate such trends (box 3.1).

¹ Figures 1–4 in this chapter are based on data for technical/vocational programmes at all secondary levels, public and private, covering full-time and part-time teachers. The base year, 1999, and the comparator year, 2007, may change for each country; see supporting tables in Appendix II.

Box 3.1
TVET employment growth in the United States and Serbia

United States

The employment of vocational education teachers at secondary level in the United States is expected to grow by 9 per cent until 2018 with a projected total employment of about 125,100 teachers and trainers in TVET by that date, approximately 10,000 more than at present. This is related to policies and incentives in recruiting personnel to replace departures and also in national economic stimulus measures since the beginning of 2009.

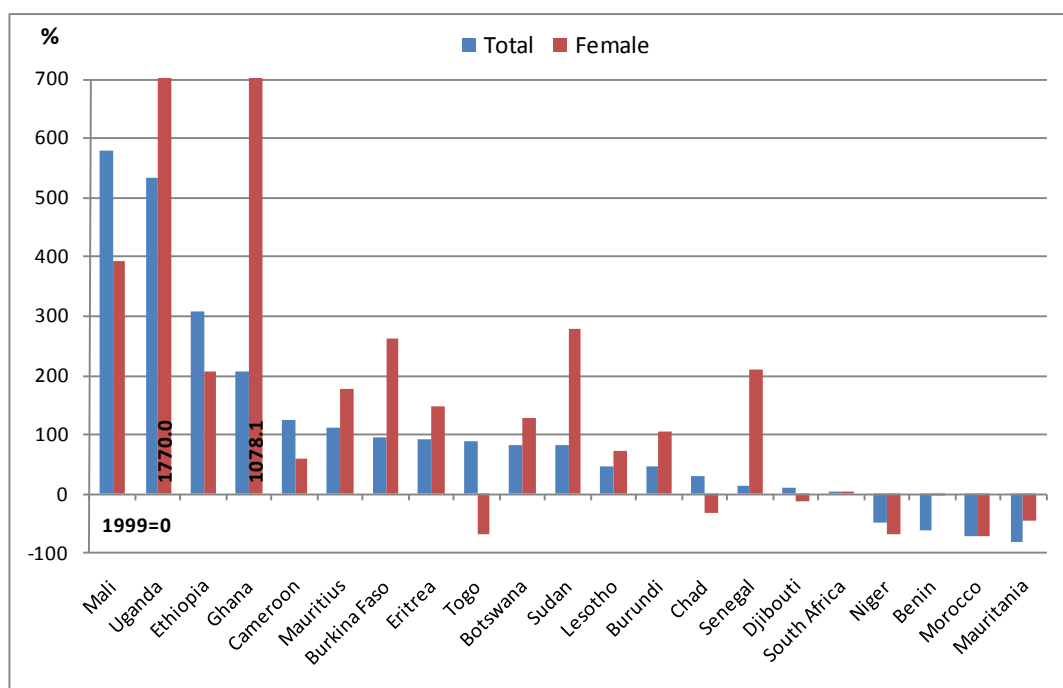
Serbia

The Ministry of Education (MoE) in Serbia is currently planning to raise the number of TVET teaching personnel in the more than 300 public TVET schools in the country. Efforts are being made to encourage more people to choose the TVET profession and TVET professional teaching associations, such as Dositej, predict two-digit growth rates in TVET personnel in the next five years.

Sources: United States: USA-BLS, 2009; Serbia: Dositej, 2010; Government of Serbia, 2006: 19–20.

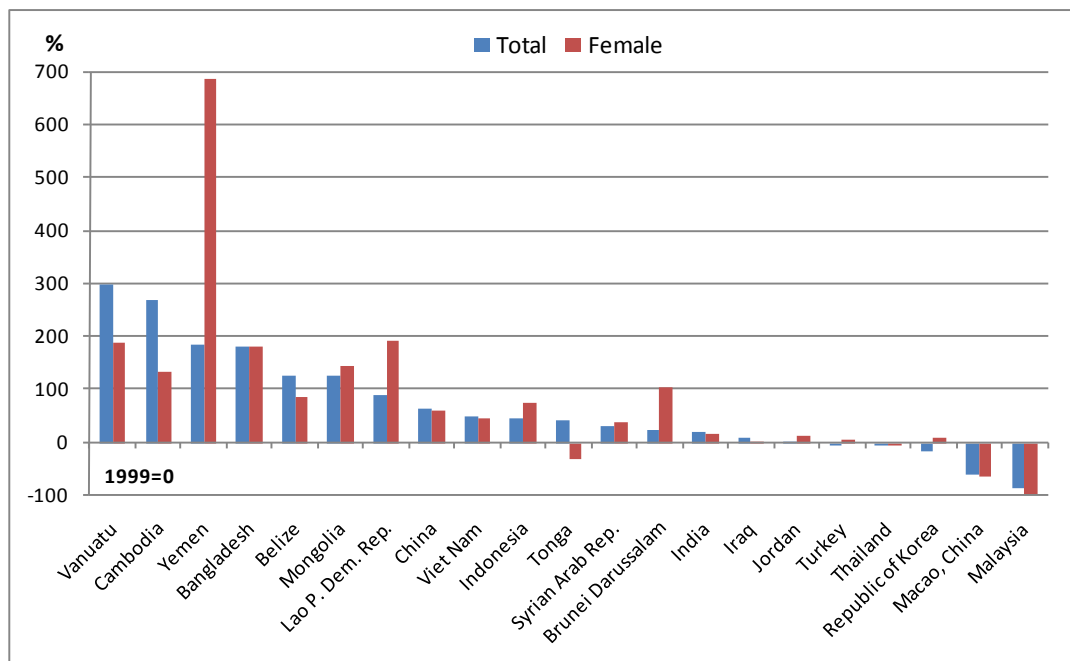
UNESCO data for other regions with a high proportion of developing countries shows that three-fifths of the countries for which comparable information is available have actually increased the numbers of TVET teachers at secondary level, albeit very slightly in many (figures 3.2–3.4). The trends suggest a great effort to recruit the necessary teachers to expand this type of education in many developing countries. Saudi Arabia is a case in point. Following policies to replace foreign technical experts by Saudis, the Technical Vocational Training Corporation (TVTC) in Saudi Arabia forecasts the engagement of 20,000 new TVET teachers and trainers by 2025, more than 1,000 prepared every year largely in TVET bachelor’s degree programmes at technical teacher training colleges (see Chapter 2).

Figure 3.2. Trends in TVET teaching employment in African countries, total and female, 1999–2007 (or latest available year)



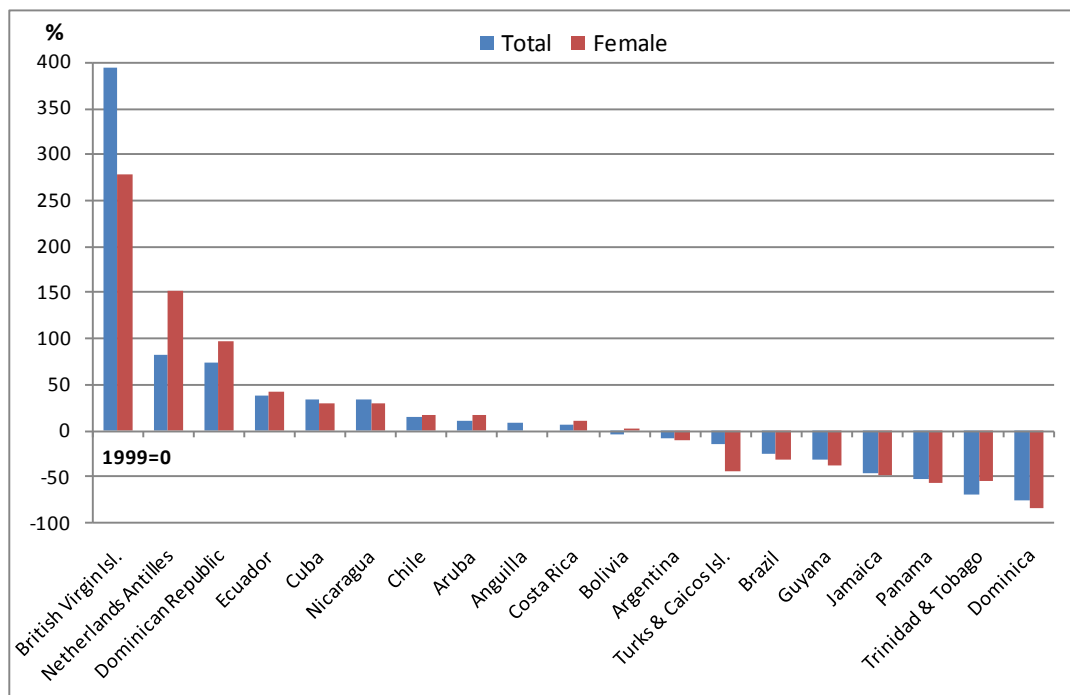
Source: UNESCO-UIS, 2010.

Figure 3.3. Trends in TVET teaching employment in selected Asian and Pacific countries, total and female, 1999–2007 (or latest available year)



Source: UNESCO-UIS, 2010.

Figure 3.4. Trends in TVET teaching employment in selected Latin American and Caribbean countries, total and female, 1999–2007 (or latest available year)



Source: UNESCO-UIS, 2010.

Gender and employment in TVET

In contrast to their numerical dominance of teaching positions in general education up to the secondary level, historically women teachers and trainers have been a minority in technical and vocational education in both developed and developing countries. This has resulted from a powerful cocktail of economic, social, cultural and education specific

barriers (for analysis of reasons and potential remedies in African countries more than 20 years ago, see Lynch, 1990, and Perez, 1990). Even within TVET, occupational segregation has channelled women into a limited number of disciplines which are traditionally “feminine”, such as secretarial and office work and domestic science (ILO, 2007: 3).

Judging from the data presented in figures 3.1–3.4 above, the situation is evolving in a positive direction, with a majority of countries in all regions reporting higher employment growth among women teachers and trainers than for the totals. Allowing for the relatively small starting base in some, the percentage increase in numbers of women teachers in this sector is quite impressive in countries such as Burkina Faso, Ethiopia, Ghana, Mali, Senegal and Uganda in Africa, and Bangladesh, the Lao People’s Democratic Republic and Yemen in Asia. Even where declines in overall employment have been registered in recent years, the impact on women teachers’ jobs has been less for the most part, with the exception of some countries in Latin America and the Caribbean. To the extent that women in TVET mirror enrolment and graduation patterns in post-secondary education generally (increasing majorities of women students and graduates compared to men), such trends are likely to continue as the pool of women TVET candidates expands, greater efforts are made to break down employment and career barriers and assuming the current economic recession and government debt does not create disinvestment in education and training that negatively impacts on women’s employment in the sector. A new skills development strategy in Bangladesh (GOB, 2009: 25) that foresees more training places in the new system on a priority basis and recruitment of female instructors and trainers as part of the strategy to meet severe staff shortages illustrates one forward looking approach to these questions.

Job security and tenure in TVET

Public sector teachers and trainers have traditionally enjoyed job security in the form of permanent employment or tenure according to national labour/public service law or institutional policy. Subject to appropriate qualifications and probationary provisions, as well as financial contingency, the international Recommendations on teachers and recommendations from the Joint ILO–UNESCO Committee of Experts on the Application of the Recommendations concerning Teaching Personnel (CEART) affirm the desirability of job guarantees in the interests of stability in the education workforce for institutions (high turnover of staff tends to undermine learning outcomes and drive up recruitment costs), teaching quality and individual commitment to professionalism and institutional mission (ILO and UNESCO, 1966: clauses 45–46; 2010: 8; UNESCO, 1997: clauses 45–46).

Permanent job guarantees continue in many TVET systems, but the winds of change are blowing stronger in the direction of less. The new skills strategy of Bangladesh foresees guidelines and transparent procedures to be put in place to decentralize the recruitment and selection of instructors and trainers in public training institutions so as to permit local recruitment of suitably qualified part-time instructors and trainers on casual or fixed-term contracts and the selection of institutional managers based on merit, not just seniority. Such changes tend to be inspired by private sector practices, but this model does not hold everywhere. A study of private training providers in Australia (Harris, Simons and McCarthy, 2006: 8–9), found that three-quarters of private registered training organizations, mostly small organizations (20 staff or less), employed less than five casual staff, with full-time staff double the numbers of casual staff among these providers. Moreover, a more recent look at TVET staff in Australia found that careers in VET are characterized by high levels of mobility, with VET staff largely focused on two outcomes in their search for greener pastures – job satisfaction and security of employment (Simons, et al., 2009: 46).

Teacher shortages in TVET

Although hard information on this subject is scarce, reports from some high-income countries indicate actual or potential shortages of TVET teachers and trainers, notably due to the aging of this workforce. A 2007 report from Sweden indicated that more than half of such teachers were over 50 years of age, for example. The problem has been compounded until very recently by the difficulties of competing with often more lucrative private enterprises and in rapidly expanding professions. The economic recession that struck the majority of countries beginning in late 2008 may have altered this equation in terms of rendering TVET teaching/training more attractive (OECD, 2009a: 48–49). Yet, serious shortages of teachers exist in low-income countries especially to meet Education for All (EFA) goals by 2015 (UNESCO, 2010: 116), and stagnating recruitment trends over the last decade at secondary level (Iliukhina and Ratteree, forthcoming) do not augur well for the future, in general education or TVET.

One response to recruitment challenges is to recruit outside national boundaries, an option increasingly used by some developed countries to meet teacher shortages in their general education systems over the last decade. The Australian Government through its immigration and visa authorities recruits interested professionals from other countries to become TVET teachers and trainers in Australia (Australian Government, 2010; Australian Visa Bureau, 2010). At the same time, the “brain drain” consequences for developing countries of large numbers of skilled teachers “exported” to developed countries has led members of the Commonwealth to elaborate and seek to implement an ethical recruitment protocol (2004) to regulate recruitment among its member countries (Commonwealth Secretariat, 2004).

National policies have also approached TVET teacher recruitment challenges via changes in pre-service training policies, developing “fast track” options. Beginning in Germany in 2003, some of the 16 state (Länder) governments such as Nordrhein-Westfalen have increasingly introduced one-year pre-service teacher training programmes for up-skilling of individuals with industry experience (for example mid-career engineers) and have designed other programmes for the transition of individuals with industry experience into the TVET teaching profession. By encouraging more students to go for TVET bachelor and master study programmes, the German Länder governments are projecting a 10 per cent annual rise in the numbers of newly recruited national TVET teaching personnel until 2015 (Kultusminister Konferenz, 2010).

Companion strategies advocated in OECD countries such as Mexico and the Netherlands encourage recourse to part-time and flexible working arrangements that permit exchanges between institutional teaching and training staff and enterprises to solve staffing problems and to enrich teacher/trainer competencies – TVET staff obtaining valuable workplace experience and industry trainers developing better pedagogical skills. Such arrangements should not have the effect of diminishing the status of either category of teachers/trainers. They may also serve to enhance TVET cooperation with private enterprise, as for example the Telkkä exchange and placement programme in Finland involving TVET teachers and workplace trainers that is cited for its positive benefits for participants’ skills, self-esteem and knowledge-sharing (OECD, 2009a: 51, 53–54).

To the extent that they exist, teacher recruitment difficulties represent a quantitative challenge to compound the qualitative challenges related to skills and competencies of TVET personnel noted already in Chapter 1, but the dearth of data on current or future shortages requires more research.

TVET career structures

Career structures for teachers and trainers in TVET that motivate individuals to perform to their highest capacity and to encourage continual professional development are an important component of human resource development systems. Such structures vary according to different country legal and policy frameworks, and according to qualifications and degrees that teachers and trainers bring to the table.

In general, career structures for TVET personnel mirror those in general education, ranging from entry level positions for newly qualified teachers or trainers to senior levels in TVET institutions, whether in vocational disciplines or general subjects. Career possibilities beyond teaching exist as institutional heads of departments or in the school management, including director and dean positions. In the United States the number of administrator or supervisor positions is limited and competition for them can be intense. Highly qualified, experienced teachers can become senior or mentor teachers, with higher pay and additional responsibilities to guide and assist less experienced teachers while keeping most of their own teaching responsibilities. CTE teachers may also move to teaching classes at the post-secondary level, for example in community colleges (USA-BLS, 2009: 3).

In the last few years, some TVET institutions in transitional economies, such as in Croatia and Serbia, have also started to establish positions for external affairs with employers, industrial associations and unions (Ministry of Education, Republic of Serbia, 2010). With moves towards more decentralization and orientation of educational services towards workplace actors, such opportunities are likely to grow, although the question remains as to whether TVET teachers and trainers or externally trained specialists will fill such jobs.

Another career opportunity for some TVET teachers exists in the form of instructional roles in pre-service and in-service teacher training programmes or in organizing work programmes for TVET teachers and trainers, such as internships or other non-academic work opportunities. Such opportunities exist for example in Germany in vocational education teacher training institutes (VETTI) for pre-service teacher training or in-service teacher training institutions.

As in any sector of education, career possibilities for TVET teachers and trainers may also exist in the respective Ministries of Education and labour. Such work encompasses policy planning, curriculum development and in some cases technical and pedagogical supervision of TVET institutions (Axmann, 2002).

Highly experienced TVET personnel might also find their way back to universities specializing in TVET research and development and do more academic work in their specialized fields. Moving farther afield, some experienced TVET personnel have become national and international consultants in their field, notably those from OECD countries actively engaged in TVET reform with specific emphases on the introduction of qualification frameworks, on competency-based learning approaches and/or the introduction of work and business processes into TVET learning in developing and transitional countries.

The question of how and how far TVET systems have progressed in terms of diversifying career prospects in ways that motivate skilled and experienced staff to remain in teaching/training positions or even within the sector needs further research and reflection.

4. Remuneration and the teaching and learning environment

Developments in TVET organization and new challenges cited in Chapter 1 have affected not only how learning is delivered, but also define the pressures faced by teachers and trainers in their working lives. Despite the lack of comparable international information, it is important to understand whether or not remuneration and teaching and learning environment conditions are keeping pace with new demands on teachers and trainers. Do the terms of compensation levels, the structure of compensation (gross and net salary, bonuses, statutory payments, paid leave, pension, etc., as well as other means such as incentives for professional development support) and the conditions within which teachers and trainers operate (hours of work – attendance hours, contact and administrative time; size of classes or training groups; infrastructure/equipment provision) serve to effectively meet new demands placed on systems, institutions and staff, as well as the expectations of staff? In the analysis below, the inherent difficulties in finding information on remuneration and terms and conditions of TVET teachers and trainers and the consequent weak database for analysis and international comparison should be borne in mind.

The backdrop: Factors influencing employment terms and conditions

A number of key themes derived from trends and challenges cited in Chapter 1 affect these questions, notably:

- developments in the respective roles of public, private and in some cases voluntary provision on delivery methods and pressures;
- modernization and restructuring in provision, including the impact of ICT on delivery and the teaching and learning environment;
- the relative supply of labour and its impact on remuneration and terms and conditions of employment in general;
- reward for continuing personal development and career progression through the enhancement of skills, increased productivity, and flexibility in response to change;
- development of qualifications – especially the introduction of new frameworks and more flexible systems that offer choice for the student and a more responsive mechanism to meet employer needs.

The changes affect countries in very different ways (or not at all in some low-income countries) according to the extent of TVET provision as noted earlier – much higher in developed countries generally than for example in Africa – and the ways in which systems respond to new challenges.

Rewarding teachers and trainers: Remuneration structures and levels

Key principles and issues in compensation policies

Means by which teachers and trainers in TVET are remunerated and rewarded for their work affect a number of key human resource issues, ranging from recruitment and retention to the motivation for high-level professional performance. International standards

on teachers (ILO and UNESCO, 1966: clause 114; UNESCO, 1997: clause 57) refer to the need to set remuneration at levels that reflect the importance of teaching (duties and responsibilities), its perceived status and comparison with other professions requiring similar qualifications, and that allow these professionals to carry out their teaching tasks, as well as engage in CPD and self improvement to renew knowledge and skills essential to their mission. Levels of remuneration and benefits assume even more importance in TVET systems because of the strong competition for skilled professionals in private enterprise. One of the significant TVET recruitment challenges (particularly for public providers) is the salary gap between what can be earned as workers in industry and the income of teachers in the TVET sector (Simons, et al., 2009: 15).

TVET salary issues are particularly complex. On the surface, gross salaries are important as an indicator, both for the signals given to prospective recruits and for retention of qualified and experienced staff, but tend to say little about the level of “reward” for the staff concerned. The additional elements of the remuneration package such as bonuses, holiday pay and other allowances, pension, etc. and “external” factors such as taxation levels in a given country variously affect individual career choices and job satisfaction.

Additionally, although evidence specifically pointing to difficulties in TVET is scarce, in the education systems of some (primarily) developing countries major issues arise not only over the level of pay but also late payments, which add to recruitment, retention and performance difficulties, not least from “moonlighting” (second or more jobs to supplement income) that may come at the expense of teachers’ presence in classes and/or commitment to students (UNESCO, 2010: 117; 124).

Public vs. private

Public TVET systems largely tend to rely on integrated public service structures, either fixed by regulation or the result of negotiations/collective bargaining, with graduated salary scales for the most part based on acquired qualifications. There are frequently extra points on a scale or similar means of recognition for shortage subjects (such as science) and for extra duties performed by staff. Public sector workers attract a range of fringe benefits that can include support for housing and transport that may compensate for lower salary levels in the private sector. For example, teachers in the state sector in the Republic of Korea are civil servants where pay levels tend to be lower than in industry but have the benefit of tenure, an early retirement option and lengthy periods of free time compared to private enterprise (Yoon and Lee, 2010).

Variations to this broad-based picture abound, even within countries (box 4.1) and especially within federal States such as Canada and Nigeria (box 4.2). ETF (Badescu and Kennedy, 2002: 38) points out that compensation packages differ markedly for Central and Eastern Europe, frequently including an array of other benefits, for instance monetary allowances to cover individual circumstances such as family status and workplace conditions.

Box 4.1
United Kingdom: Salary scales in further education (FE)

In the United Kingdom public sector, the dominant further education (FE) sector relies principally on state funding, yet each college is an independent corporation. Broadly speaking, all staff in England are paid according to a harmonized pay spine of 68 points ranging from learning support staff at the lower levels (points 4–26) to unqualified lecturers (points 15–22), qualified lecturers (points 23–37), advanced teaching and training posts (points 37–41) and leadership and management posts (points 37–68). The salary ratio from entry level unqualified lecturer (point 15) to the highest point on the scale (68) is just under 1:5. The scales differ nevertheless in Scotland, Wales and Northern Ireland, with each of the three systems negotiating scales through different mechanisms.

Source: UCU, 2009.

Box 4.2
Salaries for teachers and trainers in federal States: Canada and Nigeria

Canada

In Canada the responsibility for education lies with the provinces or territories leading to regional variations in remuneration and even among public institutions within provinces. The range of publicly funded training providers includes community colleges, colleges of general and vocational education (CEGEP), agricultural colleges, technical and vocational institutes, language schools and other similar institutions. There is also a growing private sector provision including separate establishments and in-company trainers.

In general, the salary scale and benefits package for staff is established through negotiations between teacher associations and the representatives of the government for the province or territory. The point on the scale will be determined by qualifications and teaching experience. Hourly wage ratios in the province of British Columbia for example between “low” to “high” categories are approximately 1:6 (average = 2.6+) though in remote northern parts of the province it may be 50 per cent more. In another large and predominately French-speaking province – Quebec – the wage ratio between low and high categories is less pronounced (roughly 1:4, average wage = 2.8) the variations in different areas within the province are less marked than in British Columbia.

The benefits package in many provinces could include various forms of insurance (dental, supplementary medical, long-term disability and life insurance), leave (maternity, sick, compassionate, sabbatical and study leave), and retirement contributions. The benefits are administered either by the federal Government or the province/territory government with the appropriate contributions from salary going to each as appropriate.

Nigeria

Delivery of TVET in Nigeria is largely channelled through approved tertiary technical institutes (of which there are 110), the technical colleges (currently 159), all of which come under the National Board for Technical Education (NBTE), an agency of the Federal Ministry of Education. There are 11 privately run tertiary technical institutes and three private technical colleges. Some of the public training providers are controlled by the federal Government and some by state governments, and this can affect the remuneration of teachers and trainers in a number of ways, in particular the regularity of salary payments.

Traditionally teachers and trainers in each state fall under one salary structure and this is based on the harmonized public service salary scale (HAPSS), which applies equally to teachers as to other state employees. Starting salaries for teachers are to a great extent dictated by the qualifications of the entrant across 16 points, with additional payments for extra duties. Figures from 2004 indicate a difference between entry level graduate and end of career salaries of approximately 1:3.5, with other salary differentials according to the type of institution. As civil servants, teachers are entitled to various fringe benefits, the most attractive of which relate to loans for transport (related to grade) and housing, free medical services and pension entitlement.

Sources: Canada: CTF, 2010; Nigeria: Adelabu, 2005; NBTE, 2010.

Much more variation exists in private TVET provision, where remuneration can be individually determined or linked to some form of payment-by-results system. Where such providers operate alongside public systems or institutions, there exists greater potential for differentiated labour markets and remuneration packages for those with the necessary skills and experience to move laterally during a career. This greater mobility has advantages for

individuals and perhaps providers, while complicating recruitment and retention decisions for managers, as well as teamwork and collegiality among staff.

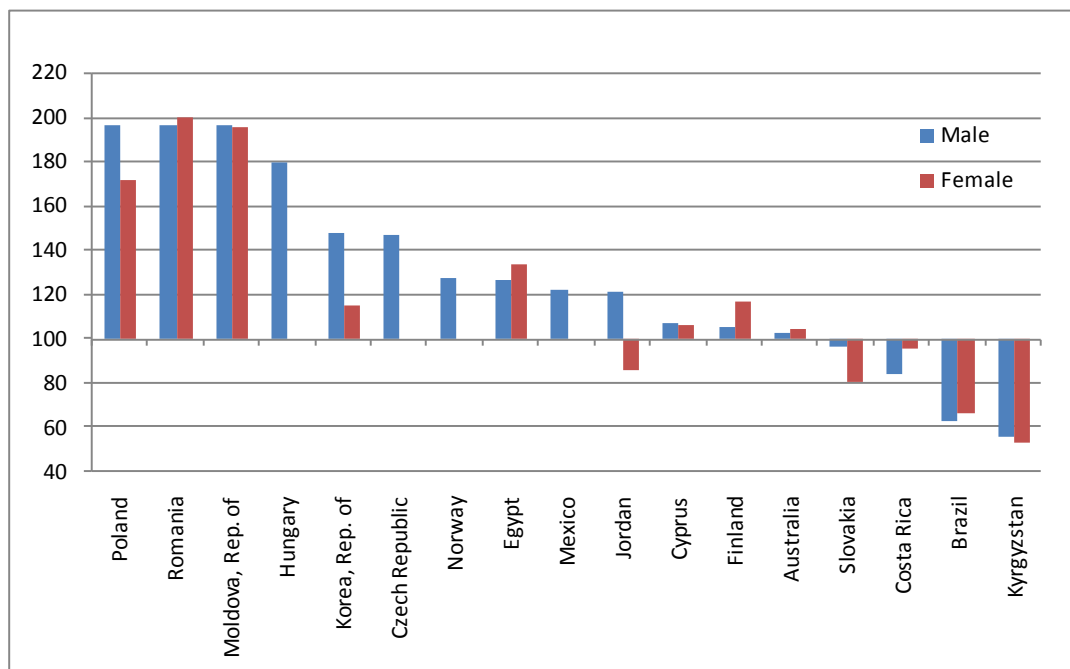
The closer proximity to and greater interaction between TVET staff and enterprises compared to general education personnel may also affect staff perceptions of salaries and employment conditions at the same time that increased private provision is altering salary determination. An Asian Development Bank report (2008: 104) points to the lack of understanding among government officials in the region (and by implication their ability to recruit) on the need to recognize workplace (industrial) experience along with academic qualifications of TVET instructors and to set salaries commensurate with “market” demand for skills as a function of such criteria. Increased private training provision in countries such as the United Kingdom (see above box 1; Chapter 1), extensively based on competition for government contracts (for example training elements in active labour market measures structured around phased payments according to completion of training stages, often with a final bonus payment for a successful training outcome) has sharpened competition and reportedly obliged state funded providers to become more market oriented. This has led some providers to circumvent traditional salary determination through national bargaining agreements by means of ancillary businesses set up to win and operate contracts, in essence subcontracting. The growth of the private sector has thus led to more individual determination of salaries, often linked to formulas for payment by results (NIACE, 2009).

There is as yet no wide-scale evidence that TVET systems have begun to apply performance-related pay (PRP) structures, though increasing autonomy of institutions and greater reliance on performance accountability measures, combined with proximity to private enterprises which may apply such rewards more systematically, is likely to focus more attention on such policies in the future. In that context, it is useful to bear in mind the guideline of the international standards on teachers that PRP or merit-based pay schemes should be negotiated with teachers’ organizations (ILO and UNESCO, 1966: clause 124).

Key trends and policy issues in remuneration

The absence of comprehensive international salary data creates inherent difficulties in attempting cross-country comparisons for TVET teachers and trainers as a guide to policy and planning. The ILO (2009b) provides limited data on salary trends for technical education teachers at secondary level, a somewhat restricted cohort in the context of the wider provision of TVET. An index using comparable consumer price data shows trends in real wages over the last 15 years for a selection of mostly high- and middle-income countries (figure 4.1).

Figure 4.1. Real wage index for technical education teachers by sex in selected high- and middle-income countries, 1994–2008 (or latest available year, 1994/95/96/98/99=100)



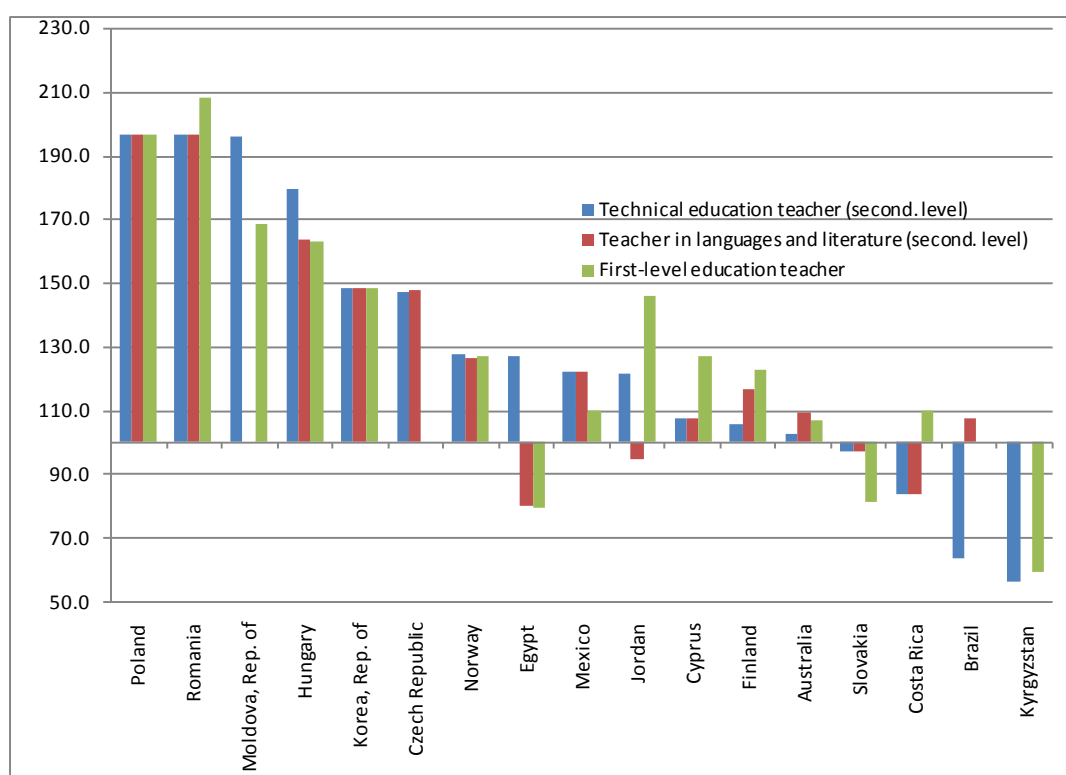
Note: For Hungary, Czech Republic, Norway and Mexico data is for all teachers.

Source: ILO, 2009c.

Though not conclusive, the data behind the trends in figure 4.1 shows that three-quarters of the reporting countries have succeeded in increasing TVET salaries over time, with countries in Central and Eastern Europe leading the way (salaries nearly doubling in the relevant period) despite the economic difficulties created by the transition from centrally planned to market economies. In two-thirds of the countries, remuneration of female teachers kept pace or did better than those of males. The trends may or may not reflect a commitment on the part of employers, systemic and institutional, to favour salary increases in order to attract and keep skilled TVET personnel in their jobs, a problem identified in reports from some European countries (CEDEFOP, 2009), or to downgrade TVET teacher salaries. In the absence of deeper analysis of these trends at country level, including information on movements in comparable professions and national income, it is difficult to draw firm conclusions for any countries.

A different measure comparing salaries of secondary TVET staff with their counterparts in general education streams is less clear but in more than half of the reporting countries, TVET salaries over time exceeded or kept pace with those in general education fields. Notable exceptions are Brazil and Kyrgyzstan, countries with widely disparate economic profiles (figure 4.2).

Figure 4.2. Real wage indexes for primary and secondary (languages and literature, and technical education) teachers (male or total), years 1994–99 to 2008 or latest available



Source: ILO, 2009c.

ETF (Grootings and Nielsen, 2005) offers an alternative measure of teachers' salaries based on their ratio to GDP per capita in selected Eastern European and Mediterranean basin countries (table 4.1). This proxy for measuring the relative status attributed to an occupational grouping compared to an average national income level is not without its weaknesses, but may still show an approximate measure of the material value assigned to an occupation. There are wide variations in the starting salaries of TVET teachers compared to the average income, ranging from a low of 0.6 per cent in Bulgaria to a high of 3.3 per cent in Serbia and Montenegro. At the mid career point the ratios have not changed much for most of the countries, with the possible exception of Tunisia where this increased from 2.0 for the starting salary to 3.1 for the mid career salary. The data is outdated according to more recent information from some of these countries and can only be seen as indicative of salary levels at a certain point in time. More comprehensive and up to date information is needed as a basis for policy and planning to ensure that the salaries at various points of a career serve to attract and retain sufficient numbers of qualified TVET staff.

Table 4.1. Ratio of teachers' salaries to GDP per capita (latest available year), selected Eastern European and Mediterranean countries, period 1998–2002

Country	Starting salary	Mid-career salary
Eastern Europe		
Bulgaria	0.6	0.9
Croatia	1.1	1.4
Romania	1.1	1.3
Turkey	2.5	2.7
South Eastern Europe		
Albania	1.4	1.6

Country	Starting salary	Mid-career salary
Bosnia and Herzegovina	2.1	2.2
Serbia and Montenegro	3.3	3.5
Mediterranean		
Tunisia	2.0	3.1
Jordan	2.2	2.7

Source: Grootings and Nielsen, 2005.

Gender and remuneration

Bearing in mind persistent gender pay gaps in many professions (ILO, 2009b: 13, 94), the available data (figure 4.1) is not conclusive across countries in terms of variations in salaries between male and female teachers. Some countries show a disturbing pattern of pay gaps between men and women teachers over time (Jordan, Republic of Korea, Poland, Slovakia). Others show the opposite, with women's remuneration increasing more or falling (Costa Rica, Egypt, Finland), perhaps a reflection of efforts to rectify previous discriminatory patterns, but the data is not sufficiently detailed to know for sure. A review of the United Kingdom (LLUK, 2009: 58, 66) revealed that in further education colleges where a higher percentage of men than women were both managers and teachers (and women were more likely to be part-time in both cases), women managers were paid on average 7–15 per cent less than males, while the difference for teachers was not statistically significant, with the gap decreasing slightly in recent years.

The question of gender equality in remuneration (as in other employment terms) is an important human resources policy issue not only for reasons of equity: parity in remuneration (equal pay for work of equal value) is a powerful incentive for greater recruitment, retention and full use of skilled women staff in a sector that is again highly competitive for such talent. TVET employers and managers are well advised to research, analyse and implement measures that address any gaps as part of forward-looking human resource management.

Salaries, recruitment and retention

It is difficult to generalize about the trends in TVET remuneration. The evolution in governance, financing and expected outcomes of TVET have and will continue to oblige management, teachers and trainers in many countries to adapt to a fragmentation of provision and therefore compensation for increasingly complex professional work. The dominance, if not monopoly traditionally held by the public sector is breaking down in the face of competition from private, for profit providers, including voluntary and community organizations (not covered by this report), many of whom have lower overall salary and therefore cost structures. This is likely to introduce a higher level of diversity into remuneration packages. The impact on recruitment, retention and motivation trends remains to be determined, and would benefit from considerably more research, national and cross-national information sharing.

The teaching/training and learning environment

TVET workload

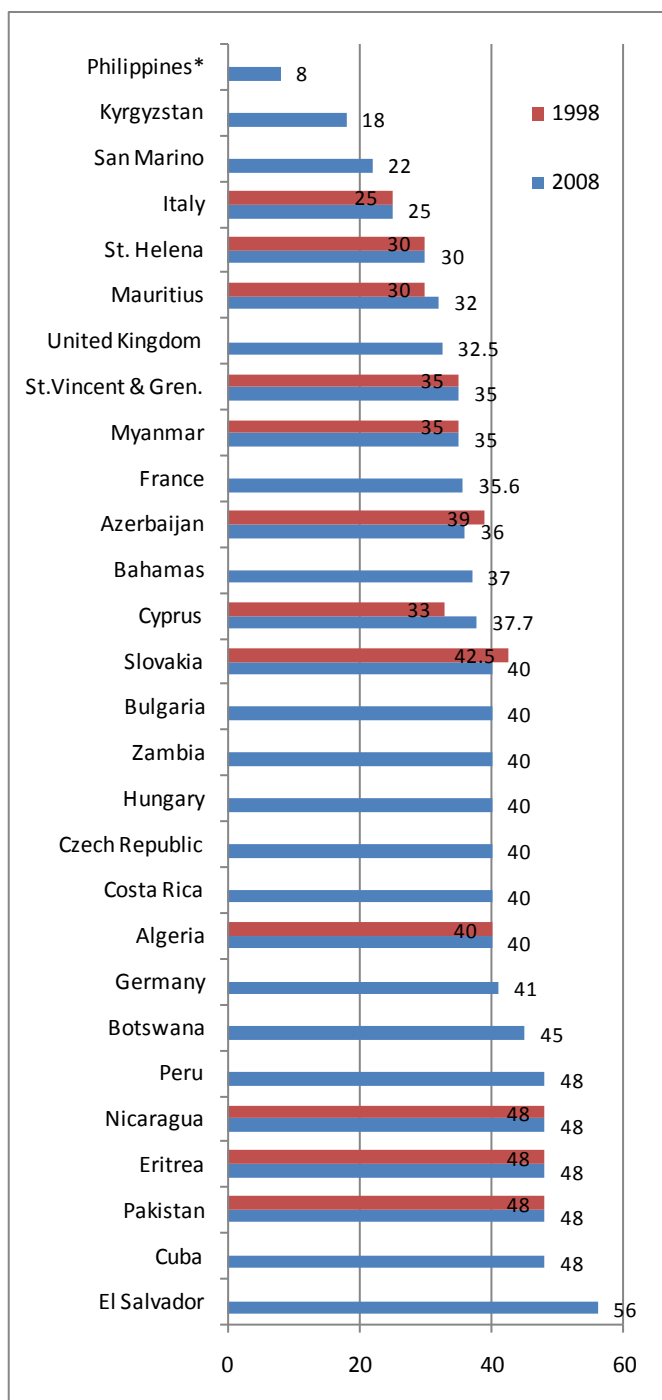
Workload of teachers and trainers is determined by a number of factors, beginning with hours of work fixed by statute, public service regulations, collective bargaining agreements or institutional requirements. The international Recommendations on teachers (ILO/UNESCO, 1966: clauses 89–91; UNESCO, 1997: clause 62) call for hours of work to

be fair and equitable, permitting staff to effectively carry out their professional responsibilities, notably by taking account of the multiple components of teachers' work – classroom instructional time, numbers of lessons, course preparation, student evaluation, extra-curricular activities within institutions, consultations with students and parents, and community outreach at post-secondary level – and to be negotiated or at least the object of consultations with teachers' organizations. Given the expected duties of TVET staff as part of what might be termed broadly community outreach, there are very high expectations of engagement with enterprises and the world of work, thus adding another element to the package.

To what extent do these many variables translate into a balanced workload that meets individual, systemic and institutional needs? As with remuneration, there is no reliable and comprehensive source of cross-national information on the number of hours worked by TVET teachers and trainers that would begin to furnish a response. The ILO October Inquiry database (2009c) provides some limited information on the statutory number of hours worked per week for secondary level technical education teachers in 28 countries (figure 4.3). It shows huge variations from below ten hours per week in the Philippines to over 50 hours in El Salvador, with most countries falling between 20 and 40 hours per week. However, this information has to be qualified: it covers the application of statutory hours and thus is likely to be at variance with actual hours worked, particularly in cases where provision is outside the state sector; the information says little about the type of work to which these hours refer to – student contact or administration time, or other activity, for example ICT-based instructional or student consultation time; and the information reflects only a partial view of the TVET sector – much delivery will be outside secondary level and by private providers.

Despite these reservations the data is useful to illustrate broad trends in hours of work as the prime determinant of workload. The data suggest no significant alteration in required hours of work over the last decade, with some exceptions in terms of increases (Cyprus, Mauritius), or decreases (Azerbaijan and Slovakia). The required hours of work that exceed what is considered a "normal" working week of 40 hours in a half-dozen African, Latin American and Asian countries are cause for concern to the extent that they do not include the other components of TVET instructor work beyond required hours of presence at work that are outlined above.

Figure 4.3. Number of hours of work per week for technical education teachers (secondary level), 1998–2008 or latest year available



Note: * Private sector only.

Source: ILO, 2009c.

The ETF report (Grootings and Nielsen, 2005) on Europe underlines this variation in the data. It found that student contact time varied from 524 hours per year in Albania, to around 900 hours per year in Bosnia and Herzegovina. Taking the United Kingdom as an example, there is no national agreement on working hours for lecturers and so they can vary between institutions, though the maximum tends to be 37 hours per week or 800–850 teaching hours per year (often with a weekly limit of 24 hours per week). Many TVET-equivalent teachers in the United States work more than 40 hours a week, including school duties performed outside the classroom (USA-BLS, 2009: 3), a situation that is not uncommon in many OECD countries.

Beyond this statistical picture, very little evidence exists on whether TVET teachers and trainers consider their workload as defined by statutory or actual hours of work to be satisfactory or not, nor the weight played by this variable in institutional capacity to meet their missions, staff job satisfaction or learners' and other actors' (enterprises, communities) perceptions of effectiveness. In response to reforms to introduce more competence-based programmes in Slovenia, TVET teachers expressed the most frustration with the lack of flexible timetabling that impeded their own innovation and creativity (Grašič and Zevnik, 2006: 15). Research on TVET staff in Australia (Simons, et. al., 2009: 8) reported that decisions about careers were more often driven by considerations such as job satisfaction, support from colleagues and their own self esteem rather than workload issues and the availability of full-time work, but the case does not indicate to what extent workload is considered appropriate or not. As with much in TVET provision, considerable research work remains to be done on this subject.

Students and teachers/trainers: Pupil–teacher ratios and size of classes/instructional groups

The ratio of students to teachers is a potentially useful way of assessing general teaching conditions – though clearly it has its limitations. In TVET for example, some practical subjects may require more direct instruction of students, and so will tend to involve a lower student–teacher ratio while others can be delivered in a classroom environment using traditional methods of delivery to a large audience, and increasingly, instruction may be distance or virtual. Practices are changing particularly under the influence of ICT, modularization of courses, new qualifications, etc., rendering meaningful comparisons within and across countries difficult.

Limited information on student–teacher ratios from Europe (Grootings and Nielsen, 2005) show figures of 18:1 (The former Yugoslav Republic of Macedonia) and 16:1 (Romania) which tend to be less than those in general secondary education but even this data set poses problems. The report also suggested that the trend in the more developed countries was for rising student–teacher ratios and attributed this to more efficient management – in reality it also reflects other factors such as the growth in ICT delivery methods, the increase in short courses and work-based learning. It may also reflect the push for greater participation in TVET without a commensurate increase in public funding that would allow the recruitment of more teachers and trainers.

This is illustrated in the case of the Republic of Korea (box 4.3) where the rapid expansion of TVET has increased student–teacher ratios to the extent that they have affected the quality of provision in certain parts of the system with likely consequences for the working lives of the affected staff as well.

Box 4.3
Student–teacher ratios in the Republic of Korea

The Republic of Korea has witnessed a big expansion in the provision and take-up of TVET, delivered through vocational high schools, vocational junior colleges and polytechnics. However, the rapid expansion of places particularly in vocational junior colleges has reportedly not been accompanied by any significant improvements in the quality of the education and training delivered and a significant contributory factor is the high student–teacher ratio.

In the 1980s the student–teacher ratio in junior colleges was similar to that in four-year university programmes. However, by 2005 the ratio at the vocational junior colleges was estimated at around 1:71 – almost twice that found in the universities delivering vocational courses over four years. In general, vocational education and training courses carry a low status among the population and so are filled with those students with lower academic achievements – the sort of students that would especially benefit from more attention from their tutors.

Source: Yoon and Lee, 2010.

Infrastructure

To effectively educate and train, TVET systems and institutions require a relatively large amount of often costly equipment permitting teachers and trainers to do their job to the highest standards. Much of TVET provision requires greater investment than conventional academic subjects in suitable training premises, purchase of equipment and consumable training materials, yet chronic underinvestment prevails, particularly in transition and low-income countries (Masson, 2006: 9; UNESCO, 2010: 84–86). An example of the impact of such conditions on teacher performance and morale is provided from Nigeria (box 4.4).

Box 4.4
Infrastructure and the working environment in Nigeria

Teachers and trainers in Nigeria reportedly face one of the poorest occupational working environments in the country, with a dilapidated infrastructure imposed on comparatively high teacher–pupil ratios, frequently delayed salary payments and consequently low morale among staff. Education reform in recent years designed to bring together various agencies dealing with TVET (including the National Board for Technical Education (NBTE) consolidation among training providers – including the federal universities, polytechnics and college of education – under the umbrella of a Tertiary Education Commission and employer-led Sector Skills Management Boards hold out some prospects for change in a positive direction. An evaluation of the impact of the reforms particularly on TVET infrastructure provision and the working environment remains to be made.

Source: Adelabu, 2005.

Some of the difficulties stem from the pace of change in much (but not all) of industry and services where equipment obsolescence can be rapid, and the associated training updates rather demanding. Where providers are not in a position to keep pace with the changes in the workplace, however, students may emerge from their training poorly equipped for the needs of employers, contributing to the skills mismatches cited earlier. To some extent this can be tackled through establishing strong industry–education links, though this appears to be a feature of the more mature economies, largely as a result of the practicalities and costs of doing so. Funding schemes such as training levies can help overcome the investment costs (McLean, Wilson and Chinien, 2009). Some governments targeted school and specifically TVET infrastructure development as part of 2008–09 economic stimulus packages, as for example Australia’s Teaching and Learning Capital Fund for vocational education and training, designed to modernize and improve TVET teaching and learning (ILO, 2010h: 1).

International development banks have also contended that distortions occur in TVET spending derived from the high percentage of salaries and allowances in TVET investment budgets that drive out spending on essential inputs such as equipment, operations and materials. In India, almost 95 per cent of expenditure goes to salaries and allowances, leaving little for the operation of vocational training institutions. In Kyrgyzstan, only 13 per cent of the budget is used for operation and maintenance of TVET institutions, and in Bangladesh, “... a consequence of prioritizing salaries to such an extent is that there have been inadequate funds for sufficient instructors, equipment, in-service training and consumable supplies, maintenance/repair of machinery and other critical infrastructure” (ADB 2008: 108; World Bank, 2007: 41). This refrain is not new, however, and often fails to take account of the chronic underinvestment in TVET that penalizes both staff remuneration and infrastructure support.

Health and safety in TVET institutions

As in many domains addressed in this report, the evidence base on health and safety issues in TVET is thin. A few countries such as Finland have reported concerns over high levels of stress among TVET teachers (CEDEFOP, 2009: 108). In general education, the climate of insecurity, even violence, in classrooms and learning sites has been growing in recent years as changes in social norms, the demographic make-up of student populations and technology (Internet-based cyber bullying) undermines teacher authority, respect and inevitably a safe and quality learning environment (EI, 2009b: 22–24; ILO and UNESCO, 2010: 16, 22, EI, 2009: 24). High profile cases of school violence in TVET settings in normally stable, high-income countries such as Finland and Germany in recent years only underscore the potentially explosive nature of such violence. Far more common is that recorded in the daily working environments of TVET teachers and trainers. An official career publication in the United States has highlighted these difficulties, with TVET teachers facing unruly students, violence, stress and isolation in classrooms (USA-BLS, 2009: 3). Aside from the disruption such an environment produces on learning outcomes, there is little information available to indicate that either sporadic, high-profile violence or more recurrent, low-level forms have a deep-seated impact on TVET recruitment, retention or motivation.

5. Social dialogue ¹ in the TVET sector

As the previous chapters of this report point out, TVET systems and institutions, and those employed in them as teachers, trainers, managers and administrative staff, have begun to design and put into place often deep-seated reforms in their mode of operation, professional practice and the workplace learning environment as a result of constantly evolving expectations of what objectives to achieve and how to do so. In this framework of reform-driven search for relevance, efficiency and quality in TVET provision, the importance of social dialogue has assumed a larger place between TVET actors and beneficiaries – students, employers and enterprises, communities – and within TVET itself between employers–managers, public or private and TVET staff, particularly teachers and trainers.

As Chapter 1 suggests, dialogue with employers, enterprises and trade unions, in association with governments as regulators and financiers in order to achieve policy coherence and relevance, has often been a weak link in the decision-making process. This dynamic is evolving as TVET adapts to demands for change and becomes more linked to the world of work. The dialogue within systems and institutions between employers and staff – consultative or in the form of negotiation – that might also reflect and underpin change has evolved less and requires greater institutionalization and capacity building for effective use. In that connection, specific issues such as the relative under-representation of women within teachers' unions and at negotiating tables and the impact on gender biases in policies, curricula and guidance could be usefully addressed.

Effective use of social dialogue especially within the TVET system to determine employment terms depends on adherence to basic principles set out in international labour standards and the recommendations on teachers. Of particular importance are the Labour Relations (Public Service) Convention, 1978 (No. 151) and the Collective Bargaining Convention, 1981 (No. 154) (ILO, 2010i), which establish frameworks and mechanisms for good labour relations in public and private settings, applicable as well to TVET staff.

Social dialogue and public–private partnerships in TVET delivery

Defining good policy and modes of TVET delivery and skills strategies that meet a country's expectations for sustainable development goals, especially in times of great change, is enhanced by strong and effective social dialogue mechanisms (ILO, 2008b: 1; 2008c: 9–10; 2009a: 8; 2010d: 24–25). Mechanisms based on tripartism – governments, employers/enterprises and their organizations and workers/trade unions – permit an institutionalized expression of interests and views that help shape policies and strategies more closely tied to the world of work to which TVET contributes. They also build important political and financial support for TVET. This balance between different points of view through the give and take of social dialogue, combined with the engagement of TVET providers – public and private institutions, researchers, teachers and trainers, further contributes to aligning policy and practice and avoids that the dominance of any one constituent's interests skew overall policy away from the general interest.

¹ Social dialogue is defined by the ILO to include all types of negotiation, consultation or exchange of information between, or among, representatives of governments, employers and workers, on issues of common interest relating to economic and social policy. It can be informal or institutionalised, and can take place at the national, regional, sectoral or enterprise level. The main goal of social dialogue is to promote consensus building and democratic involvement among the main stakeholders in the world of work (ILO, 2010g).

The scope of social dialogue on TVET issues is broad, at least in many high-income countries, ranging from advice to decisions on overall TVET policy, organization, governance and financing. Some illustrations of social partner engagement through various mechanisms and institutions – co-management of national training schemes, skills councils, qualification authorities, etc. – are outlined in Chapter 1. The OECD (2009a: 42, 100–101) has found social partner involvement in the form of advice or decision-making on TVET matters (curricula, training content and duration, competency and qualification assessments, examinations and accreditation of learning) in half of its member countries surveyed in 2009, although such engagement with regard to change management and innovation seems less robust (Parsons et al., 2009). Some countries have extended national social dialogue on TVET or skills policies and measures to regional or sectoral level. A brief survey of such institutions and mechanisms is presented in box 5.1.

Box 5.1

Social dialogue mechanisms for TVET and skills development in OECD member countries

Australia

The Industry Skills Councils (ISCs) are privately registered companies run by industry-based boards of directors, but with funding provided substantially by the Australian Government. Their tasks include: provision of industry intelligence and advice to Skills Australia (an independent body providing advice to the Government on current and future skills needs), government and enterprises on workforce development and skills needs; actively supporting the development of training packages; provision of independent skills and training advice to enterprises; and working with enterprises, employment service providers, training providers and Government to allocate training places.

Denmark

The Advisory Council for Initial Vocational Education and Training (REU) has advisory status with the Minister of Education at national level. It is comprised of members from the social partners, school leader and teacher associations, as well as members appointed by the Ministry of Education. The Council advises on the overall structure of the system and monitors existing programmes and labour market trends, as well as makes recommendations on the establishment of TVET qualifications. In addition, sectoral trade committees and local trade committees at sectoral and local levels can decide on many elements of vocational education and training within the overall structure.

Hungary

Since 2008 (subject to any decisions by a recent change of Government), regional development and training committees (more than half of whose members are drawn from the social partners) have decision-making powers over the number of students admitted to different programmes and over the qualifications to be delivered in the region subject to agreed national guidelines.

Netherlands

Regional vocational education and training centres in the Netherlands (ROC) have representatives of (regional level) social partners in their supervisory board. ROCs supply all the vocational training schemes financed by the Government at secondary level and provide adult education for a region.

Switzerland

Partnership arrangements between the Confederation, the cantons and the social partners are established by law and are a pillar of the TVET system. Employers and trade unions have a direct role in TVET policy-making with partners having their own area of responsibility. All major decisions are discussed and taken jointly and all three partners are represented at national, cantonal and local level.

United Kingdom

The UK Commission for Employment and Skills (UKCES) is an employer-led body that also has members drawn from the trade unions and local government. It advises the Government on strategy, targets and policies, monitors the TVET system, including the performance of the Sector Skills Councils, which it licenses.

United States

The “Partnership for 21st Century Skills” was formed in 2002 at the initiative of the federal Government, major US-based corporations and teachers’ organizations, has since expanded considerably its private sector membership, advocates and has developed a policy framework on skills’ curricula, assessment, instruction, professional development of teachers and improvements in the learning environment.

Source: OECD, 2009a: 37, 42, 100–102; United States: P21, 2010.

Outside of the OECD member countries, engagement of the social partners on TVET issues via social dialogue appears to be less common, largely due to weaker institutional frameworks. Brazil is a notable exception with its highly developed SENAI and related systems (see Chapter 1). In Tunisia a strategic development component and policies involving social partners in vocational training management and quality delivery have been implemented (Nielsen and Nikolovska, 2007: 43). The South African Government launched a national consultation with social partners and training providers on a new skills strategy in 2010 that requires an increased role for business and labour in the country in the form of “demonstrable high-level engagement ... at the highest level” before sectoral skills plans formulated by the Sectoral Education and Training Authorities (SETAs) are approved (RSA, 2010: 8). Despite weaknesses at present in a large number of countries, as the centrality of skills development and TVET provision in national policy agendas grows, so will the likelihood of more social partner involvement as well, provided there is political will, institutionalized mechanisms and necessary capacity-building support for the social partners to meaningfully engage. A consensus on basic prerequisites for social dialogue was adopted at the International Labour Conference in 2002 (ILO, 2002)

Social dialogue within TVET systems and institutions

The Joint ILO–UNESCO Committee of Experts on the Application of the Recommendations concerning Teaching Personnel (CEART) has termed social dialogue “the glue for successful educational reform” and defined what it means (ILO and UNESCO, 2003: 6–7) in education based on ILO concepts:

Social dialogue is understood to mean all forms of information sharing, consultation and negotiation between educational authorities, public and private, and teachers and their democratically elected representatives in teachers’ organizations.

Without full involvement of teachers and their organizations, those most responsible for implementing reform, in key aspects of educational objectives and policies, education systems have difficulties to fully achieve reforms. In its 2009 review of the state of social dialogue in education, the CEART concluded that, based on international surveys it reviewed, progress has been made in recent years but the exercise of social dialogue runs the gamut from highly positive to very limited or non-existent depending on the country and region, even though it can be demonstrated to have a positive impact on educational governance. Moreover, the CEART observed that pressures on education systems in times of economic crisis are best addressed through social dialogue mechanisms at national and international level (ILO and UNESCO, 2009: 18), echoing conclusions by the ILO’s tripartite constituents noted above in the framework of the Global Jobs Pact.

There is little evidence to suggest that the picture is any different in TVET. Specialists on TVET in European and neighbouring countries have described a process in which change is usually “something ‘done to’ teachers as opposed to something ‘done with’ them”, and have called for teachers and trainers to be more fully engaged as stakeholders in TVET reform decisions (Grootings and Nielsen, 2005: 11–14, 32). Even in European countries, many with a dynamic social dialogue tradition and strong institutional

frameworks, TVET teacher and trainer involvement in system or institutional decision-making through their teachers' union varies greatly, hampered by for example the minority position of TVET teachers/organizations within a unified teacher union, or by capacity issues related to size and resources for instance. There is also little evidence that teachers play any significant role via professional associations, another collective form of representation (Parsons, et al, 2009: 120, 123).

Social dialogue to shape teacher training and CPD

On a set of issues at the heart of TVET improvement - initial teacher education, more robust qualification systems, assessment and continual professional development to maintain professional competencies – informal or formal social dialogue mechanisms do seem to function in a diverse group of countries, though not universally. The implementation of competence framework guidelines (competences, standards and assessments) for TVET teachers in the Netherlands benefitted from “grass roots” inputs in which Dutch teachers' unions, collectively with other professional groupings of teachers, formed an open professional organization, the SBL, to comment on and thereby widen teacher (practitioner) engagement in shaping the framework. On the other hand, the small size and capacity of the Estonian vocational teachers' association formed in 2004 seems to have impeded an active role in the reform programme aimed mainly at professionalizing the TVET teacher training structure (strengthening a weak pedagogical base and lack of focus on learner-centred practices). In Greece, a technology teachers' association was formed by practitioners a few years ago to provide for a distinctive voice in influencing TVET policy and professional development issues with an eye to also improving teachers' status; it was reportedly influential in discussions leading to the ministerial decree on the new accreditation system for TVET trainers in 2007 (Parsons, et al., 2009: 122–123).

The available information does not permit a detailed analysis of social dialogue mechanisms directed towards teacher–trainer professional issues in countries outside Europe. There is no reason to consider that it is absent in other high-, middle- or low-income countries, particularly those with established mechanisms permitting such dialogue, but the evidence available on the subject is lacking.

Social dialogue on employment and careers in TVET

In line with international labour standards and the Recommendations concerning the status of teachers,² social dialogue at work takes many forms, of which negotiation, often in the form of collective bargaining, is the highest expression, since representing a binding agreement achieved not infrequently through difficult negotiations and compromise. Collective bargaining or its negotiating equivalent in other legal frameworks may co-exist in education with consultative forms of social dialogue on education policy in addition to its well-understood use to determine terms and conditions of employment. For example, collective agreements have served to render concrete an agreed consensus concerning reforms that link employment terms, careers and professional development. A national collective bargaining agreement in Bulgaria effective in 2007 and renegotiated in 2008 covering all teachers up to secondary level includes provisions for CPD. It also guarantees the right for teachers' unions and employers to receive preliminary information from the

² The Recommendation concerning the Status of Teachers, 1966, and the Recommendation concerning the Status of Higher-Education Teaching Personnel, 1997, applicable to TVET teachers and trainers at secondary and tertiary levels respectively, contain numerous guidelines on consultation and negotiation over education policy, careers, and terms and conditions of employment.

Ministry of Education on any proposed cuts in teacher positions, prior to discussing opportunities for teachers subject to lay-offs to acquire additional qualifications that facilitate redeployment in education (ETUCE, 2009: 47). Most collective bargaining agreements between local or provincial/state education authorities and teachers' unions in Canada and the United States include some provisions on careers, CPD and related matters.

Evidence on negotiated solutions on classic terms and conditions of work such as remuneration, workload, etc., either specific to TVET or the education sector generally, have been outlined in previous chapters. Of importance to the future of a healthy TVET system that is able to adapt to new and recurrent challenges will be the extent of negotiated solutions on workplace conditions that underpin and reinforce both systemic reforms and excellence in teaching and training. In that sense, the experience of negotiated solutions to difficult choices over how to reduce budget deficits provoked by the economic recession has not been encouraging. There have been some advances and some negotiations remain open on these questions in various countries (box 5.2).

Box 5.2

Consultations and negotiations on changing profiles and staffing in TVET

France

Teachers' trade unions have been pressing for enhanced conditions of employment to allow TVET and associated teachers to work with smaller class sizes. The proposals have combined an attempt to provide for more personalized support (i.e. in smaller groups) along with enabling a potential surplus of teachers and trainers to be retained as demographic changes affect overall demand for teachers. This remains a contentious issue in negotiations as employers and the public authorities have reportedly not agreed to the proposals in the context of a government policy to reduce public service (and teacher) positions as part of expenditure reductions and restructuring.

United Kingdom

Following persistent concerns about wage levels and limited career opportunities in further education, in consultation with teachers' trade unions and employer groupings the Government developed standards for a new career post of "Advanced Practitioner" in further education colleges, essentially non-management roles for practising TVET teachers which emphasize coaching and mentoring activities for less experienced staff. It reportedly has helped to retain experienced staff by providing additional wage (or skills-based) increments linked to the role.

Sources: France: Merhaut, 2010; United Kingdom: Rowe and Parsons, 2009.

The picture on social dialogue is mixed. Recent country situations point to a general lack of negotiations, even in some cases refusal to negotiate on teaching jobs, salary and pension reductions that have marked European (for instance, Greece, Hungary, Ireland, Latvia, Romania) and some other countries since 2009 (see ILO, 2009d for an earlier survey). In contrast, in support of reforms to South Africa's further education system undertaken in 2006 (see, also, discussion on social dialogue and new skills strategy above), the Education and Labour Relations Council (ELRC) has taken a lead in negotiating agreements on staff transfer to new further education and training colleges (FETs), as well as agreements on remuneration, careers, qualifications and teacher retention measures (box 5.3).

Box 5.3

South Africa: Negotiating TVET conditions to support reform

South Africa's Education Labour Relations Council (ELRC) provides a forum for consultations and negotiations on workplace matters, including further education and training, between the country's national and regional education employers and teachers' unions, and is frequently cited as an institutional model of good practice on the African continent. To support restructuring of the 150 apartheid-era technical colleges into 50 FET colleges, the introduction of a new curriculum, learning approaches and other reforms for a modern economy, the ELRC negotiated agreements on staff transfers in 2007. In the context of a major challenge to attract and retain qualified lecturers, in particular those of specialized subjects, it has continued such work by establishing a special bargaining unit within the ELRC for FE, lecturers and creating a task force of employers – the Government and representatives of the College Employers Association – and teachers' unions to develop: a framework of a new salary structure career path for lecturers; measures for improvement of lecturer qualifications through training and development; and a new performance management and reward system for lecturers.

Source: ELRC, 2010.

TVET and transnational social dialogue

Although very nascent, the traditional focus of social dialogue on education matters within national frameworks could also expand in the future to regional or international levels. This may take the form of simple exchanges of information within a targeted process of social dialogue on TVET reforms that can nevertheless serve as important policy learning tools. South Africa's ELRC recently organized an international study visit to several European and Asian countries in the framework of the country's initiative to revitalize the further education and training sector noted above. Employers and unions visited countries noted for their further education and skills development programmes in order to learn about institutional mechanisms for vocational education and training, governance structures, funding, programmes and students. A particular focus was put on learning about policies for revitalizing the teaching profession, including reward systems that are more effective in providing incentives for highly accomplished teaching, for keeping excellent teachers working in classrooms, and for providing educational leadership (ELRC, 2010).

In Europe, a substantive institutional framework for social dialogue at regional level has been created with potentially far-reaching consequences for education reform in the region (box 5.4). The application to TVET systems remains to be determined.

Box 5.4

Cross-national social dialogue on education in Europe

Following years of preparation, a European Federation of Education Employers (EFEE) was established in 2009, composed of Ministries of Education, associations of local governments and public agencies recognized as employers in education from 15 countries. With the European Trade Union Committee for Education (ETUCE) representing education sector workers, an agreement was reached to create a European Sectoral Social Dialogue Committee for Education under relevant articles of the EU treaty framework. The Committee, which met for the first time in June 2010, provides a forum for the social partners to propose joint declarations and statements as well as common tools strengthening the European approach to education to European legislative and regulatory bodies. All levels of education are covered, from pre-primary through higher education.

Source: ETUCE, 2010.

With due account for the general lack of research and evidence on this subject, overall, social dialogue between TVET employers and teachers and trainers, for the most part represented by their unions, shows these processes can, and are, having some impact

on TVET adjustments. Achievements, whether ad hoc or more comprehensive, illustrate the potential and value of the various forms of social dialogue that permit the voices of TVET actors and partners to be heard as TVET systems and institutions adjust to a rapidly changing environment. The evidence also points to what remains to be achieved in building on that potential, with social dialogue effectiveness and impact often constrained by poor or non-existent institutions or mechanisms, as background information for this report tends to show. Despite its potential, social dialogue has yet to deliver comprehensive and sustainable reforms that link gender-responsive TVET policy, governance, funding and learning strategy approaches with the necessary employment, career, remuneration and working conditions that ensure a reliable supply of professionally qualified teaching and training professionals, motivated to ensure high quality learning outcomes for students, employers, workers and the society at large. This challenge remains a timely, even urgent policy and practice issue for almost all TVET systems.

Appendix I

A matrix of possible learning outcomes at different stages of TVET teacher training

University, post-secondary or tertiary studies	Non-academic work experience – internships or other	Industry/service work experience	Pre-service teacher training	In-service teacher training/CPD
Basic principles and knowledge of the vocational discipline	The range of skills and competencies for future TVET students (for example work in tourism after initial work in a travel agency)	Engineers	Develop an “identity” as a TVET teacher and trainer vs. identification as engineers, economists or master artisans	Improve assessment competencies such as learning strategies, systematic problem-solving and self-evaluation
Further specialization in a vocational discipline	Real work situations (for example welding)	Master artisans	Assess prior knowledge level/competencies of student groups as a basis for choosing appropriate training assignments	Encourage elements of entrepreneurship development, such as leading students through the necessary phases of starting a wholesale company
Techniques of scientific work and research	Plan, carry out and evaluate a whole work cycle (for example a whole house installation as an electrician)	Technicians	Apply vocational pedagogy and didactics for effective teaching and learning	Analyse technical content for potential of discovery learning in TVET, such as finding faulty parts in air conditioning systems
Vocational pedagogy and didactics	Understand work and business processes in a field of specialization (for example establishing a marketing concept for an Internet cafe)	Business consultants	Understand how to include real work processes as starting points of TVET teaching and learning	Help TVET students to improve collection of new information from given sources (print material, hands-on experiments, internet research, etc.) rather than merely memorizing facts, figures or static technical skills
An understanding of work and business processes in the vocational discipline	Problem-solving in the field (for example reasons for car acceleration in the automotive industry)	Entrepreneurs	Combine theoretical knowledge from tertiary institutions with self-developed practical work experiences; design projects/assignments with a balanced ratio of known and unknown occupational content or pieces of information as well as appropriate levels of learning	Structure learning opportunities to permit TVET students to acquire competencies in different areas (such as in communication; communication in foreign languages; interpersonal, intercultural, social, civic and entrepreneurship competencies)
Quality assessment, project and time management	Understanding of possible or likely career patterns for future TVET students		Involve student teams in self-evaluation exercises during final stages of self-learning cycles	

University, post-secondary or tertiary studies	Non-academic work experience – internships or other	Industry/service work experience	Pre-service teacher training	In-service teacher training/CPD
Capabilities to finish academic work towards a university degree			Establish “visible vocational nearness”, for example through frequent excursions and/or enterprise or workplace visits to learn relevant processes/technologies/procedures taken from real job requirements and work processes	
			Carry out tracer studies (for example learning how to track graduates of TVET institutions and gauging employer satisfaction with new hires) (ILO, 2010e: 106)	

Appendix II

Statistical tables ¹

Table 1. Teaching staff, selected European countries, technical/vocational programmes at all secondary levels, public and private, covering full and part-time teachers, total and female, 1999–2007 (data for figure 3.1)

Country	Number of teachers				Changes for total teachers, 1999–2007 (%)	Changes for female teachers, 1999–2007 (%)	Base year	Last year
	Total		Female					
	1999	1999	2007	2007				
Albania	1 559	814	1 845	956	18.3	17.4	1999	2004
Andorra	26	7	46	24	76.9	242.9	2002	2007
Austria	20 729	9 774	20 375	9 713	-1.7	-0.6	2002	2007
Bulgaria	17 644	12 317	17 452	12 354	-1.1	0.3	1999	2003
Croatia	13 732	8 235	15 408	9 672	12.2	17.4	1999	2003
Cyprus	547	156	652	228	19.2	46.2	1999	2007
Czech Republic	44 846	23 716	36 610	24 616	-18.4	3.8	2001	2005
France	95 090	31 380	100 366	47 820	5.5	52.4	2000	2003
Germany	78 940	31 189	87 436	38 192	10.8	22.5	2000	2004
Greece	10 943	4 726	16 988	7 533	55.2	59.4	1999	2007
Iceland	493	219	711	458	44.2	109.1	2000	2007
Italy	155 285	82 577	160 546	88 073	3.4	6.7	2000	2007
Latvia	3 265	2 265	3 699	2 493	13.3	10.1	1999	2004
Lithuania	4 621	2 934	3 154	2 171	-31.7	-26.0	1999	2006
Malta	515	240	329	119	-36.1	-50.4	1999	2005
Monaco	77	27	68	20	-11.7	-25.9	1999	2004
Poland	120 029	67 370	58 929	33 849	-50.9	-49.8	2000	2006
Portugal	11 249	7 521	13 117	8 851	16.6	17.7	2000	2003
Romania	52 951	30 722	45 247	28 731	-14.5	-6.5	1999	2007
Slovakia	19 918	12 908	17 827	12 100	-10.5	-6.3	1999	2005
Slovenia	7 135	4 292	5 174	3 199	-27.5	-25.5	1999	2007
Sweden	17 010	8 431	25 155	14 090	47.9	67.1	1999	2006
Macedonia	3 631	1 939	3 876	2 183	6.7	12.6	1999	2007
United Kingdom	39 554	22 154	41 489	25 170	4.9	13.6	1999	2005

Source: UIS Data Centre, customized tables, teaching staff by ISCED level.

¹ Figures 1–4 in this appendix are based on data corresponding to 1999 or another base year, and the comparator year, 2007, or latest available year as indicated for each country and table.

Table 2. Teaching staff, selected African countries, technical/vocational programmes at all secondary levels, public and private, covering full- and part-time teachers, total and female, 1999–2007 (data for figure 3.2)

Country	Number of teachers				Changes for total teachers, 1999–2007 (%)	Changes for female teachers, 1999–2007 (%)	Base year	Last year
	Total		Female					
	1999	1999	2007	2007				
Benin	2 098	164	833	167	-60.3	1.8	1999	2004
Botswana	506	115	928	264	83.4	129.6	1999	2006
Burkina Faso	1 365	113	2 676	409	96.0	261.9	2003	2008
Burundi	745	114	800	234	46.2	105.3	2003	2008
Cameroon	9 540	2 833	21 543	4 525	125.8	59.7	1999	2006
Chad	221	16	289	11	30.8	-31.3	1999	2007
Djibouti	177	49	198	44	11.9	-10.2	1999	2008
Eritrea	88	4	169	10	92.0	150.0	1999	2007
Ethiopia	2 214	468	9 010	1 441	307.0	207.9	2002	2008
Ghana	1 159	96	3 555	1 131	206.7	1 078.1	1999	2008
Lesotho	135	56	200	98	48.1	75.0	1999	2007
Mali	832	69	5 648	341	578.8	394.2	1999	2008
Mauritania	195	7	36	4	-81.5	-42.9	2002	2006
Mauritius	305	148	645	411	111.5	177.7	1999	2008
Morocco	17 176	4 834	5 082	1 447	-70.4	-70.1	1999	2004
Niger	892	104	458	33	-48.7	-68.3	1999	2008
Senegal	651	51	753	158	15.7	209.8	1999	2005
South Africa	6 079	2 857	6 407	3 011	5.4	5.4	1999	2005
Sudan	1 058	175	1 925	665	81.9	280.0	1999	2009
Togo	1 107	332	2 106	111	90.2	-66.6	1999	2007
Uganda	579	60	3 672	1 122	534.2	1 770.0	2000	2008

Source: UIS Data Centre, customized tables, teaching staff by ISCED level.

Table 3. Teaching staff, selected Asian and Pacific countries, technical/vocational programmes at all secondary levels, public and private, covering full- and part-time teachers, total and female, 1999–2007 (data for figure 3.3)

Country	Number of teachers				Changes for total teachers, 1999–2007 (%)	Changes for female teachers, 1999–2007 (%)	Base year	Last year
	Total		Female					
	1999	1999	2007	2007				
Bangladesh	6 425	1 292	18 112	3 637	181.9	181.5	1999	2007
Belize	41	27	94	51	129.3	88.9	2001	2008
Brunei Darussalam	409	102	503	210	23.0	105.9	1999	2008
Cambodia	647	205	2 402	478	271.3	133.2	1999	2007

Country	Number of teachers				Changes for total teachers, 1999–2007 (%)	Changes for female teachers, 1999–2007 (%)	Base year	Last year
	Total	Female	Total	Female				
	1999	1999	2007	2007				
China	730 946	306 717	1 198 233	491 844	63.9	60.4	2000	2007
India	14 349	3524	17 207	4 189	19.9	18.9	1999	2002
Indonesia	143 077	46 306	209 091	82 048	46.1	77.2	2000	2007
Iraq	7 133	3 519	7 727	3 615	8.3	2.7	1999	2005
Jordan	3 470	1 380	3 581	1 557	3.2	12.8	1999	2007
Lao People's Dem. Rep.	232	59	444	174	91.4	194.9	1999	2008
Macao, China	176	87	71	31	-59.7	-64.4	1999	2008
Malaysia	7 156	4 435	1 071	208	-85.0	-95.3	2000	2005
Mongolia	639	366	1 451	906	127.1	147.5	1999	2008
Republic of Korea	40 713	11 990	35 110	13 398	-13.8	11.7	1999	2007
Syrian Arab Republic	13 639	5 868	17 945	8 100	31.6	38.0	1999	2008
Thailand	26 752	10 717	26 356	10 691	-1.5	-0.2	2001	2008
Tonga	58	27	84	19	44.8	-29.6	1999	2004
Turkey	77 696	28 232	77 813	30 267	0.2	7.2	2002	2006
Vanuatu	73	35	292	101	300.0	188.6	1999	2002
Viet Nam	9 732	4 202	14 658	6 156	50.6	46.5	1999	2008
Yemen	698	36	1 992	284	185.4	688.9	1999	2005

Source: UIS Data Centre, customized tables, teaching staff by ISCED level.

Table 4. Teaching staff, selected Latin American and Caribbean countries, technical/vocational programmes at all secondary levels, public and private, covering full- and part-time teachers, total and female, 1999–2007 (data for figure 3.4)

Country	Number of teachers				Changes for total teachers, 1999–2007 (%)	Changes for female teachers, 1999–2007 (%)	Base year	Last year
	Total	Female	Total	Female				
	1999	1999	2007	2007				
Anguilla	12	7	13	7	8.3	–	1999	2005
Argentina	99 077	67 956	91 016	61 758	-8.1	-9.1	1999	2004
Aruba	72	36	80	42	11.1	16.7	1999	2005
Bolivia, Plurinational State of	2 216	1 187	2 148	1 217	-3.1	2.5	1999	2004
Brazil	100 579	60 210	76 746	41 805	-23.7	-30.6	1999	2007
British Virgin Islands	15	9	74	34	393.3	277.8	1999	2007
Chile	12 935	6 208	14 901	7 262	15.2	17.0	1999	2007
Costa Rica	3 101	1 615	3 314	1 802	6.9	11.6	1999	2008
Cuba	18 635	9 644	25 010	12 614	34.2	30.8	1999	2008
Dominica	62	41	15	7	-75.8	-82.9	1999	2008

Country	Number of teachers				Changes for total teachers, 1999–2007 (%)	Changes for female teachers, 1999–2007 (%)	Base year	Last year
	Total	Female	Total	Female				
	1999	1999	2007	2007				
Dominican Republic	1 328	615	2 317	1 209	74.5	96.6	1999	2008
Ecuador	12 619	6 085	17 540	8 743	39.0	43.7	2000	2007
Guyana	394	248	276	158	-29.9	-36.3	1999	2008
Jamaica	54	21	30	11	-44.4	-47.6	1999	2003
Netherlands Antilles	295	109	542	274	83.7	151.4	1999	2003
Nicaragua	559	314	746	409	33.5	30.3	1999	2008
Panama	7 375	4 114	3 523	1 824	-52.2	-55.7	1999	2008
Trinidad and Tobago	176	74	57	34	-67.6	-54.1	1999	2005
Turks and Caicos Islands	14	14	12	8	-14.3	-42.9	1999	2005

Source: UIS Data Centre, customized tables, teaching staff by ISCED level.

Table 5. Real wage index for technical education teachers by sex in selected high- and middle-income countries, 1994–2008 (or latest available year, 1994/95/96/98/99=100) (data for figure 4.1)

Country	Real wage index		Base year	Last year
	Male	Female		
Australia	102.3	104.1	1994	2006
Brazil	63.3	66.5	1999	2006
Costa Rica	83.8	95.7	1999	2008
Cyprus	107.1	106.2	1994	2006
Czech Republic	147.2	–	1994	2003
Egypt	126.6	133.6	1994	2000
Finland	105.3	116.7	1995	2007
Hungary	179.1	–	1995	2007
Jordan	121.1	85.8	1994	2006
Korea, Rep. of	148.0	114.7	1994	2006
Kyrgyzstan	55.9	53.5	1994	2002
Mexico	122.1	–	1999	2004
Moldova	195.9	195.6	1994	2008
Norway	127.2	–	1998	2008
Poland	196.6	171.4	1998	2006
Romania	196.5	199.4	1995	2008
Slovakia	96.9	80.7	1996	2001

Note: For Hungary, Czech Republic, Norway and Mexico data is for all teachers.

Source: ILO LABORSTA Internet, October Inquiry: Wages and hours of work in 159 occupations, updated in 2009.

Table 6. Real Wage Indexes for primary and secondary (languages and literature, and technical education) teachers (male or total), years 1994–99 to 2008 or latest available (data for figure 4.2)

Country	Technical education teacher (second level)	Teacher in languages and literature (second level)	First-level education teacher	Base year	Last year
Australia	102.3	109.0	106.8	1994	2006
Brazil	63.3	107.6	–	1999	2006
Costa Rica	83.8	83.8	110.1	1999	2008
Cyprus	107.1	107.1	127.0	1994	2006
Czech Republic	147.2	147.5	–	1994	2003
Egypt	126.6	79.9	79.0	1994	2000
Finland	105.3	116.6	122.7	1995	2007
Hungary	179.1	163.5	162.8	1995	2007
Jordan	121.1	94.3	145.6	1994	2006
Korea, Rep. of	148.0	148.0	148.0	1994	2006
Kyrgyzstan	55.9	–	59.3	1994	2002
Mexico	122.1	121.9	109.7	1999	2004
Moldova	195.9	–	168.1	1994	2008
Norway	127.2	126.0	126.7	1998	2008
Poland	196.6	196.6	196.6	1998	2006
Romania	196.5	196.5	208.1	1995	2008
Slovakia	96.9	96.9	81.3	1996	2001

Source: ILO LABORSTA Internet, October Inquiry: Wages and hours of work in 159 occupations, updated in 2009.

Table 7. Number of hours of work per week for technical education teachers (secondary level), 1998–2008 or closest available year (base years 1994) (data for figure 4.3)

Country	1998 or closest year	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2008 or latest year
Algeria	40.0	40.0	–	–	40.0	–	40.0	40.0	40.0	40.0	40.0	40.0	40.0
Azerbaijan	39.0	39.0	39.0	40.0	40.0	36.0	–	38.0	38.0	36.0	35.0	36.0	36.0
Bahamas	–	–	–	–	–	–	–	–	–	–	37.0	–	37.0
Botswana	–	–	–	–	–	–	–	–	–	45.0	45.0	–	45.0
Bulgaria	–	–	–	–	–	40.0	–	–	–	–	–	–	40.0
Costa Rica	–	–	–	–	–	–	–	–	39.8	40.0	39.2	40.0	40.0
Cuba	–	–	–	–	–	–	–	–	–	47.7	47.7	48.0	48.0
Cyprus	33.0	–	33.0	37.5	37.6	30.5	37.6	37.6	37.9	37.7	–	–	37.7
Czech Republic	–	–	–	–	–	–	40.0	40.0	40.0	40.0	40.0	40.0	40.0
El Salvador	–	–	–	–	56.0	56.0	56.0	25.0	56.0	56.0	56.0	56.0	56.0
Eritrea	48.0	–	48.0	48.0	–	48.0	–	–	–	–	–	–	48.0

Country	1998 or closest year	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2008 or latest year
France	-	-	-	36.65	35.64	-	-	-	-	-	-	-	35.6
Germany	-	-	-	-	-	-	-	-	40.0	41.0	41.0	41.0	41.0
Hungary	-	-	-	-	-	-	-	-	-	40.0	40.0	-	40.0
Italy	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0
Kyrgyzstan	-	-	-	-	18.0	18.0	-	-	-	-	-	-	18.0
Mauritius	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	-	-	30.0	32.0	32.0
Myanmar	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	-	35.0	35.0	-	35.0
Nicaragua	48.0	-	48.0	48.0	48.0	48.0	-	-	-	-	-	-	48.0
Pakistan	48.0	-	48.0	48.0	48.0	48.0	48.0	48.0	-	-	-	-	48.0
Peru	-	-	-	-	-	48.0	-	-	-	-	-	-	48.0
Philippines*	-	-	-	-	-	-	-	8.0	-	8.0	-	8.0	8.0
San Marino	-	-	-	-	-	-	22.0	22.0	22.0	-	-	-	22.0
Slovakia	42.5	42.5	42.5	42.5	42.5	40.0	-	-	-	-	-	-	40.0
St. Helena	30.0	-	30.0	30.0	30.0	30.0	-	-	-	-	-	-	30.0
St. Vincent and the Grenadines	35.0	35.0	35.0	-	-	35.0	35.0	-	-	-	-	-	35.0
United Kingdom	-	-	-	-	-	-	32.3	32.5	32.5	32.5	32.5	32.5	32.5
Zambia	-	-	-	-	-	-	-	-	40.0	-	-	-	40.0

* Private sector only.

Source: ILO LABORSTA Internet, October Inquiry: Wages and hours of work in 159 occupations, updated in 2009.

References

- Adelabu, M.A. 2005. *Teacher Motivation and Incentives in Nigeria* (NTBE).
- Allais, S.; Raffe, D.; Young, M. 2009. *Researching NQFs: Some conceptual issues*, Employment Working Paper No. 44 (Geneva, ILO).
- Asian Development Bank (ADB). 2008. *Education and Skills: Strategies for Accelerated Development in Asia and the Pacific* (Manila), [www.adb.org/Documents/Studies/Education-Skills-Strategies-Development.pdf](http://www.adb.org/Documents/Studies/Education-Skills-Strategies-Development/Education-Skills-Strategies-Development.pdf) (accessed 23 July 2010).
- Australian Government, Department of Immigration and Citizenship. 2010. “Visas, Immigration and Refugees” (Canberra) www.immi.gov.au/immigration/ and the Australian Visa Bureau. 2010. “Emigrate to Australia” (Adelaide), www.visabureau.com/australia/emigrate-to-australia.aspx (both accessed 27 May 2010).
- Axmann, M. 2002. “Innovative Approaches to Teacher Training in Vocational Education in Germany: The Vocational Education Teacher Training Institute (VETTI) in Cologne”, Report to German Technical Cooperation (GTZ-CRYSTAL), May 2002 (Kürten, Germany), www.gtz.de/en/dokumente/en-teachertraining-innovative-approaches-to-teacher-training.pdf (accessed 26 May 2010).
- . 2004. *Facilitating labour market entry for youth through enterprise-based schemes in vocational education and training and skills development*, InFocus Programme on Boosting Employment through Small Enterprise Development Working Paper No. 48, (Geneva, ILO), www.ilo.org/wcmsp5/groups/public/---ed_emp/---emp_ent/---ifp_seed/documents/publication/wcms_117683.pdf (accessed June 2010).
- Badescu, B.; Kennedy, A. 2002. *Key Indicators on Vocational Education and Training: Central and Eastern Europe Report*, European Training Foundation (Luxembourg: Office for Official Publications of the European Communities).
- Banks, C.N. 2010. *Co-investment in the skills of the future: A summary report to Ministers in the Department for Business, Innovation and Skills*, Independent Review of Fees and Co-Funding in Further Education in England (London, Department for Business, Innovation and Skills), www.bis.gov.uk/assets/biscore/further-education-skills/docs/i/10-1035-independent-review-fees-co-funding-fe-england-summary.pdf (accessed 25 July 2010).
- Bünning, F.; Shilela, A. 2006. *The Bologna Declaration and Emerging Models of TVET Teacher Training in Germany*, UNESCO–UNEVOC Discussion Papers Series, in cooperation with InWEnt – Capacity Building International (Bonn).
- Canadian Teachers’ Federation (CTF). 2010. “Teaching in Canada – Employment Contracts, Salaries and Benefits” (Ottawa), <http://ctf-fce.ca/TIC/Default.aspx?sid=625892> (accessed on 27 July 2010).
- Commonwealth Secretariat. 2004. *Commonwealth Teacher Recruitment Protocol* (London).
- Cort, P.; Härkönen, A.; Volmari, K. 2004. PROFF – *Professionalization of VET teachers for the future*, CEDEFOP Panorama Series 104 (Luxembourg: Office for Official Publications of the European Communities), www.cedefop.europa.eu/EN/Files/5156_en.pdf (accessed June 2010).

-
- Education International (EI). 2009a. "EI urges increased funding for Vocational Education and Training" (Brussels), www.ei-ie.org/vocational/en/newsshow.php?id=1121&theme=vocational&country=hungary (accessed 31 July 2010).
- . 2009b. "Report to the Expert Committee on the Application of the 1966 ILO/UNESCO Recommendation on the Status of Teachers and 1997 UNESCO Recommendation concerning the Status of Higher Education Teaching Personnel" (Brussels), unpublished.
- Education Labour Relations Council of South Africa (ELRC). 2010. "ELRC – 2008/09 Annual Report" and "New Remuneration Dispensation for FETC" (Centurion, South Africa), www.elrc.org.za/UploadedDocuments/ELRC%20Annual%20Report%202008-09%20small.pdf and www.elrc.co.za/Display2.asp?SectID=18&ItemID=144 (both accessed 28 July 2010).
- Egger P; and Sengenberger W. (eds). 2003. *Decent work in Denmark: Employment, social efficiency and economic security* (Geneva, ILO).
- Engineering Capacity Building Program (ECBP). 2010. "University reform: Educating" (Addis Ababa), www.ecbp.biz/reform-fields/university.html (accessed 17 July 2010).
- European Centre for the Development of Vocational Training (CEDEFOP). 2005. *The Future of ICT and Learning in the Knowledge Society: Executive Summary* (Luxembourg, Office for Official Publications of the European Communities).
- . 2008. *Training VET Teachers and Trainers: Thematic Analysis – 06* (Refernet Germany), www.refernet.de/media/a13_refernet_thematic-analysis_06.pdf (accessed 26 May 2010).
- . 2009. *Modernising vocational education and training: Fourth report on vocational training research in Europe: Background report*, Vol. 2, CEDEFOP Reference Series 70 (Luxembourg, Office for Official Publications of the European Communities).
- European Commission. 2010. "The Bologna Process – Towards the European Higher Education Area" (Brussels, Directorate for Education and Training), http://ec.europa.eu/education/higher-education/doc1290_en.htm (accessed 11 Mar. 2010).
- European Trade Union Committee for Education (ETUCE). 2009. *Teacher Education in Europe: An ETUCE Policy Paper* (Brussels), http://etuce.homestead.com/Publications2008/ETUCE_PolicyPaper_en_web.pdf (accessed 28 July 2010).
- . 2010. "First plenary meeting of the European Sectoral Social Dialogue Committee in Education" (Brussels), http://etuce.homestead.com/News/2010/2010-05/2010.05.18_ESSDE_eng.pdf (accessed 28 July 2010).
- European Training Foundation (ETF). 2006. "South East Europe focuses on the dual role of teachers", Conference of the ETF VET Teacher and Trainer Network in South Eastern Europe, Belgrade, Serbia, 14–16 September 2006 (Turin), www.etf.europa.eu/web.nsf/pages/11092B383BD65F36C125722E00587A60_EN?OpenDocument (accessed 15 July 2010).
- Federal Ministry of Education and Research, Germany (BMBF). 2005. *Vocational Training Act - Berufsbildungsgesetz (BBiG)*, 23 March 2005, *Federal Law Gazette [BGBl.]*, Part I, p. 931 (Berlin), www.bmbf.de/pub/BBiG_englisch_050805.pdf (accessed 19 July 2010).

-
- . 2010. “Reform of Vocational Education and Training” (Berlin), www.bmbf.de/en/1644.php (accessed 19 July 2010).
- Gallart, M.A. 2008. *Skills, productivity and employment growth: The case of Latin America* (Montevideo, ILO–CINTERFOR).
- Gasskov, V. 2006. *Vocational education and training institutions – A management handbook and CD-ROM* (Geneva, ILO).
- Government of Bangladesh (GOB). 2009. “Bangladesh Skills Development Policy 2010–15: Final Draft”, December 2009 (Dhaka), www.moedu.gov.bd/index.php?option=com_content&task=view&id=497&Itemid=416 (accessed 25 July 2010).
- Government of South Australia – TAFESA (GSA-TAFESA). 2010. “tafeSA: Careers” (Adelaide), www.tafe.sa.edu.au/ (accessed 28 May 2010).
- Grašič, S.; Zevnik, M. 2006. “Increased autonomy of teachers and schools in reformed secondary VET programmes”, ATEE Conference, Portorož, 21–25 October 2006 (Ljubljana, National Institute for Vocational Education and Training).
- Grollmann, P. 2009. “Professionalization of VET Teachers and Lecturers and Practices in TVET institutions in an International Perspective”, in R. McLean, D. Wilson and C. Chinien, (eds), pp. 1190–1191.
- . Rauner, F. (eds). 2007. *International perspectives on teachers and lecturers in technical and vocational education*, UNESCO–UNEVOC Technical and Vocational Education and Training Series 7 (Dordrecht, Springer).
- Grootings, P; Nielsen, S. (eds). 2005. *ETF Yearbook 2005 – Teachers and trainers: Professionals and stakeholders in the reform of vocational education and training* (Turin, European Training Foundation).
- Group of 20 (G20). 2010. *The G20 Toronto Summit Declaration*, 26–27 June 2010 (Toronto).
- Harris, R.; Simons, M.; McCarthy, C. 2006. *Private training providers in Australia: Their characteristics and training activities* (Adelaide, NCVER), www.ncver.edu.au/publications/1688.html (accessed July 2010).
- Hmelo-Silver, C.E. 2004. “Problem-based learning: What and how do students learn?” in *Educational Psychology Review*, 16, pp. 235–266.
- International Labour Office (ILO). 1954. *Memorandum on collaboration between the ILO and UNESCO in matters of technical and vocational education and related matters*, *ILO Official Bulletin*, Vol. XXXVII, No. 7, 31 Dec. 1954, pp. 399–401 (Geneva).
- . 1999. *World Employment Report: How training matters* (Geneva).
- . 2000. “Conclusions on lifelong learning in the twenty-first century: The changing roles of educational personnel”, *Note on the Proceedings*, Joint Meeting on Lifelong Learning in the Twenty-first Century, Geneva, 2000, JMEP/2000/10 (Geneva), www.ilo.org/public/english/dialogue/sector/techmeet/jmep2000/conclude.htm (accessed 21 June 2010).
- . 2002. “Resolution concerning tripartism and social dialogue”, International Labour Conference, 90th Session, Geneva, June 2002 (Geneva), www.ilo.org/public/english/standards/relm/ilc/ilc90/pdf/pr-21.pdf (accessed 4 Aug. 2010).

-
- 2004. *Human Resources Development Recommendation, 2004 (R195)*, International Labour Conference, 92nd Session, Geneva, 2004 (Geneva).
 - 2007. “Gender issues in education and training: A case of unequal access”, Sectoral Activities Programme, SECTOR Notes, May 2007 (Geneva, ILO), www.ilo.org/public/english/dialogue/sector/papers/education/note-gender.pdf (accessed 21 July 2010).
 - 2008a. *Skills for Improved Productivity, Employment Growth and Development*, Report V, International Labour Conference, 97th Session, Geneva, June 2008 (Geneva).
 - 2008b. *Conclusions on skills for improved productivity, employment growth and development*, International Labour Conference, 97th Session, 2008 (Geneva).
 - 2008c. *ILO Declaration on Social Justice for a Fair Globalization*, International Labour Conference, 97th Session, 2008 (Geneva), www.ilo.org/wcmsp5/groups/public/---dgreports/---cabinet/documents/publication/wcms_099766.pdf (accessed 26 June 2010).
 - 2009a. *Recovering from the crisis: A Global Jobs Pact*, International Labour Conference, 98th Session, Geneva, 2009 (Geneva).
 - 2009b. *Gender equality at the heart of decent work*, International Labour Conference, Report VI, 98th Session, Geneva, 2009 (Geneva).
 - 2009c. “Wages and hours of work in 159 occupations (ILO October Inquiry)”, database updated in 2009 (Geneva, LABORSTA Internet).
 - 2009d. “The sectoral dimension of the ILO’s work: Update of sectoral aspects regarding the global economic crisis: Tourism, public services, education and health”, Governing Body, 307th Session, March 2010, GB.307/STM/1 (Geneva), www.ilo.org/wcmsp5/groups/public/---ed_norm/---relconf/documents/meetingdocument/wcms_123768.pdf (accessed 3 Aug. 2010).
 - 2010a. *Global Employment Trends: January 2010* (Geneva), www.ilo.org/public/libdoc/ilo/P/09332/09332%282010-January%29.pdf (accessed 20 June 2010).
 - 2010b. “Recovering and sustaining growth and development: The contribution of the Global Jobs Pact”, paper submitted to the Working Party on the Social Dimension of Globalization, 307th Session of the ILO Governing Body, GB.307/WP/SDG/1 (Geneva), www.ilo.org/wcmsp5/groups/public/---ed_norm/---relconf/documents/meetingdocument/wcms_123972.pdf (accessed 20 June 2010).
 - 2010c. “Consensus-based recommendations”, Up-skilling out of the Downturn: Global Dialogue Forum on Strategies for Sectoral Training and Employment Security, Geneva, 29–30 March 2010 (Geneva).
 - 2010d. *A skilled workforce for strong, sustainable and balanced growth: Proposals to G20 leaders for a training strategy*, June 2010 (Geneva), www.ilo.org/public/libdoc/jobcrisis/download/g20_skilledworkforce.pdf (accessed 4 July 2010).
 - 2010e. *Employment policies for social justice and a fair globalization*, Report VI, International Labour Conference, 99th Session, Geneva, June 2010 (Geneva).
 - 2010f. “Technical and Vocational Education and Training (TVET) Reform Project in Bangladesh” (Dhaka, ILO Office in Bangladesh), www.ilo.org/dhaka/Whatwedo/Projects/lang--en/WCMS_106485/index.htm (accessed 12 July 2010).

-
- 2010g. “What is Social Dialogue?” Industrial and Employment Relations Department – DIALOGUE (Geneva), www.ilo.org/public/english/dialogue/ifpdial/areas/social.htm (accessed 27 July 2010).
 - 2010h. “Upskilling out of the Downturn: Strategies for Sectoral Training and Employment Security in the G20”, Sectoral Activities Department Note, Mar. 2010 (Geneva).
 - 2010i. “International Labour Standards” (Geneva), www.ilo.org/global/What_we_do/InternationalLabourStandards/lang--en/index.htm (accessed 3 Aug. 2010).
- ILO–UNESCO. 1966. *Recommendation concerning the Status of Teachers* (Paris and Geneva), www.ilo.org/public/english/dialogue/sector/techmeet/ceart/teache.pdf (accessed 20 June 2010).
- 2003. *Joint ILO–UNESCO Committee of Experts on the Application of the Recommendations concerning Teaching Personnel: Report*, Eighth Session, Paris, 15–19 September 2003 (Paris), www.ilo.org/public/english/dialogue/sector/techmeet/ceart03/ceartr.pdf (accessed 25 July 2010).
 - 2007. *Joint ILO–UNESCO Committee of Experts on the Application of the Recommendations concerning Teaching Personnel: Report*, Ninth Session, Geneva, 30 October–3 November 2006 (Geneva), www.ilo.org/public/english/dialogue/sector/techmeet/ceart06/ceartr.pdf (accessed 20 June 2010).
 - 2010. *Joint ILO–UNESCO Committee of Experts on the Application of the Recommendations concerning Teaching Personnel: Report*, Tenth Session, Paris, 28 September–2 October 2009 (Paris), www.ilo.org/public/english/dialogue/sector/techmeet/ceart09/ceartr.pdf (accessed 20 June 2010).
- Iliukhina, N.; Ratteree, B. Forthcoming. “Employment and careers, teacher salaries, teaching and learning conditions”, Background report for the Joint ILO–UNESCO Committee of Experts on the Application of the Recommendations concerning Teaching Personnel – CEART (Geneva, ILO).
- International Centre for Technical and Vocational Education and Training (UNEVOC) and UIS. 2006. *Participation in formal technical and vocational education and training programmes worldwide: An initial statistical study* (Bonn).
- International Organisation of Employers (IOE); Business and Industry Advisory Committee to the OECD (BIAC). 2010. “Lifelong Learning Strategy – G20 Meeting”, Mar. 2010 (Geneva and Paris), www.ioe-emp.org/fileadmin/user_upload/documents_pdf/papers/position_papers/english/pos2010_lifelonglearning.pdf (accessed 29 July 2010).
- International Trade Union Congress (ITUC). 2010. “Resolution on a decent life for young working men and women”, 2nd World Congress, Vancouver, 21–25 June 2010 (Brussels), www.ituc-csi.org/IMG/pdf/2CO_07_Youth_03-10-3.pdf (accessed July 2010).
- Johanson, R.K. (2004). *Implications of globalization and economic restructuring for skills development in sub-Saharan Africa*, Working Paper No. 29, Policy Integration Department (Geneva, ILO).
- van Adams, A. (2004). *Skills Development in Sub-Saharan Africa* (Washington, DC, World Bank); http://publications.worldbank.org/e-commerce/catalog/product?item_id=3101561 (accessed 18 July 2010).

-
- Kultusminister Konferenz. Standing Conference of the Ministers of Education and Cultural Affairs of the Länder in the Federal Republic of Germany. 2010. "Lehrereinstellungsbedarf und –angebot in der Bundesrepublik Deutschland", www.kmk.org/statistik/schule/statistische-veroeffentlichungen/lehrereinstellungsbedarf-und-angebot-in-der-bundesrepublik-deutschland.html (accessed 21 July 2010).
- Lee, T. et al. 2004. *Learning as Work: Teaching and Learning Processes in the Contemporary Work Organization*, Learning as Work Research Paper No. 2, Centre of Labour Market Studies (Leicester, UK, University of Leicester).
- Lifelong Learning UK (LLUK). 2009. *Annual Workforce Diversity Profile 2007/08: An analysis of further education colleges in England* (London), www.lluk.org/documents/annual-workforce-diversity-profile-2007-2008.pdf (accessed 25 July 2010).
- Loveder, P. 2005. *World trends in staff development: Implications on the performance of technical education institutions*, Paper presented to National Seminar: The Development of Technology and Technical Vocational Education and Training in an Era of Globalization, 23–24 August 2005 (Adelaide, National Centre for Vocational Educational Research), www.ncver.edu.au/publications/1628.html (accessed 23 July 2010).
- Lynch, K. 1990. *The problems of women teachers in technical and vocational education in Kenya, Tanzania and Zambia: An exploratory report*, Sectoral Activities Programme Working Paper, SAP 4.4/WP.35 (Geneva, ILO).
- Masson, J-R. 2006. *Financing Vocational Education and Training in the EU New Member States and Candidate Countries: Recent Trends and Challenges* (Luxembourg, ETF and Office for the Official Publications of the European Communities), [www.etf.europa.eu/pubmgmt.nsf/%28getAttachment%29/3AD39E01E3BA762AC125712A0064D1BB/\\$File/NOTE6MNPHG.pdf](http://www.etf.europa.eu/pubmgmt.nsf/%28getAttachment%29/3AD39E01E3BA762AC125712A0064D1BB/$File/NOTE6MNPHG.pdf) (accessed 25 July 2010).
- McLean, R.; Wilson, D. 2009. "Introduction", in R. McLean; D. Wilson and C. Chinien (eds), *International Handbook of Education for the Changing World of Work: Bridging Academic and Vocational Learning* (Dordrecht, Springer Science and Business Media).
- Merhaut, P. 2010. "Vocational training in France", pp. 110–135 in G. Bosch and J. Charest (eds). *Vocational Training: International Perspectives*, Routledge Studies in Employment and Work Relations in Context (New York, Routledge, Taylor and Francis).
- Ministry of Education, Republic of Serbia. 2010. "Vocational Education and Training Reform Programme: Teacher Training and Human Resource Development" (Belgrade), www.vetserbia.edu.rs/humanresourcedevelopment.htm (accessed 28 May and 19 July 2010).
- Mitchell, J; Ward, J. 2010. *The JMA Analytics Model of VET Capability Development* (Pyrmont, NSW, John Mitchell and Associates), www.jma.com.au/User_Uploaded_Files/file/JMA%20Analytics%20National%20VET%20Practitioner%20Skills%20Report%2031%20January%202010.pdf (accessed 27 July 2010).
- National Board for Technical Education, Nigeria (NBTE). 2010. "About National Board for Technical Education (NBTE)", web site pages on "Institutions" and "About VEIs and IEIs" (Kaduna, Nigeria), www.nbte.gov.ng/ (accessed 24 July 2010).
- National Industrial Training Service (SENAI). 2010. *SENAI Portal – Serviço Nacional de Aprendizagem Industrial* (Brasilia), www.senai.br/br/home/index.aspx (accessed 10 July 2010).

-
- National Institute for Adult and Continuing Education (NIACE). 2009. *The private training market in the UK: Inquiry into the future of lifelong learning*, Sector Paper 2 (Leicester), www.niace.org.uk/lifelonglearninginquiry/docs/IFLL-Sector-Paper2.pdf (accessed 25 July 2010).
- National Institute for Vocational Education and Training of Slovenia (CPI). 2007. *National Institute for Vocational Education and Training in Development of a Common European VET Area* (Ljubljana).
- Nielsen, S. 2007. “Teachers and trainers in vocational education and training reform”, in S. Nielsen and M. Nikolovska (eds), pp. 57–73.
- ; Nikolovska, M. (eds). 2007. *ETF Yearbook 2007 – Quality in Vocational Education and Training and Modern Learning Processes* (Turin, European Training Foundation).
- Organisation for Economic Co-operation and Development (OECD). 2008. *Education at a Glance 2008: OECD Indicators* (Paris).
- . 2009a. *Learning for Jobs: OECD Policy Review of Vocational Education and Training* (Paris).
- . 2009b. *Education at a Glance 2009: OECD Indicators* (Paris).
- . 2010a. *International Development Statistics (IDS): Online databases on aid and other resource flows* (Paris).
- . 2010b. “OECD Stat Extracts” (Paris), <http://stats.oecd.org/Index.aspx> (accessed 26 May 2010).
- OECD Centre for Educational Research and Innovation (CERI). 2009. *Working out Change: Systemic Innovation in Vocational Education and Training* (Paris).
- Parsons, D.; Hughes, J.; Allinson, C.; Walsh, K. 2009. “The training and development of VET teachers and trainers in Europe”, in Cedefop (ed.), Vol. 2, pp. 79–156.
- Partnership for 21st Century Skills (P21). 2010. “Overview” (Tucson, AR.), www.p21.org/index.php?option=com_content&task=view&id=254&Itemid=119 (accessed 28 July 2010).
- Perez, S. 1990. *Les femmes enseignantes dans l’enseignement technique et professionnel au Bénin, en Côte d’Ivoire, au Mali, au Sénégal: Une étude comparative*, Sectoral Activities Programme Working Paper, SAP 4.31/WP.83 (Geneva, ILO).
- Rowe, V.; Parsons, D.J. 2009. *A National Strategy for the Work-based Learning Workforce*, Research Report to Lifelong Learning UK (Leeds, Lifelong Learning UK).
- Republic of South Africa (RSA). Department for Higher Education and Training, 2010. *Framework for the National Skills Development Strategy, 2011/12 – 2015/16* (Pretoria), www.info.gov.za/view/DownloadFileAction?id=121537 (accessed 27 July 2010).
- Saudi Arabia, General Directorate for the Design and Development of Curricula (GDDDC). 2010. “Technical Colleges Study Plans” (Riyadh), <http://cdd.gotevot.edu.sa/en/index.htm> (accessed 27 May and 20 July 2010).
- Schleicher, A. 2006. *The economics of knowledge: Why education is key for Europe’s success*, Lisbon Council Policy Brief, Mar. 2006 (Brussels, The Lisbon Council).
- Government of Serbia. 2006. *The Strategy for the Development of Vocational Education and Training in the Republic of Serbia* (Belgrade), www.vetserbia.edu.rs/Strateski

%20dokumenti/Usvojene%20strategije%20razvoja/VET%20Strategy.pdf (accessed 26 May and 20 July 2010).

Serbian Association of Professional Teachers (Dositej). 2010. "Reform of vocational education in Serbia" (in Serbian only) (Belgrade), www.dositej.org.rs/ (accessed 26 May and 20 July 2010).

Simons, M.; Harris, R.; Pudney, V.; Clayton, B. 2009. *Careers in vocational education and training: What are they really like?* (Adelaide, NCVER) www.ncver.edu.au/publications/2114.html (accessed 25 July 2010).

Technical Trainers College (TTC). 2010. "Welcome" (Riyadh), www.ttcollege.org/ (accessed 20 July 2010).

TT-TVET. 2008. "The Development of Transnational Standards for Teacher Training for Technical and Vocational Education and Training with a Multidisciplinary and Industrial Orientation" (Bremen, Institute for Technology and Education), www.itb.uni-bremen.de//tt-tvet/ (accessed 17 July 2010).

United Kingdom Commission for Employment and Skills (UKCES). 2009. *Ambition 2020: World Class Skills and Jobs for the UK* (London), www.ukces.org.uk/upload/pdf/UKCES_FullReport_USB_A2020.pdf (accessed 27 July 2010).

United Nations Educational, Scientific and Cultural Organization (UNESCO). 1997. *Recommendation concerning the Status of Higher-Education Teaching Personnel* (Paris), http://portal.unesco.org/en/ev.php-URL_ID=13144&URL_DO=DO_TOPIC&URL_SECTION=201.html (accessed 24 July 2010).

—. 2001. *Revised Recommendation concerning Technical and Vocational Education*, UNESCO General Conference, Paris, 2 November 2001 (Paris). http://portal.unesco.org/en/ev.php-URL_ID=13145&URL_DO=DO_TOPIC&URL_SECTION=201.html (accessed 25 June 2010).

—. 2010. *Reaching the marginalized: EFA Global Monitoring Report 2010* (Paris and London, UNESCO Publishing and Oxford University Press). www.unesco.org/en/efareport/reports/2010-marginalization/ (accessed 20 June 2010).

UNESCO Institute for Statistics (UNESCO-UIS). 2005. *Global Education Digest, 2005* (Montreal).

—. 2006. *International Standard Classification of Education – ISCED 1997* (Montreal).

—. 2007. *Global Education Digest 2007: Comparing Education Statistics Across the World* (Montreal).

—. 2010. "Customized tables, teaching staff by ISCED level" (Montreal, UIS Data Centre), http://stats.uis.unesco.org/unesco/TableViewer/document.aspx?ReportId=136&IF_Language=eng&BR_Topic=0 (accessed 4 June 2010).

UNESCO–ILO. 2002. *Technical and Vocational Education and Training for the Twenty-first Century: UNESCO and ILO Recommendations* (Paris and Geneva).

United States Department of Labor – Bureau of Labor Statistics (USA–BLS). 2009. *Occupational Outlook Handbook, 2010–11 edition: Teachers – Vocational* (Washington, DC), www.bls.gov/oco/ocos358.htm, last updated 17 Dec. 2009 (accessed 20 July 2010).

-
- University and College Union (UCU). 2009. “Pay & conditions: FE pay and salaries” and “Salary scales” to August 2009 (London) www.ucu.org.uk/index.cfm?articleid=1703 (accessed 23 July 2010).
- Vähäsantanen, K.; Eteläpelto, A. 2009. “Vocational teachers in the face of a major educational reform: Individual ways of negotiating professional identities”, *Journal of Education and Work*, 22:1, pp. 15–33.
- World Bank. 2007. *Learning for Working Opportunities: An Assessment of the Vocational Education and Training in Bangladesh*, Bangladesh Development Series No. 16, Human Development Unit, South Asia Region (Washington, DC).
- . 2008. *Skill Development in India: The Vocational Education and Training System*, South Asia Region Human Development Unit Report No. 22 (Washington, DC). http://siteresources.worldbank.org/EDUCATION/Resources/278200-1099079877269/547664-1208379365576/423150_India_VET.pdf (accessed 18 July 2010).
- Yoon, J-H.; Lee, B-H. 2010. “The Transformation of the Government-Led Vocational Training System in Korea”, in G. Bosch; J. Charest (eds). 2009. *Vocational Training – International Perspectives*, *Routledge Studies in Employment and Work Relations in Context* (New York, Routledge, Taylor and Francis).