INTERNATIONAL LABOUR ORGANIZATION

UNITED NATIONS EDUCATIONAL, SCIENTIFIC
AND CULTURAL ORGANIZATION

CEART/13/2018/8

Joint ILO–UNESCO Committee of Experts on the Application of the Recommendations concerning Teaching Personnel (CEART)

A Global Overview of TVET Teaching and Training:
Current Issues, Trends and Recommendations

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July 2018

Report submitted to the 13th Session of the Joint ILO–UNESCO Committee of Experts on the Application of the Recommendations concerning Teaching Personnel (CEART)

Geneva, 2018

UNESCO – PARIS ILO – GENEVA

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First published 2019

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A Global Overview of TVET Teaching and Training: Current Issues, Trends and Recommendations, by Christa Rawkins

This report served as a background study for the 13th session of the Joint ILO/UNESCO Committee of Experts on the Application of the Recommendations concerning Teaching Personnel (CEART), held in Geneva, 1-5 October 2018.

Also available in French: *Aperçu global de l'enseignement et de la formation techniques et professionnels: défis actuels, tendances et recommandations*

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Printing and Distribution Branch (PRODOC) of the ILO.
Graphic and typographic design, layout and composition, manuscript preparation,
copy editing, proofreading, printing, electronic publishing and distribution.
PRODOC endeavours to use paper sourced from forests managed in an environmentally sustainable and socially responsible manner.
Code: DTP-CAD-ICA

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Abstract

Global developments in technology and demography, as well as shifts towards lifelong learning approaches to education and training have resulted in increasing pressure on governments to expand the scope and scale of national TVET systems. Concurrently, with low public spending, teacher shortages and a dearth of internationally comparable data and research, TVET remains the "poor relative" of education systems. Therefore, reforms which address existing issues of quality and help to raise the status of TVET personnel are crucial. This paper highlights four key areas of challenge (recruitment and pre-service training; continuous professional development; working conditions; social dialogue), offering a global overview of strengths and weaknesses in national TVET systems. These are then compared to the current policy debates and reforms taking place across the world to consider the most appropriate steps forward. Several policy recommendations are offered, centring on the need to place system coherence, stakeholder collaboration and evidence-based approaches at the heart of all policy processes concerning the TVET sector.

Acronyms and abbreviations

AI	Artificial Intelligence
ASEAN	Association of Southeast Asian Nations
CANTA	Caribbean Association of National Training Authorities
CARICOM	Caribbean Community
CBET	competency-based education and training
CEART	Committee of Experts of the Application of the Recommendations concerning Teaching Personnel
CEDEFOP	European Centre for the Development of Vocational Training
CPD	continuous professional development
CQF	Qualifications Framework
CVQ	Caribbean Vocational Qualifications
EU	European Union
ICT	information and communications technology
ILO	International Labour Organization
LLL	Lifelong Learning
NEET	Not in Education, Employment, or Training
NGO	Non-governmental Organization
OECD	Organisation of Economic Co-operation and Development
SDGs	Sustainable Development Goals
SEA-TVET	Southeast Asia Technical and Vocational Education
STEM	Science, Technology, Engineering and Mathematics
TALIS	Teaching and Learning International Survey
TVET	Technical and Vocational Education and Training
UN	United Nations
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNESCO-UNEVOC	International Centre for Technical and Vocational Education and Training of the United Nations Educational, Scientific and Cultural Organization
UNICEF	United Nations Children's Fund

Introduction

The potential of technical and vocational education and training (TVET) to drive progress and transform societies is widely acknowledged. The European Union (EU) refers to it as the, "engine of economic development and international competitiveness" (Azzoni and Arbizu, 2013). Others highlight its capacity to contribute to more humanistic goals such as social inclusion, and sustainable and socially just economic prosperity (Wheelahan and Moodie, 2016; UNESCO, 2015a).

Yet an increasingly concerning paradox exists between its potential and its performance. A high proportion of the population of poor countries remains unskilled, richer countries are struggling to meet the human capital demands of rapidly changing work environments and, almost universally, TVET remains the "poor relative" of education systems both in terms of perception and attention (Campbell, 2015).

The weight of this paradox falls heavily on the shoulders of TVET personnel: they are both the critical agent of change in realizing governments' economic and social expectations for TVET and the victims of the sector's low status. Indeed, within this setting we can see that many of the major trends affecting the teaching profession as a whole – including the de-professionalization of teachers, the weakening of teachers' roles in social and policy dialogue and an increase in privatization and contract teaching (CEART, 2015) – intensify for TVET teachers specifically.

Additionally, many of the issues and challenges facing TVET teachers are quite different from those confronting general teachers (UNESCO-UNEVOC, 2012). Demands for close collaboration with business and industry partners, the need to maintain up-to-date knowledge of rapidly changing work environments and the call for dual expertise in practical and pedagogical skills add complexity to the role of TVET professionals.

It is crucial therefore, that TVET personnel receive more focused attention in international education policy discourse. The growing importance of TVET, its special role in linking up education and employment and the complexities of TVET teaching provide a strong rationale for greater international peer learning and international guidance in the domain. The inclusion of TVET on the agenda for this year's Committee of Experts on the Application of the Recommendation concerning Teachers (CEART) meeting is therefore well-timed.

Considering this, and positioning TVET personnel as the focal point, this paper provides a global overview of the current policy landscape within the sector. As the first paper received by CEART on the topic, the report aims to provide umbrella coverage of the central areas concerning TVET personnel, as opposed to providing an in-depth analysis of one area in particular.

The paper adopts UNESCO's definition of TVET as, "education, training and skills development relating to a wide range of occupational fields, production, services and livelihoods … *(which)* … includes work-based learning and continuing training and professional development which may lead to qualifications" (UNESCO, 2015b). TVET can be formal (provided by an education or training institution and leading to certification), non-formal (training occurring outside the formal system) or informal (learning resulting from daily life activities related to work, family or leisure) (UNESCO, 2010). This paper endeavours to address all three but, limited by available data and research, largely focuses on the formal sector.

Within the sector, there are multiple professional roles: teachers, trainers, instructors, coaches, mentors, technicians etc. The roles, their status and their significance vary across

countries and it is not within the scope of this paper to delineate between them. Therefore, terminology relating to those who work in the sector (teachers, trainers, staff, personnel, professionals) is used interchangeably here, except where distinctions are relevant to the analysis. This will be clearly stated.

While taking note of the growing role of TVET within the framework of lifelong learning (LLL) strategies, the scope of this paper is limited to the teaching and learning that takes place at secondary, post-secondary and tertiary levels. [1] Finally, in recognition of both the heterogeneity of TVET systems and the growing call for regional and international coherence, trends and issues at national, regional and international levels are identified and discussed.

The research began with the identification of the key policy areas for TVET teachers addressed in the CEART recommendations for teachers (ILO–UNESCO, 1966; 1997). These included recruitment and pre-service training, continuous professional development (CPD), working conditions and social dialogue. An international literature review was then conducted for each of these areas with a focus on approaches in low- and middle-income contexts. This was combined with a comparative analysis of TVET policy debates and challenges across different systems. These analyses led to the formulation of recommendations for policy professionals at national, regional and international levels.

The paper begins by establishing the contextual background, considering both the macro-influences on the sector and its growth trajectory over recent decades. Following this, the latest descriptive statistics and a synthesis of international and regional normative frameworks help establish an overview of current provision. In-depth analysis of key policy areas and challenges follows, leading to a series of recommendations for future work and discussion.

A changing context

Macro-level developments during the first decades of the twenty-first century have had a significant impact on the way in which TVET policy is discussed and enacted.

The first of these influential changes is technological advancement. Technology both stimulates and demands a transformation in the way TVET personnel carry out their roles. As with general education, TVET staff are expected to integrate the latest technology into classroom practice to best prepare students for life beyond education (Latchem, 2017; UNESCO-UNEVOC, 2013; Majumdar, 2011). Doing so is often hailed as an opportunity to increase access, quality and equity in the classroom. This includes calls to offer distance and online TVET learning, simulations of practical work and a greater individualization of learning through adaptive technologies.

Technology is also forcing a transformation in the types of work TVET personnel must prepare students for and thus the skills at the heart of curricula. Workforce skills have undergone a continuous process of adjustment due to technological advances (Azzoni and Arbizu, 2013). This has posed two major challenges to TVET teachers. Firstly, the pressure to teach students about the latest technological developments in the technical subject has not been matched by the provision of resources. This is particularly true in developing countries: (Manuel et al., 2017) describe Mozambican classrooms where TVET teachers draw chalk sketches to familiarize students with new industry equipment that the teachers themselves have never seen. This practice is not uncommon across sub-Saharan Africa. Secondly,

[1] Further exploration into the experience of teachers and trainers within the workplace, both in the formal and informal sectors of the economy, is recommended for future study.

changes in the nature of work have pushed TVET curricula to be more competence-based, forcing teachers to develop both traditional technical skills and other transferable skills – such as critical thinking, problem solving and creativity – and their accompanying pedagogies.

Further pressure of this kind is foreseen with the onset of the Artificial Intelligence (AI) revolution. It has been estimated that by 2030, in about 60 per cent of occupations, at least one third of the constituent activities could be automated (Manyika, 2017). The adjustment process and potential productivity and innovation gains will be hampered if education systems cannot provide the required skills. This is exacerbated by the complex process of predicting the skills demanded by unknown jobs (Acemoglu and Restrepo, 2018). Effective capability development in preparation for these transformations is therefore critical. New skills and new combinations of skills must be fostered to ensure the "best form of complementarity between humans and artificial intelligence" (Villani et al., 2018). This includes cross-cutting academic skills, digital skills and other cognitive transferable skills. [2] Developing these more general skills will enable workers to flexibly adjust to technological change and increase their mobility (Bode and Gold, 2018).

Technology is therefore transforming demands on the way TVET teachers teach and the skills they must develop in themselves and their students. The same is of course true of the education system in general. However, as a labour-market oriented sector, the pressure on TVET to change in a timely manner is greater. Concurrently, the lack of funding and weaknesses in CPD structures within the TVET sector, render these issues more complex.

This complex situation overlaps with another macro-force influencing the policy debate surrounding TVET: the push towards lifelong learning systems. Traditionally, TVET policy has existed within national education systems, with some areas falling under the responsibility of specific sectoral ministries. However, from the 1990s, international organizations have pushed for human capital development through the establishment of learning societies committed to LLL (Schuetze, 2006). This means structured, purposeful learning throughout the lifespan of an individual, covering formal and informal, work and leisure (Maclachlan and Osborne, 2009). The discourse surrounding LLL frames it as essential, in different measures, in fostering "human capital (economic growth), social capital (social justice) and identity capital (personal fulfilment)" (Panitsedes and Anastasiadou, 2015).

Although the EU has led the way in reforming TVET within the wider framework of LLL, the UNESCO-UNEVOC country reports [3] demonstrate that the approach is increasingly common across all nations of the world. This is also evidenced at the regional level: the Caribbean Association of National Training Agencies (CANTA) has the promotion of LLL as one of its founding aims; the African Union set a goal for TVET in its Second Decade of Education for Africa (2006–2015) Plan of Action which aims to "ensure that education systems in member States are better able to … lead to a culture of lifelong learning and entrepreneurship in order to fit into an ever-changing world of work (African Union, 2006). Finally, UNESCO has identified an increasing need for a lifelong perspective when talking about TVET (Campbell, 2015).

[2] For more detail on the digital skills required of the next generation of workers see Chetty et al., 2018. A detailed overview of the shifting nature of desirable skill sets for the next ten years is included in the World Economic Forum's: "The Future of Jobs Report" (2016, pp. 21–22).

[3] UNESCO-UNEVOC, the International Centre for Technical and Vocational Education and Training, publishes TVET country reports on its website as part of its World TVET database. These reports are compiled by UNESCO-UNEVOC in collaboration with the national TVET community and are published on an ongoing basis. They provide a general overview of a country's TVET system.

This poses both opportunities and challenges for TVET professionals. Firstly, enjoying a central place in the near-universally accepted LLL discourse raises the profile of TVET, placing it at the forefront of policy agendas. However, the re-imagining of TVET as a system responsible for continuous professional development and the retraining of workers, as well as those at entry level, puts further demand on the professional capacities of the staff. This is exacerbated by the fact that LLL systems call for the teaching of a much wider set of competences and skills.

A third significant contextual change lies in the growing and diversifying student population. Ageing populations in many of the world's more developed economies again push TVET into expanding its role in retraining workers of all ages. Furthermore, in Africa, the youth bulge in population, resulting from improved child healthcare and the increased completion of primary education, is leading to a significant increase in the demand for quality TVET provision at secondary level (Richardson, 2014). The same challenge has been identified for the Middle East (Maclean and Fien, 2017).

Migration trends add to this demand: less developed economies must establish a strong TVET offer to avoid a brain drain (Azzoni and Arbizu, 2013); developed economies need quality TVET mechanisms designed to facilitate migrants' swift entry into the labour market. Migrants themselves would benefit from having their qualifications and studies recognized internationally – a need hampered by the heterogeneity of TVET systems both within and between countries.

Overall, these macro-influences have led to demands for an increase of TVET provision and a widening of TVET's remit. This can be seen in the trajectory of TVET's position in policy debates. At the time of the Dakar Conference it had been experiencing a downturn and many countries were scaling back provision (UNESCO, 2015b). However, spearheaded by the EU and the Organisation for Economic Co-operation and Development (OECD) in the wake of the 2008 financial crisis, TVET is increasingly rising to the top in global policy debates and in the strategic and operational priorities of regional economic communities (Latchem, 2017). See box 1.

Box 1
The Caribbean Community (CARICOM) Regional TVET Strategy for Workforce Development and Economic Competitiveness

Formally launched in September 2014 by the Caribbean Community (CARICOM) and the CANTA (estimated 2003), the regional TVET strategy aims to reorient the TVET systems of member nations towards competency-based education and training (CBET), standards-driven assessment and certification, and globally benchmarked competency standards.

It focuses on the establishment of a harmonized regional system of training and certification based on agreed principles. This builds on the Caribbean Vocational Qualifications (CVQs) established in 2007 and the CARICOM Qualifications Framework (CQF) of 2012. The following recommendations directly concern TVET professions:

1. Change the term, "Teacher" to "Instructor", "Trainer" or "Facilitator"; ensure language in instructor training programmes is learner-centred and gender neutral.
2. Develop a CVQ for TVET instructors for implementation by all CARICOM countries.
3. Better incorporate methodologies that support TVET into teacher training programmes (CBET, learner-centred, use of technology, etc.).
4. Re-examine national instructor-hiring regimes to ensure flexibility, responsiveness and quality of personnel.
5. Employ prior learning assessments in assessing instructor skills and granting qualifications.

Other key areas of focus include establishing an integrated CARICOM training system, developing public–private partnerships for TVET throughout the region and improving the quality of career guidance and counselling. The final objective is a well-trained regional workforce for economic competitiveness.

Source: Caribbean Association of National Training Authorities, 2012.

Despite the growing profile of TVET in policy discussions, most current public TVET systems cannot effectively provide for the majority of young people seeking skills training (Richardson, 2014); the sector's capacity to meet the demands being placed upon it is often limited. Additionally, the low quality of many national systems raises concerns about expansion. The field of TVET is currently concerned with change and reform but without effective institutional support and governance mechanisms, a lot of pressure is falling directly to teachers to widen provision, improve content and increase quality.

International normative frameworks

Although no internationally mandated guidelines specifically for TVET personnel exist, there are numerous international normative frameworks and agreements which are highly applicable to the sector. Alongside the macro-level changes described above, these ensure that TVET policies occupy an important position on national education and economic agendas worldwide.

Firstly, the Sustainable Development Goals (SDGs) have strong relevance to policy decisions affecting the TVET sector. Goals 4 (ensure inclusive and equitable quality education and promote lifelong learning opportunities for all) and 8 (promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all) commit governments to promoting equity, quality and inclusion in TVET provision at secondary and tertiary levels. In aiming to reduce the number of youth not in employment, education or training (NEET) and promote universal secondary education, they also commit to a significant expansion of TVET provision.

Several other goals have implications for TVET: quality TVET is crucial in promoting gender equality, empowering women and girls and reducing inequalities within and between countries; TVET programmes can also significantly contribute to developing sustainable consumption and production and promoting sustainable practices in agriculture and industry (UN, 2015).

Underpinning and adding further detail to SDG 4, the Incheon Declaration has further implications for TVET personnel. The programmes they deliver must go "beyond mastering work-specific skills, emphasis must be placed on developing high-level cognitive and non-cognitive/transferable skills (problem-solving, critical thinking, creativity, teamwork, communication skills and conflict resolution)" (UNESCO, 2016). Additionally, links between TVET and business and industry must be improved, along with increased social dialogue in reform processes and the monitoring and evaluation of the impact and outcomes of TVET programmes. Finally, it calls for increased cross-border recognition of qualifications and quality assurance processes which has direct implications for teacher and student mobility and teacher appraisal processes.

In 2015, UNESCO published a revision of the 2001 recommendation on TVET, reiterating the above and stressing the need to raise the profile of TVET and increase participation. Turning to governance, it recommends strengthening regulatory frameworks while providing institutions and actors with enough autonomy to engage locally. It also promotes the exploration of innovative funding mechanisms including more performance-based financing models to encourage incentivization and accountability mechanisms (UNESCO, 2015a).

The first of these frameworks to explicitly address the role of TVET teachers, the recommendation calls for policies to ensure qualified and high quality TVET staff with strong provision for status, recruitment and professional development. It calls on these staff to "make TVET responsive to the economic, social, cultural and environmental contexts of the communities and societies they serve and to contribute to the transformation and

expansion of TVET" (UNESCO, 2015a). To facilitate this, they must participate in quality CPD, have up-to-date practical experience, and should engage in conscious reflection.

The recommendation also renews commitments from the 1966 and 1997 recommendations but in explicit relation to TVET staff. These documents establish guidelines to ensure that the working conditions of teachers "best promote effective learning and enable teachers to concentrate on their professional tasks" (ILO–UNESCO, 1966). As such, they cover the following areas particularly relevant to this paper:

- Developing teacher professionalism.
- Fostering cooperation in policy issues.
- Establishing high quality teacher training including clear standards for admission to teacher preparation programmes.
- Protecting professional freedom.
- Responsibilities and rights of teachers.
- Remuneration and hours of work (ILO–UNESCO, 1966).

For teachers of higher education, the following are also included:

- Contracts/employment security.
- Appraisal (ILO–UNESCO, 1997).

The Incheon Declaration reiterates the importance of several of these in the pursuit of SDG 4 although not specifically for TVET teachers. It calls for teachers and educators to be "empowered, adequately recruited and remunerated, motivated, professionally qualified, and supported within well-resourced, efficient and effectively governed systems". (UNESCO, 2016a). It particularly highlights the importance of quality training and development opportunities for teachers, clear professional standards and processes and improved participation in social and policy dialogue.

Finally, the joint UNICEF and ILO recommendation for Human Resource Development (2004) also contributes to the framework within which TVET policy decisions should be made. Specifically regarding trainers and teachers, it calls for clear certification procedures, quality assurance mechanisms and a commitment to securing decent working conditions. Finally, it promotes a "greater commitment to learning and training methodologies, including the use of information and communication technology in training and use research to guide policies" (ILO–UNICEF, 2004).

Overall, much of the content in the normative frameworks confirms issues raised earlier: a lot of pressure falls on TVET teachers to adapt and change their practice in line with labour market and policy trends as well as technological and pedagogical developments. To facilitate this, they should be afforded the same conditions as regular teachers – effective and regular CPD, appropriate recognition (formal and informal) of their professional status and the opportunity to establish collaborative relationships with colleagues, industry and government.

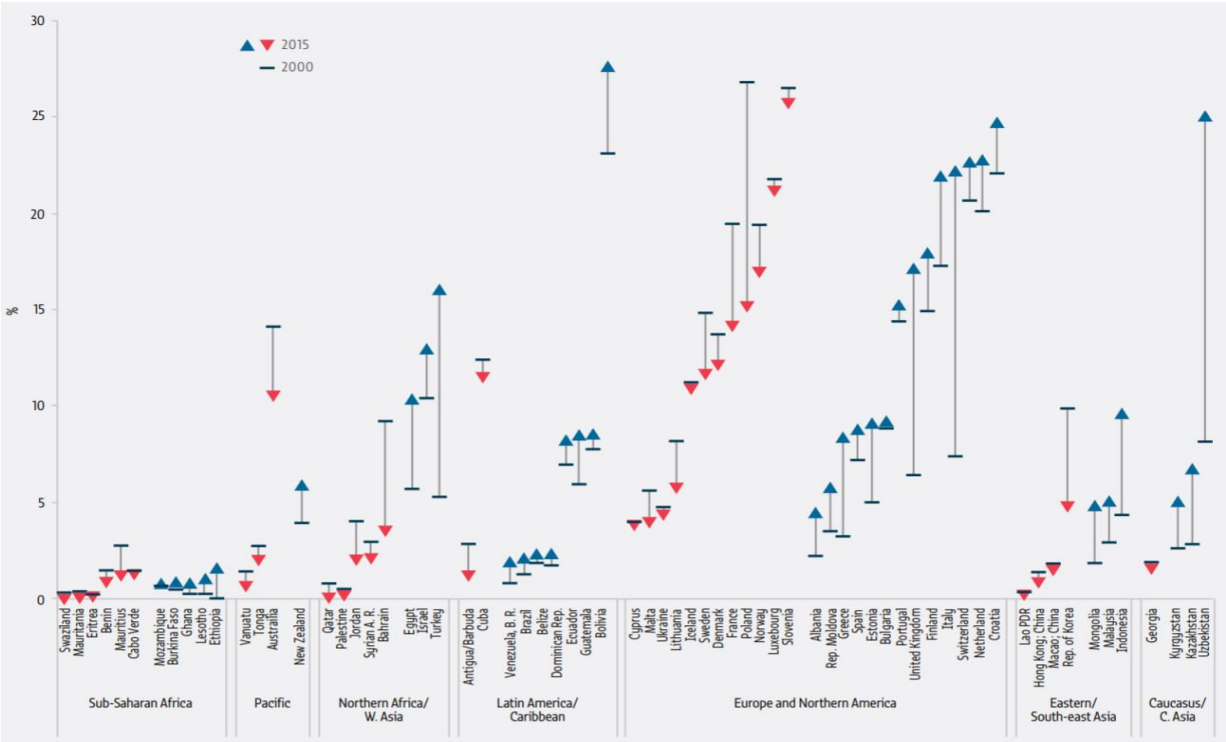
Describing TVET systems and their teachers

As described above, a conflict exists: the role of a TVET teacher is distinct from that of a general teacher; however, in international policy debate, they are rarely treated as different beings. This section attempts to better profile the TVET teacher, remaining cognizant of the fact that the international TVET landscape is fragmented and diverse: no two national systems are the same.

TVET teachers work within a relatively small sub-sector of education. Across the world, 2 per cent of youth aged 15–24 years old are enrolled in formal TVET programmes; they make up 10 per cent of total secondary enrolment. This number fluctuates according to region (Europe and North America have 12 per cent of youth in these programmes; the Pacific region has less than 1 per cent) and economic status (high-income countries have, on average, 8 per cent; low-income countries have 1 per cent) (UNESCO).

Depending on where you teach, these numbers may have increased, fallen or remained stagnant over the last 15 years (see figure 1). Some countries have experienced a dramatic increase in enrolment (Italy, Turkey, Uzbekistan); others have experienced equally dramatic decreases (Bahrain, Poland, Republic of Korea). Notably, although low-income countries have experienced a significant increase in TVET enrolment numbers, this is in large part due to an increase in general secondary provision: the percentage share of TVET in global total secondary enrolment actually remained stagnant between 2000 and 2015 (UNESCO).

Figure 1. Participation rate of 15–24 year olds in technical and vocational education programmes, 2000 and 2015



Source: UNESCO.

Gender disparities occur in many TVET systems. Globally, the percentage of female students in vocational programmes is estimated at 44 per cent while that of general programmes is at 48 per cent (UNESCO, 2016b). Countries of high income seem to experience greater inequity in terms of gender: TVET enrolments make up 16 per cent of

total secondary enrolments for male youth and 13 per cent for female. In low-income countries there is, on average, only a 1 per cent difference (UNESCO). However, these figures may obscure other issues of gender equality: in developing countries in particular, it is common for girls' opportunities in TVET to be limited to traditionally "feminine" careers so that occupational segregation takes root (Axmann et al., 2015).

TVET teachers are more likely to be male, unless recruited in the last decade. Historically, females have been a minority in TVET in both developed and developing countries, reversing the trend seen among general teachers. Nevertheless, this situation is improving: the majority of countries in all regions have reported higher recruitment among women teachers and trainers in recent years (Axmann et al., 2015)

Despite heightened focus on the importance of TVET, government expenditure remains relatively low: based on the latest World Bank statistics, the global average sees the TVET sector receive 6.72 per cent of a government's total education budget. Although TVET is only a small sub-sector of education, it is one of the more expensive, given the cost of work placements and up-to-date facilities and equipment. As with every other aspect of TVET, we see significant heterogeneity between countries. The biggest spender is the Netherlands, where 21.45 per cent of the education budget is dedicated to TVET. At the other end of the scale, the Gambia spends less than 0.01 per cent. We see significant variation according to income category as well (see Table 1). The average spending for a high-income country is around 10 per cent, whereas for a low-income country it is 5 per cent. Nevertheless, there are exceptions: Ethiopia and Rwanda both assigned 14 per cent of the national education budget to the TVET sector in 2015 (World Bank, 2018).

Table 1. Average government expenditure on TVET as per cent of total public spending on education (adapted from World Bank database, 2018) *

Low-income countries	5
Lower middle-income countries	4.88
Upper middle-income countries	3.92
High income countries	10
East Asia and the Pacific	5.09
Europe and Central Asia	9.94
Latin America and the Caribbean	4.92
Middle East and North Africa	8.58
North America	N/A
South Asia	3.31
Sub-Saharan Africa	5.1

*°Non-weighted averages calculated by the author from the World Bank database. The latest figures available, dating from 2013–17, were used for each country. A total of 78 countries were included in the calculations. Countries were grouped according to the World Bank classification system, 2018.

Although the data is limited, TVET teachers are much more likely to be working in the private or non-formal sector than general teachers (Wheelahan and Moodie, 2016). Indeed, Axmann and colleagues, (2015) note that many developing countries spend their entire national training budget on the formal sector when, in reality, it caters for less than 10 per cent of trainees. Adding further complication is the fact that, compared to general education, TVET encompasses a very diverse set of institutions, programmes and actors (Pilz, 2012). This is particularly true in developing countries where the providers of TVET vary greatly from the government and private institutions to local and international NGOs and even religious organizations (Manuel et al., 2017).

Private provision of training is growing in response to the limits of public provision; this is particularly true in low- and middle-income countries. In Asia for example, 95 per cent of the training institutions in Bangladesh are private, accounting for 75 per cent of TVET enrolments. And the trend is not dissipating: in Nepal, the number of approved private training institutions more than quadrupled in the first decade of the twenty-first century (Asian Development Bank, 2014).

One generalization we can confidently make across TVET teachers and trainers in all locations is that within the internationally collected data, they are under-represented. Much of the data collected on teachers and school systems is not differentiated at the TVET level; additionally, large international surveys giving voice to teachers (e.g. Teaching and Learning International Survey (TALIS) from the OECD) rarely incorporate the voice of TVET teachers, covering teachers at lower secondary level instead.

Without a doubt, there is a lack of global data disaggregated to the TVET level. The EU, which collects the most comprehensive set of indicators to measure progress in the TVET sector; this could serve as a model to other regions across the world. See box 2.

Box 2
The EU – a regional example of more comprehensive data collection for TVET

The EU contains some of the most well-respected TVET systems in the world. Clear benchmarks and measurable goals have been laid out in the regional Education and Training 2020 strategic framework. To measure progress towards these goals, a set of 36 indicators has been established; those relating directly to TVET, as defined in this paper, are:

1. Students participating in TVET.
2. Students participating in work-based TVET.
3. TVET students with direct access to tertiary education.
4. Female students participating in TVET.
5. Young TVET graduates continuing in education training.
6. Job-related non-formal education and training.
7. TVET public expenditure (% of GDP).
8. TVET public expenditure per student (PPS units).
9. Average number of foreign languages learned in TVET.
10. Science, Technology, Engineering and Mathematics (STEM) graduates from upper secondary in TVET.
11. Young people with a TVET qualification at tertiary level.
12. Innovative enterprises with supportive training practices.
13. Employment rate for TVET graduates (20–34 year olds).
14. Employment premium for TVET graduates (over general stream).
15. Employment premium for TVET graduates (over low-educated stream).
16. Workers with skills matched to their duties.
17. Early leavers from education and training.
18. NEET rate for 18–24 year olds.
19. Unemployment rate for 20–34 year olds.

While this offers a comprehensive overview of TVET provision across member States, data on teachers, other than pupil teacher ratios, is noticeably missing.

Source: Adapted from European Centre for the Development of Vocational Training (CEDEFOP), 2018.

Nevertheless, at this moment and even in Europe, it is difficult to illustrate empirically the changing identity of TVET personnel who increasingly find themselves part of a holistic – as opposed to economic – focused education provision. Teaching style in general has undergone a transformation from lecturing and rote learning to interactive, problem-based learning. New TVET teachers are thus expected to be experts in both vocational substance and pedagogy, as well as capable of enabling learning experiences, creating networks and continuously developing themselves professionally (Isopahkala-Bouret, 2010).

The dual professional identity of the TVET teacher as pedagogue and industry expert is generally well-established among academics and policy-makers. However, the desired profile of a high quality TVET professional is becoming increasingly complex and demanding. The roles and responsibilities of teachers and trainers in TVET have changed considerably in a wide range of countries, becoming much more multifunctional (ILO, 2010). This pressure for change is keenly felt among TVET professionals (Majumdar, 2011).

Certainly, a TVET teacher needs capabilities based around knowledge, technical and personal attributes and the ability to impart those capabilities on others. They must be able to balance their teaching expertise with an up-to-date knowledge and experience of an ever-changing industry. They need pedagogical skills, industry experience and academic knowledge (ILO, 2010; OECD, 2015). Going a step further, Maurice-Takerei (2017) argues that given the profile of the typical TVET student in many TVET systems (lower socio-economic background, lower cognitive ability) the real everyday work of a TVET teacher is "a combination of educational work, social development and career development combined with a strong measure of care, patience and understanding".

(A UNESCO report on the CPD of TVET teachers) summarizes the work of TVET personnel as requiring:

- theoretical, technical or subject knowledge;
- practical skills related to a vocational field;
- current knowledge of industrial practices and work processes;
- theoretical pedagogical knowledge; and
- practical pedagogical skills and know-how of pedagogical practice (UNESCO, 2014).

In a report on TVET teachers and trainers, ILO adds the following:

- a high degree of functionality in information and communications technology (ICT) and technological processes;
- general understanding and ability to share larger economic and social realities with students;
- ability to function collaboratively with external and internal colleagues;
- research, reflection and change as necessary in teaching practice;
- ability to communicate and empathize with students; and
- capacity to innovate and impart innovation in learning (ILO, 2010).

Running alongside this complexity, is the fact that there exists a plethora of distinct roles and responsibilities within the profession. Teachers, instructors and trainers all deliver TVET programmes; assistants and technicians may support them in formal learning environments while in the workplace, supervisors, mentors and tutors have a role. Different types of training may require multiple types of teaching; this may be fulfilled by one individual or by a collaboration between multiple professionals. This terminology varies across national TVET systems.

Clearly there are many complexities and challenges facing TVET personnel (multi-faceted roles, heterogenous systems), as well as external factors inhibiting their practice (poor financing, lack of research). The next sections consider selected policy areas and the ways in which they contribute to or relieve this complications and limitations.

Recruitment and pre-service training

There is a global shortage of quality TVET personnel. This has been identified as a "pervasive phenomenon" in the emerging economies of East Asia and South-East Asia (Euler, 2015) and, in a consultation with trade unions, over 90 per cent of African representatives reported teacher shortages and high attrition rates in the TVET sector (Symeonidis, 2015). In several countries, these shortages have been blamed for the poor implementation of national TVET reforms (Sevilla and Dutra, 2017).

Weak recruitment systems and the low status of the profession have been blamed. In Bangladesh and Sri Lanka for example, slow bureaucratic procedure and unattractive salaries have resulted in a low output of trained teachers and instructors and high vacancy rates (Asian Development Bank, 2014). The revised TVET strategy for Caribbean countries also highlights non-competitive salaries and the poor image of TVET as resulting in shortages across CARICOM countries (CANTA, 2012).

For those who do join the profession, we have already seen that the demands made of TVET teachers is complex. Logically then, recruitment pre-requisites and initial teacher training programmes should be high quality. Unfortunately, this is rarely the case: across the world, the biggest weaknesses facing teacher training programmes in TVET are a lack of structure and relevance, a lack of responsiveness and inclusion and a lack innovation and progress (Axmann et al., 2015).

Firstly, too often, in developing countries, TVET teachers are recruited through school or university systems, rather than from industry (Euler, 2015). This means they often lack professional experience of any kind, not to mention the specific skills of the work they prepare students for. This is particularly true in sub-Saharan Africa (Haseloff et al., 2017) and South-East Asia where there is generally no requirement for TVET teachers to have any workplace or industry experience (Euler, 2015). It has also been noted in a review of Arab States (UNESCO, 2014).

Contrastingly, Grollman (2008) states that in the majority of high- and middle-income countries, work experience is a precondition to employment as a vocational teacher. Indeed, a few European countries have started to develop specific teacher training programmes for up-skilling individuals with industry experience and to support their transition into the TVET teaching profession, often through modularization and part-time training (Axmann et al., 2015).

Concurrently, many developing countries have introduced requirements for masters' level qualifications for TVET teachers. This has perhaps been a misinterpretation of international calls for improved teacher training in the sector, equating academic qualifications with quality training systems. Thus, we can see an interesting divergence in

approach: while in higher-income countries, the required academic qualifications for TVET teacher trainees seem to be becoming less stringent, the reverse is true of their counterparts in developing countries (Axmann et al., 2015).

Secondly, pre-service programmes for teachers and instructors are not always in place in low- and lower middle-income countries. Where they do exist, they tend to provide similar preparation programmes for TVET teachers as received by their counterparts across the wider field of teaching (Hasleoff et al., 2017; UNESCO–UNEVOC, 2012). The CARICOM regional TVET strategy (2012) noted that member States differ in their capacity to train TVET instructors: some only offer general teacher training, whereas others also offer specialized TVET instructor training. In Latin America, there is no TVET training programme for teachers in Plurinational State of Bolivia, Paraguay or Costa Rica (Sevilla and Dutra, 2017).

Even in OECD member States, the focus of preparation programmes tends to be too theoretical and academic as opposed to practical and vocational (OECD, 2014). This exacerbates the persistence of traditional lecture styles of teaching, creating significant difficulties for personnel working in TVET, which is highly dependent on innovations and is technology driven (ILO, 2010).

Perhaps of greater concern is the erosion of requirements for pre-service training occurring in some countries in the name of cost-efficiency following the 2008 financial crisis (Billet, 2011). Additionally, new teachers are often hired to fill an urgent need, so that the initial period of job adaptation and training is rushed or even neglected (Chatigny, 2012). As pressure to extend provision continues, this situation is likely to deteriorate.

The result of this is that it is not uncommon for TVET teachers to have no industry experience and/or no teacher training. They (and their students) are therefore doubly disadvantaged: they are not trained in how to apply work-based learning methodologies, and do not have technical skills in the programmes in which they are required to teach (Euler, 2015). This has serious consequences for system quality. Indeed, Billet (2011) notes that the countries with the most highly esteemed and seemingly effective vocational education systems – Austria, Finland, Germany, Switzerland, – pay considerable attention to the qualities and skills of those who teach.

International guidelines have been encouraging countries to improve their pre-service training for several years, and some progress has been made. Marope et al. (2015), highlight the establishment of specific TVET teacher training institutions in some countries, the creation of a single coordinating body with responsibility for pre-service training for TVET teachers in Egypt and Saudi Arabia and the introduction of masters' programmes in Uganda and Malaysia. Occupational standards are also increasingly common as a way of structuring training and quality assurance UNESCO (2014) note that the development of occupational or professional standards for TVET teachers is in progress for the majority of countries in the Arab region.

Increasingly, developed countries, NGOs and development banks are working with developing countries to train quality TVET staff. Box 3 offers an example of an innovative networked approach to pre-service training for TVET teachers in Africa supported by the German Government.

Box 3
Parallel pre-service training initiatives through institutional networks

Acknowledging the multi-faceted nature of the TVET educators' role, this emerging model tries to network a number of institutions for the production of TVET educator competences. For example, universities are brought in to teach the theory and model research approaches; TVET colleges teach practical or functional aspects of the

role; companies provide insight to the competences and knowledge needed within the occupation (Hasleoff et al., 2017).

This is the model being piloted in the Vet-Net project which involved four countries: Ethiopia, Germany, Mozambique and South Africa. Trainees from the three African countries come together in a mutual education network. They choose and carry out a suitable learning project according to the teaching qualification they are pursuing (basic, bachelor, master). The project is led by the universities but executed together – in a network – with the partners in TVET schools, companies and other TVET surroundings (Eicker et al., 2017).

This training model establishes strong collaborative links which ensure that each area of the TVET teacher's profile is developed, that working relationships with key stakeholders are established from the start of training and that a certain international standard is reached. Adopting a project-based learning approach, it also helps steer trainees away from traditional teacher-led pedagogical approaches.

Nevertheless, weaknesses persist in many countries across the world. It is essential, therefore, to attempt to identify the common barriers to quality pre-service training. Firstly, the issue of funding holds systems back. Improving training requires investment: building dedicated institutions with quality facilities; improving governance; attracting and remunerating quality personnel. As already seen, TVET budgets tend to be low in comparison to their general education counterparts.

Secondly, the heterogeneity of TVET systems, in developing countries in particular, renders the governance and coordination of pre-service training more difficult. TVET personnel in the non-formal or private sectors often fall outside the remit of government standards and regulation. Finally, a significant hurdle is the lack of research on the topic: in order to train a quality workforce, it is first essential to understand what makes a good TVET teacher in any given environment. Although the training of teachers in general has enjoyed a higher profile in policy debates in recent years, the training and development of TVET teachers and trainers specifically has frequently received too little attention (Marope et al., 2015).

Continuous professional development

As in general education, CPD is a fundamental and increasingly important element of any quality TVET system. It enables personnel to update their pedagogical knowledge and equips them to teach a new curriculum, module or competence (UNESCO, 2014). Thus, it helps raise student outcomes. Additionally, the provision of sufficient training opportunities impacts teachers' ability to further develop themselves and learn new skills that provide better career prospects. As such, training opportunities can also positively impact attrition and recruitment rates.

Moreover, CPD takes on greater importance in the realm of TVET specifically. Firstly, as already established, the TVET sector must adapt to ever-changing industries to remain relevant. As such, CPD can perform a crucial task in enabling practitioners to keep abreast of industry developments and effectively prepare trainees for their constantly evolving roles (Dymock and Tyler, 2018). Secondly, CPD initiatives can help combat the almost universal imbalance in esteem between the TVET sector and general education by increasing quality of provision and improving teacher satisfaction. Indeed, CPD can facilitate a range of career paths such as research, leadership and professional development, thus enhancing career structures (UNESCO, 2014).

Finally, in a sector of education which has firmly positioned itself on the political agenda in recent years, CPD plays a crucial role in the successful implementation of reforms. In Latin America, studies have demonstrated that the introduction of competence-based curricula in numerous countries without concerted efforts to train personnel has seriously limited the effect of such reforms (Sevilla and Dutra, 2017). In the case of South Africa, the

same situation has "created a multiplicity of problems that adversely affect learner performance" (Mgijima, 2014).

In recognition of this important role, there have been several high-profile commitments to promoting quality CPD systems for TVET teachers; indeed, Euler (2015) refers to it as "the common denominator in all international declarations and statements". TVET teachers and trainers have the same status as general education teachers within international standards and therefore their right to CPD and adherence to the principles of LLL is enshrined in the ILO–UNESCO recommendations of 1966 and 1997. More specifically, in the 2015 recommendation on TVET, UNESCO called for countries to implement CPD programmes with three aims: the continuous review and updating of knowledge, competencies and skills; the continuous updating of specialized professional skills and knowledge; opportunities for periodic work experience in the relevant occupational sector (UNESCO, 2015a).

There have been significant regional commitments too. The Riga Conclusions engage EU Member States in introducing "systematic approaches to, and opportunities for, initial and continuous professional development of [T]VET teachers, trainers and mentors in both school and work-based settings" (European Commission, 2015). It has also been high on the list of priorities among Association of Southeast Asian Nations (ASEAN) and CARICOM countries. Notably however, in a review of common TVET reforms over the last decade in Africa, teacher training or quality did not make the top eight (Hasleoff et al., 2017).

Despite this increased attention at international level, CPD remains "one of the weakest links in the TVET chain" (Axmann et al., 2015). Universal and sustained access to CPD is not guaranteed, even in developed countries, meaning that even where educators do have formal teaching qualifications, many of their skills are outdated. In Africa, most countries provide some professional training opportunities for TVET teachers, but often these are ad hoc, irregular and rely on the will, and resources, of the individual teacher. Additionally, there tends to be a lack of differentiation between the CPD offered to general teachers and that for TVET teachers (Grijpstra, 2015). There is a similar situation in Latin America where poor teacher training has been identified as the biggest weakness in TVET systems across the region (Sevilla and Dutra, 2017).

Turning to high-income countries, a review of data from seven systems in different regions showed that generally, the participation rate of TVET teachers in CPD is more or less in line with that of general teachers (Serafini, 2018). However, even in developed countries, systems have been criticized for offering too little scope for teachers to update their professional and technical knowledge by spending time in industry (Dymock and Tyler, 2018). Ultimately, "conceptually speaking, TVET teaching and training in many countries is still seen as something that people will learn on the job" (ILO, 2010). This is even more true for those working in the non-formal sector (UNESCO, 2014).

Where CPD provision does exist, it typically comes from a wide range of providers. Universities and TVET institutions are the core providers in well-structured systems. In developed countries there is a push for greater provision to come from industry partners themselves in an effort to establish stronger links between education and work. In developing countries, it is common to find CPD offered by international agencies, international donor organizations and NGOs. This can cause complications however, when these programmes are merely one-offs or are not well-integrated into national provision (UNESCO, 2014; Grijpstra, 2015).

System incoherence is often a considerable obstacle to effective CPD provision. It is important that the planning, funding, quality assurance and development of CPD across different sectors and institutions is coordinated. Additionally, CPD programmes should respond both to the individual needs of teachers and the supply needs of the labour market and therefore must be implemented alongside appraisal mechanisms and occupational

standards. Unfortunately, a coherent strategic plan of this sort is rare in low-income countries.

Where some elements are in place, as in the Arab States, CPD systems are inhibited by other issues: a lack of systematic formal certification of professional development; low professional ethos in support of professional development and weak responsiveness to the needs of the TVET system and TVET staff have been identified as holding back quality teacher training in the region (UNESCO, 2014).

These weaknesses are felt by teachers themselves: in Italy, significant proportions of teachers of vocational subjects perceived the existence of barriers to their professional development. The main obstacles were identified by these teachers as being a lack of incentives for participation (over 80 per cent of respondents) and a lack of relevant offers (over 70 per cent of respondents). (Serafini, 2018). A study in New Zealand found that professional development is often a low priority in what is a demanding environment with increasing teaching loads and administrative tasks (Maurice-Takerei, 2017).

Additionally, the casualization of much of the workforce also constitutes an obstacle to effective CPD. Teachers and instructors who have part-time or fixed-term contracts are often not eligible or have less access to CPD in some countries (UNESCO 2014; Grijpstra, 2015). Furthermore, in systems where CPD is not a requisite for continued practice, part-time or fixed-term status can dissuade individuals from seeking out professional development opportunities.

The lack of motivation to develop professionally could also be attributed to the lack of career paths within the TVET sector. Generally, teaching teams are based around a hierarchical ladder, for which progression is rarely performance-related. However, across Africa, studies have shown that there are no progression routes that stimulate the professional development of TVET teachers (UNESCO 2014; Grijpstra, 2015). Moreover, while career ladders may provide opportunities for some roles within the profession, technical instructors and trainers are even less likely than TVET teachers, to have options for promotion (UNESCO, 2014).

Particularly in Europe, efforts have been made in the last few years to address these issues. For example, Croatia and Serbia have started to establish positions within TVET institutions for coordinating external affairs with employers, industrial associations and unions (ILO, 2010). It is felt that adding a more diverse range of opportunities to career structures will provide incentives to individuals to pursue professional development opportunities. With the moves towards more decentralization and a re-orientation to workplace opportunities, it is likely that such opportunities will grow in high- and middle-income economies.

Additionally, efforts have been made to find innovative solutions to CPD issues through harnessing technology. Modularization, distance and blended learning have been introduced in EU, ASEAN and CARICOM countries to help make the CPD offer more accessible (Axmann et al., 2015). The European Commission has also promoted the development of professional standards for TVET teachers which can help structure CPD provision as well as appraisal processes. Both the Asian and Caribbean regional blocks are following suit; see box 4 for details from the ASEAN context.

Box 4
Quality CPD through Regional Integration: The ASEAN example

The ASEAN region has worked hard to put teacher quality at the heart of the TVET systems of member countries. Accordingly, several strategies have been put in place to support CPD for TVET personnel across the region.

One of four priority areas for the region, as defined in the ASEAN Work Plan on Education 2016–2020, is strengthening regional harmonization for the advancement of quality TVET transformation through networking, partnership and mobilization of TVET personnel and resources. One of the key initiatives has been the launching of the Southeast Asia Technical and Vocational Education (SEA-TVET) Consortium, a network of nearly 200 TVET institutions from across the region which has three aims:

1. To create networking among TVET providers.
2. To provide opportunities for participating institutions to work together in student and staff exchange and industrial attachment.
3. To share best resources and practices and to generate new and innovative ideas through research collaboration.

More recently, there have been efforts to introduce an In-Company Trainer Standard and a TVET Teacher Standard for the region, as well as a Regional Quality Assurance Framework focusing on TVET personnel. It is felt that these can complement national frameworks and drive standards. Finally, all this work is complemented by the establishment of an online open resource TVET research platform, TVET@Asia. The Online Journal for Technical and Vocational Education and Training in Asia.

Source: SEA-TVET, 2017.

Overall, the crucial need for well-developed CPD systems within the TVET sector is clearly recognized at international, regional and national levels. However, weaknesses in provision can be seen across the world. In particular, CPD systems suffer from a lack of strategic planning and low motivation levels among teachers who are rarely incentivized to pursue CPD opportunities.

Working conditions

Enjoying the same status as general teachers, TVET personnel are entitled to working conditions which "best promote effective learning and enable teachers to concentrate on their professional tasks" (ILO–UNESCO, 1966). Building on this, the ILO–UNICEF, 2004 Recommendation on Human Resources Development emphasizes the importance of "qualified teachers and trainers working under decent conditions" in building quality TVET systems.

ILO (2010) identifies a further challenge for the TVET sector as ensuring "conditions of work comparable with those in industry so as to attract the most talented". Finally, the UNESCO TVET recommendation (2015) reiterates the need for decent working conditions and adequate remuneration for TVET staff.

Unfortunately, internationally comparable data monitoring adherence to these recommendations does not exist. However, various studies have suggested that the working conditions of TVET teachers are inferior to those of their colleagues in general education. An international survey of teachers' unions shows that TVET teachers are consistently below others on all measures of quality pay, including incremental salary scales and comparability to other professions (Symeonidis, 2015).

Several systems in sub-Saharan Africa offer poor remuneration to TVET teachers who may also suffer from being paid in arrears or denied their salaries (Kayode and Adeyemi, 2016). Additionally, in some countries, TVET educators are paid in function of the number of teaching hours and therefore their contracts are dependent on the availability of learners (Manuel et al., 2017). In some cases, this has contributed to a brain drain with tertiary-level instructors, in particular, searching for better conditions of service elsewhere. Poor pay conditions have also been blamed for the poor attitude to work of staff in the sector (ILO, 2010; UNESCO, 2013).

In terms of equality of pay, again the available data is not conclusive across countries. Axmann et al. (2015) find that while some countries show a persistent pattern of pay gaps between male and female TVET teachers over time (Jordan, Republic of Korea, Poland, Slovakia), others show great improvement in this area (Costa Rica, Finland).

These issues take on extra gravity when considering that, in recruiting quality personnel, the TVET sector is in direct competition with business and industry. In this way, salaries need to recognize both the workplace experience and academic qualifications of TVET instructors, but this is rarely the case. Indeed, the failure of Asian governments to recognize this has been identified as a key obstacle to addressing teacher shortages in the region (Euler, 2015).

Further complication comes from the fact that, within the private TVET sector, remuneration does not follow the same standards and so can be linked to results or individually determined (ILO, 2010). Therefore, given the heterogeneity of TVET provision, particularly in many low-income countries, significant internal variation can exist without adequate regulation. Indeed, although, there is no wide-scale evidence that TVET systems have begun to apply performance-related pay structures, policy trends in more developed systems towards increased autonomy, greater performance accountability and more involvement of the private sector are likely to focus more attention on this in the future (ILO, 2010). A recent academic paper on reforms for the TVET sector in Zimbabwe, for example, recommends results-based pay for teachers as a tool for motivating staff to retain their jobs and reducing the number of those that leave the profession because of a low wage (Dube and Xie, 2018).

A further concern regarding the working conditions of TVET personnel comes from the tendency for more precarious contracts to be in place in comparison to the general teaching population. This is true even in high-income economies: (Lloyd and Payne, 2011) note that only 55 per cent of formal sector TVET teachers in England and 49 per cent in Wales, hold permanent contracts. In Canada too, less than 30 per cent of TVET teachers hold permanent status (Chatigny et al., 2012). However, more recently, countries such as Australia, Finland and Poland have shown much lower proportions of fixed-term contracts among TVET personnel (Serafini, 2018).

In Asia, although permanent job guarantees remain common in many countries, trends seem to be moving towards a greater emphasis on decentralized recruitment of part-time instructors and trainers on casual or fixed-term contracts. This seems to result from the intention to make systems more responsive to local labour demands and is also inspired by private sector practices (ILO, 2010).

In the Arab region, most teachers of TVET are civil servants with permanent contracts like their general education counterparts. However, this causes challenges in itself: it encourages an excess of demand for teaching posts leading to questions about teacher motivations; it also leads to a greater separation between employees of the private and public sectors, further inhibiting collaboration between the two. Nevertheless, assuring TVET teachers permanent contracts can significantly contribute to the professionalization of the workforce, a factor which is important in raising quality and status for the TVET sector.

Finally, high attrition rates in the sector offer further evidence that the working conditions of TVET teachers need more attention. Education International estimates TVET attrition rates to be similar to those in general secondary education (50 per cent) which are themselves elevated in comparison to other areas of education (Symeronidis, 2015). In Africa, 11 out of 12 unions reported high TVET teacher attrition rates. This inevitably exacerbates poor working conditions as shortages lead to overcrowded classrooms, increased workload and the hiring of unqualified teachers (Symeronidis, 2015).

Clearly then, the working conditions of TVET teachers raise concerns about systems across the world. The situation is exacerbated, however, by the fact that TVET teachers have no specific provision in international normative frameworks and there is a global deficit of data concerning the working conditions of TVET teachers.

Social dialogue

CEART has previously referred to social dialogue as the "glue for successful educational reform" (ILO–UNESCO, 2003). This is particularly true for TVET, a sector of education characterized by its multiplicity of actors and its need for flexibility and adaptability. Thus, we see in the international literature regarding the sector numerous references to the importance of fostering social dialogue.

The notion of social dialogue and tripartism is one of the four main pillars of the ILO Decent Work Agenda (ILO, 2008). The UNESCO recommendation for TVET (2015) identifies the need for strong employer engagement in policy development and in the management of TVET institutions as one of three issues at the heart of the agenda. The Shanghai Consensus urges member countries to develop frameworks and incentive mechanisms to promote the active involvement of relevant stakeholders in planning, governance, curriculum, qualifications development and assessment, as well as school-enterprise cooperation and workplace learning (UNESCO, 2012). The OECD has also identified increased collaboration between TVET institutions and enterprises and the flexibility for professionals to alternate between the two as a key element in establishing effective systems (OECD, 2010).

ILO–UNESCO, 2003 defines social dialogue as "all forms of information sharing, consultation and negotiation between educational authorities, public and private, and teachers and their democratically elected representatives in teachers' organizations". This can occur in formal, institutionalized forums or informally and takes place at various levels. For example, formal consultation processes may occur at national level for policy development and consensus; local stakeholders may meet to determine the needs of the local economy, and at an institutional level, teachers and leaders may form links with local industry and business for student and teacher placements and the transfer of expertise (Gunbayi, 2015). Increasingly, there are examples of international multi-stakeholder engagement as well, particularly at a regional level.

Various actors may also be represented within social dialogue efforts. The classic tripartite model rests on government, employers and worker or professional associations. However, other representatives could include the local community, NGOs, chambers of industry and parents. TVET teachers themselves are also expected to cross academic and professional boundaries, including linking up with the prior occupation, the teaching occupation and the community of teacher training (Cornelius and Stevenson, 2018). Needless to say, within the framework of changing macro-environments and a reform-driven search for relevance, efficiency and quality in TVET provision, the importance of social dialogue has assumed a larger place (ILO, 2010; UNESCO, 2014).

This level of cooperation, if well-realized, serves a multitude of purposes. It allows for the construction of a more unified vision for reform and ensures important political and financial support for TVET (ILO, 2010; UNESCO). It can make system governance more effective by ensuring greater coherence between the world of work and education and greater external validity of curricula and qualifications at both the local and national levels. The quality of teaching and training will also improve as the partnerships established in consultations and negotiations can feed into practical exchanges and knowledge sharing. It should also contribute to the development of a professional community of TVET teachers and trainers thus helping to raise their social status (UNESCO, 2014). Finally, it can help

foster innovation and creative problem-solving by making new approaches or expertise available.

Establishing good social dialogue practices is especially important for systems shifting to a supply rather than demand focus, as is the case in many low- and middle-income countries (Russell, 2015). Positive steps have been made in the Caribbean, where national training agencies with multi-sectoral representation have been established as coordinators and regulators of the system, along the European model (Sevilla and Dutra, 2017). In 2015, Chile launched an online participatory space for public debate, discussion and proposals regarding national TVET reforms (Sevilla and Dutra, 2017).

In the Arab States, professional associations for TVET teachers have been established in Egypt, Lebanon, Morocco and Tunisia to represent TVET professionals more effectively in policy development (UNESCO, 2014). In the EU and the EU neighbourhood countries, Economic and Social Councils and TVET Councils or Employment Councils have been established for representation in policy discussions. In some countries these occur at national, regional and local levels (Gunbayi, 2015).

Nevertheless, although dialogue within higher performing systems in search of greater coherence and relevance has evolved, it remains weak in the majority of countries. The 2015 Global Monitoring Report calls for a concerted effort to improve coordination and cooperation among all stakeholders (UNESCO, 2015b). In particular, outside of most 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 (ILO, 2010).

In Latin America, few countries have a systematic approach to social dialogue; partnerships and tripartite governance both at national and institutional levels is often more superficial than useful (Sevilla and Dutra, 2017). In most EU neighbourhood countries, the state plays a very dominant role in the TVET policy cycle and trade unions seem to rarely define links between vocational training and their agendas (Gunbayi, 2015). Similarly, in the Gulf States, unions and professional associations are largely absent. This means that there is a general lack of negotiations and refusal to accept social dialogue (UNESCO, 2014). In Africa, although social dialogue may take place, largely facilitated by NGOs or international initiatives, it tends to be of a one-off nature and lacks institutionalization (Grijpstra, 2015).

Obstacles to establishing effective systems and frameworks for social dialogue include institutional weaknesses in business organizations, incoherence in national TVET strategies and administrative rigidity within centralized TVET systems. There may also be a lack of incentives for the private sector to commit time and resources to contribute to the TVET sector (Russell, 2015). In some countries the traditional view that education should be academic also inhibits the pursuit of collaboration at institution level (OECD, 2014). Finally, there may also be capability issues, particularly on the part of trade unions and TVET institutions.

Ultimately, however, there are often more deep-rooted issues relating to the status of TVET and education in general. Firstly, in several regions of the world, a mutual distrust among public and private partners concerning their interests and knowledge inhibits collaboration (Russell, 2015). Teachers are often forced to cooperate from the position of non-expert with regard to working life and professional practices (Isopahkala-Bouret, 2010). Hierarchical structures then arise and, too often, industry works with government on policy and practice that then gets fed down to teachers to implement (Billet, 2011).

One increasingly popular policy lever to overcome these obstacles and stimulate greater social dialogue in TVET systems is to establish national TVET agencies which are multi-sectoral, multi-actor and multi-level (see box 5). Indeed, the most attractive and

innovative TVET systems in the world (Australia, Germany, Netherlands,) are based on the development of effective multi-level partnership approaches. This enables the making of binding decisions between actors from the public and private sector at different levels of territorial aggregation in negotiation, deliberation and implementation (Manuel Galvin Arribas, 2016). Particularly beneficial are regional and local satellite agencies which are able to communicate local needs and can be made accountable for implementing locally appropriate measures (Russell, 2015). This decentralized approach can make systems more responsive to the needs of business and bring more flexibility in implementation and delivery of TVET programmes (Ryu, 2017).

Box 5
Social dialogue and territorial governance in Colombia

Colombia's National Training Service (SENA) has established regional and sectoral committees (now 85 in total) for regular consultation between industry and business, the government and academic institutions and actors.

Their main tasks include contributing to annual national and regional plans for labour and training, establishing normative frameworks for large-scale policy reforms such as curriculum overhaul, and developing initiatives to support the development of human resources in their sector. The sectoral committees are also crucial in helping to generate information about the demand for skills in the labour market.

The model has been successful, particularly in terms of the level of interest from the private sector: some of Colombia's largest businesses partake in their respective sectoral committees, and smaller companies are also represented in local level committees.

Nevertheless, the system is not perfect and identified weaknesses include a lack of systematization in terms of meetings and agendas and too much diversity in the performance of the various committees. Evaluation reports have also identified weak capacity among certain actors to articulate their needs within the forums and to influence policy direction in general. This is, in part, due to a lack of clearly established procedure and objectives. There is also limited information on the specific role of TVET teachers and trainers within these committees and the impact of the outcomes of these discussions on their teaching.

Source: González-Velosa and Rosas Shady, 2016.

However, although several countries have tried to implement these sorts of governance changes, in many previously highly centralized systems, these measures rarely go beyond the status of a formal arrangement and fail to achieve effective power to influence policy design and actively participate in implementation (Russell, 2015). There is also a danger of devolving governance to local and regional actors who lack the capacity to act in efficient and effective ways.

Overall, we can see that an effective systematic approach to social dialogue can help address numerous difficulties within TVET systems, not least partnership with industry and business. However, there are significant obstacles to this type of approach in many countries.

Current trends and policy debates

In offering this overview of the current situation in TVET systems across the world, it is useful to attempt to grasp a better understanding of the current policy trends and concerns affecting the sector at global, regional and national levels. By conducting a comparative analysis of the UNESCO–UNEVOC TVET country reports, we can gain an overview of the policy discussions and key reforms taking place across the world. This can provide useful insights, particularly for international and regional bodies looking to support successful TVET reform internationally.

The World TVET Database is an online repository developed by UNESCO-UNEVOC (2008) providing concise and up-to-date information on TVET systems worldwide. The Country Profiles which are compiled by UNESCO-UNEVOC in collaboration with the

national TVET community, are published on an ongoing basis. Each report provides a brief description of the formal, non-formal and informal TVET systems, an outline of TVET strategy and key policy, information regarding the training of TVET teachers and trainers, details of the qualifications and quality assurance and an overview of current reforms and policy challenges.

The latter section has been used for this analysis. Taking all the country reports published since 2014 (37 in total), table 1 provides an overview of the areas of TVET policy which are at the top of the agenda for governments across the world. Twenty areas were identified in total; those mentioned in only one or two reports were not included. Countries have been grouped using the World Bank's economic and regional classification system for 2019.

Table 2. Comparative overview of current policy trends and concerns across UNEVOC country reports (2014–18) (Part I)

	Country	Region	Report date	Increased provision	Equity	Completion rates	Quality of teachers	Quality of programmes	Quality assurance	Integrating technology	Responsiveness to market	Social dialogue	Links with industry
Low income	Mozambique	Sub-Saharan Africa	2016		●			●	●				●
	Tanzania, United Rep. of	Sub-Saharan Africa	2016				●	●	●	●		●	●
	Gambia, the	Sub-Saharan Africa	2015										
	Madagascar	Sub-Saharan Africa	2015		●						●		
	Benin	Sub-Saharan Africa	2014	●	●		●						●
	Chad	Sub-Saharan Africa	2014	●				●					●
	Senegal	Sub-Saharan Africa	2014	●	●		●	●	●		●	●	●
	Nepal	South Asia	2014		●			●			●		
	Uganda	Sub-Saharan Africa	2014								●		
Lower-middle income	Viet Nam	East Asia and Pacific	2018				●			●	●		●
	Georgia	Europe and Central Asia	2015				●		●				●
	India	South Asia	2018		●		●			●	●		
	Sri Lanka	South Asia	2018	●			●	●			●		
	Cameroon	Sub-Saharan Africa	2015	●	●		●						●
	Ghana	Sub-Saharan Africa	2016				●						●
	Bhutan	South Asia	2015	●					●	●	●		
	Morocco	Middle East and North Africa	2015		●	●							●
	Philippines	East Asia and Pacific	2014			●	●	●			●		
	Myanmar	East Asia and Pacific	2014				●				●		●
	Cambodia	East Asia and Pacific	2014	●	●		●	●	●	●	●		
Upper-middle income	Mexico	Latin America and Caribbean	2018				●				●		●
	Iran, Islamic Republic of	Middle East and North Africa	2015					●			●		
	Thailand	East Asia and Pacific	2015	●	●	●	●	●		●			●

	Country	Region	Report date	Increased provision	Equity	Completion rates	Quality of teachers	Quality of programmes	Quality assurance	Integrating technology	Responsiveness to market	Social dialogue	Links with industry
	Namibia	Sub-Saharan Africa	2015	●		●		●				●	●
	Iraq	Middle East and North Africa	2014		●		●		●		●		
	South Africa	Sub-Saharan Africa	2014		●		●						
	Australia	East Asia and Pacific	2018		●	●		●			●		●
	Canada	North America	2013	●					●				●
	United States	North America	2014					●					●
	France	Europe and Central Asia	2015	●		●					●		●
	Trinidad and Tobago	Latin America and Caribbean	2015	●			●	●				●	
High income	Bahrain	Middle East and North Africa	2015				●					●	●
	Korea, Republic of	East Asia and Pacific	2018	●	●					●			
	Qatar	Middle East and North Africa	2014	●							●		●
	Malta	Middle East and North Africa	2015										●
	Latvia	Europe and Central Asia	2014	●					●		●		
	Lithuania	Europe and Central Asia	2014				●	●					

Table 3. Comparative overview of current policy trends and concerns across UNEVOC country reports (2014–18) (Part II)

	Country	Region	Report date	Status	System coherence	Information management	National qualifications	Decentralization	Governance	Facilities and infrastructure	Financing	Public–private partnerships
	Mozambique	Sub-Saharan Africa	2016				●	●	●		●	
	Tanzania, United Rep. of	Sub-Saharan Africa	2016						●	●	●	
	Gambia, the	Sub-Saharan Africa	2015								●	●
	Madagascar	Sub-Saharan Africa	2015						●		●	
Low income	Benin	Sub-Saharan Africa	2014		●		●		●		●	●
	Chad	Sub-Saharan Africa	2014							●		
	Senegal	Sub-Saharan Africa	2014		●	●		●	●	●		
	Nepal	South Asia	2014								●	
	Uganda	Sub-Saharan Africa	2014						●		●	●

	Country	Region	Report date	Status	System coherence	Information management	National qualifications	Decentralization	Governance	Facilities and infrastructure	Financing	Public–private partnerships
Lower-middle income	Viet Nam	East Asia and Pacific	2018					●				
	Georgia	Europe and Central Asia	2015									
	India	South Asia	2018	●		●						
	Sri Lanka	South Asia	2018	●	●		●		●			
	Cameroon	Sub-Saharan Africa	2015		●					●	●	●
	Ghana	Sub-Saharan Africa	2016	●							●	
	Bhutan	South Asia	2015							●		●
	Morocco	Middle East and North Africa	2015		●				●		●	
	Philippines	East Asia and Pacific	2014	●						●		
	Myanmar	East Asia and Pacific	2014									
	Cambodia	East Asia and Pacific	2014	●					●	●		●
Upper-middle income	Mexico	Latin America and Caribbean	2018	●	●		●					
	Iran, Islamic Republic of	Middle East and North Africa	2015		●		●				●	
	Thailand	East Asia and Pacific	2015			●			●	●		
	Namibia	Sub-Saharan Africa	2015					●				
	Iraq	Middle East and North Africa	2014							●	●	
	South Africa	Sub-Saharan Africa	2014							●	●	
High income	Australia	East Asia and Pacific	2018								●	
	Canada	North America	2013									
	United States	North America	2014	●	●							
	France	Europe and Central Asia	2015					●				
	Trinidad and Tobago	Latin America and Caribbean	2015		●					●		
	Bahrain	Middle East and North Africa	2015			●						
	Korea, Republic of	East Asia and Pacific	2018									
	Qatar	Middle East and North Africa	2014	●						●		
	Malta	Middle East and North Africa	2015									
	Latvia	Europe and Central Asia	2014							●		
	Lithuania	Europe and Central Asia	2014									

Looking at the table as a whole, the most common area of focus is improving links with the private sector. This includes both local level links between industry and TVET institutions and collaboration at national level. This also seems to be a key missing link in those countries concerned about social dialogue: every report that highlighted social dialogue as a key area, also highlighted the need for improved links with industry.

Increasing teacher quality was also a popular concern. Among the 19 countries for whom this was identified as an area of focus, some common themes can be identified. Several Asian countries (India, Sri Lanka and Viet Nam) acknowledge teacher shortages as a hurdle to system reform. In particular, the recruitment of teachers with industry experience is a challenge. Cambodia has confronted the challenge by introducing an annual quota system, aiming to train 300 TVET teachers every year. The Philippines partnered with Singaporean TVET professionals to offer a two-and-half-month programme in pedagogical competencies in TVET training which trained 600 TVET teachers. The programme was funded by a Singaporean foundation.

CPD provision is another concern for many of these countries: in Georgia, India and Lithuania, expanding opportunities for CPD within industry and other workplaces is an area for development; in Cambodia and South Africa the focus is on capacity building for TVET institution leaders; Lithuania and Tanzania aim to improve staff's technological competencies. In Benin, two new institutes for the training of TVET teachers have been established with responsibility for CPD and pre-service training while in India and Iraq there are efforts to offer more flexible forms of CPD through the use of technology.

Arguably, quality of teachers and quality of programme are hard to delineate; considering them together, quality can be noted as a global concern across all countries considered here. This may be due to a recognition that improving the quality of provision will have an extremely positive impact on other key areas; namely the status of TVET, student completion rates and labour market responsiveness. Indeed, establishing a system which is well-matched and responsive to labour market needs is also a top priority for many governments.

Considering the information by region, some patterns emerge. For example, nearly all sub-Saharan Africa countries identified financing the system as an area of focus, many of them highlighting the need to find innovative funding mechanisms. In the Middle East and North Africa, we see that establishing links with the private sector is a priority for most countries. This feeds into previous observations that these traditionally highly centralized systems are now looking to shift from a supply-driven system to demand-driven.

Trends are also identifiable when filtering by countries' economic status. Low-income countries seem to be much more focused on the wider system-level issues of financing and governance. High-income countries are more concerned with local level links between industry and institutions. Across both lower and upper middle-income countries, the most common area of focus is the quality of teachers. One important theme to take note of is that the number of areas covered in the current policy debates and reforms varies according to economic level. In high-income countries, the average number of areas raised is 4; in low-income countries it is 6.4 with Senegal alone identifying 14. This raises concerns about funding, policy coherence and capacity building as low-income countries feel the pressure to address multiple areas of the system at once.

Recommendations

The above analysis has enabled the identification of a variety of problem areas and pressing concerns within TVET systems across the world. This leads us to a set of recommendations for policy actors at national, regional and international levels which aim to offer expedient approaches to tackling these issues. In particular, the focus is on enhancing the overall effectiveness and efficacy of TVET systems through enhancing teacher quality and status.

Before detailing the specific recommendations, three key themes which should guide TVET policy discussions in the future must be highlighted:

1. Coherence:

   - The complexity and heterogeneity of TVET systems, both within and between countries, has been a recurring issue in this paper. For TVET teachers specifically, this includes a heterogeneity in nomenclature and qualification requirements and a complexity in institutional support which comes from a variety of providers.

   - Governments would do well to strive for a greater coherence when discussing future policy reforms to ensure that system functioning is enhanced rather than complicated further. This may include streamlining institutional mechanisms and responsibilities, defining clear national TVET strategies and coordinating at a regional level to harmonize and share processes and systems where possible. The latter may be particularly useful in designing clear standards for specific teaching and training roles within national systems.

2. Collaboration:

   - The very nature of TVET – a policy sector straddling work andeducation – demands a highly collaborative approach from all actors. Actively promoting the role of teachers and trainers in this collaboration is necessary to ensure greater success in the implementation of new policies and programmes.

   - A collaborative culture should be embedded across the system at local, national, regional and international levels. In particular, at regional and international levels, collaboration can be a useful way of maximizing funds and expertise for greater impact. This may be a particularly useful approach for capacity building among TVET actors.

3. Evidence-based:

   - Identifying internationally comparable data for the TVET sector has been a challenge. More effort should be made to enable data collected internationally for general education to be disaggregated at the TVET level. This is particularly true for the data collected on teachers.

   - Nuanced research regarding the specific experiences of TVET teachers and trainers has also been challenging as the literature rarely treats the different professional roles within TVET systems separately. Therefore, future research must reflect the heterogeneity of TVET systems by considering formal, informal and non-formal TVET provision separately as well as the various actors within them.

International and regional organizations may take the lead on promoting a more evidence-based approach to academic research by defining more specific policy indicators at the TVET level and promoting greater collaboration with the academic community. The following more specific recommendations are considered pertinent:

1. Promote and develop pre-service training programmes which are cognizant of the multi-faceted role of the TVET teacher:

   - Recognizing the need for personnel to develop pedagogical, technical and practical skills and competences, pre-service training should provide parallel experience and learning in all three areas. Where possible, this should harness the expertise of various stakeholders, thus enabling TVET teachers to establish useful links with colleagues and industry professionals from the start of their careers.

- Having a clear understanding of what a TVET teacher needs to know and do is crucial to this. Therefore, governments should begin by pursuing the development of TVET trainer/teacher occupational standards. These can then form the backbone of the recruitment and initial training programmes as well as CPD, appraisal and quality assurance. These should be established in cooperation with teachers themselves as well as integrating the knowledge of academics and industry representatives.

- Pre-service training providers should be carefully regulated at a national level; this includes ongoing quality assurance processes.

2. TVET personnel must be encouraged and supported to access CPD opportunities across the length of their career:

   - Occupational standards should be used across the course of a career to guide and structure appraisal and development processes. CPD must be mandatory and training opportunities should lead to certified and recognized qualifications.

   - CPD opportunities must be made as accessible as possible: this can include online and distance learning opportunities, modular approaches, establishing professional learning communities and informal peer-to-peer learning and curating online resource banks for TVET teachers.

   - Regional organizations can play a key role here by streamlining governments' efforts in order to avoid duplication, improve efficiency and foster the pursuit of higher regional standards of practice.

3. Ensure working conditions make TVET teaching both an attractive and a well-respected profession:

   - Support TVET teachers and trainers to be well-represented by professional associations.

   - Effectively regulate to ensure that both the public and private sectors uphold international standards for teachers, particularly in the areas of contract security and remuneration. This could be strengthened by establishing a recommendation at international level specifically concerning the status of TVET personnel.

   - Promote greater awareness and understanding of working conditions in the non-formal and informal sectors through data collection and research.

4. Facilitate the participation of TVET teachers and trainers in quality and systematic social dialogue from the local level upwards:

   - Adopt multi-level governance approaches to collaboration within the TVET sector, considering coordination at geographical and sectoral levels.

   - Pursue capacity-building measures at local level to ensure all stakeholders are empowered to participate meaningfully.

   - Develop clear systems and procedures for accountability, incentivization and recognition among those who partake in social dialogue processes.

5. Establish and secure sustainable funding mechanisms for capacity building across TVET systems:

- Increase investment by governments in teacher and trainer development, both pre-service and CPD, prioritizing quality before pursuing an expansion of TVET provision.

- Encourage development banks, NGOs and the private sector to fund training for TVET personnel as opposed to running their own TVET programmes.

Conclusion

Due to a range of macro-level developments – technological advancement, lifelong learning agendas, demographic shifts – TVET has risen to the top of education policy agendas across the world and demand is growing for the establishment of quality TVET systems.

However, too often, understanding of the sector lacks nuance: equating TVET teachers to general education teachers ignores the fact that many of the challenges they face are intensified in comparison to their general education counterparts – the need to embed new technologies; low status – or are specific to the TVET experience – pressure to collaborate closely with industry and business; demand for responsiveness.

Several international guidelines from the last decade reflect the growing importance of TVET: UNESCO's Recommendation for TVET (2015) and the UN's Sustainable Development Goals (2015) frame TVET as being crucial in fostering an economically productive labour force but also in facilitating the personal fulfilment and social cohesion necessary for sustainable futures.

Nevertheless, greater interest in TVET and recognition of its crucial role have not yet led to the development of strong systems across the world. Indeed, particularly in low-income countries, TVET provision is limited, expenditure is low, and teacher and programme quality are inadequate.

Four specific areas of concern have been explored in this paper. Firstly, regarding recruitment and pre-service training, funding holds systems back, as does the heterogeneity of TVET providers and actors within each country and the deficit of research dedicated to profiling effective TVET teachers. As a result, approaches to recruitment and pre-service training tend to lack clear and coherent procedures and fail to prepare trainees for the systems they will be working in.

Secondly, CPD provision is sporadic and ad hoc at best, in developed and developing countries. Again, although the importance of CPD in improving system quality is recognized, there is often a lack of strategic planning in the implementation of CPD programmes and the low motivation levels among teachers limit participation.

The working conditions of TVET teachers raise concerns about systems across the world. TVET teachers often suffer poorer pay conditions and more precarious contracts than their general education counterparts. Moreover, it is very difficult to gain a good understanding of this situation due to the global lack of data concerning the working conditions of TVET teachers. Finally, centralized systems, institutional weaknesses and low stakeholder capacity are inhibiting one of the most crucial aspects of effective TVET provision across the world: social dialogue.

Governments are aware of these issues: teacher and programme quality, improving partnerships with business and industry, finding innovative funding mechanisms and developing the responsiveness of the sector to labour market changes are the top priorities, globally, in national policy debates. Several recommendations have been made to support

governments in pursuing policy reforms in these areas. Most critical is the need to place system coherence, collaboration and evidence-based approaches at the heart of all policy processes concerning the TVET sector.

TVET reform is undoubtedly a priority for many governments across the world. However, the temptation to increase provision without addressing the quality issues at the heart of current systems could prove too strong for some national policy-makers. International and regional actors must therefore play a significant role in ensuring the focus of future TVET reform is on developing policy which facilitates and prioritizes quality not quantity.

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