



TVET teacher education in Africa

Synthesis report

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EXECUTIVE SUMMARY

This study has three broad objectives. Firstly, it seeks to compare experiences on the education and training of Technical and Vocational Education and Training (TVET) teachers in South Africa, Egypt, Ghana, Tanzania, and Cameroon. Secondly, it seeks to get input from inspiring practices from European Member States. Lastly, policy pointers should be proposed for further action. This study was commissioned as part of the South Africa – EU Strategic Partnership sectoral policy dialogue in education. Data was collected between December 2014 and September 2015. The study serves as input to that policy dialogue, in particular in relation to the education and training of upper secondary and higher TVET teachers working in institution-based TVET providers in the formal public education system.

Teachers are the most important in-school factor influencing the quality of student learning and the training of teachers is the key issue in this report. However, able practitioners do not necessarily reach their potential without appropriate support nor without being sufficiently professionally challenged and rewarded. The quality of TVET teaching also depends on other factors, such as the teacher's persona; the TVET organisation (at school or college level) and the wider TVET system (national structures related to TVET of which TVET teacher education is an important element).

The main research activities consisted of desk research; interviews; country studies; and comparative analysis and reporting. To validate the findings and ensure a practical link to further dissemination of the results, policy workshops were organised with policymakers in the participating countries.

In this summary, key conclusions are discussed per topic. For each topic, policy pointers are presented.

Positioning of the TVET sector, teacher education and the teaching profession

TVET is seen as a key policy priority for each of the countries under review. However, this priority is not always translated effectively into the implementation of adequate policies. Fragmented governance and institutional structures hamper further policy development in TVET teacher quality and the countries are at various stages in harmonising and bringing coherence to their TVET systems. For example, the historical divisions between what was seen as general Vocational Education on one hand, and workplace related Technical Training on the other, has impacted training and development of teacher quality for Technical and Vocational Education and Training (TVET). Historically separated and fragmented systems therefore still exist side by side while emerging policy initiatives in some countries are attempting to bring about a single integrated system for TVET teachers. Fragmented governance structures do not contribute to the development of a national TVET strategy.

The impact of these fragmented structures is reflected in the overall lack of unified and standardised qualifications and assessments of teachers. In addition, there is a lack of transparency in the pathways of becoming a TVET teacher. In each of the possible pathways to become a TVET teacher, after building professional experience in the sector, or arriving fresh from school at the initial teacher training institute, different qualifications and requirements apply. There is demand for more flexible entry points into teaching for top graduates or experienced professionals and much remains to be done to establish flexible and transparent pathways for professional TVET teachers' development. This can serve to improve the status of TVET teachers, and include initial teacher education 'top up courses' for professionals who want to become teachers as well as educational trajectories for future lecturers coming from industry. This incorporates the crucial element of taking the motivation of individual teachers into account.

Where the previous conclusion dealt with entry routes into the profession, the next concerns progression routes in the profession. Although TVET teachers on the basis of qualifications and years of experience can obtain more salary in most countries, there are no progression routes that stimulate the professional development of teachers, including industry experience and obtaining new skills. These progression routes can make the TVET teaching profession attractive and provide opportunities for ongoing development for instance in curriculum design or management. Incentives such as a stable employment status combined with incentives to continuously develop the lecturer's skills would enhance the attractiveness of the profession.

There are little or no statistics pertaining to the enrolment of TVET teacher education students across the countries in the study. Even less evidence is available on student backgrounds, career paths and motivations for enrolling in TVET teacher education programmes. More in-depth research on prospective and current TVET teacher motivations therefore is needed to gain critical insights to ensure reforms in the sector are congruent with the needs of the primary 'target group'.

Based on these conclusions a number of policy pointers are formulated on positioning of the TVET sector, teacher education and the teaching profession:

- Improve the organisation and governance of TVET lecturer education. A specific focus on (an element of) TVET teacher policy can serve as a mobilizing factor that brings together various stakeholders.
- Provide clear but flexible pathways for becoming a TVET lecturer and realign the career ladder and related salary increase criteria in a way that rewards staff for gaining industry experience or new skills, and not just for gaining higher academic qualifications

Offer progression routes within the teaching profession.

Quality and relevance of TVET teacher education

Teacher education is still strongly geared towards training of school teachers. TVET teacher education takes place largely within general teacher education qualifications offered at higher education institutions or colleges of education affiliated to universities. TVET teacher education is largely university based, except for a dedicated general Vocational Teachers Training College in Tanzania, and the Normal Schools for Teachers of Technical Education (ENIETs) in Cameroon. In some countries, no specific curricula for TVET teachers were found. Instead, all teachers are prepared as general school teachers. Where TVET teacher programmes do exist, these curricula tend to focus more on general teaching pedagogy instead of technical and practical skills needed to teach a particular trade. Despite this situation, all countries under study seem aware of the need for specialist TVET teacher training and are engaged to set in place policies and legal and financial frameworks that take responsibility for specific TVET teacher education. As examples from the countries show, standardised higher qualification requirements for TVET lecturers can contribute to improving the quality and status of TVET. These also contribute to the introduction of contextually relevant key competences to the teaching profession, which also guides curriculum development for TVET teacher education.

Initial TVET teacher education for vocational teachers consists mostly of concurrent or integrated programmes. In most countries, the teacher education is only provided as an initial degree. South Africa and Egypt on the other hand, have consecutive or 'top up' programmes where subject matter knowledge is acquired before pedagogical training is added, while in Ghana a 'top up' programme also targets current teachers for professional upgrading.

TVET teacher education is still underfunded in relation to general schooling. Stable and sufficient funding is a prerequisite for achieving policy aims such as accessible, qualitative and relevant TVET teacher education provisions. TVET teacher education is

mainly financed through government funding to universities or state institutions that undertake general teacher education. Only Tanzania and South Africa have developed a skills levy system which provides an additional source of funding for specific TVET teacher capacity building as well as a potential feedback mechanism to strengthen the links between teacher education and sectoral needs.

The funding relates as well to the capacity of the TVET teacher training providers. There is a need for expanding the provision of specific initial TVET teacher education to increase the number of TVET teachers, and to increase the knowledge base on vocational pedagogy and training to bring it better in line with the actual needs of TVET teachers.

Quality assurance systems of TVET teacher education in all countries in this study apply generally to teacher education programmes and career paths. South Africa has the only dedicated policy for TVET teacher training that sets specific qualifications and standards in place for TVET teacher education.

Stimulating a quality culture in TVET by conducting local action research on TVET teacher education is in the countries studied with the exception of South Africa, still underdeveloped or emergent. The same is true for the involvement of teachers in decision making on implementation of reforms and innovations, both at policy and institutional level.

Based on these conclusions a number of policy pointers are formulated on positioning of the TVET sector, teacher education and the teaching profession:

The following policy pointers sketch a way forward on the issue of quality and relevance of TVET teacher education:

- Introduce competence standards for TVET lecturers.
- Set up organisational, legal and financial frameworks that take responsibility specifically for TVET teacher education.
- Increase capacity of specific TVET teacher training providers.

Get grassroots support for interventions and involve TVET institutions and professionals in reforms.

Relevant TVET teacher curricula: employer engagement

One of the central challenges of TVET in the countries under study - and in most TVET systems elsewhere in the world - is to ensure that TVET teachers teach relevant skills to students to help them finding or creating employment. This study confirms that in various countries, prospective TVET teachers are prepared to teach in general education, without attention to the pedagogical or technological specificities of their TVET field.

Workplace exposure or industry training is not yet a structured part of TVET teacher training, even though countries like Egypt and Tanzania recognise that this is desirable, particularly for technical and practical instructors. There was no evidence of industry engagement in the design of TVET teacher education programmes, while improving the linkages between TVET teacher education and employers could strongly contribute to overcoming the gap between skills supply and demand. In South Africa work-integrated learning is built into the new TVET teacher qualifications.

The study pointed to another challenge in designing an adequate TVET teacher education curriculum. This challenge concerns the lack of sufficient ties with the (local) business community, which is crucial to ensure that TVET teachers are able to prepare their students effectively for the labour market. These ties concern exchange on whether the graduates of TVET colleges are sufficiently prepared for their job; provision of work-placements for students of TVET colleges; future skills demands

concerning what competences are needed in the community; and how TVET teachers can better prepare TVET students for working life.

Based on the conclusions and findings, the following learning elements can be seen as policy pointers in the area of relevant TVET teacher curricula:

- Strengthen employer and industry involvement in TVET in general, by (1) aligning TVET teacher education, and TVET as a whole, with industry demands and needs; (2) allowing employers to be involved in trade-related courses; (3) involvement of industry to provide staff placements during initial teacher education.
- Improve sectoral labour market and employment information systems to support the industry – TVET – teacher education dialogue.

Ensure effective feedback loops involving industry/business; TVET colleges and TVET TE providers by involving stakeholders in development and updating of curricula for TVET training, both initial and in-service.

Continuous professional development of TVET teachers

The status and attractiveness of the TVET teacher profession depends primarily on the overall perception of the TVET sector, salary level and job security. However, the provision of sufficient training opportunities and consequently, career options, is also relevant. This impacts whether TVET teachers can further develop themselves and enhance the quality of their work, or learn new skills that provide better career prospects. In-service training opportunities can also prevent quality lecturers from leaving the profession.

Most countries provide some professional training opportunities for personal development of TVET teachers, but often this remains ad hoc and 'refresher training' does not take place on a regular basis. In many instances international / donor organisations provide one-off opportunities for professional TVET teacher development. If in place, early career support and continuing professional development is more often geared towards general school teachers rather than to provide structured opportunities for TVET teachers. There is therefore a lack of systematic in-service pedagogy education for those already working as teachers, to update and improve their teaching competences. An important element of this is teacher-industry exchange and teacher placements to ensure that skills are in line with the latest developments in the industry.

To conclude, the TVET teachers are only to a limited extent involved in institutional and national policy development. By increasing their competences and the status of their profession, the TVET teachers might function more as a professional group voicing their experience and knowledge of their profession in policymaking and curriculum development.

The following policy pointers sketch a way forward on the issue of continuous professional development of TVET teachers:

- Provide adequate and timely continued professional development to TVET teachers. In this a focus can be on innovative forms of formal and informal learning through distance, online, flexible types of learning or other innovations to work around limited budgets.
- Specifically consider collaboration between TVET teacher training providers, TVET schools and industry. Allow TVET lecturers to update skills and competences through trade-related placements.

Ensure that teachers' experience is not only used in the classroom, but resonates equally in policymaking and broader curriculum development, for TVET students and (prospective) TVET teachers.

INTRODUCTION

Panteia is pleased to present the final report for the study on TVET teacher education in Africa. This report has been prepared by Douwe Grijpstra (Panteia), Joy Papier (FETI), Johan Bokdam (Panteia), Seamus Needham (FETI), Gert-Jan Lindeboom (Panteia) and Simon Broek (Ockham-IPS). The report could not have been realised without the country-specific input from selected IBF experts (Daniel Baffour-Awah, Bernadetta Ndunguru, Ahmed Fouad El-Ashmawi, Pierre Fonkoua) and the academic supervision of professor Simon McGrath and Robert Palmer PhD.

This study has three broad objectives. Firstly, it seeks to compare experiences on the education and training of Technical and Vocational Education and Training (TVET) teachers in South Africa, Egypt, Ghana, Tanzania, and Cameroon. Secondly, it seeks to get input from inspiring practices from European Member States. Lastly, policy pointers should be proposed for further action. This study was commissioned as part of the South Africa – EU Strategic Partnership sectoral policy dialogue in education. Data was collected between December 2014 and September 2015. The study serves as input to that policy dialogue, in particular in relation to the education and training of upper secondary and higher TVET teachers working in institution-based TVET providers in the formal public education system.

This first chapter of the report presents relevant background information for the study. It presents the policy context and aim of the study, addresses relevant key concepts and summarizes the research design. Chapters 2 to 4 form the descriptive part of the report and compare the findings of the different country studies. They cover the TVET teacher profession, the systems of TVET teacher education and the teacher education programmes in the five countries under study. The final chapter brings together the empirical findings in combination with inspiring European practices, draws conclusions and formulates policy recommendations. The background country reports and more extensive descriptions of European practices are included as annexes to the report.

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GLOSSARY - LIST OF ACRONYMS

ABET	Adult Basic Education and Training (South Africa)
ADTVT	Advanced Diploma in Technical and Vocational Teaching (South Africa)
AU	African Union
CBT	Competency-based Teaching
CEDEFOP	European Centre for the development of vocational education
CFEP	Teachers of Technical Education Colleges
CHE	Council for Higher Education (South Africa)
CIPSET	Centre for Integrated Post-School Education and Training (South Africa)
COTVET	Council for Technical and Vocational Education and Training (Ghana)
CPD	Continuing Professional Development
CTF	Canadian Teacher's Federation
DACUM	Developing a Curriculum
DBE	Diploma in Basic Education (Ghana)
DFOP	Directorate of Vocational Training
DHET	Department of Higher Education and Training (South Africa)
ECS	Early Career Support
ECTS	European Credit Transfer System
ENIET	Normal Schools for Teachers of Technical Education (Cameroun)
ENSET	Normal schools of the Higher Technical Education
ESF	European Social Fund
ETDP SETA	Education, Training and Development Practices Sector Education and Training Authority (South Africa)
ETF	European Training Foundation
EU	European Union
FE	Further Education (United Kingdom) - continuing vocational education
FWSC	Fair Wages Salary Commission (Ghana)
GER	Gross Enrolment Ratio
GES	Ghana Education Service
GNAT	Ghana National Association of Teachers
HE	Higher Education
ICT	Information and Communication Technologies
ISCED	International Standard Classification of Education
IT	Information Technologies
ITE	Initial Teacher Education
JICA	Japan International Cooperation Agency
MINEDUC	Ministry of Education (Cameroun)
MINEFOP	Ministry of Vocational Education (Cameroun)
MINESUP	Ministry of Higher Education (Cameroun)
MoE	Ministry of Education
MVTTC	Morogoro Vocational Teachers Training College (Tanzania)
NACTE	National Council for Technical Education (Tanzania)
NAQAA	National Authority for Quality Assurance and Accreditation of Education (Egypt)
NCEEE	National Center for Examination and Educational Evaluation (Egypt)
NEET	Not in employment nor education and training
NGO	Non-governmental organisation
NTA	National Technical Awards
NTC	National Teaching Council
NVA	National Vocational Awards (Tanzania)
NVTI	National Vocational Training Institute (Ghana)
ODL	Open and Distance Learning
PALC	Adult learning centres and Community colleges
PASECA	Support Programme for Cameroon Educational System

PAT	Professional Academy for Teachers (Egypt)
PLET	High school Professors of technical education
PTPDM	Pre-Tertiary Professional Development and Management
PVTD	Productivity and Vocational Training Department (Egypt)
QA	Quality Assurance
REAL	Centre for Research Education and Labour (South Africa)
REQV	Relative Education Qualification Values (South Africa)
RUDS	Regional Units for Dual System
SACE	South African Council of Educators
SADC	Southern Africa Development Community
SDL	Skills Development Levy (Tanzania)
SHS	Senior High School
SSACI	Swiss-South Africa Cooperation Initiative
SSSS	Single Spine Salary Structure (Ghana)
STI	Staff Training Institute
SUP	Skills Upgrading Programme
TCU	Tanzania Council of Universities
TE	Teacher Education
TET	Technical Education and Training
TEWU	Teachers Workers Union (Ghana)
TSS	Technical Secondary School (Egypt)
TVET	Technical Vocational Education and training
TVSD	Technical Vocational Skills Development
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNEVOC	International Centre for Technical and Vocational Education and Training
VET	Vocational Education and Training
VETA	Vocational Education and Training Authority (Tanzania)
VTC	Vocational Training Centre
VTCC	Vocational Teacher Certificate Course
WAEC	West Africa Examination Council
WBE	Workplace Based Exposure
WIL	Work Integrated Learning

1. BACKGROUND AND AIM OF THE STUDY

This first chapter of the report presents relevant background information for the study. It presents the context, aim and demarcation of the study, addresses relevant key concepts and summarises the research design. Chapter 2-4 forms the descriptive part of the report and compares the findings of the different country studies and describes the TVET profession, the systems of TVET teacher education and the teacher education programmes in the five countries under study. Chapter 5 forms the final and analytical part of the report that brings together the empirical findings in combination with inspiring practices, the drawing of conclusions and formulating policy recommendations.

1.1. Background of the study: policy cooperation

1.1.1. Policy developments in the African Union

In many African countries the teaching profession is associated with poor working conditions, low status, limited professional development, and limited support. These conditions are exacerbated by irregular pay, crowded classrooms and lack of pedagogical support which undermine teachers' motivation and performance and inhibit the provision of quality basic education. Rapidly growing populations and limited budgets for education do not allow investments into the necessary improvements in teachers' working conditions.

In an effort to improve the situation, the African Union offers channels through which African countries can exchange experiences and learn from each other's approaches. In the "Second Decade of Education for Africa (2006-2015)" the African Union has been putting forward the specific ambition to improve information shared between

With regard to TVET, the African Union underlines the importance of TVET as "a support mechanism for economic growth and as a means of empowering individuals to lead sustainable livelihoods"¹ These considerations informed the development of a specific African Union TVET strategy in 2007. This strategic framework identified instructor quality as one of the eleven key priorities². The delivery of quality TVET is dependent on the competence of the teacher; competence measured in terms of theoretical knowledge, technical and pedagogical skills, as well as being abreast with new technologies in the workplace. In 2011 the African Union also underlined the central position of quality TVET in contributing to sustainable development of youth and their civic engagement³.

In December 2013, the African Union Commission published "the African TVET strategy for Youth Employment"⁴. This strategy addressed the cross-cutting issues of employability, relevance, collaboration between training institutions and employers, accreditation of training providers (in the formal, non-formal and informal sectors), assessment and certification, quality assurance, and portability of TVET qualifications across national boundaries. African states were called upon to develop a national TVET strategy, which explicitly links TVET to employment opportunities⁵. The strategy also included a specific focus on "dual qualifications"; teachers should have both the required pedagogical and practical skills in the fields they teach. The strategy suggests that teacher training colleges focus on the recruitment of students who already have

¹ African Union Commission (2007), The Second Decade of education for Africa.

² AU (2007), Strategy to Revitalize Technical and Vocational Education and Training (TVET) in Africa

³ African Union (2011), Decisions adopted during the 17th African Union Summit, Malabo, Equatorial Guinea.

⁴ African Union Commission (2013), The African TVET Strategy for Youth Employment and AU (2014) The continental strategy for TVET to foster Youth Employment

⁵ African Union Commission (2013), The African TVET Strategy for Youth Employment,

the requisite level of subject mastery and some enterprise experience, so that the teacher training can fully focus on pedagogical aspects⁶.

The regional SADC framework on TVET (2011) also listed staff development as a key priority. However, there is little evidence in policy, programmes or data systems that TVET staff development has received sufficient attention across much of the region. There are concerns that few vocational instructors have a sufficiently strong blend of subject specialist knowledge, industrial experience and pedagogical skills. Not all SADC Member States have an institution that provides specific TVET teacher training. However, all countries do have at least one provider where teachers may gain some kind of teacher training. Providing support to strengthen TVET teacher training provision would form one part of a regional strategy for staff development⁷.

1.1.2. EU policies on teacher education in TVET

Within the European Union, Member States co-operate on education issues and the European Union supports Member States in developing general education and training policies.

The European Commission's 2012 "Rethinking Education" communication and the underlying Commission staff working document 'Supporting the Teaching Professions for Better Learning Outcomes', seeks to strengthen the professional profile of teaching professions⁸. The latter provides recommendations ("policy pointers") on achieving coherent and comprehensive systems for the recruitment, selection, education, induction and career-long individualised professional development of the teaching professions. Five key actions were recommended to support teachers and trainers at the Member State level, mainly elaborating on previous recommendations:

- Define the professional competences and qualities required of teachers in a framework based on teachers' learning outcomes;
- Re-design recruitment systems to select the best into teaching
- Ensure systematic induction support for new teachers;
- Review in-service learning provision, to ensure that teachers take part in career-long collaborative professional learning; and,
- Base teacher development on regular feedback on their performance.

In addition, two key actions were recommended to support teacher *educators*: firstly, to develop an explicit profile of the competences required by teacher educators; secondly, to reinforce collaboration between all the key actors in all phases of teacher education. However, the focus of these documents was strongly on general school education.

In the field of vocational education and training (VET), the role and quality of teachers has been an important element in the European cooperation since the launch of the Copenhagen process in 2002. Improving the quality of VET through closer cooperation between education and business was the main premise of the 2010 Bruges Communiqué on VET. The communiqué therefore, specifically called for improvements in the initial and continuous training of teachers, trainers, mentors and counsellors, by offering flexible training provisions, developed in closer collaboration with business⁹. Such flexible training provisions are particularly urgent in view of the ageing European teachers' population.

⁶ African Union Commission (2013), The African TVET Strategy for Youth Employment, page 35.

⁷ UNESCO (2013) Status of TVET in the SADC region, assessment and review of TVET in the SADC Region and of the development of a regional strategy for the revitalisation of TVET, SADC/UNESCO, Paris 2013.

⁸ European Commission (2012), Rethinking Education: Investing in skills for better socio-economic outcomes. COM(2012)669 final European Commission (2012) Supporting the Teaching Professions for Better Learning Outcomes, Commission Staff Working Document 374 final, Strasbourg, 20.11.2012.

⁹ See Bruges Communiqué, page 8

European studies, reports and implementation activities after Bruges have therefore mainly been focused on in-company VET *trainers* and not on teachers within educational institutions. The European Centre for the Development of Vocational Education (CEDEFOP), which is playing a central role in exchanging experiences between European Member States, has particularly focused on mapping the various competence profiles for VET trainers in different EU Member States¹⁰.

More recently, the issue of the quality of education and training of VET *teachers* seems to be back on the EU policy agenda. In May 2014, the Council adopted conclusions on effective teacher education, which also specifically extends to VET education¹¹. An ongoing study by CEDEFOP on the learning outcomes approach, will pay specific attention to its impact on teacher training¹². Internally, CEDEFOP is working to update existing material on VET teachers. Particularly, the issue of continued professional development of teachers will receive further attention in the years to come¹³.

1.1.3. Cooperation between EU and African Union in the field of education

The foundation for cooperation between the African and European Unions was crafted at the 2007 Africa-EU summit in Lisbon, in which the Joint EU-Africa Strategic Partnership was adopted¹⁴. In the field of education, the joint strategy sought to facilitate cooperation between higher education systems between Europe and Africa. In 2014, at the fourth EU-Africa Summit, a roadmap was approved for policy cooperation¹⁵. For the first time this roadmap specifically underlined the desire to extend the exchange of experiences to the field of vocational education, as well as to further promote quality practices in universities.

Despite the importance granted by the African Union to TVET, cooperation between the African Union and the European Union does not focus particularly on TVET. Whereas, some individual EU Member States also provided financial support in the field of TVET in Africa, the cooperation between the AU and the EU is mainly geared towards developing the capacity of *higher education* in Africa and focuses on activities to increase mobility between African Universities. The EU for instance, financially supports a programme to 'tune educational structures and programmes' ("Tuning Africa"), with the goal to improve overall mobility by introducing outcome-based teaching to African universities¹⁶. The tuning education initiative is relevant as the current pilot includes teacher education. Particularly, the working group on "teacher education" within this project identified that universities are increasingly beginning to offer specialist programmes for TVET teacher educators¹⁷.

1.1.4. EU-South Africa cooperation in the field of education

Cooperation between the Republic of South Africa and the EU has grown substantially since the advent of democracy in South Africa in 1994. In 2007, a South Africa – EU Strategic Partnership was agreed upon. Under this framework, the EU and South

¹⁰ See for instance Cedefop (2013), Trainers in continuing VET: emerging competence profile.

¹¹ Council of the European Union (2014), Conclusions on effective teacher education, EDUCATION, YOUTH, CULTURE and SPORT Council meeting, Brussels 20 May 2014.

¹² Cedefop (2014) Work Programme 2014.

¹³ Based on interview with Cedefop

¹⁴ See http://www.africa-eu-partnership.org/sites/default/files/documents/eas2007_joint_strategy_en.pdf (visited February 12, 2015)

¹⁵ See http://www.africa-eu-partnership.org/sites/default/files/documents/2014_04_01_4th_eu-africa_summit_roadmap_en.pdf (visited February 12, 2015)

¹⁶ Results available at http://www.africa-eu-partnership.org/sites/default/files/documents/jaes_summit_edition2014_en_electronic_final.pdf (visited February 12, 2015)

¹⁷ C.A. Onana et al. (2014), Tuning Africa, Tuning and harmonisation of Higher Education: The African experience. http://www.tuningafrica.org/images/public_files/tuning%20africa%202014%20engl.pdf

Africa cooperate in various policy fields, amongst which, in the field of education and training.

The sectoral policy dialogue in education seeks to promote exchange, knowledge sharing and knowledge building through regular exchanges of best practices, common challenges and reviews of possible policy solutions¹⁸. The work conducted is not specifically limited to South Africa, and will build upon regional and continental initiatives. Specific events such as seminars, workshops or expert meetings are jointly organised for the purpose of those exchanges and discussions.

In this cooperation particular attention is paid to the role of teachers. To improve the quality and capacity of the entire education system in South Africa, quality professional development programmes and opportunities for teachers are considered crucial elements¹⁹. Whereas, the wider education sector is targeted by this approach, policymakers paid particular attention to the role of TVET teachers – in the South African context referred to as college lecturers - which South Africa defines as a crucial instrument to reduce unemployment and improve relevant skills of the South African workforce²⁰.

In the framework of this cooperation, representatives from South Africa and the EU have for instance, shared information and views on the EU's "Rethinking education strategy" and the South African "White paper on Post-school education and training" in senior official meetings and policy workshops. In this exchange of views, the challenge to address the youth that are not in education or training for South Africa was also discussed in view of EU policy developments in this field²¹. A central role was attributed to the TVET sector to address this issue, for which teacher quality is considered one of the primary routes towards improvements. For this reason, it was agreed upon to support a joint study on TVET teacher education and training²².

1.2. Aim of the study

The general objective of the study is to compare experiences and good practices, as input towards the policy dialogue between the EU, Africa and South Africa in the field of teacher education and training, in particular in relation to the education and training of upper secondary and higher TVET teachers.

By means of comparison, the study maps the current education and training of TVET lecturers – both with regard to their initial training and their continuing professional development - in South Africa, Egypt, Ghana, Tanzania, and Cameroon. In particular, the study compares:

- Current situation and recent policies and programmes;
- Initial qualification system for teachers;
- Induction and continuing professional development of teachers;
- Quality assurance mechanisms.

¹⁸ See European Council (2014), Cooperation between the European Union and South Africa: Progress Report on EU-SA Education and Training Dialogue. <http://data.consilium.europa.eu/doc/document/ST-4903-2014-INIT/en/pdf>

¹⁹ Commission Implementing Decision on the Annual Action Programme 2014

²⁰ In this context based on interview with EAS. However the African TVET Strategy for Youth Employment specifically follows the same approach.

²¹ European Council (2014), Cooperation between the European Union and South Africa: Progress Report on EU-SA Education and Training Dialogue. <http://data.consilium.europa.eu/doc/document/ST-4903-2014-INIT/en/pdf> (visited April 11, 2015)

²² European Council (2014), Cooperation between the European Union and South Africa: Progress Report on EU-SA Education and Training Dialogue. <http://data.consilium.europa.eu/doc/document/ST-4903-2014-INIT/en/pdf> (visited April 11, 2015)

The study can be used as a reference for organisations and associations working in the field, as input for further collaboration efforts, to stimulate discussions between policymakers and support strategies for international cooperation and collaboration.

The current report presents a comparative synthesis on the organisation of teacher education and training for upper secondary and higher TVET teachers and college lecturers (ISCED levels 4 and 5). Past and current developments affecting the sector and teacher education in countries in the region are included. Central to this report are highlighting similarities and differences in the approaches, trends and policy responses observed in the countries in question. An annex presents the separate country reports, providing more detailed and background information.

1.3. Definitions and demarcation

TVET and TVET delivery

TVET is a complex education subsector, combining elements of general education, work-based learning and the worlds of work and school. How TVET is shaped within specific countries and educational systems is often rooted in national traditions and perceptions on the role of industry and government in the delivery of skills needed.

At country level, there is a myriad of definitions and terminologies used with regard to Technical and Vocational Education and Training. In the Southern African Development Community (SADC) region for instance, "some countries distinguish between vocational education and training on the one hand and technical education and training on the other while others use broader notions of skills development to refer to both terms (...). There is no definitional agreement regarding the nature and scope of TVET in the region"²³.

For the purpose of this study, we follow the UNESCO conceptual definition of TVET as "those aspects of the educational process involving, in addition to general education, the study of technologies and related sciences, and the acquisition of practical skills, attitudes, understanding and knowledge relating to occupations in various sectors of economic and social life"²⁴. This conceptual definition of TVET cuts across educational levels (post-primary, secondary, and even tertiary) and sectors (formal or school-based, non-formal or enterprise-based, and informal or traditional apprenticeship) as preparation for employment and further life is one of the functions of every educational system. It is therefore important to take into account the transversal and longitudinal nature of TVET in any strategic policy framework²⁵.

A 2008 review of Technical Vocational Skills Development (TVSD) systems in African countries revealed a wide range of modalities and actors through which technical and vocational skills are delivered. Traditional apprenticeships in the informal sector predominate, while formal TVET is delivered by both government and private providers, which include for-profit institutions and non-profit, NGO and Church-based institutions. Within the formal TVET system, most countries have a primarily school-based model, where education is provided in specific schools or colleges with workshops for the practical training²⁶.

²³ UNESCO (2013) Status of TVET in the SADC region, assessment and review of TVET in the SADC Region and of the development of a regional strategy for the revitalisation of TVET, SADC/UNESCO, Paris 2013.

²⁴ For full definitions see UNESCO 2001 Revised Recommendation concerning Technical and Vocational Education. Further (and previous) definitions can be found in the TVETipedia Glossary: <http://www.unevoc.unesco.org/go.php?q=TVETipedia+Glossary+A-Z&filt=all&id=474> (visited March 10, 2015)

²⁵ See : AU (2007), Strategy to Revitalize Technical and Vocational Education and Training (TVET) in Africa

²⁶ See: African Education Outlook (2008), Developing Technical & Vocational Skills: <http://www.africaneconomicoutlook.org/theme/developing-technical-vocational-skills-in-africa/the-rationale-for-technical-and-vocational-skills-development/taking-stock-of-technical-and-vocational-skills->

To improve comparability within this variety of conceptions and systems, the focus in this study is on general and vocational TVET teachers working in institution-based training providers in the formal education system. Depending on the national context, the focus will be both on those sections of the education system under supervision of the Ministry of Education, as well as formal TVET under the supervision of other ministries.

As for relevant levels, the study focuses on teachers in upper secondary education and post-secondary non-tertiary education (level 3 and 4 ISCED 2011). Depending on national context, TVET might also include short cycle tertiary non-university courses (level 5 ISCED 2011 classification). This being said, the focus will be shifted in some contexts to capture other relevant national TVET characteristics.

Teachers and the teaching profession

The teaching profession in TVET is generally more heterogeneous than in general education. This “fragmentation” of the profession reflects the variety in types of TVET delivery and the dual operation in both the education system and the world of work²⁷. Different attempts to provide global overviews of TVET teachers and trainers end up with detailed categories of TVET staff in reflection of the different models of school-to-work transition and the variety of profiles and functions within different educational settings.

A starting point for most analyses is the distinction between teachers and trainers. The term “TVET teacher” generally designates personnel in secondary level schools and TVET colleges in the public initial TVET education system. The term “trainer” usually refers to professionals involved in apprenticeship systems, on-the-job and off-the-job training and, more generally, in private sector training markets²⁸. CEDEFOP defines a trainer as “a skilled worker who introduces newly recruited employees to the company, provides training to co-workers as part of the job or mentors apprentices”.

This distinction is too simple for our purposes: it leaves out vocational trainers within public TVET institutions who are responsible for practical vocational skills²⁹. Therefore, we will use the comprehensive identification by Grollmann and Rauner of six staff profiles based on a comparative study across ten countries³⁰:

- Teachers or lecturers working in formal school or college settings and giving instruction in vocational courses;
- Instructors and laboratory assistants working in school or college settings in vocational laboratories;
- Others who teach with a high degree of autonomy or sometimes act as assistants to other vocational teachers;
- Trainers, tutors and others in enterprises who integrate training and education functions into their jobs with varying degrees (from incidental to full-time teaching of trainees and apprentices). In dual systems, this function is often separated from human resource development functions within companies, while in others this distinction is not strongly maintained;

[development/delivery-modalities/](#) (visited February 13, 2015) and African Union (2007) Strategy to Revitalize Technical and Vocational Education and Training (TVET) in Africa

²⁷ See for example Grollmann and Rauner (2007), Nielsen 2012, Rauner (1999), CEDEFOP (2009) “*Competence Framework for VET Professions* and *VET Teachers and Trainers in Finland*, Publications of the Ministry of Education, Finland 2006:41:

http://www.minedu.fi/export/sites/default/OPM/Tapahtumakalenteri/2006/10/eu_16_1710/VET_Teachers_and_Trainers.pdf (Visited June 5, 2015)

²⁸ See Nielsen 2012, p.

²⁹ See for example OECD (2009)

³⁰ Grollmann and Rauner (2007)

- Instructors and trainers working in labour market training institutions supported by governments and public authorities, often with a strong focus on social inclusion and basic occupational competences; and
- Instructors and trainers working in employers' organisations, such as chambers of commerce, sectoral training institutions or privately-run training companies and providers that focus on upgrading technical competences, training in communication skills, etc.

The first three categories are situated in formal school settings, though differences do exist within these categories, such as the type of public institution, the educational level or the background and qualifications of staff involved.

The Inter-Agency Working Group on TVET Indicators³¹ in their work³², proposed a typology of TVET provision which can be used to identify what type of TVET teaching staff this study is focused on. This typology is presented in Table 1.1. Highlighted in yellow are the categories of TVET delivery and those teachers that are the focus of the current study.

Table 1.1: Typology of TVET provision and staff profiles

1. Institution-based training	(i) Provided by the formal education system	(a) Under the supervision of the Ministry of Education (both publicly and privately funded)	General teachers
		(b) Under the supervision of another Ministry (labour, health etc..)	Vocational teachers
	(ii) Provided outside the formal education system (informal)	(a) Public	Vocational trainers
		(b) Non-public	Instructors/lab assistants
		For profit	
		Not for profit	
2. Workplace-based training	(i) Pre-employment training	(a) Modern apprenticeship	
		(b) Traditional apprenticeship	
	(ii) In-service training		
3. Combination of multiple types of training (e.g. sandwich programs, dual systems)			

Source: Inter-Agency Working Group on TVET Indicators (2012), Proposed Indicators for Assessing Technical and Vocational Education and Training, adjusted by authors.

It is important to note that the modalities above are not necessarily mutually exclusive. Many students combine several of them in pursuing their pathways of work. Similarly, individual teachers can also cross boundaries, and work within companies both as part-time trainer and teacher at public institutions³³. Furthermore, within the

³¹ which includes partners such as UNESCO (chair), OECD, ILO, the European Commission, CEDEFOP, ETF and development banks (WB, ADB)

³² Inter-Agency Working Group on TVET Indicators (2012), Proposed Indicators for Assessing Technical and Vocational Education and Training

³³ See for example Education International (2009) Literature Review Vocational Education and Training, http://www.ei-ie.org/en/websections/content_detail/3267#intro3 (visited January 10, 2015)

formal system private providers offering formal qualifications can also be supervised by the Ministry of Education (or other institution).

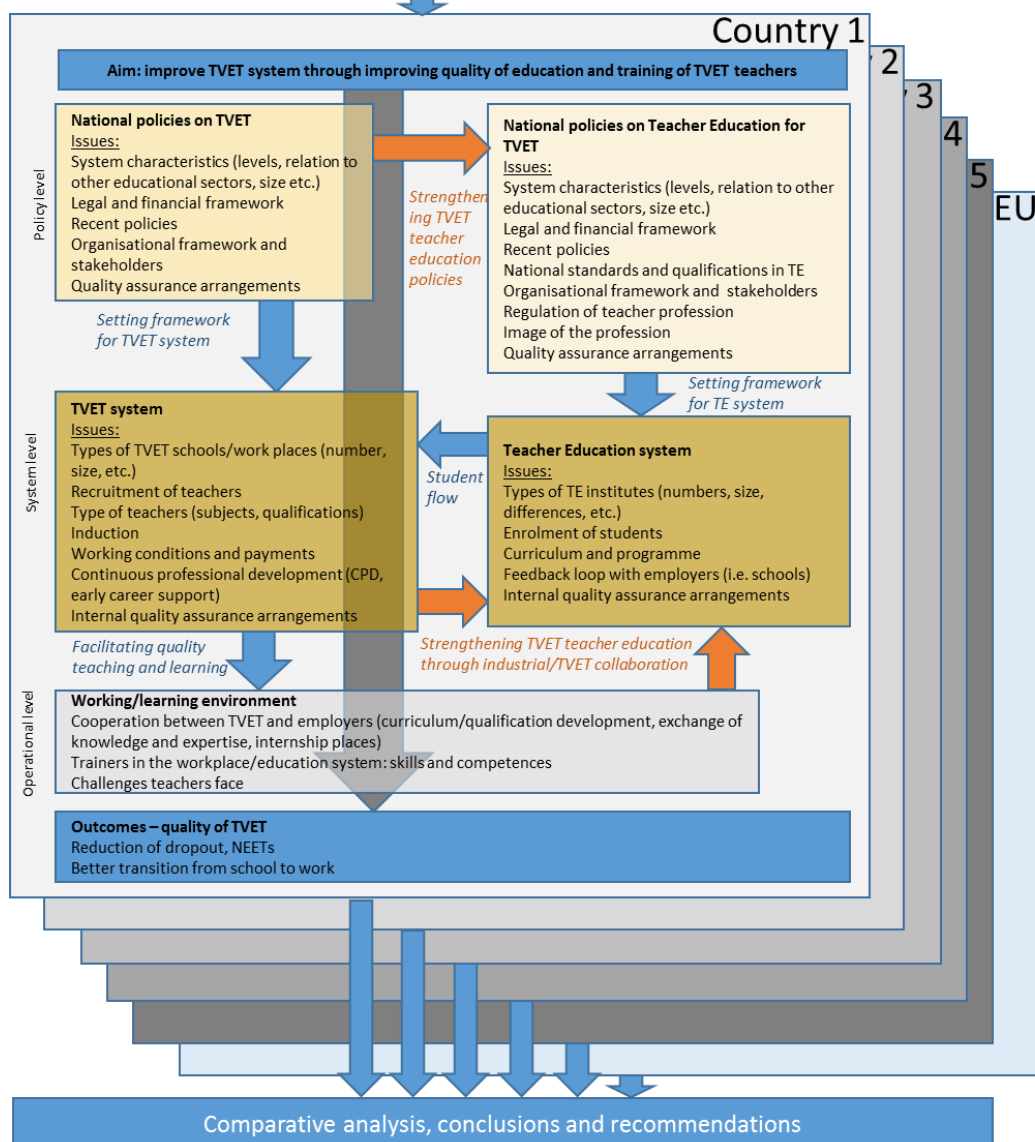
1.4. Analytical framework

To systematically assess teacher training and education or quality development in TVET, two 'systems' need to be taken into account at two different levels. The systems concern firstly, the TVET system; i.e. the educational sector in which TVET teachers operate; and secondly the higher education (HE) system (ISCED 2011 levels 4 and 5) in which TVET teachers are educated for a career in teaching. The levels concern the national, policy level and the operational, institutional or school level. When crossing the systems and levels, four clusters are formed of which all impact on TVET teacher quality and educational effectiveness.

In each cluster a number of operationalised research questions have been developed that shed light on the TVET sector and recent policies and programmes; initial qualification systems for teachers; induction and continuing professional development of teachers and quality assurance mechanisms for each of the countries included in this study. Figure 1.1 below summarises this approach, in which the left side of the figure on TVET systems provides necessary contextual data to fully comprehend the background against which TVET teacher training is developed and provided.

Figure 1.1: Analytical framework for the study

Compare experiences and good practices, as input to policy dialogue between the EU, Africa and South Africa in the field of Teacher Education and Training



Source: authors

An important qualification not included in this framework is the relevance of context. Interventions on teacher education and training are important, though not sufficient in an integrated effort to improve the quality of TVET delivery. Teachers are the most important in-school factor influencing the quality of student learning: up to three quarters of school effects on pupil outcomes can be explained by teacher effects³⁴. However, able practitioners are not necessarily going to reach their potential in settings that do not provide appropriate support nor sufficient challenge and reward³⁵.

The quality of TVET also depends on:

³⁴ Rivkin, Steven G., Hanushek, Eric A., Kain, John F. (2005), Teachers, Schools, and Academic Achievement, in: *Econometrica*, Vol. 73, No. 2. (Mar., 2005), pp. 417-458.

³⁵ In line with Scheerens, J. (ed.) (2010). Teachers' Professional Development: Europe in international comparison, a secondary analysis based on the TALIS dataset. European commission, Luxembourg 2010.

- The **teacher's persona** - both the background of those pursuing a career in teaching and their attitude towards the development of personal competences can pose challenges to improving the quality of teaching;
- The **TVET organisation** (at school or college level) - aspects of the working and learning environment that influence teachers' effectiveness include working conditions, the number of students the teacher needs to instruct (either in the classroom or on the work floor); the emphasis on teamwork and the issue of isolation of teachers and the issue of teachers' stress and the risk of burnout³⁶.
- The **TVET system** (national structures related to TVET and teacher education) - with regards to the macro, system-level, challenges related to teacher quality, literature emphasises the relationship between the quality of the system and the attractiveness of the teaching profession. Important macro-level factors that influence the quality of teaching are the number of teachers, relative pay levels and funding available for professional development.

These aspects do not form the core of this study, but will be addressed in the next chapters, where relevant towards integrating efforts to improve the quality of TVET delivery.

1.5. Research design

This study commenced in December 2014 and the gathering of data was concluded in September 2015. It consisted of three distinct phases: a preparatory phase, the country study phase and the final phase of analysis and reporting.

- The aim of the **preparatory phase** was to explore the policy background by desk research and preliminary interviews. The core team conducted a number of exploratory interviews with different stakeholders. These interviews provided operational insight in the current state-of-affairs of the formal policy development in the field of TVET teachers, both in Africa and the EU. Interviews were conducted with UNESCO-UNEVOC, Bonn; CEDEFOP; ETF; South African Department for Higher Education and Training, Pretoria; EU Delegation to South Africa in Pretoria; EU Delegation to the African Union in Addis Ababa (by phone); The African Union Commission.
- The aim of the **country studies and workshops phase** was to gather all relevant information in the five selected countries (South Africa, Ghana, Cameroon, Tanzania and Egypt) on TVET teacher education. The country studies were conducted by local experts, in close consultation with the core research team. The country studies started off with a desk research of academic sources, relevant policy documents, statistics and key legislation. This information was validated, amended and complemented during interviews with a number of key stakeholders in the country and through site visits to several TVET colleges and TVET teacher education institutes. During the site visits, guided interviews were conducted with TVET college leaders, TVET teachers, TVET teacher educators and students. These inputs were analysed and brought together by the local experts in draft country reports, based on the data collection format. As a final means of validating the findings, and ensuring a practical link to concrete policy solutions in each of the countries, policy workshops were organised by the national experts in Cameroon, Tanzania and Ghana. These were mostly organised in close consultation with

³⁶ See for example IBF (2013), Study on Policy Measures to Improve the Attractiveness of the Teaching Profession in Europe, volume 1 and volume 2, p.71 and EI/ETUCE (2001), Study on Stress: the causes of stress for teachers, its effects, and suggested approaches to reduce it.

national authorities on TVET policy. For these workshops, the experts and policymakers interviewed for the country report in the previous stages were invited. During these workshops, the findings of the relevant country report were presented by the country expert while a member of the core team presented the preliminary overall findings based on a first comparison of the country reports and the previous research phases. Subsequently, interactive sessions were hosted to invite responses to the findings of the study. The discussions, comments, and criticisms were integrated by the country expert in the final country report and incorporated in the current synthesis report. In addition, the research team presented the design and findings of the study during two TVET seminars, in Pretoria and Brussels, within the framework of the EU-South Africa policy dialogue.

- The aim of the **analysis and reporting phase** was to bring all evidence together in a concise synthesis report. After the draft country reports were drawn up, the core research team conducted a three-track analysis. Firstly, the country reports were analysed individually, reaching general conclusions on how the selected countries support TVET teachers. Secondly, a cross-country analysis was conducted to compare the countries on each of the identified key issues to find common patterns and main differences across countries. Thirdly, on the basis of the cross-country analysis, the core team reflected on the country reports, in order to come to more detailed policy recommendations at the national level. Based on these analytical steps, the core team drafted this synthesis report, presenting the findings and conclusions in a comparative perspective and elaborating on analytical recommendations.

2. THE PROFESSION OF TVET TEACHERS

Key messages

The key messages on the profession of TVET teachers in the five countries under review are shown below.

- TVET teachers' profiles differ according to the TVET level or system in which they operate, the subjects they teach and the qualifications they have.
- Working conditions and remuneration depend on educational qualifications and years of work experience.
- A number of challenges can be reported on related to the TVET teaching profession:
 - TVET is seen as a key policy priority for each of the countries under review, although in most countries this priority is not effectively translated into implementation;
 - Fragmented governance and institutional structures hamper further policy development in TVET and teacher quality;
 - The TVET sector and the TVET teacher profession is suffering from a low image and the job is in general not considered attractive;
 - In general, payment is not high and lower compared to teachers in other education sectors and the related industry, but those teachers recruited as permanent civil servants benefit from a high level of job security and social benefits such as insurance and pension.
- Given these challenges, becoming a TVET teacher is usually not a first career choice. Lower status and a negative image are detrimental to quality TVET as the sector finds it difficult to attract quality staff.

In this section, the profession on TVET lecturers in the five countries is discussed. It will deal with different types of TVET teachers; their working conditions; and the image of the profession. It starts with a general discussion on the national TVET system. In the last section of this chapter challenges related to the TVET teaching profession are presented.

2.1. National TVET system: enrolment and policy challenges

This section of the report outlines key characteristics of the TVET system of each of the five countries under review and the relationship of TVET to other educational sectors. Legal frameworks are also summarised, as well as the state of policies and strategies for the development of the TVET sector. For more elaborate background information on the TVET systems readers may refer to the country reports.

The focus of this study is on five African countries and TVET located at the secondary school level and extending into higher education levels. Students enter this section of the TVET system usually after primary school. For instance in Cameroon, young people enter TVET after primary school and TVET extends to tertiary level in university based Institutes of Technology. In Egypt, young people can enter a vocational preparatory system from Grade 7, while technical secondary education programmes admit young people on completion of primary school education. In Tanzania young people can enter the TVET system on completion of primary schooling. In South Africa and Ghana, the general pathway is that young people enter TVET upon completion of nine years of schooling. However, in South Africa there is much variation in the moment students actually enrol.

TVET provision in all five African countries – like in many countries around the globe - is small in comparison to other educational sectors and is generally perceived to be a second choice option for school leavers and parents in relation to general education

that provides routes to university. The table below shows enrolment in schools, TVET and universities for the countries in this study. As a reference to TVET it takes the enrolment in pre-tertiary TVET both in the public and the private sector.

Table 2.1: Enrolment in schools, TVET and universities in the five countries

a) Country	b) Population	c) School enrolment (Primary, Junior and Senior Secondary)	d) Formal TVET enrolment (public and private)	e) Percentage of population enrolled in TVET(d/b)	f) University enrolment	g) Secondary Gross Enrolment Rate ³⁷
Cameroon ³⁸	23,130,000 (2014)	5,562,000 (2012) ³⁹	383,539 (2012-2013)	1.66%	244,233 (2011) ⁴⁰	50.4%
Ghana	27,000,000 (2012)	5,685,000 (2012)	61,496 (2012-2013)	0.23%	121,000 (2011)	70.9%
Egypt ⁴¹	86 642,000 (2013)	15,228,000 (2014)	1,895,000 (2014-2015)	2.19%	1,807,000 (2011)	84.4%
South Africa	50,000,000 (2012)	12,428,000 (2012)	773,276 (2012)	1.55%	1,050,000 (2012)	110.8%

The table shows that where enrolment in primary and secondary education is considerable in the countries, TVET enrolment barely reaches 2% (in Egypt) of the total population and is only 0.23% in Ghana.

TVET in the countries is provided in different sub-systems. In order to understand teacher-education trajectories related to these different sub-systems, here these sub systems are very briefly described.

Cameroon:

- Post-primary level offering a Certificate of Professional Competence after 4 years of study.
- Technical high schools offer three year qualifications leading to technician qualifications.
- Institutes of Technology, polytechnics and universities offer a range of TVET qualifications such as engineering (three years) and engineering design (five years).

Egypt:

- Technical Secondary Schools (TSS) offer a three year technical diploma or a 5 year advanced technical diploma.
- Vocational Training Centres (VTCs) offer short technical courses to one year or

³⁷ The World Bank definition of Gross Enrolment Ratio (GER) is the ratio of total enrolment, regardless of age, to the population of the age group that officially corresponds to the level of education shown. Secondary education completes the provision of basic education that began at the primary level, and aims at laying the foundations for lifelong learning and human development, by offering more subject- or skill-oriented instruction using more specialized teachers. GER can exceed 100% due to the inclusion of over-aged and under-aged students because of early or late school entrance and grade repetition. <http://www.indexmundi.com/facts/indicators/SE.SEC.ENRR/compare?country=tz#country=eg:tz> (visited June 22, 2015)

³⁸ http://www.indexmundi.com/cameroon/demographics_profile.html (visited April 16, 2015)

³⁹ http://data.uis.unesco.org/Index.aspx?DataSetCode=EDULIT_DS (visited May 5, 2015)

⁴⁰ http://data.uis.unesco.org/Index.aspx?DataSetCode=EDULIT_DS (visited May 5, 2015)

⁴¹ http://www.adeanet.org/min_conf_youth_skills_employment/sites/default/files/u24/Egypt%20Country%20Report_0.pdf (visited June 24, 2015)

more training programmes leading to a technical diploma⁴²

- Regional technical colleges, Industrial Education Colleges and postsecondary vocational institutes offering higher education qualifications.
- Productivity and Vocational Training Department (PVTD) of the Ministry of Industry, Trade and SMEs⁴³ also administrates a formal apprenticeship scheme at the end of which the three-year students receive a diploma recognised by the Ministry of Education and equivalent to the Technical Secondary Schools diploma.

Ghana:

- The formal public system, which includes primarily time-bound, institution-based, graded, and certified training. It is offered by institutions such as the National Vocational Training Institute (NVTI), Ghana Education Service (GES), and youth training institutions.
- Formal private non-profit Technical and Vocational Skill Development (TVSD), facilitated by various faith-based organisations and NGOs.
- Formal private and for profit TVSD, with a variety of Private Vocational Training Schools, which has profit making as one of its objectives.

South Africa:

- Public and private TVET colleges offering 1 to 3 year programmes leading to NQF qualification, national certificates with focus on artisan development and national diploma's and occupational training.
- Adult learning centres and Community colleges (PALCs)
- Technical High schools and high schools
- Higher education colleges offering degrees in specialised areas such as agriculture, nursing, police, traffic, public service, as well as private higher education institutes offering programmes in arts, teaching, IT etc.

Tanzania:

- VET level courses offered by vocational training centres (VTCs). The training programmes in VTCs prepare learners more generally upon entering the labour market.
- Technical Education and Training (TET) offered by TET-institutions. At the TET level the focus is on preparing graduates to undertake middle to higher level professional jobs. TET is considered part of higher education but provided by a non-university institution.

All five countries have put policies and legislation for TVET in place as a key driver for education and training that address scarce skills and unemployment. This being said, this does not necessarily mean that TVET systems are in a good position in practical terms. The TVET systems generally face insufficient budgets to realise the policy objectives and TVET systems are suffering from fragmented governance and institutional structures.

The issue of fragmentation of TVET systems is addressed in a number of countries. For instance in Cameroon besides the three Ministries of Education: Ministry of Secondary Education (MINEDUC), Ministry of Employment and Vocational Training (MINEFOP) and the Ministry of Higher Education (MINESUP) responsible for public TVET, there are 14 other government ministries that also provide TVET for human resource development within their specific sectors. Egypt established a dedicated Ministry for TVET in 2015 to overcome fragmentation of the TVET system, however, after elections the same year this ministry was dissolved; its technical education functions re-integrated within

⁴² Private VTCs offer non-formal training and to a much lesser extent formal training, primarily aimed at community development needs.

⁴³ In May 2015, the affiliation of the PVTD was transferred to the new Ministry of Technical Education and Training.

the Ministry of Education and vocational training went back to the different ministries which were responsible before 2015. Some countries report that they have put overarching authorities in place for TVET. This is for instance the case in Tanzania. In 2008, this country consolidated its Vocational Education and Training Authority (VETA) and National Council for Technical Education (NACTE) under the Ministry of Education and Vocational Training.⁴⁴ South Africa created a government Ministry, the Department of Higher Education and Training in 2009, which includes adult education, TVET, workplace training and higher education. More recently, TVET has been transferred from a provincial mandate to a national mandate.

In order to improve the TVET system the countries launched a number of recent key policies. These are summarised in the box below.

- In Cameroon, there is an increasing focus on competency based education and training approaches for TVET provision that is guiding current reforms of the secondary and tertiary TVET systems. Workplace orientation for teachers and inspectors, as well as capacity building interventions for teachers is also a key focus. Many of these interventions are donor driven and are noted in the international section below.
- In Egypt, there has been a focus on TVET reform that includes policy revision, introduction of performance-based assessment for civil servants (including TVET staff), as well as donor projects, including Phase 2 of the EU TVET reform programme.
- In Ghana, their emphasis has been placed on the introduction of Competency Based Training and workplace experiential learning. Donor funding has been used to identify demand-driven approaches to employability of TVET graduates and the use of new technologies. Another donor funded project is providing infrastructural support for TVET teacher training and upgrading competencies of faculty staff.
- In South Africa, the release of the White Paper on Post-School Education and Training (2013) aims to expand TVET enrolment to 2.5 million students by 2030 from about 650 000 in public TVET Colleges in 2013 (White Paper, 2013:13) and a recent TVET teacher education policy with minimum education requirements was released in 2014.
- In Tanzania, there has been a renewed policy focus on increasing TVET teacher training recruitment and the number of teaching facilities, as well as continual professional development of teachers and enhanced conditions of service. ICT and E-learning is seen as important intervention towards improving access to TVET and there is a focus on re-introducing apprenticeship schemes and part-time modes of delivery.

2.2. Types of TVET teachers

When comparing the different types of TVET teachers that exist within the educational TVET systems of South Africa, Tanzania, Egypt, Cameroon and Ghana there is no general, common picture emerging. South Africa, Egypt and Tanzania make distinctions between different categories of lecturers, be it in a different way. In Ghana TVET teachers are considered subject specialists.

The following table provides an overview of the number of TVET teachers disaggregated by different sub-systems in the countries, the number of students and the student-teacher ratio (the average number of students per TVET teacher). However, these averages should be interpreted with caution, since in South Africa for instance, theoretical classes (e.g. business studies) could accommodate large numbers of students whereas, practical modules in a workshop (e.g. electrical) have safety and

⁴⁴ NACTE has competence both at the mainland and Zanzibar whereas VETA is only covering the mainland. ZETA is responsible for Zanzibar.

equipment restrictions on the number of students that can be in the workshop at any one time. It should be noted in relation to the table below that the difference between private and public TVET might differ per country. The definition can be related to different governance structures, forms of delivery (formal/non-formal), funding, or a mix of these aspects.

Table 2.2: Number of TVET teachers, number of students and student-teacher ratio for the five countries

Country	Teachers in pre-tertiary TVET (public and private)	Number of students in pre-tertiary TVET (public and private)	Student-teacher ratio
South Africa	Public TVET: 9,877	657,690 (2012)	66.6
	Private: 6,846	115,586 (2012)	16.9
	Total: 16,723	773,276 (2012)	46.2
Tanzania	VET: 2,150 ⁴⁵	145,511 (2012)	67.7
	TET: 3,784 ⁴⁶	113,080 (2012)	29.9
	Total: 5,934	258,591 (2012)	43.6
Egypt	Technical Secondary Schools (TSS) - 3 and 5 year programme: 142,056	1,800,000 (2014-2015)	12.7
	PVTD 3 year apprenticeship programme: 1,278	25,000 (2014-2015)	19.6
	Technical Colleges - 2 year programme: 1,232	70,000 (2014-2015)	56.8
	Total: 144,566	1,895,000 (2014-2015)	13.1
Ghana	Public TVET: 2,766 ⁴⁷	47,000 (2012-2013) ⁴⁸	17.0
	Private TVET: 657 ⁴⁹	29,307 (2010-2011) ⁵⁰	Not calculated
	Total: 3,423	61,496 (2012-2013)	18.0
Cameroon	Public TVET school teachers: 17,670	383,539 (2012-2013)	21.7

Below, the different types of TVET teachers are discussed per country. Often the main difference is related to teachers working in different sub-systems of the TVET sector:

- In **Cameroon**, at the level of secondary and post-primary there are teachers of Technical and Vocational Education. These can be divided into two levels: Class A (professors of high schools) and category B (principal teachers). The teachers of colleges ("écoles normales") can similarly be distinguished in two grades.
- In **Egypt**, there are several different types of training-related jobs and job titles within the system, depending on the ministry regulating the particular TVET school, centre or institute, but there appear to be very few comprehensive and competence-based job descriptions for these positions. It should be noted that there is a traditional separation within the TVET system of

⁴⁵ This concerns the teachers of maintain Tanzania (VETA). Zanzibar has 77 teachers coordinated by VTA. See: SADC/UNESCO (2013), Status of TVET in the SADC Region, p. 86)

⁴⁶ This concerns the teachers of maintain Tanzania. Zanzibar has 48 teachers coordinated in TET. See: SADC/UNESCO (2013), Status of TVET in the SADC Region, p. 86)

⁴⁷ Educational Management Information System (EMIS) of the Ministry of Education (MOE), 2014.

⁴⁸ Estimation, see: Darvas, Peter; Palmer, Robert. 2014. Demand and Supply of Skills in Ghana: How Can Training Programs Improve Employment?. Washington, DC: World Bank, p. 50.

⁴⁹ Although this information is derived from Educational Management Information System (EMIS) of the Ministry of Education (MOE) (2014), it is considered to be low as the number of private providers is estimated at 445, see: Darvas, Peter; Palmer, Robert. 2014. Demand and Supply of Skills in Ghana: How Can Training Programs Improve Employment?. Washington, DC: World Bank, p. 58.

⁵⁰ This data provides only partial information as only limited number of the private institutions is covered, see: Darvas, Peter; Palmer, Robert. 2014. Demand and Supply of Skills in Ghana: How Can Training Programs Improve Employment?. Washington, DC: World Bank, p. 57-58.

teachers teaching theory and those instructors teaching practical subjects. The emphasis too often seems to be on what academic degree or qualification is held rather than a specific list of the duties that the training job requires. While there have been attempts in the past to merge these functions in some pilot institutes and schools, this separation still persists as the norm in most TVET schools. Based on the educational background of the potential teacher he or she is then categorised into the following types of teaching roles:

- **Core subject teachers:** the term "Core" here refers to the cross-cutting subjects required to be taken by the student regardless of the technical specialisation of the programme. These teachers teach core subjects like mathematics, science, languages, humanities and religious studies among others.
- **Technical teachers/trainers:** these teachers, trainers and lecturers teach the theory of the technical subjects which are broadly divided into three main sectors but within them many different specialisations. These three main sectors are industrial, agricultural and commercial (including tourism) subjects.
- **Practical trainers/instructors:** these instructors are responsible for training practical sessions inside training workshops and labs using machines and equipment where relevant to the specialisation or programme.
- **Master trainers:** responsible for training teachers.
- In **Egypt** there is a clear bias towards the core subject of teachers being hired and recruited by the Ministry of Education. More than 63% of the teachers in Technical Secondary Schools' (TSS) 3 and 5 year programme', are teaching core and theory subjects.
- In **Ghana**, at both the technical and polytechnic levels all TVET teachers are subject specialists, e.g., Automobile, Mechanical, Building, Fashion etc., though they do not always have a technical qualification and learned the trade in practice. Data is only available on the public TVET that is under the Ministry of Education. These teachers, both at the secondary vocational school level, and at the tertiary technical Institute level, are all trained within the general education teacher training framework. However, some are trained in technical subjects and are therefore, considered as teachers with technical qualifications.
- In **South Africa** the following types of TVET teachers and lecturers can be identified:
 - College lecturers with university qualifications;
 - Lecturers with occupational qualifications;
 - Artisans who are employed to teach both theory and practical subjects; and,
 - Lecturing staff with N6 qualifications (NQF level 5 qualifications).
- In **Tanzania** the lecturers differ according to the two different types of vocational education and training. The first group works for the VET level trainees within the so-called vocational training centres (VTCs); and the second group works for Technical Education and Training (TET) level trainees within the TET colleges or institutes. The training programmes in VTCs prepare learners more generally upon entering the labour market. Sometimes learners enter into TET to progress their learning career in an additional programme (on top of a lower level VET programme) to specialise for a technical profession. For the purpose of progression into other/follow-up education programmes the curriculum has been complemented with a number of general and trade related subjects. This calls for the following teacher categories in VET:
 - Those teaching cross cutting subjects such as entrepreneurship, life skills, and communication skills to improve the employability of the graduates. The cross-cutting subject teachers are categorised based on their educational background that is, the salary will differ based on whether they have a diploma, or degree and work experience.
 - Those teaching related subjects such as technical drawing, engineering science and, general science geared at improving the scientific

explanations of the specific trade or skill, are also categorised based by their educational level, such as holding a diploma, or degree and related work experience.

- Those teaching core practical skills or the trade-profession such as brick-laying, carpentry, tailoring and, welding and fabrication, are categorised by work experience and additional levels of education within their profession. The determining factor is whether they possess National Vocational Awards (NVAs), National Technical Awards (NTAs), and different degree levels.

At the TET level the focus is on preparing graduates to undertake middle to higher level professional jobs. TET is considered part of higher education but provided by a non-university institution. The following teaching categories are therefore, found in the TET institutions: laboratory technicians; instructors; lecturers; professors; and tutors teaching cross-cutting subjects.

It is clear that the TVET lecturers' profiles differ according to the TVET level/system in which they operate, the subjects they teach, and finally the qualifications they have. In each of the five countries we see more emphasis on core and theoretical subject teachers and less emphasis on the technical and practical lecturers.

2.3. Working conditions and payments of TVET lecturers

In general in the five countries, teachers for public TVET institutes are recruited and employed by the state. For instance in Egypt, the majority of TVET providers and institutes are public TVET teachers and are civil servants employed by the state. In South Africa 63% of all TVET college staff are on the payroll as state employees and the remainder are directly employed by the TVET colleges. In Tanzania teachers are also either employed by the state in the case of the public institutions, or by private institutions.

In this section we will describe the working conditions and payment of TVET lecturers. The main difference within the countries is between the teachers having a permanent contract and the teachers having a temporary contract. With regard to the employment status, the South African system for instance, differentiates between permanent full-time staff paid by the State and contract staff paid by the College. Contract staff would usually be appointed in terms of specific programme needs, for example to teach on an occupational programme funded by SETAs, over a specific period. Such contracted staff are required to receive 37% of salary as a top up in lieu of benefits.

In the systems where teachers are employed by the state, the teachers with a permanent contract benefit from job security. For instance in Egypt, like all civil servants, public TVET school and college teachers with permanent contracts benefit from job security, being very difficult to dismiss them according to the law⁵¹ and the regulations for pay scale according to level, promotions and supplementary incomes are clearly articulated and adhered to within the system. This makes the teaching profession attractive compared to working in the private sector where job security is not guaranteed despite the fact that the basic salary for teachers in the government is relatively lower. Also in Cameroon public permanent TVET teachers have a relatively high level of job security, and follow a formally laid down trajectory of career development within their institution. However, in comparison to other public officials, TVET teachers receive a considerably lower salary, which persists despite recent readjustments by the government. In Tanzania, working conditions of public TVET teachers are guided by the public service, which follow public guidelines towards the

⁵¹ There is legislation currently being drafted to amend the civil service law to make continued employment more performance based which could lead to dismissal of civil servants if appraisal is not good, however this is still not implemented yet.

intention of attracting and retaining quality staff. Teachers with permanent contracts are more secure, compared to those with short-term contracts. However, when compared to counterparts practising in their respective trades, TVET teachers especially at VET level, are paid lower salaries due to unclear vertical progression paths. A number of TVET teachers have entered higher learning institutions to undertake courses which lead them to become managers of TVET, leaving the TVET teacher profession. The main reason provided is the limitation on vertical progression in the TVET teaching profession at the VET level. Recently, within the TET system there have been discussions to transform TET institutions into universities under the Tanzania Council of Universities (TCU).⁵² The salary structure for TET teachers in public institutions was likewise improved to match that of institutions under TCU, and as a result TET institutions are now attracting and retaining teachers. This has improved the perceptions about TET teaching.

Temporary staff has a less secure position. In Cameroon for instance, in the public TVET sector many teachers are not hired on a permanent basis, and are instead granted the contractor status. Contractors at public TVET providers do not enjoy the benefits of civil servants, and face similar working conditions as TVET in the private sector. In the private sector, institutions are allowed by law to have up to 40% of temporary staff. In Egypt part-time or fixed-term TVET teachers on the other hand do not benefit from most of the packages in terms of salaries, security, personal development or perks.⁵³

In some countries TVET institutions and teachers in all education sectors need to be business minded and can receive extra funding when providing additional services to students and their parents. In Egypt, unlike teachers from the general education stream, TVET teachers do not have the same opportunities available to them to conduct private tuition, because most TVET students are from low income families who cannot afford these extra fees and also because many of the students themselves are working to support their families. In Tanzania, running a sustainable privately owned TVET institution is considered challenging. Such institutions have to operate as business entities and depend on learner fees, and charging for goods and services as part of their training programmes (something teachers in the public system also do). The institutions therefore, demand teachers who can produce quality skilled graduates, and services and goods have to be highly competitive.

The salaries of teachers in all countries depend often on their qualifications and years of experience. In Egypt, teachers' salaries rise moderately over a career: after 15 years a teacher with the minimum education qualifications can expect to earn approximately 1.42 times the starting salary, and after 30 years, 4.2 times the starting salary⁵⁴. Within the Ghana Education Service a key determinant of a teacher's salary is the number of years in a rank, technically called step or incremental jump. A step or incremental jump is a yearly salary increase that teachers get on the first of September each year in order to differentiate them from those on the same rank but who are juniors in terms of job experience. In South Africa salaries depend mainly on educational levels and years of additional training.⁵⁵ Contract employees (non-state

⁵² In terms of these discussions, the TET progression structure received recognition to offer professional degrees up to PHD awards in the proposed national qualifications framework as for the universities under TCU.

⁵³ It is acknowledged that these teachers' starting salaries are much lower than those with full tenure. Many of these teachers started demonstrating for better working conditions after the January 2011 revolution which forced the government to comply with demands to make their contracts permanent.

⁵⁴ World Bank (2010) *Saber Country Report- Teacher Policy*, p. 6

⁵⁵ The range of annual salaries are from RAND 100,893 (Euro 7,238) for teachers with Grade 12 or lower, and without a teacher's qualification, National Certificate in ABET Practice (accredited by ETDP SETA) to RAND 247,557 (Euro 17,758) for teachers with grade 12 plus four years' apposite training. It should be noted however that these REQV (Relative Education Qualification Values) levels were intended for teachers in general schooling, and were simply applied to TVET lecturers as well, with the addition of qualified artisans being recognised at REQV 13 (the officially endorsed benchmark entry level). This is in the process

employees) paid by the college are paid 37% as a top-up to compensate for the benefits that State employees enjoy in their salary package. The Minister also decreed in 2011 that TVET college lecturer salaries should be raised to be placed on par with those of school teachers. In South Africa college lecturers regard themselves as being poorly remunerated as those with only industry qualifications and no teaching qualifications were paid as 'unqualified' teachers. In order for TVET lecturers to be remunerated at the level of a qualified teacher they are now required to hold a teaching qualification. In Tanzania, the public sector is able to pay teachers well because of the subsidy from the government. For example at VET level, all remuneration is covered by the SDL (which is the 2% Skills Development Levy for employers). In Ghana, the Single Spine Salary Structure as described below was an attempt to improve employment conditions.

Single Spine Salary Structure (SSSS)

As part of Government's effort to improve upon the working conditions of public and civil servants in Ghana, an act of Parliament (Act 737,2009) established the Fair Wages Salary Commission (FWSC) in June 2009, with the mandate to ensure fair, transparent and systematic implementation of government's public service pay policy dubbed 'single spine salary structure' (SSSS). Among others, the salary was to minimise disparities, discrepancies and distortions in salaries of the public sector and to make the public sector budget easier and manageable for estimation and forecasting. (FWSC 2009, 2013).

While the intention of the SSSS was laudable and there have been improved retention of teachers and a reduction in the numbers of workers who migrate overseas, there have been a number of difficulties in getting the electronic payments systems working, delays in negotiating some of the specific allowances, difficulties of interpretation in payment arrears and tensions over which categories of workers are entitled to retention.

The Ghana National Association of Teachers (GNAT) and the Teachers Workers Union (TEWU) have however reported that given the same level of qualification, public servants in the health and police service are paid better than teachers under the new salary structure. This is a situation which is not helping the teaching profession in the second cycle education in Ghana.

Other benefits for teachers besides salary, concern for instance a grant that covers accommodation costs, uniform costs and utility bills. This is the case for Ghana teachers in the public sector under the Ministry of Education. Due to this, the government does not provide accommodation, uniforms and does not pay utility bills for teachers. Most teachers live in private houses and a few are privileged to live in government houses and pay rent at the end of the month to the government. In Egypt other benefits offered to TVET teachers include pension entitlements, healthcare, sick leave, maternity leave, long annual leave during summer and relatively short working days which provides teachers with time to obtain another job to make ends meet. This is quite common among male teachers who *moonlight* in various occupations or operate their own small businesses depending on their technical specialisations.

2.4. Attractiveness of the teacher profession

Being a TVET teacher in one of the five selected countries (and generally speaking in most countries across the continent) means having a low status, poor salary and sometimes facing challenging groups of learners. As a result, it is difficult to attract qualified technical teachers to TVET. Teachers leave the profession because they can

of changing, as conditions of service and remuneration levels and scales are being debated in the national bargaining chamber by the state as employer, and teacher unions. These negotiations are taking into account the new framework of prescribed qualifications specific to TVET college lecturers.

earn higher salaries in the private sector or in management positions. Higher TVET levels face fewer difficulties than lower levels of TVET. Low status and a negative image are detrimental to quality TVET as the sector struggles to attract and retain qualified staff.

As in many developed and developing countries, in the five countries the picture that emerges is a TVET teaching profession that has low status and is not regarded as a first choice career. One of the issues related to the low status and negative image is that teaching is not considered financially attractive. In general, the low image of TVET reflects on the low image of the TVET teaching profession as well. As a result, the profession has difficulties attracting skilled teachers. For instance, a 2002 survey⁵⁶ in Ghana showed that parents did not want their children to attend a technical or vocational school because they were concerned about the quality of TVET lecturing.

Although, this image of TVET in the countries – and worldwide – is slowly changing, TVET still suffers from perceptions of low esteem, low quality, low status and poor performance. This does not only affect students but also teachers within the TVET system. The status of TVET teachers is considered lower compared to other civil service professions.

In Cameroon, the reasons for this are 1) lower wages; 2) teacher education students need to pay for their own education (this is not the case for other civil servant professions); 3) after graduation teachers are not always automatically recruited by the state and they need to depend on part-time jobs for some time (e.g. paid by parents). In Ghana and Tanzania a similar picture emerged as in Cameroon. TVET teachers have to deal with a low occupational status compared to teachers in the grammar schools who are considered more prestigious. Additionally, in Egypt the TVET system has not yet been successful in improving its image vis-à-vis other types of education and professional options. Teachers and instructors within the TVET system suffer lower social status relative to teachers within the general education stream.

The status of TVET teachers and trainers is not just between TVET teaching staff and other education systems but is also emphasised within the different categories of the TVET system itself (see textbox). Higher TVET levels also face fewer difficulties than lower levels of TVET.

Different status of teachers within the TVET system in Egypt

Academic teaching staff within the technical colleges consider themselves of higher status vis-à-vis teachers within the TSSs because they are affiliated to the Ministry of Higher Education. Also there is a clear distinction between teachers and practical instructors due to their education background and pay scale within the TSSs. Furthermore, teaching staff within the PVTD vocational training centres are seen as having lower status than those within TSSs affiliated until recently to the Ministry of Education. This has created a superficial hierarchy based on perceptions rather than actual discrimination within bylaws and legislation.

The lower status in Cameroon leads to all kinds of challenges for the teaching profession. There is a lack of motivation and demobilisation that reinforces the practice of parallel activities: private and paid courses; trade; vacation; etc. Marginalised and underqualified Cameroonian teachers offer a questionable value for the education system. Efforts are underway to enhance the teacher's image. Recently, the basic monthly salary of the civilian and military personnel, including teachers, increased respectively by about 15% and 5%.

⁵⁶ See: Amedorme, Sherry K., Fiagbe, Yesueneagbe A.K. (2013), Challenges Facing Technical And Vocational Education In Ghana, in: International Journal of Scientific & Technology Research Vol. 2, issue 6 (June 2013).

In Egypt, the poor image of the teaching profession does not prevent the profession from attracting new (general) teachers. For the 30,000 new teachers- competition in 2014 (see also paragraph 4.3), the Ministry received more than 1.6 million applications, indicating the relative popularity of the teaching profession in Egypt vis-à-vis other options for formal jobs.

Related to the low image of TVET teacher is the fact that they are often poorly represented at national level or in bargaining processes. In South Africa for instance TVET college lecturers as a teaching cohort have historically been neglected. The school teachers, who number around 500,000 receive much more attention, compared to the approximately 10,000 TVET lecturers.⁵⁷

2.5. Challenges for the TVET teaching profession

Based on the descriptions provided in this chapter, a number of challenges can be reported on for the five countries. In many cases, these issues play a role in other countries as well.

- Bullet Point 1 TVET is seen as a key policy priority for each of the countries under review, although this priority is not effectively translated into implementation. This suggests the existence of a widely acknowledged discrepancy in TVET between policy as rhetoric and policy as practice. National TVET systems are smaller in relation to other educational sectors and public funding generally reflects an even lower part of the budget spent on the TVET sector. There is limited investment from the private sector in the public TVET system that is mainly derived from a skills development levy. In most countries, except for South Africa, recent policy reforms have been strongly influenced by international partnerships and donors.
- Fragmented governance and institutional structures hamper further policy development in TVET and teacher quality, though efforts are underway in several countries to strengthen the governance of the sector.
- The TVET sector and the TVET teacher profession is suffering from a low image and the job is in general not considered to be attractive. In general, payment is not high (a factor related to the low status of the profession), but those teachers recruited as permanent civil servants benefit from a high level of job security and social benefits, such as insurance and pension. The employment conditions for temporary staff and teachers in the private sector are less secure and favourable. In addition, the TVET teacher profession wages are lower compared to teachers in other sectors so commencing teachers would only take TVET as a second option. Secondly, the TVET teacher wages are lower than the wages in the trades they teach and hamper the inflow of teachers from the private sector and even make it difficult to retain qualified and skilled staff as qualified technical staff would earn higher salaries in the private sector. These issues all contribute to a situation where it is difficult to recruit and retain quality teachers in TVET.

⁵⁷ The teachers are also strongly unionised. College teachers were previously part of the same bargaining chamber as school teachers, but as the FET Act 2006 brought about the transfer of staff from provincial departments of education to College Councils, matters affecting college lecturers became more prominent and a separate section of the national Education Labour Relations Council (ELRC) was set up to deal with that.

3. SYSTEM OF TVET TEACHER EDUCATION

Key messages

In spite of the particularities of each of the five countries' TVET systems, the following central messages can be stated with regard to TVET teacher education:

- Teacher education is still strongly geared towards training of academic or general school teachers. TVET teacher education is largely university-based, except for a dedicated general Vocational Teachers Training College in Tanzania, and the Normal Schools for Teachers of Technical Education (ENIETs) in Cameroon. In some countries it was difficult to disaggregate the preparation of general school teachers from that of TVET teachers.
- However, all countries under study stress the need for specialist TVET teacher training and are engaged in setting policies and legal and financial frameworks in place that take responsibility for specific TVET teacher education. Much remains yet to be done to establish clear pathways for professional TVET teachers' development. Quality assurance systems of TVET teacher education in all countries in this study apply generally to teacher education programmes and career pathing. South Africa has the only dedicated policy for TVET teacher training that sets specific qualifications and standards in place for TVET teacher education.
- Funding for TVET teacher education is mainly through government funding to universities or state institutions that undertake general teacher education. TVET teacher education is still underfunded in relation to general schooling. Only Tanzania and South Africa have developed a skills levy system which provides an additional source of funding for specific TVET teacher capacity building, as well as a potential feedback mechanism to strengthen the links between teacher education and sectoral needs.
- Country reports point to instances of international cooperation around teacher development but there was not much evidence of internationally benchmarked TVET teacher qualifications. Furthermore, the local research based on TVET teacher education is still underdeveloped or emergent, with the exception of South Africa.

These key messages will be expanded upon in the sections that follow, with regard to more specific information from each of the 5 countries in the study.

3.1. TVET teacher education policies

General school teacher education is predominant in teacher education in the countries under study. However, all countries are engaged in setting policies and legal and financial frameworks in place that take responsibility for specific TVET teacher education, but there remains much to be done to establish clear pathways for professional TVET teachers' development. South Africa has the only dedicated policy for TVET teacher training that sets specific qualifications and standards in place for TVET teacher education.

In Cameroon two major non TVET specific decrees organize the body of public TVET teachers: Decree 200/359 of 5 December 2000 on the specific status of the bodies of Education; and Decree No. 93/035 of 19 January 1993 on the special status of personnel of higher education. Currently, the private TVET sector does not have specific legislation.

In Egypt the Ministry of Education (MoE) and the Professional Academy for Teachers (PAT) are the primary institutions responsible for setting all teacher policies, including TVET teachers, until the end of the secondary education stage. The MoE and PAT are

presently taking on a strong role alongside the Educational Directorates at Governorate Level, the National Authority for Quality Assurance and Accreditation of Education (NAQAEE) and the National Center for Examination and Educational Evaluation (NCEEE). PAT sets requirements for all teacher education.

In Ghana, policies, strategies and guidelines for teacher training for TVET teachers under the Ministry of Education have been put in place by the Ghana Education Service as part of the main grammar teacher training policies. Recent policies on TVET teacher training are included in the 2007 Education Reform and 2008 Education Act. The National Teaching Council (NTC) is mandated by the Education Act 2008, to improve professional standing and status of teachers and provide licensing and registration of teachers in Ghana. The functions of the NTC affect TVET teachers as well. The COTVET Act (2012) and the National Policy Framework aim for a demand-driven and competency-based technical and vocational education and training system. In terms of this the Council shall register and accredit facilitators and trainers who offer technical and vocational education and training programmes to ensure quality delivery in TVET.

In South Africa, the Department of Higher Education and Training (DHET) published its Policy on Professional Qualifications for TVET College Lecturers in 2013. All teacher education is the responsibility of university Faculties of Education, hence the new professional teaching qualifications for TVET lecturers also falls within the university ambit. In order for universities to respond to this policy, qualifications need to be designed and submitted first through university administrative processes, then to the DHET and the CHE (Council on Higher Education) for approval, before they can be placed within the university's programmes and qualifications mix. The new Policy on Professional Qualifications for TVET Lecturers sets out a suite of initial and post-professional qualifications for TVET college lecturers.⁵⁸ All new TVET lecturer qualifications require a Work Integrated Learning (WIL) component and may require collaboration with other university faculties to develop discipline-specific knowledge and specialised subject matter.

Teacher Education for TVET in Tanzania is organised at the two levels of VET and TET. The VET Act established the Vocational Education and Training Authority (VETA) as a legal instrument for the supervision of VET in the country with an added mandate to establish Vocational Teachers Training Colleges. As a result VETA has established the only TVET related teacher training college in the country focusing on the VET level namely the Morogoro Vocational Teachers Training College (MVTTC). The college is governed by the principal who is answerable to the Director General of VETA. The recent VETA Corporate Plan (VCP IV) seeks to enhance the capacity of MVTTC to provide diversified education and training programmes and opportunities. Through this strategy the college will: develop a postgraduate certificate programme; develop a module for leadership in vocational training; implement training through Open and Distance Learning (ODL) to increase equitable access to VET teacher education in the country; and update the database for Vocational Teachers in the country. Regarding Technical Education and Training (TET) the National Council for Technical Education NACTE confirms there is no specific college focusing on TET teacher education, however, NACTE registration and accreditation requires that all TET teachers are trained in pedagogy to enable transfer of skills. At the TET level, the Ministry and NACTE plan to institutionalise TET teacher training programmes by either using one of the TET institutions or reviving the former Technical Education (TE) Teacher Training

⁵⁸ DHET, 2013. Policy on Professional Qualifications for Lecturers in Technical and Vocational Education and Training. Govt Gazette No.36554. www.gpwonline.co.za

Colleges to create capacity to offer regular TVET teacher training programmes at TET levels.

3.2. Overview TVET teacher education institutions

TVET teacher education takes place largely within general teacher education qualifications offered at higher education institutions or colleges of education affiliated to universities.

With a few exceptions, none of the country institutions are devoted to TVET teacher education exclusively and in some countries it was difficult to disaggregate the preparation of general school teachers from that of TVET teachers. There are also differences between the training of general vocational teachers and specialist technical teachers. In Cameroon and Egypt there are institutions for specialised technical subjects, but not all these graduates end up becoming TVET teachers as the emphasis is on the technical discipline rather than any specific TVET teacher preparation. All the country studies stress the need for specialist TVET teacher training.

In Cameroon teacher training is split between two kinds of institutions, each of which has a different focus. Both are open to graduates of post-primary qualifications. First are the Normal schools for Teachers of Technical Education (ENIET), public or private schools of secondary education under the supervision of MINESEC, which train Teachers in Technical Education (EIT). Today, there are four functional public ENIET: Yaounde-Soa (Nkolfoulou); Douala (Ngodi-Bakoko), Garoua and Mbengwi. At the end of 2012/2013, six (6) more emerged: Bafoussam-Baleng, Bertoua, Ebolowa, Maroua, Ngaoundere and Kumba. Mbengwi and Kumba are intended primarily for Anglophones while the others focus primarily on Francophones.

Second are the three Normal schools of the Higher Technical Education (ENSET), whose primary mission is training of Teachers of Technical Education Colleges (CFEP); High Schools Professors of Technical Education (PLET); Guidance counselors (CO); Training of Teachers of Normal Schools Teachers of Technical Education (PENIET) and higher business managers. The ENSET has the status of Public University Schools and the three that exist are housed in the State Universities: ENSET Douala belongs to the University of Douala, ENSET Bambili at the University of Bamenda and ENSET Kumba to University of Buea. Each has ENSET departments that offer training to trainers from the industrial and commercial TVET. All ENSET are supervised by the Ministry of Higher Education.

In Egypt there are two types of specialised initial education institutes for teachers: university faculties of Education, and faculties of Industrial Education. There are 26 faculties of Education affiliated to different public universities nationwide under the supervision of the Ministry of Higher Education. These faculties deal with both technical and general teachers but have specialised departments for technical schoolteachers. Most of the teachers graduating from these faculties work in technical schools and teach core subjects, such as languages, mathematics, social studies and science. These faculties award Bachelor of Arts degrees in education and provide post-graduate degrees in education.

In the early 1990s two Industrial Education faculties were established within the Helwan and Bani Suef universities technical teacher training. Subsequently, two more faculties were established in Suez and Sohag. Industrial Education colleges provide a four-year Bachelors degree accredited by the Ministry of Higher Education. Students specialise in trades, such as automotive, air conditioning, electricity, electronics and industrial production, however, not all graduates end up working as teachers. Most of these graduates end up working as skilled workers in factories but tend to be treated

differently from engineering graduates. From their third year of study, students start their practical on-the-job training by working in factories during summer and in the fourth year they co-teach at TSSs for one day a week. There was no evidence that PAT has a role in setting standards or curricula, since the current curriculum has not been updated since 1997.

In Ghana, teacher training under the Ministry of Education takes place at two levels: at the Colleges of Education level and at the University level. There are 38 Colleges of Education, two public universities and one private university.

The Colleges of Education concentrate on training teachers for the Junior High Schools, Senior High Schools, as well as Technical and Vocational Institutes. Seven out of the 38 Colleges have been given the specific additional function to train in technical subjects with the view of preparing teachers for TVET institutes at the secondary level. However, TVET teacher training does not take place exclusively in any of these institutions but is part of the general provision for the preparation of teachers to teach at various levels of the education ladder. After a 2006 review of the entire educational system teacher training colleges were upgraded to diploma-awarding institutions to improve teacher education delivery. Since then they have been titled as "Colleges of Education" and are affiliated to the University of Cape Coast.

Teachers in TVET institutions under the authority of other ministries can also gain qualifications at the polytechnics in trade areas, which enables them to teach in some types of Vocational Training Institutes. This type of training is focused on work-related competences and does not focus on pedagogical skills.

In South Africa, nearly all teacher education to date for TVET College staff has been conducted by universities of technology and comprehensive universities in their faculties of Education. In most instances TVET teachers have undertaken the same teacher training as those in the general schooling qualifications, although, there are two or three exceptions where the Faculty has made provision for specialist TVET groups. Several universities though, have indicated their interest in offering the new qualifications for TVET lecturers which are yet set to roll out. Key challenges faced within South African universities include the lack of experience in integrating TVET theoretical provision with practical workplace exposure, as well as a dearth of capacity of TVET professional teaching staff in universities. Some universities have started to work on this, but it will require significant further investment in improving postgraduate qualifications in TVET to build the university capacity necessary to offer sufficient initial and continuing professional TVET teacher development. Other training courses relevant to TVET in public colleges have been conducted over the years by private training providers, for which college staff have had to fund themselves either through college or personal funds.

In Tanzania, despite the big demand for TVET teachers, there is currently only one operational TVET teacher education college focusing on VET teacher education, the Morogoro Vocational Teacher Training College (MVTTTC). The college has a range of functions dealing with training, awarding certificates and diplomas, learning materials production and conducting seminars and research. Generally there is a limited supply of TVET teachers when compared to demand at both TET and VET levels. The current infrastructure of TVET teacher education focuses on pedagogy rather than the vocational field specialisms.

The table below summarises the type of teacher education institutions as discussed in relation to the different systems of TVET.

Table 3.1. Summary overview of TVET institutions, type of teachers and main providers of teacher education

	Type of TVET	Type of teachers	Main providers of teacher education
Ghana	Technical schools	General teachers including TVET teachers	Colleges of Education affiliated to University of Cape Coast
	Vocational Training Institutes	Trade area teacher	
Tanzania	VET	VET teachers	Polytechnics Morogoro
	TET	TET teachers	Vocational Teacher Training College (MVTTC) Currently no systematic provision, but registration and accreditation requires that all TET teachers are trained in pedagogy
Cameroon	Technical education college	Teachers of Technical Education Colleges (CFEP)	Normal schools for Teachers of Technical Education (ENIET)
	Technical high schools and polytechnics	Teachers of Technical Education Colleges (CFEP); High Schools Professors of Technical Education (PLET); Guidance counselors (CO); Training of Teachers of Normal Schools Teachers of Technical Education (PENIET); Higher business manager.	Normal schools of the Higher Technical Education (ENSET)
Egypt	PVTD	General teachers and technical schoolteachers.	University faculties of Education
	Technical Colleges	These teachers work in technical schools and teach core subjects	Faculties of Industrial Education
	Technical Secondary Schools (TSS) Technical Secondary Schools (TSS)	Specialised teachers in specific trades	No systemic provision (Practical teachers are not required to attend specialised initial teacher education programmes)
South Africa	TVET	TVET College staff	Universities of technology and comprehensive University Faculties of Education.

3.3. Funding of TVET teacher education institutions

Stable and sufficient funding is a prerequisite for achieving policy aims such as accessible, qualitative and relevant TVET teacher education provision. Although there is increasing interest in advancing public TVET, TVET teacher education is still underfunded in relation to general schooling. State funding for TVET teacher education is generally included in the allocation for general teacher education. Tanzania and South Africa have developed a skills levy system which provides an additional source of funding for specific TVET teacher capacity building, as well as a potential feedback mechanism to strengthen the links between teacher education and sectoral needs.

In Cameroon the resources of private ENIET come from various sources, such as personal contributions, gifts, bequests, tuition fees, aid associations of parents, products of the various activities of the institution and some contributions from State, regional and local authorities. Apart from loans, the public ENIET have similar resources to the private ENIET but the state is the major contributor. In ENSET, the state lends support with substantial subsidies linked to investment and operation.

In Egypt the public sector is the main funder of teacher education. The funding of teacher education institutions and specific costs of training trainers are not easy to disaggregate, as budgets are included as civil service employee expenditure funded by the government.

Funding in Egypt for education in general and TVET in particular is mostly based on historical expenditure data, with no links to performance and no consideration of national socio-economic priorities, such as improved teacher quality in order to impact on education at large.

Some recent positive developments include increases in public education and training budgets; efforts to decentralise the management of budgets to the governorate level; and several ministry driven efforts to fund training in partnership with sector federations and in alignment with market needs. Funding for in-service teacher training and short CPD programmes is usually supplemented by international donors engaged in projects on aspects of the TVET system.

In Ghana the TVET teacher education budget is not specified but included in the Ministry of Education's budget on general teacher education and the Ministry of Employment and Labour Relations' budget for the NVTIs.

All South African universities are funded on a programmatic basis. Funding is based on student enrolment and throughput and is paid on a two yearly retrospective basis. Targeted funding for TVET College lecturer education has not yet been finalised by the DHET and currently no additional allocations have been made available. The DHET is apparently awaiting the results of an annual survey on TVET educator qualifications before numeric targets are set for universities to train TVET College lecturers, but DHET noted that it will need a range of funding sources to sustain TVET teacher training and continuous professional development.

The Education, Training and Development Practices (ETDP) SETA within whose ambit all education and training institutions fall, within its Sector Skills Plan 2011-2016 included support to TVET colleges, and the ETDP SETA Annual Report 2013/2014 shows evidence of substantive funding to training of lecturers as assessors and moderators, and for them gaining industry experience and exposure, as well as funding support for development of new qualifications and the funding of a new chair at the Nelson Mandela Metropolitan University. This funding source can continue to be tapped into for support of lecturers obtaining the new prescribed professional

qualifications, as well as support to teacher educator institutions for the development and piloting of new qualifications in the short to medium term.

In Tanzania, operating under the mandate of VETA, funding of VET teacher education is primarily covered through Skills Development Levy (SDL) paid to the Vocational Education and Training Fund. Part of this fund is used to finance VET teacher education and is paid to Morogoro Vocational Teachers Training College (MVTTC). Currently 5.05% of the total budget of the VET fund goes to MVTTC and is used in funding VET Teacher Education. VET teacher education is highly subsidised by the Government of the United Republic of Tanzania through use of SDL. While the actual certificate course unit cost in the country is 2,700,000 Tanzanian Shillings per year (1,100 Euro), including full board and tuition, students pay only 600,000 Tanzanian shillings (250 Euro), for diploma courses, and full board and tuition totalling 270,000 Tanzanian shillings (112 Euro) per annum for the certificate programme.

3.4. Quality assurance of TVET teacher education institutions

Quality assurance systems of TVET teacher education in all countries in this study apply generally to teacher education programmes and career pathing. Where universities are involved in TVET teacher preparation regular university quality assurance processes apply regarding course approvals, examination systems and the like. Additionally, in SA the DHET proposes a collaborative process for designing and quality assuring the new proposed TVET teacher qualifications.

In Cameroon international models are most often used for implementation of the standard quality assurance system. Regarding quality assurance for teacher education, in MINEFOP, the Ministry of Higher Education, the Directorate of Vocational Training (DFOP) manages the quality of training in partnership with the Training General Inspectorate. DFOP is responsible for organising, monitoring and evaluating vocational training. Three sub-directorates assist it to that end.

In Egypt the Professional Academy for Teachers (PAT) is working closely with the MoE and the faculties of education to ensure that teacher education curricula prepare students according to the required teacher standards. Furthermore, PAT is responsible for setting accreditation requirements for teacher education programmes. This requirement forces institutions seeking to offer teacher training to be evaluated and earn certification. Although PAT is ultimately responsible for the quality of the teaching profession including TVET teachers, it has to work with other bodies like the NAQAAE.

As of 2013, anybody involved in the training of teachers (not long term education), including donors and NGOs, also has to be endorsed by PAT. Standards for licensing teacher training centres have been issued, focusing on such aspects as the state of the facilities, the materials used, and the training programmes themselves.

In Ghana, tertiary or higher education institutions have adopted various processes and practices for purposes of quality assurance, such as an external examiner system, programme and course approval procedures, evaluation of teaching and course, and student feedback. The Public Colleges of Education have an external examiner system managed by the University of Cape Coast, whereby, the university manages examinations, sets and moderates examination questions and administers the examinations. There is an award committee that comprises of principals of the Colleges, the director and senior members of the different universities' faculties of education, representatives from Ghana National Association of Teachers (GNAT) and West Africa Examination Council (WAEC). This committee is responsible for issues related to administering of examinations, and presentation of examination results.

In South Africa the Council on Higher Education (CHE) is responsible for the overall quality assurance of higher education in South Africa. The CHE conducts regular quality audits of universities and their programmes. Programmes are generally accredited for a specified period before they are required to be internally reviewed by the university and reports submitted to the quality assurance division of the CHE. The CHE also conducts external audits of qualifications within specific fields for purposes of quality assurance.

For TVET teacher educator institutions, the new policy on professional teaching qualifications for TVET teachers will guide future accreditation of TVET teaching programmes. In the case of a new qualification developed for TVET teaching, a university has to prepare a detailed submission of this qualification for internal university programme processes, including its Senate Academic Planning Committee. Once approved internally the proposed qualification is forwarded to the DHET for approval, as well as the CHE for accreditation. The DHET expects that the development of qualifications will include international benchmarking and collaboration between universities across the country.

3.5. TVET teacher education institutions and international developments

Country policies show evidence of the intention to conform to international standards and international cooperation and support in the process to achieve these aims. Tanzania and South Africa have National Qualifications Frameworks which create the possibility for credit accumulation and transfer, but this has not yet been tested in practice in relation to TVET teacher education. Cameroon has attempted to create a higher education system that can articulate in Western Africa, by its adoption in 2005 of the Licence-Master-Doctorate system.

In Cameroon the system for training of TVET teachers is generally linked to international developments in education. This is demonstrated by the introduction of the Licence-Master-Doctorate system in higher education (ENSET) and in the competency-based learning approach in ENIET. The Licence-Master-Doctorate system was adopted in 2005 to build a Higher Education, Research and Training system in Western Africa, like the Bologna system, in order to facilitate the internationalisation and globalisation of credits education; promoting the mobility of students, teachers, researchers and administrative staff. Since 1996, through its Ministry of Education (MINEDUC), Cameroon signed an agreement over four years with France to lead the Support Programme for the Cameroonian educational system (PASECA). In 2003, the competency-based learning approach was launched.

In Egypt national policy documents refer to the need to comply with international norms and standards in teacher development, however, very few actually articulate how this will be achieved, and the procedures to be put in place at the operational level. Therefore, no evidence of international benchmarking was found, though the processes put into place by PAT and NAQAAE were developed with international practice in mind. The PVTD Staff Training Institute received extended international support from GiZ (Deutsche Gesellschaft für Internationale Zusammenarbeit) between 2002 and 2012, where teachers benefited from German expertise both in Egypt and in Germany. Furthermore, the PVTD recently benefited from a twinning project with the Omnia, the Joint Authority of Education in the Espoo Region – Finland, through funding from the EU. NAQAAE has taken part in a twinning project with Finnish and German expertise.

In Ghana the Ghana National Association of Teachers (GNAT) and the Canadian Teacher's Federation (CTF) have for the past 20 years jointly organised periodic

collaborative in-service workshops for general education teachers in the country. The training is aimed at updating teachers' knowledge and skills in the light of new developments in teaching techniques and educational research, to empower teachers to develop innovations in teaching practices, as well as help weaker teachers to become more effective, but have not targeted TVET teacher development per se. JICA was involved in competency based teaching (CBT) development and piloting in Ghana and TVET teachers were trained on this⁵⁹.

3.6. Teacher education institutions and postgraduate research

Developing the local knowledge base on TVET teaching is a fourth element in the strategy to improve the quality and capacity of TVET teacher education - next to funding, quality assurance and international benchmarking and cooperation. This section looks at the issue of postgraduate study and research in TVET teacher education, particularly in relation to building the knowledge base on TVET teacher education. Findings indicate that postgraduate research specifically related to TVET teacher education is thin and under-funded, with South African developments standing out.

In ENSET and ENIET in Cameroon there is generally a lack of qualified personnel. This requires the managers and more specifically the heads of department to use postgraduate graduates and professionals to give lectures, provide practical trainings and tutorials.

In Egypt, 26 faculties of Education affiliated to the different universities provide post-graduate degrees at Master and PhD level and the four Industrial Education faculties are planning to introduce postgraduate studies. It is not clear how this will directly or indirectly impact on teacher education or the TVET system at large.

In Ghana there has been inadequate funding for research facilities especially equipment to enhance the training of TVET teachers in the training institutes. The over-emphasis on primary education at the expense of other levels of education has removed the indigenous capacity for research and innovation in TVET which is centrally important to link education to future development of the country. Research facilities in the TVET teacher institutes are woefully inadequate, particularly within the Colleges of Education.

In South Africa, with the recent policy emphasis on TVET as an integral part of post-school provision, there has been increased research into TVET, with an increasing number of Masters and Doctoral studies located in TVET settings. A few universities have in the last 5 years established dedicated centres for TVET research and this is likely to increase the number of outputs in that domain, for example the Institute for Post School Studies at University of the Western Cape, which has been involved in TVET research and development since 2002, the Centre for Integrated Post-School Education and Training (CIPSET) at the Nelson Mandela Metropolitan University established in 2012, and the Wits University Centre for Research Education and Labour (REAL) in 2012. In addition, the University of Stellenbosch's Centre for Higher Education and Adult Studies is involved in leadership and management programmes aimed at TVET Colleges, while UKZN has also been engaged in TVET research and TVET lecturer qualifications for some time. The MerSETA in collaboration with Bremen University is involved in a PhD programme for South African TVET scholars in competency based education. It is evident that TVET in South Africa is enjoying

⁵⁹ Japan International Cooperation Agency, see <http://www.jica.go.jp/project/english/ghana/0604633/activities/index.html> (visited on March 24, 2015)

academic scrutiny, and is a rapidly growing field though relatively small compared with other areas of educational research. Several academics have participated in international forums and discussions on vocational teacher education issues⁶⁰.

⁶⁰ See publications by Wedekind, V.; Papier, J.; Akoojee, S. inter alia.

4. INITIAL AND IN-SERVICE TEACHER EDUCATION PROGRAMMES

Key messages

The key messages on TVET Teacher education programmes (initial and in-service) in the five countries under review are shown below.

- Preparation of TVET teachers is largely based on the traditional teacher training programme. General vocational teachers, largely 'core subject' teachers receive the more traditional teacher training programme with a bigger focus on pedagogy, whereas, the category of technical and practical teachers, does not have a structured pedagogy programme. Models of initial teacher education include mostly concurrent or integrated programmes. South Africa and Egypt have consecutive or 'top up' programmes where subject matter knowledge is acquired before pedagogical training is added, while in Ghana a 'top up' programme is targeting current teachers for professional upgrading. There is demand for more flexible entry points into teaching for top graduates or experienced professionals.
- There are little or no statistics pertaining to the enrolment of TVET teacher education students across the countries in the study. Even less evidence is available on student backgrounds, career paths and motivations for enrolling in TVET teacher education programmes. More in-depth research on prospective and current TVET teacher motivations is needed to gain critical insights to ensure reforms in the sector are congruent with the needs of the primary 'target group'.
- Most countries provide some training opportunities for TVET teachers, but also in most countries continuing professional development is ad hoc and refresher training does not take place on a regular basis. In many instances donor organisations provide one-off opportunities for professional TVET teacher development. If in place, early career support and continuing professional development seems largely geared towards teachers in general schooling rather than structured opportunities for TVET teachers.
- Workplace exposure or industry training is not yet a structured part of TVET teacher training, even though countries like Egypt and Tanzania recognise that this is desirable, particularly for technical and practical instructors. There was no evidence of industry engagement in the design of TVET teacher education programmes, while improving the linkages between TVET teacher education and employers could strongly contribute to overcoming the gap between skills supply and demand. In South Africa work integrated learning is built into the new TVET teacher qualifications.

The key messages stated above will be expanded upon in the sections that follow, with regard to more specific information from each of the 5 countries in the study.

4.1. Organisational aspects of TVET teacher education programmes

This section examines initial and in-service TVET teacher education organisation at institutional level and arrangements regarding the content of TVET teacher education curricula. In Cameroon, Egypt and South Africa university Faculties of Education offer formal teacher education programmes that include TVET teachers. In Ghana there are Colleges of Education under the national Ministry of Education and affiliated to universities, and in Tanzania there is a dedicated vocational teacher training college, the MVTTTC for training general vocational teachers.

In Cameroon the three ENSET function as departments within the public university that offer training to trainers from the industrial and commercial TVET. All ENSET are supervised by the Ministry of Higher Education. The ENIET, public or private, are schools of secondary education under the supervision of MINESEC.

In Egypt formal initial education programmes for teachers are mostly organised by faculties linked to universities. Examples mentioned earlier include the faculties of Education and the faculties of Industrial Education. The content of curricula is usually developed at the university level through specialised committees within the university and approved by the Ministry of Higher Education and the Supreme Council of Universities supposedly through coordination with PAT, although it is not clear how this happens.

In addition to these specialised teacher education faculties, the majority of technical teachers and instructors graduate from normal universities or technical schools and colleges with no teacher education provided during studying.

For in-service training, non-formal training institutions such as the PVTD's STI or the Technical Colleges ETCP provide teacher training programmes. These are units or departments within the parent organisation and curricula are developed centrally through specialised committees with limited involvement at centre or institute level. For the majority of TSSs teachers affiliated to the MoE, in-service training in pedagogy could be offered by PAT or PAT approved centres mainly for promotion purposes. Additionally, some TSS teachers are offered in-service training in technical or interpersonal skills at ad-hoc bases through donor-funded projects (who are responsible for the curricula and content development).

In Ghana, as indicated earlier, TVET teacher education is embedded in general teacher training. The Colleges of Education in Ghana are devoted to the training of student-teachers to enable them to acquire the necessary professional and academic competencies for teaching in pre-tertiary institutions, including TVET institutes and non-formal education institutions. A College of Education can decide on the subjects to be taught based on their special relevance to the needs of the educational system of the country and for national development. Colleges of Education are also required to ensure that basic research and action research form amongst others, an integral part of teacher education. The Councils of Colleges of Education have the responsibility for approving the educational programmes developed by their academic boards and prescribing terms and conditions for admissions of persons selected for a course of study organised by the college. The development of academic policies, regulation of courses, development of academic standards, the conduct of examinations and award of diplomas should be undertaken in consultation with an affiliated university institution.

TVET instructors can also get their education via polytechnics. Though, this does not qualify them to work in MoE vocational schools, they can work in many other types of vocational training centres, including non-MoE public ones.

All public universities in South Africa have a large degree of curriculum autonomy but will have to follow the stipulated policy outcomes for new TVET teacher qualifications. These qualifications will be delivered through faculties of Education. Universities can largely decide on content for the curriculum and most attempts at collaboration between universities focus on key outcomes rather than specific curriculum content. The broad outcomes are described in the submissions to DHET and CHE together with assessment methods and bibliographies. The DHET has urged universities to work together on the development of curricula for new qualifications for TVET lecturers and this is likely to result in common curricula which can be used by faculties in their delivery of the qualifications.

In Tanzania currently the MVTTTC runs a certificate programme, the nationally recognised Vocational Teacher Certificate Course (VTCC) established in 1993, which has five modules: Communication Methods; Education Studies; Training Methodology; Practical attachment/field work; and Training Workshop Management. The certificate course is delivered in two modes, namely on-campus and off-campus. At the moment there are fourteen (14) off-campus centres scattered across the country. The MVTTTC

also runs a diploma Programme, the Diploma in Vocational Education and Training (DVoET) established in 2008, which has the following modules: Curriculum studies; Management of vocational training functions; Development studies; Research; and special needs education.

4.2. Key characteristics of the curriculum

Preparation of TVET teachers is largely based on traditional teacher training programmes, where subject matter knowledge and pedagogy are combined in the programme. General or 'core subject' teachers receive a teacher training programme with a bigger focus on pedagogy, whereas the category of technical and practical teachers for instance in Egypt, does not have a structured pedagogy programme. Models of initial teacher education include mostly concurrent or integrated programmes. South Africa and Egypt have consecutive or 'top up' programmes where subject matter knowledge is acquired before pedagogical training is added, while in Ghana the two years 'top up' B.Ed programme is targeting teachers who already hold a basic Diploma in Education for professional upgrading. Tanzania offers an interesting example of flexibility in modes of delivery. There is demand for more flexible entry points into teaching for top graduates or experienced professionals.

In Cameroon training varies between the ENIET and ENSET level, and depends on the various options - technical and industrial sciences and tertiary technologies. In ENIET training curricula generally include 36 hours per week and 4 large sets of disciplines:

- the disciplines of communication: languages, psychology, pedagogy, professional ethics and law, management, sociology, history, geography, law, physical education and sports;
- scientific and mathematical disciplines: general mathematics, applied mathematics, physical sciences and natural sciences;
- the specialised technology disciplines (varying according to the industry: industrial technology or science and technology tertiary);
- ancillary technologies: agro techniques, crafts (basketry, pottery, etc.).

The training includes theoretical courses, work sessions or workshops. In the third year especially, the internships in schools to learn of teaching practice, application and case studies become important. Training is focused on pedagogy: teaching, psychology of the child, adult education, educational psychology, organisational and group facilitation techniques, school legislation, micro-teaching, sociology and philosophy of education. At the end of training, the review includes 4 components:

- the scores on schooling;
- score on the technical record established by the candidate;
- scores of written tests;
- scores of practical pedagogic tests.

In ENSET, the training is similar to that of ENIET with the emphasis also on teaching courses, teaching, psychology of the child, adult education, educational psychology, organisational techniques and group facilitation, school legislation, micro-teaching, sociology and philosophy of education. Practical training is also essential. Practical courses are offered in schools and colleges under the supervision of classroom teachers who are evaluated by a national inspector⁶¹. Since the adoption of the License-Doctorate-Master system in higher education, each level is modularised into

⁶¹ UNESCO, "Données Mondiales de L'éducation. Cameroon," Ecrit (Genève, 2010).

teaching units which need to be obtained separately. This training awards graduates of ENSET the title of pedagogical engineers⁶².

In Egypt initial teachers can undertake a concurrent programme, where subject matter knowledge and pedagogical skills can be acquired simultaneously; or a consecutive training programme, where subject matter knowledge must be acquired first and then, at a later stage, pedagogical skills are learned. All core-subject teachers in Technical Secondary Schools complete an intensive education diploma programme for one full year. TVET student teachers within faculties of education, specialise in languages (English, Arabic), science, mathematics, history, geography, or chemistry. Students divide their study time between the subject/area of specialisation (75%), foreign languages (5%) and pedagogy theory and methods (20%).

For technical and practical teachers and instructors in TSS, Productivity and Vocational Training Department (PVTD) and Technical Colleges the training process is unclear and less structured. These teachers and instructors could receive their initial education from different sources, for example, faculties within university, such as engineering, agriculture, tourism, commerce, or from the four Industrial Education faculties, or they could be graduates of the five-year technical education programmes. There is no evidence to confirm if they are subject to the one-year intensive education diploma programme as for core-subject teachers. Trainers who conduct practical training therefore, hold a range of qualifications and some have had little or no specialist teacher training. Their main qualification is an academic degree, rather than pedagogy.

Stakeholders have emphasised that also Egypt should explore the creation of more flexible entry points into teaching for top graduates or experienced professionals. For the TVET sector some practical steps are still to be taken in partnership with employers – for example to ensure that vocational teachers have a good understanding of modern industry, and to develop workplace training as an integral element of most training programmes. Some stakeholders have indicated that both PAT and NAQAAE's emphases since their establishment have been focused on general education not technical education.

In Ghana the Colleges of Education (CoE) have been running a regular 3-Year Diploma in Basic Education (DBE) programme since 2007. It used to be structured on the "in-in-out" basis. It means students spend the first two years in school to study the prescribed courses, and use the last year to go off campus to practice teaching. Since the 2013/2014 academic year students spend the 1st and 2nd years and the second semester of the 3rd year on campus and use the first semester of the third year for their off-campus teaching practice. The college runs other programmes (sandwich) which are used to train teachers with Certificate "A" for a 2-year period to qualify for the award of a Diploma in Basic Education. Similarly, those with Diploma in Education qualification have been admitted to do a 2-year Sandwich "top-up" programme that will qualify them for the award of a B. Ed. Degree in Basic Education. This gives teachers the opportunity to upgrade themselves, in order to improve upon their professional knowledge and competence. The two universities also run a 4-year programme, for in-service and upgrading on an 'in-in-in-in' basis at UCC (University of Cape Coast) with a 6 week practicum during the last year and an 'in-in-in-out' system at the University of Education Winneba at its campuses.

In South Africa the new policy on TVET teacher qualifications prescribes both 'top up' and integrated full qualifications. In the new policy a full 360 credit Diploma: TVET teaching, or a 480 credit Bachelor of Education provides for new undergraduate entrants into TVET teaching, whilst a 'top-up' or capping qualification, the 120 credit

⁶² Yves Bertrand Feudjio Djouda, "L'adoption Du «Système LMD» Par Les Universités Du Cameroon : Enjeux, Contraintes et Perspectives," JHEA/RESA 7, no. 1&2 (2009): 141–57

Advanced Diploma in Technical and Vocational Teaching (ADTVT), could be offered to university graduates or diplomates who decide to enter TVET teaching. Underqualified TVET lecturers currently in the system will need upgrading in terms of the new qualifications and Recognition of Prior Learning criteria are suggested in the policy for each new qualification. The policy contains a list of basic competences for professionally qualified TVET lecturers, as well as for each qualification the required knowledge mix, admissions requirements and so on.

Practical training, referred to as Work Integrated Learning (WIL), refers to structured WIL in both education/teaching and workplace/industry contexts, which will ensure the TVET teacher is exposed to the industry that his or her students will train towards. The new policy on TVET teaching qualifications establishes TVET teachers as being distinct from general schooling or other tertiary teachers, and indicates an intention to build a cadre of teachers with a unique TVET identity.

In broad terms the structure of ITE TVET qualifications includes the following components:

- Disciplinary learning – a basic study of education as a discipline and its foundations, and the study of specific or specialised subject matter relevant to TVET fields;
- Pedagogical learning – principles, practices and methods of teaching in post-school contexts – both for general pedagogical knowledge as well as specialised pedagogical knowledge which applies to teaching a specific TVET subject or field;
- Practical/WIL – for workplace experience/exposure and for practice teaching in a college;
- Situational Learning – about the TVET context, economic environment, life skills (HIV/AIDS, Unemployment, Poverty etc.), the diverse challenges faced by TVET learners;
- Fundamental learning - ICT; the ability to converse in an African language; academic literacies.

Each university will develop curricula from outcomes that have been developed under each of the above named areas.

In Tanzania the key characteristics of the ITE curriculum at MVTTC are based on the purpose for which it was established. The curriculum in use is flexible, modularised and designed to cater for the following ITE needs:

- A continuous 1 year long course for those who are able to attend the long continuous course at the MVTTC in the form of in-campus structure
- A continuous 1 and half years block release off-campus long course for those who are not able to leave their work stations for various reasons but would like to acquire pedagogical skills
- Short courses based on the long course modules for those who are not able to commit a long duration in the form of in-campus or off-campus, but want to acquire pedagogic skills

Due to limited practical workshops, the current curriculum's focus is however, mainly on pedagogy, in spite of the desire for a mixed curriculum where there is a combination of work experience and pedagogy. The curriculum is designed in such a way that all teacher trainees do micro teaching as part of gaining pedagogical skills.

4.3. Recruitment and selection for initial teacher education

Criteria for access to initial teacher education in TVET in the countries in the study are varied and range from the requirement of a school-leaving certificate to that of requiring vocational qualifications at least a level above that which would be taught. In Cameroon a national competition by the Ministry awards entry to ITE, whereas, in Ghana and Tanzania a period of work experience is required in addition to formal

qualifications. In Egypt, practical teachers are not required to have teaching qualifications and may hold only disciplinary specialist qualifications. In South Africa the new policy sets minimum criteria for each of the qualifications described in the policy.

In Cameroon access to ENIET, whether public or private, takes place through a competition test administered by MINESEC. Access in ENSET can be obtained through a competition conducted by the Ministry of Higher Education. However, in public ENIET, there are also candidates, Cameroonian and foreign, who are admitted under a special title, designated as auditors.

In Egypt, all applicants to teacher education programmes are selected for admission based on strong performance in secondary school, results of the Thanawiya Amma, Egypt's compulsory secondary school leaving certificate, and an interview assessment. The Central Bureau for Admission to University allocates students to the faculties of education for admission and an internal faculty-based entrance examination tests the suitability for becoming a future teacher. However, all candidates achieve a passing grade on this test and gain admission. Practical teachers in secondary technical schools are not required to attend specialised initial teacher education programmes, so they can apply to any faculty at university depending on their grade at secondary level, and can end up becoming teachers.

Gender balance in the Egyptian TVET workforce is biased towards men. In general, women represent about one third of TVET teachers and instructors though this varies between vocational sectors, such as ready-made garments, commerce and tourism. There is little encouragement for experienced professionals from the world of work to train as TVET teachers. Vocational training institutes such as the PVTD and post-secondary technical education colleges are not much different in terms of recruitment and selection for their teachers and instructors.

In Ghana, initial teacher education for MoE TVET teachers starts from the Colleges of Education (COE). The entry requirement to undertake a three year Diploma in Basic Education is a Senior Secondary Certificate comprising Credit in five subjects of which there are three core subjects and two elective subjects. In addition to the general requirement, entry into any of the seven designated schools for TVET training is credit passes in the English language, core mathematics, integrated science and two elective subjects in the mathematics, science and technical education areas of the Senior High School (SHS) programme. When applicants are admitted, the applicant has to seek sponsorship from a District Director of Education. Failure to obtain such sponsorship normally leads to the withdrawal from the college. A TVET applicant has to show evidence of three years post-qualification experience, in addition to any of the following:

- vocational area qualification which is at least one level above the level the applicant wishes to operate; and a qualification in pedagogy/facilitation skills; or
- a training qualification; or
- a minimum of one year industrial experience in the trade area.

In South Africa the new policy on TVET teacher qualifications sets out minimum criteria for entry into each particular qualification. In addition, universities are able to set their own entry criteria as well. Some examples of current practice are as follows: University requirements generally include a matric/school leaving qualification with entry into Diploma or Bachelors programmes. Teacher applicants require at least 2 teaching subjects at a second year level but this will change for TVET teacher applicants in the new policy. For currently offered TVET teaching qualifications which cater largely for in-service college lecturers and which will be phased out when the new programmes are implemented, candidates have to be teaching in a TVET college and hold an appropriate post-secondary vocational qualification.

In addition to holding an NVA (National Vocational Award), or NTA (National Technical Award) plus work experience of three years in Tanzania, there are no prescribed entrance examinations. The key element is a desire to enrol for one of the prescribed courses as a condition for employment in a VTC.

4.4. TVET teacher education student population

There are little or no statistics pertaining to the enrolment of TVET teacher education students across the countries in the study, mostly for the reason that it was difficult to find disaggregated information on TVET student teachers distinct from teachers in general schooling. Only Ghana was able to report an enrolment figure for students taking technical subjects within the teacher education cohort.

Reliable data on student retention, drop-out rates and graduation rates in (TVET) teacher education are lacking in all countries. Anecdotal evidence provided rough indications of low (5 to 10%) drop-out over three to four years of teacher training.

Country reports were limited in the kind of evidence that could be relied upon to describe student backgrounds, career paths and motivations for enrolling in TVET teacher education programmes. From the country reports it would appear that TVET teaching is not a first-choice career due to unattractive remuneration. Some positive motivations include teaching as a socially acceptable career, secure employment, relatively low entry requirement and some benefits, such as vacation periods and shorter working hours. Albeit limited, altruistic motivations included satisfaction in seeing people develop and acquire skills. More in-depth research on prospective and current TVET teacher motivations is needed to gain critical insights to ensure reforms in the sector are congruent with the needs of the primary 'target group'⁶³.

In Egypt, the profile of teacher education students varies. Core subject and theory teachers within TVET mostly enter teacher education as graduates of general secondary school with relatively high grades and who have decided to become teachers. Practical instructors could be graduates of technical secondary schools or general secondary schools. Most teachers within public schools (almost all TVET schools) come from modest socio-economic backgrounds. Most students enter university at the age of 18 and in terms of gender distribution more females enter education faculties while the majority of students within the four industrial education faculties are male.

In South Africa TVET candidates in university teacher education offerings have generally been mature students undertaking part-time studies, and are in-service college lecturers. Generally, in South Africa college teaching has not been a career track of choice, in that there is no pathway directly into TVET college teaching. Present college employees have entered college teaching after a few years in high school teaching or after several years in the workplace which is higher paying than a college. More recently and especially in areas where suitably qualified staff are hard to find, colleges have employed their N6 graduates as part-time teachers – these would be younger students with little or no real work experience.

In Tanzania, the majority of entrants into VET teacher education are experienced skilled workers with regular income. Their typical age profile is above 25 given the attainment of level III qualifications and three years of work experience; and like most of the entrants into VET, there are about 30% females and 70% males. The Diploma course entrants share similar characteristics as those at certificate level but are of

⁶³ See for example Chris Day and Qing Gu (2010) *The New Lives of Teachers* and Buckler, Alison (2015) *Quality Teaching and the Capability Approach: Evaluating the Work and Governance of Women Teachers in Rural Sub-Saharan Africa*. Routledge Research in Education, 140. Abingdon and New York: Routledge.

slightly more advanced age given the fact that in most cases these students have already taken the certificate course.

4.5. Early career support and continuous professional development

The status and attractiveness of the TVET lecturer profession does not only depend on the primary labour conditions (wages) and other benefits. It can also depend on whether there are sufficient training opportunities so that TVET teachers can further develop themselves and enhance the quality of their work, or learn new skills that provide better career prospects. In-service training opportunities can also encourage quality lecturers not to leave the profession. Most countries provide some training opportunities for TVET teachers, but in most countries continuing professional development is ad hoc and refresher training does not take place on a regular basis. In many instances donor organisations provide one-off opportunities for professional TVET teacher development. If in place, early career support and continuing professional development seems largely geared towards teachers in general schooling rather than structured opportunities for TVET teachers. In Cameroon and Egypt there is some structured mentoring support for beginning teachers.

In Cameroon, early career support under MINESEC is undertaken through supervision of young teachers in-service by educational colleagues of their discipline, the first level of the pedagogical supervision chain. Above them are the educational advisors (at departmental level), the regional inspectors (regional) and the national inspectors (at national level). In MINESUP, the newly recruited Assistant is overseen by the Course Manager, the Senior Lecturer by the Lecturer, and the Lecturer by the Professor of the discipline. In all ministries, the quality of continuous training is ensured by inspections. When the need arises such inspections may initiate innovations and pedagogical shifts, also by sometimes providing training grants abroad. Training of trainers has improved through symposia and national and international seminars and through other personal development. Internships in companies have been organised by MINESEC since 2005.

In Egypt there are limited and ad-hoc in-service training opportunities available for new teachers within the different technical and vocational education and training institutes in Egypt. Under the newly implemented Assistant Teachers' Program (2009), incoming teachers are required to gain practical professional experience. Once implemented, teachers should have around 2 years of practical professional experience as part of their training. Though not extensively implemented for TVET teachers, especially those teaching technical subjects, the Assistant Teachers' Program comprises a strong mentoring component for all teachers. After completing an induction programme for 3 to 6 months, beginning teachers take part in a mentoring programme lasting 1 to 2 years. The senior mentor is required to continuously assess and provide feedback to the beginning teacher over this period. Though specific data on TVET teachers are hard to find, it appears that TVET teachers receive less support in terms of continuing professional development than other teachers, and this is mostly implemented through donor-funded projects. There is a relatively low level of support offered to TVET teachers. For the PVTD, there is a dedicated Staff Training Institute (STI) that organises, funds and regulates structured initial induction programmes for newly appointed instructors as well as continuous professional development programmes after three years of service. The Middle Technical Institutes of the Technical Colleges, affiliated to the Ministry of Higher Education have a dedicated project that funds and organises continuous development programmes but have limited early career support programmes.

In Ghana, the Ghana Education Service of the Ministry of Education in 2012 developed a policy framework document for the development and management of pre-tertiary teacher professionals to guide and direct early career support and continuous professional development of teachers for pre-tertiary education including TVET in the country. Section 10 of the Education Act of 2008 stipulates that the NTC (National Teaching Council) shall be responsible for establishing (a) the framework for

employing teachers, (b) in-service education and training (INSET) and (c) the periodic review of professional and ethical standards for teaching.

The so-called Pre-Tertiary Professional Development and Management (PTPDM) framework aims to prepare teachers and enable them to function effectively in the basic and second cycle schools in Ghana and to develop and nurture them to become reflective and proficient practitioners capable of providing quality education for all. The PTPDM has introduced the signing of contracts stating teachers' duties and responsibilities at the Beginning Teacher stage. It also states clearly that the District education budgets shall include a budget line for training INSET facilitators, managing INSET activities, as well as sponsoring teachers to participate in INSET programmes. The Ministry of Education and GES organises induction and initial INSET programmes within the first year for Beginning Teachers.

For teachers working in in public TVET under other ministries, such as the ICCES under the responsibility of the Ministry of Employment and Labour Relations, there is virtually no provision for CPD⁶⁴.

In South Africa, training opportunities for TVET College lecturers are currently conducted on an ad hoc basis. This is in part due to changing curriculum and the absence of a coherent continuing professional development policy to date. Early Career Support and Continuous Professional Development are largely initiated by the colleges itself. However, the DHET has undertaken development workshops in respect of changes in curriculum and training for assessment. TVET college management provides opportunities for TVET lecturers to engage in CPD in areas identified in performance management evaluations, but these are not necessarily credit bearing courses. Colleges have also arranged regular workshops based on lecturer needs for training in ICT, fundamentals teaching, product specific training for industry and the like.

Specific budgets for continuous professional development (CPD) have not been provided and there are no set targets for CPD points. Debates are ongoing as to whether there is a need for a dedicated professional body to be established for this purpose. At this stage, TVET College lecturers are registered with the South African Council of Educators (SACE), a professional body primarily concerned with registration of formal school teachers. The Skills Development Act however, does require that colleges budget 1% of payroll for staff development. This staff development budget is administered by the ETPD SETA which has established a TVET college chamber. In practice, timetabling staff development appears to be a major challenge, as there are no resources for staff replacement to enable teaching to continue whilst others are in training. This situation has resulted in lecturers being involved in training during their holiday time and after hours. A few provincial education departments have established College Curriculum Committees that assist TVET lecturers to develop communities of practice in specific curriculum areas but this is not a mandated practice and depends on personal initiatives.

Workplace Integrated Learning

A noteworthy CPD intervention has been conducted by the Swiss-South Africa Cooperation Initiative (SSACI), a non-profit company that uses donor funding. Since 2012, 420 TVET College lecturers in 28 TVET Colleges have undergone Workplace Based Exposure (WBE) orientation, of whom 150 have spent time in industry. However, less than 1,000 out of 9,000 TVET College lecturers have had exposure to WBE as a form of CPD, and there is some lecturer resistance to spending additional hours on CPD. Currently only self-motivated lecturers engage in WBE during their holidays.

⁶⁴ See Appendix B to Darvas, Peter; Palmer, Robert (2014). Demand and Supply of Skills in Ghana: How Can Training Programs Improve Employment?. Washington, DC: World Bank

In Tanzania, at VET level the responsibility of ECS and CPD is basically the responsibility of individual VTCs to ensure that their staff obtain the necessary qualifications to meet registration and accreditation standards. In particular, newly recruited staff lack either the pedagogical or practical working skills to enable them to meet the performance standards of a given job. The VETA zonal offices organise ECS and CPDs as part of regular support to strengthen the delivery capacity of the VTCs and to enhance the quality of VET programmes. At MVTTTC ECS and CPD are offered under the sponsorship of VETA through short programmes. Most significant is the Skills Upgrading Programme (SUP) designed by the college to enable the VET providers to upgrade staff or update their practical skills.

4.6. Aligning teacher education to professional and industry needs

Quality, accessibility and relevance are main quality aspects of any educational system. In this final paragraph two feedback loops for improving the relevance of the TVET teacher education are assessed. In most of the countries under study, strong formal links have been established between teacher education, TVET school needs and the profession. Hardly any evidence has been found on collaboration between TVET teacher education and the industries for which TVET teachers will be preparing their TVET students to enter, while improving the linkages between TVET teacher education and employers could strongly contribute to overcoming the gap between skills supply and demand.

In Cameroon programmes are not always adapted to professional needs. Even when consultation platforms are recommended, much seems to be unilaterally decided by the teacher education institutes. With the adoption of the License-Doctorate-Master system in higher education, some companies are communicating their needs to the trainers, stressing the skills they desire, however, this step is too recent to evaluate impact upon training.

In Egypt, although PAT is responsible for setting requirements to enter teaching and for initial education programmes for teachers, the focus has been on academic teachers not TVET teachers. Therefore, there is a lack of alignment with the industry and employers at the initial education stage. Furthermore, since the faculties of education are under the supervision of the Ministry of Higher Education, limited coordination occurs between the Ministry of Education teachers and the universities when setting curricula for potential teachers.

One of the main challenges of TVET acknowledged by stakeholders in Egypt is the disconnect or lack of linkages between TVET provision and employers, creating a large gap between skills supply and demand. Learners studying to become TVET teachers are rarely exposed to work-based training or even communication with industry or employers. Furthermore, after becoming teachers they are rarely involved in developing curricula for initial education of teachers. Even within the dual system where TVET students move between the school and the enterprise, TVET teachers are not permitted to supervise students at the workplace as this supervision is given to non-teaching employees within specialised units of local investors associations called Regional Units for Dual System (RUDS).

Some donor-funded projects that provide training for in-service teachers develop training programmes according to the needs of specific sectors and employers and limited projects provide practical work-based training within industry for teachers. However, these interventions are ad-hoc and unstructured, and are not open to all teachers.

In Ghana, the MoE Professional Development and Management framework has made room for aligning the TVET teacher post-initial education to professional needs through in-service education and training at three levels (see previous paragraph). The aims

are however, not towards improving the teachers' knowledge of industry developments or upgrading of work-floor experience.

The Council for TVET (COTVET) has five standing technical committees, all of which are led by industrialists and other relevant industry representation, which role should be to input into TVET curricula for training TVET students. However, this input is not at the level of TVET teacher education.

In South Africa, college managements and industry have at various points in the development of the new TVET teacher qualification been consulted as to the outcomes desired, but universities have not particularly sought such consultation in the design of the new qualifications nor is there a specific forum for such feedback. Universities who are in the process of designing new qualifications have broadened their consultation with SETAs, colleges and other entities engaged in college interventions e.g. SSACI. Accredited university curricula have to meet university quality assurance requirements, however, it is envisaged that once programmes are implemented there will be an opportunity to improve, review, and include feedback from its users.

In Tanzania use has been made of the DACUM (Developing A CURriculum) chart approach for teacher education curriculum development at both VET and TET level and which has involved the employers. At TET level for example, the teacher education curriculum was developed with the support of NUFFIC (The Netherlands) which involved TVET institutes/employers. However, this curriculum, though developed, has not yet been implemented.

5. COMMON CHALLENGES AND INSPIRING PRACTICES

5.1. Introduction

The previous chapters highlighted the various experiences and reforms in TVET teacher education across five African countries. The analytical framework assisted in distinguishing the impact of the design of national TVET systems and the state of the TVET teacher profession (Chapter 2), the system of TVET teacher education (Chapter 3) and actual TVET teacher education programmes (Chapter 4). These empirical chapters showed the specific impacts on TVET teacher education for each of the five countries under study. Based on the analyses, a number of transversal challenges which were found to have impacts beyond national contexts, are discussed further in this chapter, which is structured along three such transversal challenges, namely:

- challenges arising from the positioning of TVET teacher education in the educational sector;
- challenges that concern the quality of TVET teacher education;
- challenges regarding the relevance of teacher education curricula for TVET teachers.

For each of these transversal challenges, the core issues are summarised, after which 'policy pointers' based on TVET experiences in the EU are set out. These policy pointers are illustrated by successful or 'promising' practices in various EU Member States which suggest possible practical approaches to the challenge identified. While these practices offer interesting insights into addressing European problems, the study does not offer them as a panacea for the challenges encountered in sub-Saharan Africa and Egypt. National TVET systems are complex, and are embedded in specific historical, political, economic, social and cultural contexts, therefore, any efforts to improve TVET teacher education have to be grounded in and tailored to the specific context. The promising practices identified in this chapter are merely examples of how other systems have overcome similar challenges.

5.2. Positioning TVET teacher education in the education sector

This study highlighted the difficulties of positioning TVET teacher education, and TVET more broadly, within the national education sector. Across the countries under study, we found degrees of **fragmentation of governance structures**, which overall impede effective policymaking in the field of teacher education for the TVET sector. The effects of this fragmentation on the positioning of TVET teacher education is explored in more detail in paragraph 5.2.1. Many countries experience a vicious circle of **negative perceptions** of TVET that contribute to a negative image of (prospective) TVET teachers. As a result, teacher education programmes do not reach sufficiently qualified students to provide sufficient well-trained TVET teaching professionals, as detailed in 5.2.2.

5.2.1. Challenge: Fragmented governance structures

The education of TVET teachers in Tanzania, Egypt, Ghana, and Cameroon is severely impacted due to fragmented governance structures. In terms of governance, supervision and coordination of TVET policies various institutions are involved, which complicates decision making and obscures responsibilities. Without exception, multiple ministries are involved in TVET policymaking, each with different responsibilities and obligations.

Complex governance structures and overlapping legal responsibilities are prone to political conflicts and contradicting policy directions. Despite the various attempts in each of the countries under study to institute a central authority centralising the responsibility over TVET policies, this authority lacks the power to set out a unified strategy. Either it is too recently established to be able to lead the variety of other

stakeholders in the field, or, more commonly, because of political compromises, this authority was established based on overlapping and/or contradicting mandates with existing stakeholders. The lack of clear policy ownership and of a commonly held vision by the stakeholders in the government and in the field remains a major challenge in positioning the education of TVET teachers centrally in the national education system.

The impact of these fragmented structures can for instance be seen in the overall lack of unified and standardised qualifications and assessments of teachers. In each of the possible pathways to become a TVET teacher (after building professional experience in the sector, or arriving fresh at the teacher education programme) different qualifications and requirements apply. In Ghana, the fragmented governance system for TVET limits individuals in choosing a teaching career in line with their interests, talents and capabilities. In South Africa frequent policy changes in TVET have contributed to high levels of stress amongst TVET teachers. In Egypt, TVET teacher education is characterised by substantial governmental involvement, which as a result, contributes to regular sudden policy changes. The result is that TVET teachers feel their autonomy in the classroom is reduced, and this loss of autonomy experienced by practising or prospective TVET teachers in their profession is an important explanation for the relatively marginal position of TVET teacher education in the wider national education sector.

5.2.2. Challenge: Negative image of TVET teachers

A major challenge common to the various countries in this study (and many other countries) is a prevailing negative perception of TVET teachers in relation to their colleagues in other education sectors. In Tanzania, the association of TVET with education for under-performers has a negative effect on enrolment figures. In South-Africa, TVET still struggles with the notion that it is an option for drop-outs from academic pathways, rather than a valuable educational route into employment. These negative connotations are carried over to the body of TVET teachers with the result that relatively small numbers of graduates seek a career as a TVET teacher. In some countries teaching in the TVET sector is viewed as a profession for individuals who were not able to secure a job in the business sector. This does not only negatively impact on the number of students aiming to become TVET teachers, but equally finds its way to the policy level, in turn contributing to a vicious circle that affects the quality of TVET offered, and even the performance of TVET students.

5.2.3. Exploring avenues to position TVET teacher education more prominently in the education sector.

In order to better position TVET teacher education in the national education system, a number of policy pointers have been defined, based on recent policy approaches by the European Union, and its individual Member States. The policy pointers here are part of a larger overall approach, and the two concrete practices presented below combine various elements of that.

The Netherlands – Specific trajectories for becoming a vocational teacher

Description: To better facilitate the influx of qualified professionals into TVET education, the Netherlands have taken a number of policy measures to harmonise and improve the trajectories for industry professionals to become TVET teachers. In 2012, the Minister of Education required TVET institutions to develop a quality framework and courses supporting the entry of industry professionals into TVET colleges. This has a positive effect on the quality and number of industry professionals choosing a career as TVET teachers.

Context: Before this initiative was introduced, TVET schools in the Netherlands were in a position to evaluate industry professionals themselves. Even without pedagogical qualifications, the professional could apply to TVET institutions, which were charged with evaluating the adequacy of competences for teaching. Part of the evaluation was that the candidate had to have a professional proficiency at higher education level (ISCED 5). Without the certificate to prove this, the candidate could provide proof of at least 3 years professional experience in a function that requires a similar education level. Once hired by the TVET school, industry professionals can start teaching right away, on the condition that he / she obtain a pedagogical certificate within 2 years. Over the last years since 2010, an increasing number of teachers started working through these procedures, from 15% in 2010 to 25% in 2012. Various inspection reports show that considerable difference in quality can be observed between institutions. With this procedure gaining popularity the Ministry of Education requested in 2012 that TVET providers establish a quality framework to ensure the teaching quality of industry professionals.

Approach: In 2013, TVET schools jointly proposed a quality framework for the 'pedagogical-didactical certificate', in which procedures are outlined for how to assess the adequacy of candidates, how to organise internal supervision at the institution, and how the cooperation with teacher education is designed. The education programme offered to industry professionals contains 60 ECTS, and 50% of the education needs to take place within the TVET college. The pedagogical-didactical certificate will be accredited by the national accreditation organisation as higher education. It is underlined in the quality framework that even though this certificate is sufficient for teaching in TVET institutions, it does not equate to a full teacher education qualification. Upon obtaining the certificate, TVET schools can hire the candidate full time.

Naturally, to make this initiative work in different contexts it is assumed that at least some qualified industry professionals are interested in making the choice to pursue a career as TVET teacher. In this sense, this initiative presupposes a minimum level of attractiveness of the occupation. At the same time, it shows that industry professionals can be attracted to the TVET sector by eliminating too strict entry requirements. Overly rigid requirements for entry into the teaching career may discourage professionals from making the switch, while a minimal level of specific teacher education is necessary to ensure the quality of TVET education. In particular, the fact that they can start teaching right away, and then combine their theoretical preparation with actual teaching, contributes to the motivation of aspiring teachers. The importance of taking the motivation of (prospective) TVET teachers into account cannot be stressed enough. This is a crucial element for better positioning TVET teaching in the wider national education system.

The support given by TVET schools to seasoned professionals entering the teaching profession is another important element, though also related to motivation. This support can be given in the form of learning facilities and supervision throughout the induction phase. It is relevant to note that in the Netherlands TVET schools have considerable autonomy to recruit industry professionals themselves, and these institutions also decide on whether the industry professional is competent for teaching (and starting the educational trajectory). Although, it is not excluded that in a more

centralised system the initiative may also work, the autonomy of TVET providers in the Dutch context facilitates the easy start of a teaching career. A more centralised procedure may limit the possibilities to start teaching right away.

Another approach, found in Sweden, also attempted to position the TVET sector more centrally in the overall national attempt to develop the skills of the national workforce.

Sweden – Focusing on in-company trainers

Description / aim: This approach contributes to quality VET by ensuring continuous training for in-company trainers. While in VET institutions the CPD may be organised or even mandatory by law, such rules are often much less clear for in-company trainers. The focus on this specific group is in line with the policy attention for this group in VET, prioritised by CEDEFOP and the European Commission.

Context: Work-based learning is an important element in the Swedish VET system. Although, the exact proportion of work-based learning varies considerably on the learning pathway, all secondary education and adult programmes contain some part of work-based learning. Because of this importance, Sweden has increasingly focused policy attention on raising the level of in-company trainers.

Approach: The training of these in company trainers is made possible by public funds and includes the equivalent of two days of education. To deal with the specific nature of the group of trainers that do not work in education institutions, a specific web-based training was developed. Through such on-distance learning, trainers are given the flexibility to combine the training with their responsibilities within the company. The web-based training also allowed trainers to share experiences with other trainers through the means of a user forum. The training is provided in modular format and may be followed online in a flexible way whenever and wherever it suits the trainer. Upon completion, a certificate may be printed by the trainer as proof of completing the training. Companies are given incentives to participate in this scheme, as they receive additional subsidy for offering a workplace to a student, if the appointed supervisor has participated in a formally approved training programme such as the one discussed here.

The focus on work-based learning and in-company trainers rather than on in-school TVET teachers is illustrative of the broader approach in the EU over the last decade. CEDEFOP has also focused primarily on sharing European experiences in this respect. While funding is an important condition for broadening the scope of TVET policies to in-company trainers, this practice teaches us the relevance of continuing development of (pedagogical) skills of in-company trainers. Since a crucial element of TVET education is practical knowledge, it is critical that the responsible trainer or teacher has the necessary pedagogical competences to educate students. For this reason, policymakers position the TVET sector as a relevant partner for in-company training. While companies can also provide various in-company skills without the involvement of the education sector, a central position for TVET can ensure that such skills are not limited to one company, and thereby, prepare students for the broader labour market.

Flexibility in the design of additional courses for in-company trainers is an important element for success. Numerous studies and European peer learning activities have shown the importance of such flexibility⁶⁵. If the training requirements are too extensive it may reduce the attractiveness for companies to take responsibility for the recruitment and training of trainers, while also reducing motivation of possible

⁶⁵ See for instance Danish Technological Institute (2007) VET Partnership between Schools and Companies – the Role of Teachers and Trainers, at http://www.atee1.org/uploads/EUpolicies/pla_partnerships_vet_schools_companies.pdf (visited on May 21, 2015)

trainers. To further reduce limitations on trainers, various stakeholders repeatedly point out that courses should be provided free-of-charge to trainers⁶⁶.

Another success of this strategy is the positive contribution of training to the image of in-company trainers. Additional training certificates/qualifications have a positive effect on the trainer's labour market position. If companies are directly incentivised to upskill trainers on their staff through subsidies, it becomes increasingly attractive for interested professionals to take up (some) teaching as part of their job. Such training may encourage enthusiasm for the profession of TVET teacher, and thus help to reduce the shortage.

5.2.4. Policy pointers towards better positioning of the TVET sector

Based on the above and the various European practices found, we identify a number of broad policy pointers, which summarise the key findings of this section:

- **Improve the organisation and governance of TVET lecturer education.** Fragmented governance structures do not contribute to the development of a national TVET strategy. A specific focus on (an element of) TVET policy can serve as a mobilising factor that brings together various stakeholders.
- **Provide clear but flexible pathways for becoming a TVET lecturer and realign the career ladder** and related salary increase criteria in a way that rewards staff for gaining industry experience or new skills, and not just for gaining higher academic qualifications. This can serve to improve the status of TVET teachers, and includes initial TE for professionals who want to become teachers as well as educational trajectories for future lecturers coming from industry. This incorporates the crucial element of taking the motivation of individual teachers into account.
- **Offer progression routes within the teaching profession.** This entails making the TVET teaching profession attractive, providing opportunities for ongoing developing for instance in curriculum design or management. Incentives such as a stable employment status combined with incentives to continuously develop the lecturer would enhance the attractiveness of the profession.

5.3. Ensuring the quality of TVET teacher education

The previous chapters showed limitations in various countries in raising the quality of TVET teacher education. A limiting factor is that the body of teacher instructors is often relatively low-skilled or possesses **outdated skills**. Another problem that pertains particularly to the sub-Saharan African countries is the **overall lack of resources** assigned to TVET teacher education. Due to the limited own resources, donors have played a relatively large role in designing teacher education programmes, which creates problems for the sustainability of teacher education programmes.

5.3.1. Challenge: Outdated teacher education skills

The labour market relevance of TVET is influenced to a large extent by the relevant training received by its teachers. Our study in five African countries demonstrates that in many instances the curricula for prospective TVET teachers are inadequate, and often contain outdated technologies. In Cameroon, Ghana and Egypt, it is reported that prospective TVET teachers interact only to a very limited extent with industry stakeholders. As already discussed earlier herein, teacher training institutes are not able to combine pedagogical training with practical training in relevant and recent

⁶⁶ See for instance ETUI (2015), Improving competences of VET teachers and trainers, at http://www.csee-etu.org/images/AGENDAS/2015_Seminar_background_document.pdf (visited on July 23, 2015)

technologies, as would be required by some industries in the labour market. However, South Africa's new policy on professional qualifications for TVET teachers builds Work Integrated Learning into all initial TVET teacher qualifications, as well as engagement with the industry, in an attempt to strengthen labour market relevance.

The weak linkages of TVET with the labour market in a number of countries is exemplified in the training of the current TVET workforce. To illustrate, in Egypt only 35% of TVET teachers has received pedagogical training, while only 50% received advanced practical training in their line of work. In South Africa, this challenge has been recognised by policymakers and is taken serious with the move away from 'chalk and talk' towards modernising the skills of the workforce into applied practical technological knowledge. In Cameroon the necessity to adapt teaching methods to socio-economic realities is also emphasised.

Regarding continued professional development, the study found limited provision for continuous professional development, which cannot ensure the updating and upgrading of TVET teacher skills. In Egypt for instance, continued professional development for TVET teachers is insufficiently offered, and where provided it is relatively ad hoc and does not follow transparent criteria. Generally, the TVET teacher workforce needs systematic updating of necessary skills connected to the actual needs of the labour market.

5.3.2. Challenge: The lack of resources and dependence on donors

A crucial element that impacts the quality of every TVET system is the allocation of resources. Considerable differences exist between the countries under study in the allocation of funds. In South Africa for instance, a substantial growth in public investment in the TVET sector can be observed over the last 10 years. In other African countries the allocation of sufficient funds has been more problematic. This irregular inflow of resources limits the possibilities for development, particularly creating strain on human resources for the sector. In various contexts, the investment in TVET is unstable and limits long-term growth of the sector. A specific challenge in sub-Saharan African countries arises due to the relatively large share of donor driven investments in the (technical) vocational education sector. Whereas, this support is important for the development of TVET in these countries, there are disadvantages. In Tanzania for instance, the study shows how the TVET sector was impacted by relatively sudden changes in policy priorities from foreign donors. A donor coordination group on TVET, modelled on the approach taken by donors in higher education in Africa, might increase coherence and effectiveness of current support programs⁶⁷.

The lack of funding has direct implications for TVET teachers who face dealing with limited resources on a daily basis. Secondly, the limited resources have implications for TVET teacher education. In all countries under study, a dearth of teacher training facilities was reported. In Tanzania one TVET teacher training college exists for the entire country.

5.3.3. Developing sustainable quality TVET teacher education

This section lists a number of practices found in the EU whereby, the quality of TVET teacher education was sustainably developed. Investment in African TVET is needed, and if done through the support of donors, it is recommended that due attention is paid to consistent programming. The challenge of allocating adequate resources to the TVET sector is a crucial one, which did not find a ready resolution in European

⁶⁷ As a follow up to the Paris declaration and the Accra Agenda on aid effectiveness a donor coordination group on higher education, especially in Africa, was set up. For TVET, such coordination is currently absent.

practices. EU practice was more helpful in providing examples for mitigating the challenge of out-dated skills of TVET teachers.

With regards to sustainable improvements to the skills of TVET teachers, a recent reform of initial teacher education for TVET teachers in the United Kingdom is presented.

England (UK), Improving the quality of initial teacher education

Description: In England, a reform was introduced in 2007 to Initial teacher education in the Further Education (FE – continuing vocational education) sector. This reform introduced new professional standards for FE teachers and trainers and formalised three qualifications for teachers working in the FE sector. Additionally, it regulated the induction of industry professionals by setting up a professional process to achieve certification. Through this process, teachers are required to demonstrate their ability to use effectively the skills and knowledge acquired. The 2007 reforms were widely considered by the sector as beneficial to the professionalisation of teachers in FE, and as contributing to the quality of education.

Approach: Despite earlier reforms, an inspection report in 2003 highlighted considerable weaknesses in relation to the initial training of further education teachers, for instance in the fields of literacy, numeracy, and ICT knowledge. In response the government introduced a white paper addressing these challenges, requiring all teachers to be registered with the “Institute for Learning” (association for VET teachers), and to maintain their licence to teach by means of on-going professional development. A more recent reform revoked the compulsory registration with the Institute for Learning in 2012. However, the minimum qualification requirements remained in force. A white paper was developed in a 2007 Regulation that introduced new requirements for teachers. The main difference with the previous system is that qualification requirements for teachers are currently based on the breadth and type of teaching responsibilities, instead of the numbers of hours of teaching as before.

Even though a more recent reform in England revoked some elements of the 2007 reform, an important lesson can be learned from the introduction of minimum qualification requirements based on the type of teaching position. Before the reform, various studies had shown the relatively low level of qualifications of English TVET teachers in comparison with their colleagues in general education, but also in relation to some of their European colleagues.

Stakeholders indicated that the reforms were particularly successful in increasing the practice of teacher training. Because many already practising teachers had to obtain a qualification, the reforms contributed to a culture where colleagues supported and encouraged each other in obtaining the necessary qualifications. Through increased feedback from fellow colleagues on their teaching while working towards a qualification, teachers received a confidence boost and the support needed to meet the qualification. Finally, standardising the newly introduced qualifications across the further education and skills sector contributed to a shared feeling of professionalism that was previously lacking. Teacher organisations indicated they were satisfied with the reforms and reported a considerable quality improvement in initial teacher education, illustrated by a larger uptake of teacher students to work in FE colleges. Statistics also confirm that an increasing number of teachers are qualifying themselves under the new system, in line with the objective of the regulation.

In view of the limited resources available for the development of quality TVET teacher education in the countries studied, this research attempted to find strategies for improving the quality of TVET teacher education. A small-scale Dutch initiative, outlined below, which had as its objective, the contribution towards a higher quality of TVET teacher education, undertook this by linking the TVET teacher education provider I to a TVET provider.

The Netherlands: Teacher education in the TVET school

Description: Among various policy initiatives taken in the field of TVET teachers in the Netherlands since 2011, an initiative (“Opleiden in de school”, Teacher education in the school) seeks to improve the cooperation between TVET teacher education schools and TVET providers. In 5 pilot projects, it was explored how TVET teacher education can benefit from closer cooperation with TVET institutions. The project shows that closer cooperation can result in better curricula tailored to practical needs, while also contributing to the professional development of teachers already working in the TVET institution. This has a direct effect on the quality of education provided to students in the TVET institution.

Context: The initiative consists of creating a closer relationship between the teacher education institution and the TVET schools for which the teacher students are being prepared. Before 2011, this was not a known concept in the Netherlands, even though it was more common in general education. In 2013, the Dutch Ministry of Education approved a subsidy to a number of pilot study TVET schools. Under this subsidy, the participating institutions created a personal link between the TVET college and the teacher education institution to foster concrete cooperation. This was done at the management level, but also in the form of teacher supervision in the TVET institution to guide and teach TE teachers in the TVET institution. Before 2014, it was not required that TVET college lecturers were prepared specifically for TVET in their teacher education, which had a more general education focus. Currently, the Dutch government is implementing the requirement that future teachers in TVET are also prepared specifically for TVET.

Approach: As part of the project, TVET teachers and TE teachers were linked together to exchange experiences and plan concrete steps for cooperation. For instance, TVET teachers were invited to participate in a number of teacher education classes, and the duos were put together to reflect on developments. This helped to improve the understanding of TVET teachers as to what their interns (the future TVET teachers) were learning and enabled them to better tailor support to junior-teachers in the TVET institution. Currently, the exchanges are of a voluntary nature, but the participants in the project indicated that a mandatory cooperation would be beneficial. These developments supported the interests of teachers and teacher students to learn more from both sides, which contributed to the success of the initiative. Another initiative under the project required TE students (who were not specifically specialising for teaching VET) to teach in a TVET institutions as part of their curriculum. Whereas, many students initially did not feel attracted to teaching at TVET colleges, many returned enthusiastically due to the open atmosphere created by the teaching staff at the VET institution, and may well feel motivated to teach in a TVET institution in the future.

This Dutch practice which connects TVET teacher education with TVET providers underlines the need to cement support for reforms and initiatives at the lowest level. To raise quality levels in TVET, it is imperative that any policy proposal builds upon teacher support in the teacher education institution, as well as in the TVET provider. A specific element that can be learned from this particular initiative is that a modest beginning with some enthusiastic participants has the potential to contribute to a wider take-up in the organisation.

The initiative also underlines the benefits of cooperation between the Teacher Education providers and TVET schools. Even though this initiative cannot be seen separately from the efforts of the Dutch Ministry of Education to introduce a more specialised VET module in TE curricula to reduce the distance to teaching in TVET providers, it contains lessons for TVET providers in other contexts as well. This model shows the importance of dedicated intern supervisors in TVET colleges, who are not only there to give feedback and support to TE students, but are also open to learning

themselves. The suggestion is that if sufficient support is given by management, the TVET provider could be enabled to receive better prepared teachers while improving the quality of their existing staff.

5.3.4. Policy pointers towards developing the quality of TVET teacher education sustainably

Based on the challenges identified in the various countries, and on the various European practices found, we identify a number of broad policy pointers, which summarise the key findings of this section:

- **Introduce competence standards for TVET lecturers.** Examples have been provided of how standardised higher qualification requirements for TVET lecturers can contribute to improving the quality and status of TVET and introduce contextually relevant key competences to the lecturing profession
- **Increase capacity of specific TVET teacher training providers.** This dealt with expanding the provision of specific initial TVET teacher education to increase the number of TVET teachers, and to increase the knowledge base on vocational pedagogy and training to bring it better in line with the actual needs of TVET teachers. It should also develop the grassroots cooperation between TVET teacher training providers and TVET schools and donor coordination on TVET.
- **Get grassroots support for interventions.** Increase the role of teachers in deciding on and implementing reforms and innovation, both at the policy and institutional level.

5.4. Ensuring relevant TVET teacher competences: employer engagement and continuous professional development

One of the central challenges of TVET in the African countries under study, and in most TVET systems elsewhere around the world, is to ensure that TVET teachers are able to teach their students skills that are relevant for finding or creating employment. This study confirms that in various countries, prospective TVET teachers are prepared to teach in general education, **without attention to the pedagogical or technological specificities of their TVET field**. The study pointed to another challenge in designing an adequate TVET teacher education curriculum - the **lack of sufficient ties with the (local) business community**, which is crucial to ensure that TVET teachers are able to prepare their students effectively for the labour market.

5.4.1. Challenge: Contextually relevant TVET teacher education

This study shows that a lack of policy coordination for TVET at the national level is closely related to the dominance of general education over TVET, and the generally lower status of TVET. This subordinate position is frequently translated into the low attention to specific TVET teacher education. National teacher education curricula focus primarily on school teacher preparation with little focus on TVET specificities, even when preparing teachers for the TVET sector. In South Africa, Ghana and Egypt, we found that the current capacity of universities to combine vocational pedagogy with practical and technical workplace experience is insufficient. Generally, student teachers are taught pedagogy, but not related to their technical field, while universities that provide education for teachers in disciplines, such as engineering, agriculture, commerce, and tourism do not provide specific teacher or pedagogical training. In fact, in Egypt, we found a bias towards initial education and in-service training for core-subject teachers over technical teachers and practical instructors in terms of both number of institutions.

5.4.2. *Challenge: Insufficient ties between TVET teachers and the labour market*

The lack of involvement of industry partners in the development of TVET curricula is another challenge that has severely impacted some TVET systems in the countries under study. Prospective TVET teachers are often not brought into sufficient contact with labour market stakeholders, and the importance of this link is often underestimated. In Egypt and Ghana for instance, we found that employers are only occasionally asked to provide input into training curricula – if at all, while no policies are in place to sustain their interaction with the content of curricula. In Cameroon as well, TVET curricula were designed by various sectoral ministries that primarily had their own human resource needs in mind, rather than those of the entire sector. The lack of systematised linkages between relevant industry stakeholders and the TVET sector prevents TVET curricula being developed in line with actual labour market needs that could benefit development of the national workforce. While this remains a considerable challenge in Egypt, Ghana and Cameroon, TVET in Tanzania is relatively well connected to the labour market, as shown by a relatively low unemployment rate of TVET graduates. In addition, in South Africa, the link is better established, though not as centrally coordinated as in Tanzania. However, in countries with large informal economies, such as Tanzania, unemployment rates don't accurately reflect labour market outcomes. Improving the labour-market relevance of TVET curricula has the potential to contribute to better employment prospects for students, and an immediate positive effect on the TVET sector as whole.

5.4.3. *Contributing to cooperation between TVET and labour market stakeholders*

Based on these challenges, a set of European practices have been identified as beneficial to promoting the cooperation between TVET teachers and labour market stakeholders. We start by exploring a recently established pilot project in Ireland, which seeks to redesign the induction period of new teachers.

Ireland – Pilot project for new design of induction of new teachers (“Droichead”)

Description: This intervention was designed by the Irish Teaching Council to reconceptualise the link between ‘induction’ (the additional workshops / training, sometimes complemented with actual support in the workplace), and ‘probation’ period (the initial work experience until registration). In its new conceptualisation, probation is the point that marks the end of the induction period of a newly qualified teacher. To structure this new induction period, the teaching council started a pilot called “Droichead” (Irish for bridge).

Context: In Ireland a relatively strict registration system is in place for newly qualified teachers. Upon graduation, newly qualified teachers need to engage in a number of workshops to finalise ‘induction’ into the profession, complemented by the approved teaching experience of 300 hours, within the first three years. Upon meeting these criteria, the national Teaching Council formalises the registration of new teachers. Only after this formal registration, are teachers fully qualified to teach by themselves.

Approach: The core of the Droichead approach is to offer newly qualified teachers a structure for support from experienced colleagues, who understand what is involved in teaching and learning in their school. These professionals will themselves be supported through the provision of a range of structures and resources. The design of Droichead is based on a body of academic work in education, which shows that the closer the support and the learning is to the site of practice, the greater the impact of that support and learning. It should also be seen in the context of institutionalising professional development at the workplace, which does not stop at induction or probation of newly qualified teachers, but is a continuous feature of the teaching

profession. Currently, Droichead, which is still a pilot functions alongside the 'normal' induction system, which provides a combination of workshops and information sessions to newly qualified teachers. Droichead adds a structure for professional support to the existing requirements for newly qualified teachers in the field of minimum teaching hours and participation in relevant workshops. Under Droichead, each participating school (primary, and various types of post-primary schools, including vocational schools) sets up a professional support team for newly qualified teachers, consisting of at least 3 experienced (and fully registered) teachers, the school principal, and the mentor of the newly qualified teacher. The Teaching Council recommends that the members of the team have at least five years of professional experience. The mentor will have the primary supporting role to the new teacher, and will plan in detail personalised steps for development. The other members of the support team are not that closely involved, but may offer feedback after regular observation of the teaching of the newly qualified teacher. In the currently running pilot, the Teaching Council suggests for various schools in the same region to work in clusters, to also include views in the professional supporting teams from professionals in other schools. This contributes to including fresh views on the performance of teachers across different schools.

The pilot project for a new induction period offers a very relevant learning trajectory for new TVET teachers, which is equally valuable for industry professionals that enter into the teaching profession after gaining professional experience in the sector. By offering personal guidance in introducing the new teacher into the profession, the chances are increased that the newly qualified teacher stays in the TVET sector. Participants in the project are very positive about the potential of the programme. Mentors for instance, find the process of supporting new teachers' induction into the profession a very rewarding one, which contributes greatly to the cohesion between the body of staff (both new teachers, and fully registered and experienced), while it also offers relevant learning perspectives to the mentor. An interesting element that is observed in the programme is the high level of responsibility assigned to the mentor, principal and other members of the professional support teams, as these have the responsibility to report to the Teaching Council whether a newly qualified teacher can be assigned the full registration status. This is also in line with the recommendation in the previous section to assign sufficient value and autonomy to teachers, as a means to increase the image of the profession.

The type and content of continuing teacher education curriculum is equally relevant. A Finnish initiative is finding a way to encourage TVET teachers to update their skills to prevent them from becoming obsolete. Again, this practice targets the skills of teachers but equally seeks to contribute to the motivation and self-image of the TVET teacher, which, as this report shows elsewhere, are crucial elements.

Finland – Work-based learning for teachers

Description: To ensure the link between education and practice, and ensure that TVET teacher continue to update their technical skills with the latest developments in the labour market, the "competent to work markets" project enables work-based learning, not for students but for teachers. With support of the project, Finnish vocational teachers were placed in an authentic work placement for a period of time (ranging from 2 weeks to 3 months), to develop their competences in collaboration with employers. During this period, teachers worked in jobs in their expertise area, either in enterprises or in the public sector. Formally, the aim was "to develop substance knowledge pedagogy as well as to create facilities for systematic cooperation between the workplace and educational institution."

Approach: The idea behind the project is that a teacher's competences are not permanent, and need to be continuously updated. The needs of work life change, as do education, technical development in the field and work processes in relevant industry sectors. An authentic work placement for a limited period for teachers

thereby offers possibilities for updating and developing professional expertise. It can also give teachers various perspectives to choose new and innovative study content for students to meet the future needs of work life after obtaining their qualification. Participating teachers reported that the work placement had a positive influence on the teachers' personal competences and contributed to integration of school curricula with the work place. Particularly the dialogue that is supported through these interactions are given an important positive role. The work placement offered teachers the possibility to reflect on their daily work and confirm their knowledge of practices and work cultures in the field, reflect on professional theory and practice in their field of expertise and most importantly make use of refreshed understandings to develop new ideas for teaching practices. An unintended consequence of the interactions is that the positive experiences of teachers in the programme also contributed to motivation at work and increased feelings of self-respect.

The benefits of the work-based learning for teachers do not only extend to the personal development of teachers. Instead, positive effects were also reported for the educational institution. The work placement offered a relevant opportunity to evaluate ongoing teaching practices, and branded the local education institution more specifically as a relevant service organisation in the local economy. By making the teachers directly visible to local business, ties could be strengthened to the benefit of the schools, teachers and the students. It offered a way to inform businesses about ongoing education processes, evaluation of students, contents, purpose and curricula. As such, this project shows how the development of TVET teacher skills can make a broader contribution to the quality of TVET. Participants in the project indicated that they saw themselves differently; they were no longer a school official (a civil servant), but instead a facilitator of learning, and a crucial representative of an economic sector⁶⁸.

The curriculum of TVET teacher education ideally has two sides which deserve equal attention. On the one hand training the technical side of teachers is crucial to equip TVET students with the necessary and relevant skills to find sustainable employment. The Finnish example of work placement of TVET teachers is an interesting approach that contributes to this goal. The other element of TVET teaching, which encompasses pedagogy is equally important. A Danish practice that has been active over the last decade shows how to develop and update the pedagogical skills of TVET teachers by means of continued professional development.

Denmark – Innovation and development in TVET curricula and systems

Description: Denmark has a long tradition of using local innovations to modernise TVET curricula and systems. Particularly in the 1990s, the funding through so-called 'innovation and development' projects has been an important tool for the Danish Ministry of Education to support local or regional projects within set priority areas guided by the expertise of TVET teaching consultants. These development projects are seen as important contributions to the continued up-skilling of TVET teachers in Denmark, where innovation of content, methods and teacher competence development go hand in hand.

Approach: As part of larger system of reforms in the 1990s towards a more market-oriented provision of TVET, pilot projects on internal quality development were initiated at a number of colleges. To support TVET colleges in their work to translate the new national objectives into local approaches, the Danish Ministry of Education set up a fund for innovation activities, targeted at the teaching staff (FoU: Innovation and development). Through this fund, the Ministry set yearly priorities, allowing TVET

⁶⁸ European Social Fund. (2012). Euroopan sosiaalirahaston tietopalvelu-hankkeiden loppuraportit [The information service of the European Social Fund—The final reports of the projects].

providers to request funding for specific projects under the set priority. To obtain the funding, teachers were required to indicate where they wanted to improve their practices. Given this bottom-up focus of projects under the funding, the projects are closely related to the challenges perceived by teachers. In practice, the projects are guided by the expertise of TVET teaching consultants funded directly by government. Most literature point to this approach as good practice as it combines innovation of content, methods and teacher competence development. It is unique in the sense that these projects contribute to the development of quality in those areas indicated by teachers, while also explicitly focusing on teachers as 'change agents'. Afterwards, the results from these colleges were integrated into an overall quality strategy. The overall aim of the strategy was to improve and develop the VET that was provided, and to make the VET programmes more attractive. This was to be achieved by motivating the VET providers to integrate the principle of "self-evaluation" into their overall management philosophy, so that this would comprise an on-going, internal quality assurance and development, and a continuous evaluation of activities and results. In order to promote the quality strategy at the colleges, quality became one of the FoU priority areas by the mid-1990s, and all colleges were able to apply for funding for quality assurance activities.

This Danish practice gives an example of how a central government can contribute to developing the quality of TVET teachers, by allowing teachers themselves to select the competence areas they want to focus on. To make this work, it is essential that funding is made available to contribute to quality development of teaching staff. Potentially, the Danish model may therefore, be adopted as a model for foreign donors in designing continued professional development for TVET teachers. Whereas, the exact model of competition for central funding may not be possible to replicate in an African context, this Danish example underlines the need for national policymakers to respect the autonomy of TVET teachers, and see them as the 'change agents'. Without helping TVET teachers develop their competences to deal with the issues they encounter daily in the classroom, national governments will not be able to raise the quality of TVET. Whereas, the Danish government put out a set of priorities in which it provided funding, they left it to the creativity of TVET teachers to design projects for their own further competence development.

5.4.4. Policy pointers for ensuring relevant TVET teacher competences through employer engagement and continuous professional development

The specific challenges related to ensuring relevant TVET teacher competences in the TVET sector, both in terms of initial teacher education and in the continued professional development of teachers in sub Saharan Africa inspired the identification of a number of European practices. While the practices may not be suited to immediate implementation in African contexts, we distil the main learning elements as policy pointers.

- **Strengthen employer and industry involvement in TVET** in general, by (1) aligning TVET teacher education, and TVET as a whole, with industry demands and needs; (2) allowing employers to be involved in trade-related courses; (3) allowing TVET lecturers to update skills and competences in trade-related work placements.
- Improve sectoral labour market and employment information systems to support the industry – TVET dialogue.
- **Ensure effective feedback loops involving industry/business; TVET colleges and TVET TE providers** by involving stakeholders in development and updating of curricula for TVET training, both initial and in-service.
- **Provide adequate and timely continued professional development to TVET teachers.** This concerns in-service pedagogy education for those already working as teachers, to update and improve their teaching competences. An important element of this is teacher-industry exchange to ensure that skills are in line with the latest developments in the industry. The focus on innovative

forms of formal and informal learning concerns TVET teacher training through distance, online, flexible or other innovations to work around limited budgets. Specifically, by considering collaboration between TVET teacher training providers, TVET schools and industry.

- **Establish a central role for teachers in curriculum development**, which respects their autonomy and makes use of their specific expertise in the classroom. Ensure that teachers' experience is not only used in the classroom, but resonates equally in policymaking and broader curriculum development, for TVET students and (prospective) TVET teachers.

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