

Competency-based approach to technical and vocational education and training in Africa.

Country report: South Africa

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1. Executive summary

Under Apartheid, vocational training designed specifically for white people was based on a dual training system of quality which was run by institutions which, in turn, were created by business entities.

After ANC's landslide victory in the first ever multiracial elections (May 1994), the end of Apartheid marked the introduction of education for all. That was to be followed by a long transition period which saw, on the one hand, the dismantling of the old system and consequently the business world shifting away from TVET. On the other hand, a period of restructuring was initiated, and is still ongoing, which impacted heavily the quality of the sector. Furthermore, TVET had to address major challenges such as catering for 3 million students in 2030 while 735,000 youth enrolled in TVET for the academic year 2018-2019, the average success rate in State examinations is around 40% whereas the rate of professional integration is pretty similar six months after recruitment.

Other challenges are no less important. Before outlining them here, we will first look into how vocational training is organised.

By creating a federation of nine provinces, the South African Constitution intended to respect local specificities and assigned wide-ranging powers to provincial assemblies. The resulting devolution structured the organisation of vocational training by granting a large degree of autonomy to the regions and, in particular, to TVET. Fifty TVET Colleges are responsible for the administration, governance and quality of 260 schools grouped under the name of "campus".

Today, the country's vocational training system is built on a national qualifications framework made up of ten levels each corresponding to a diploma. Levels 1 to 4 fall under vocational training while level 5 (engineer) is under higher education. Occupation or level of skills by occupation is not an indicator for diplomas. For the same occupation, a student may have up to five different vocational training pathways each leading to a level 4 diploma in terms of certification. However, since 2017, one of the main vocational training quality certification bodies, i.e., the Quality Council For Trades & Occupations (QCTO), carried out valuable work by rationalizing the historical OQFs, reducing them from 2,000 to 300, while eliminating duplication and ensuring that they are cross-sectional. The work has been completed but its impact on the rationalization of training programmes is yet to be seen.

For the two main schemes, i.e., National Technical Education (NATED) and National Certificate Vocational (NVC), as well as for Government-funded basic technical education (Technical High School), competency-based training (CBT) was not selected. Rather, they opted for a knowledge-based pedagogy: it is entirely theoretical for NATED (70% of TVET students) and mostly theoretical for NCV programmes (25% of TVET students). However, practical workshops are included in NCV programmes (70% of study volume) although implementation differs from one training school to the next. Also, following their syllabi

(NATED and NCV) students may complete their training with an internship of 18 to 20 months which enables NCV students to sit the Trade Test whose content is certified by the competent body after collecting the input of the companies that hosted those students. Assessment is carried out in close collaboration with 21 state-run sectoral entities (Skills Education Training Authorities (SETA)) so as to reflect the representation of companies operating in those sectors.

In actual fact, although they sit in the assemblies of each of these SETA, economic operators have a limited role and lend only a relative legitimacy to those authorities. Each SETA is expected to carry out an annual study of its sector. Business operators' and labour organizations' opinion of these studies is not highly positive as they feel that they (the surveys) merely provide a concise list of the needs of each company (development plan) and that their scope and level of reliability are questionable. Also, these training programmes are rarely updated and even less in relation to these sectoral surveys.

CBT was retained for two of the remaining courses (Unit Standard Learnership and Dual System Pilot, the latter benefiting from German and Swiss cooperation). In the case of Dual System Pilot (also called "Centres of Specialisation" CoS), the 13 targeted trades were selected on the basis of a wide national plan designed in 2012. Thereafter, 19 sectoral studies (besides those carried out by SETAs) were carried out in close collaboration with business operators and, thus, gained in credibility. Also, in connection with these CoS, local businesses play a key role in the development of occupation-competencies framework (OCF) as well as for training and assessment. Those businesses participate in the recruitment effort of the learners and offer them contracts. The two schemes (United Standard Learnership and CoS) provide for an effective alternation between theory and practice, in the classroom and in the workshop, dedicating six weeks for each sequence. While the CoS are a source of hope for an improvement of the quality of TVET and for a more effective integration of CBT, it is however too early to draw any conclusion as they are still being tested. They were only initiated in 2019 in 26 TVET colleges.

It is worth indicating that TVET colleges enjoy a rather wide autonomy. They can, inter alia, hire their own trainers. Also, syllabi originating from the ministry of education and, more specifically, from the Directorate for vocational and higher education, are chosen and proposed by TVET colleges who are also at liberty to update such syllabi. However, as the updating exercise is long and administratively complex, most vocational training centres opt for an informal update with the financial and HR help of local businesses. Collaboration with local business operators depends greatly on how economically dynamic the area where the TVET college is situated is. Of course, those in large urban areas are more dynamic. Indeed, financial autonomy is there but it is not used optimally: partnerships with companies represent a negligible 1% of a training centres' budget.

This important devolution, which grants administrative, educational and financial autonomy to TVET colleges, can have a great added value provided that an efficient accountability system is in place to ensure quality at all levels and in all TVET schools.

The bulk of the funding comes from Government and, to a lesser extent, thanks to a 1% tax levied on the wage bill of companies.

The quality of the training of trainers is seriously questioned. Most of them have no practical/hands-on experience of work in companies and/or were poorly trained. There is no specific training on CBT. Initiatives, supported by Swiss cooperation, were initiated but they are limited and unsustainable.

It may be fair to say that the system is still struggling and needs to enhance its efficiency. More efforts of simplification and readability are required. Also, in this rather confusing landscape where quality is quite problematic, CoS do inject a momentum of hope. However, to be able to gauge the efficiency of these centres of specialisation (CoS) one needs to wait at least three years.

2. Abbreviations

CBT	Competency-based training	NSFP	National Skills Fund Plan
WSA	Work situation analysis	OIF	International Organization of la Francophonie
CBA	Competency-based approach	UNDP	United Nations Development Programme
CHE	Council on Higher Education	PPO	"Teaching by objectives" approach
CoS	Centre of Specialisation	PPP	Public private partnerships
DBE	Department of Basic Education	PSDS	Provincial Skills Development Sector
DHET	Department of Higher Education and Training	TFP	Technical and Financial Partners
ESDP	Education Sector Development Program	QCTO	Quality Council for Trades & Occupations
ETP	Education and training policy	OCF	Occupational Qualifications Framework
FET	Further Education and Training	SAQA	South African Qualifications Authority
TVET	Technical and Vocational Education and Training	SARS	South African Revenue Services
GDP	Gross Domestic Product	SDL	Skills Development Levy
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit (German cooperation)	SETA	Sector Education and Training Authority
HEI	Higher Education Institution	SIP	Strategic Integrated Project
HIV	Human Immunodeficiency Virus	SSACI	Swiss-South African Cooperation Initiative
IFEF	Institut de la francophonie pour l'éducation et la formation	SSP	Sector Skills Plan
IIEP	International Institute for Educational Planning	ToR	Terms of reference
NAMB	National Artisan Moderation Body	TVET	Technical and Vocational Education and Training
NATED	National Technical Education	UNESCO	United Nations Educational, Scientific and Cultural Organization
NCV	National Certificate Vocational		
NQF	National Qualifications Framework		
NSA	National Skills Authority		
NSDS	National Skills Development Strategy		

3. Background

3.1. Study objectives

For the purpose of finding out how competency-based training (CBT) approach is customized, how syllabi are adjusted and aligned on CBT and what positive outcomes were registered as a consequence, IIEP-Dakar and IFEF conducted a joint study on the customization and contextualization of the CBT approach in eight (8) African countries: 4 of them are members of the OIF (i.e. Benin, Morocco, Rwanda and Senegal) whereas the other 4 are non-francophone countries (i.e. Botswana, Ethiopia, South Africa and Tanzania). The study focuses on non-francophone African countries who apply a modular CBT, the certification of which is validated by companies.

The aim of the study is, firstly, to identify good practices and explore how those practices can be used in other contexts/countries to enhance the performance of the CBT approach in their TVET systems and, secondly, to identify the challenges that emerged when the CBT approach was introduced and/or sustained. The identification of positive or negative tipping points when implementing the CBT approach is carefully considered in order to take stock of the lessons learned.

Based on the findings drawn from the implementation of CBT in those eight countries, the study makes recommendations aimed at helping to better adapt the CBT approach to the specificities of African countries.

3.2. Methodology

The week from 5 to 9 November 2018 was dedicated to planning and guidance: the terms of reference (ToR) of the study were fine-tuned, the conceptual views and practices of the team members were streamlined, the scope and goals of the study clearly defined and the data collecting tools were developed. After that, a validation of tools and comparison of preliminary outcomes from the two country missions carried out in Morocco and Senegal was completed at a joint workshop held on 31 January 2019. Attended by representatives from IIEP-Dakar and IFEF, the workshop served to finalize the work tools and to strengthen the functional links among the team while ensuring synergies. The mixed pool of experts that contributed to this study was most valuable for the various methodological approaches and, in particular, for understanding the qualitative and cultural dimensions of assessment and for the analysis and interpretation of the data collected.

3.3. Limitations of the mission

The main challenges that the country mission faced were:

- The way the availability of the various players was managed: several activities were held at the same time which made it difficult for them to attend all of them;

- Frequent changes made to the work schedule, even though contact was established and planning was completed two weeks before the launch of the mission, in addition to the excellent collaboration extended by the focal point at the Department of Higher Education and Training (DHET);
- The long time it routinely took to confirm attendance to meetings;
- The wide range of stakeholders that had to be met with to secure the triangulation of data, as they come from various ministries and entities.

4. Analysis

4.1. History and institutional context of CBT introduction

4.1.1. General data and economic environment

In 2017, South Africa, whose administrative capital is Pretoria, had an estimated population of 56.5 million, nearly 80 % are blacks, 8.8 % are coloured, 8.4 % whites and 2.5 % Asians (Indian subcontinent). The population growth is 1.6% whereas literacy rate is 86%. Life expectancy is increasing quite rapidly after a significant decrease in the beginning of the new century as a result of AIDS-related mortality. Between 2005 and 2017, life expectancy increased from 54 years to 64 years. In 2017, 22% of deaths were caused by AIDS (116,110 deaths).

Since 1994, South Africa is made up of nine provinces, namely: Western Cape, Northern Cape, Eastern Cape, KwaZulu-Natal, Free State, North West, Gauteng, Mpumalanga and Limpopo. Each of the nine provinces is governed by a unicameral legislature and an executive council headed by a Premier. It is a moderate federal system. Most of the population lives in the eastern regions of the country. Gauteng is the most populated region, followed by KwaZulu-Natal.

There are 11 official languages in South Africa. But in actual fact Zulu is the most widely spoken language in South African households (around 25% of the total). Afrikaans is the second language of over 30% of the population. However, it is losing ground to English.

South Africa is part of the BRICS grouping (Brazil, Russia, India, China, South Africa). It is an economic powerhouse on the African continent with modern infrastructures covering all the country; 75 % of the largest African business entities are South African. The country registered a 0.8% economic growth in 2018. It is expected that it will increase to 1.4% and 1.7% in 2019 and 2020 respectively.

It will be hard for the country to reduce its unemployment rate which stands at 27.7%, the highest since 2003. It will not be easy either to reduce the public debt which is expected to go up to 61% of GDP by 2022 and would absorb around 15% of budget revenue. Inequalities will not be reduced. Indeed, the income of different population groups did not increase since the end of Apartheid and inequality in South Africa is one of the highest in the world. No less than 93% of national wealth is held by 10% of South Africans.

The poorest continue to live in huge slums (townships). Thus, often far from any large city - and its basic facilities - large ghettos appear in the middle of nowhere. The problems which arise in these huge areas that are neglected by public authorities are multifaceted: pollution; deficient hygiene; lack of sanitation, social and educational facilities; no public transport, etc. Often, the results are disastrous.

Lastly, the mega-city of Gauteng hosts more than 14 million people over a vast urban area which includes, from north to south, Pretoria, Johannesburg and Vereeniging. Its economy - which is at 90% mainstream or formal - is historically generated by primary and secondary industries such as the extractive industry (gold, diamond, platinum, chrome) and manufacturing (car assembly, metals, machinery, textiles, iron, steel, chemicals (fertilizers), agri-foodstuffs and shipbuilding). Following a global trend, growth moved these last few years to the services sector. Currently, finance, real estate and services more generally are top contributors to the economy.

However, according to UNDP's Human Development Index (HDI), between 1990 and 2005 South Africa slipped 35 places in the ranking, signalling a general impoverishment of the population.

So far as basic education is concerned, every year 1 million children start their first primary school year but only 500,000 complete the 12 years of schooling, and only 8% of these enrol in university.

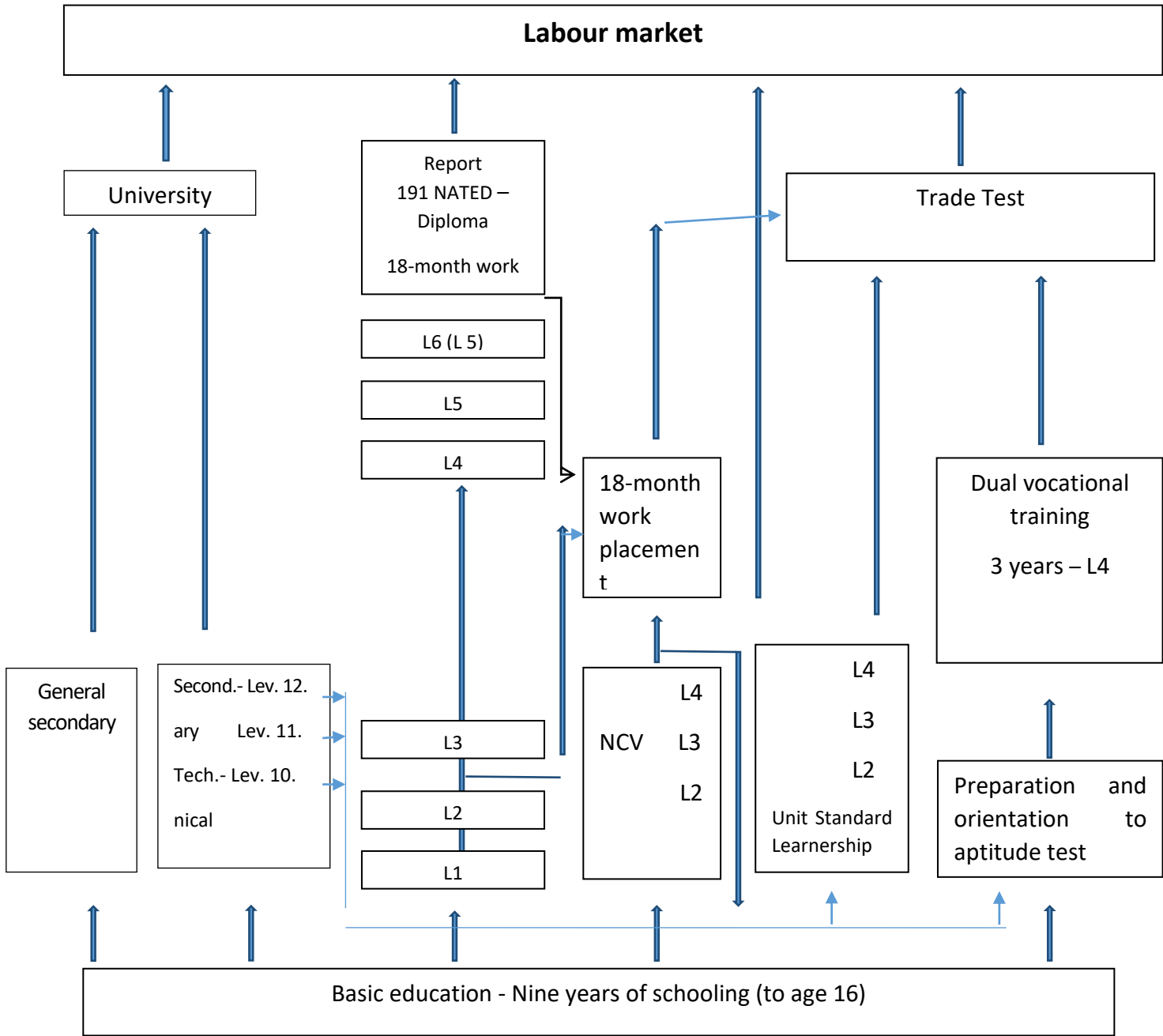
The very low level of achievement of students completing their basic education is a major challenge faced by the establishment of a quality TVET. In 2015, two international studies (TIMSS et PIRLS)¹ showed that the level of academic achievement of South-African students was abysmal. Tested on sciences, grade 8 students came last on a list of 49 countries. In 2016, the same studies showed that 78% of students completing grade 4 (bottom of the list on 50 countries) failed basic reading skills. One of the reasons for this very poor performance is the fact that most teachers (including in TVET) are under-qualified or not qualified at all for the job. Another study, carried out in 2007, focused on teachers. They were asked to solve maths tests that were intended for their own students (including simple fractions and ratio computations). 79% of the teachers scored less than what would have been expected from their own students on the same tests.

4.1.2. TVET background in South Africa

The country designed a reform of TVET scheduled for 2011-2016 before it was extended to 2020. In 2013, a white paper encouraged public-private partnerships (PPP) in TVET colleges and schools. It is quite striking to note that financial investment earmarked for TVET was reduced during that period (see the sub-section on TVET financing, further below). This indicates a changing political strategy.

¹ TIMSS: Trends in International Mathematics and Science Study ; PIRLS: Progress in International Reading Literacy Study.

Figure 1 – Structure of South Africa's education system with a focus on TVET



4.1.3. Organisation of TVET

At the federal/national level: In respect of TVET, it is the Department of Higher Education and Training (DHET) which administers the funding and the appointment of principals of colleges and oversees the 21 Skills Education Training Authorities (SETA). The role of these entities is to assess the needs of the sector. They are also mandated by the QCTO to develop occupation-competencies framework (OCF). As for DHET, their remit is to develop and review training curricula.

At the regional level: There are 50 TVET colleges which, together, total 266 campuses. The role of these colleges is to provide administrative management and strategic development for the campuses attached to them. They also endorse recruitment proposals made by the campuses.

At the local level: Campuses may adapt their curricula to the skills required by employers; that can be done formally though the process is cumbersome, or informally (see section 4.3). They teach and administer knowledge and practical examinations. They help find work placements for graduated students in businesses. They work with SETA to devise dual and alternate vocational trainings.

4.1.4. Language of learning

English is the language used in TVET. However, in rural primary schools, children learn to read and write in their mother tongue. In secondary, vocational or higher education, lessons are given in English and that can pose a serious challenge in rural areas where this language is not widely used. Mindful of this situation, TVET courses offer English-language lessons (and maths too).

4.1.5. Complex vocational training offerings

TVET presents a wide range of training and learning pathways which appeared gradually in the recent history of the country. This is reflected in figure 1 where training pathways are shown, from left to right, from the earliest to the latest programme.

Rather than substituting one another, these types of training are rather superposed, like a multi-layered cake, all things which make the offerings and training pathways particularly complex and hard to figure out. At the end of the day, only the last two training pathways (dual vocational training and Unit Standard Learnership) are modelled on an effective CBT approach. Among these training offerings, we have:

- **Technical secondary:** Students are given a knowledge/theoretical teaching. On completion of these 12 years of schooling, students may enrol in a university (only 8% of post-secondary students join university) or start a vocational training (Unit Standard Learnership or dual system). Indeed, in so far as engineering-related trades are concerned, businesses prefer to hire trainees who had 12 years of schooling, not

9. However, when a trainee does not find an internship or a job - which is often the case - he goes back to a vocational type of study (NVC) TVET is therefore considered as a second chance schooling. Far from seeking to meet sectoral needs in terms of skilled labour, the purpose of this recycling is mostly social. Also, there are currently 4 million youth, aged 18 to 24, that are neither employed nor enrolled in any TVET.

- **NATED courses (Report 191):** This TVET scheme is the oldest (some of its courses date back to the 1950s and are rarely revised, if ever) and offers 23 training pathways². Exclusively theoretical in nature, this training can be organised in two stages: L1, L2 and L3 courses (from L1 to L3, the duration is eighteen months) and certificates are issued by the college. In theory, after L2 students may go for an apprenticeship; however only 20% of them manage to find an internship placement. The other students continue with the training scheme. They may also further their studies in L4, L5 and L6 and receive a certificate on completion. To be eligible to sit the trade examination and be awarded a level 5 diploma (engineer level), in the national qualifications framework, students must undertake an in-company apprenticeship of 12 to 18 months.
- **NCV (National Certificate Vocational):** Introduced in 2007, NCV offers 19 training pathways³ and leads to a diploma equivalent to level 4 in the National Qualifications Framework (NQF) (technician). The first three years are spent on campus. Part of the learning is conducted in class (in theory 30% of the total of the training time is to be dedicated to theory but in practice that amounts to 50% or even 80%, depending on the campus) and the other part is dedicated to practicals (in production workshops). The ratio is 30 learners for each trainer. A small proportion of the syllabi was partially revised since 2007.

Impediments to offering practical training are dealt with under section 4.4 where the extent of implementation of CBT-based programmes is presented.

While entry requirements allow access to youth who had nine years of schooling, in reality, most applicants (80% in total) would have attended twelve years, because the level of those who studied nine years only is weak. This shows how inefficient the system is. Also, since attendance is free of charge for those with low income, many students shun technical high schools and opt for these NCVs.

² Art and design; business management; garment manufacturing; healthcare; engineering studies; agricultural management; production of fertilizers; financial management; hair care; hospitality and catering services; human resource management; interior decoration; legal secretary; management assistant; commercial management; medical secretary; music composition; music production; management of music studio; public management; public relations; textiles; tourism.

³ Civil engineering and building; industrial design; education and development; electrical infrastructure; construction; engineering and design; finance, economics and accountancy; hotel industry; information technology and computing; management; marketing; mechatronics; administrative management; agriculture; management of treatment plant; security management; tourism; transport and logistics; healthcare.

Eighty per cent of the funding of NATED and NCV schemes are forked out by government. The remaining 20% are covered by the parents. Households whose yearly income is below ZAR 350,000 receive an allowance to help them pay the 20% fee. In either case, the TVET college is in charge of assessment: desktop tests for the theoretical part and an 'integrated summative test task' which combines theory and practice. Certification is issued by the Quality Council for Trades & Occupations (QCTO). In-company traineeships, after three years at the NCV, are funded through a training levy. Students receive a grant to cover their travel and accommodation expenses.

- **Unit Standard Learnership:** this pathway was created right after the end of Apartheid to make a difference with the pre-1996 system which was based on dual learnership in companies but which then appeared too cumbersome and failed to meet the expectations of the business sector. More used in private professional schools, this scheme is being adjusted to suit the needs of economic entrepreneurs. These are short-term training schemes with a strong focus on a specific trade.

The training is funded by two sources: Government funds the training that takes place in TVET colleges whereas SETA grant funds to companies which pay a minimum wage to the apprentices.

The schools may customize the contents of the curricula to meet the needs of companies. Thus, this training pathway is funded by SETA after levying 1% from business concerns. Curricula are designed with a CBT approach, in consultation with businesses within SETA. Occupational competency standards (OCF), training and assessment standards are validated by each SETA and accredited by QCTO. Also, any company that takes an apprentice is accredited by QCTO.

- **Dual vocational training:** dual learnership was already in place before the end of Apartheid and benefited for the white population. Companies had their own vocational training centres. They would determine the time dedicated to training within the centre and the time to be spent in apprenticeship. After 1996, government took over vocational training centres and that led business firms to withdraw from the administration of training.

Since 2015, with the help of Swiss and German cooperation (SSACI and GiZ) apprenticeship resumed and certification is entrusted to QCTO.

This experience is directly linked to businesses' needs for skilled labour; it is up to them to select and hire the youth. Through their federations and in collaboration with SETAs, business firms were also associated in the selection of the schools which will provide theoretical and practical training over a period of three years. Skill assessment is performed by means of trade tests. Since 2019, the test phase actually started based on an alternate learning method of 3 years with the student spending most of the time in the firm as he gradually advances in his studies. This pilot

experiment was conducted in 26 VTCs associating 30 learners from every centre and covering 13 different trades.

As regards Unit Standard Learnerships and dual vocational training, CBT is used to define OCF, it being understood that training and assessment standards are under the remit of each sectoral SETA in close collaboration with the private sector. In either case, the course is completed at level 4. Unlike under NATED and NCV, students may sit the trade certification immediately after obtaining their education certificate without having to go through a 12- to 18-month internship since the company part is included in their course programme.

4.1.6. Figures

In 2016, some 705,397 students enrolled in vocational training. More than half (56.8%) of the students are female, the rest (43.2%) being male. Also:

- 70 % of the students enrolled in NATED training programmes;
- 25 % of the students enrolled in NCV training programmes;
- the remaining 5 % joined training schemes.

4.1.7. TVET funding: three sources

In 2016-2017, Government allocated ZAR 306,584 billion to the education sector; this represents 19.4% of total government spending. In 2011, the amount was ZAR 170 billion.

Budget allocated to TVET in 2011 was to the tune of ZAR 5.7 billion (approx. € 380 million). In 2017, this figure went up to ZAR 7.4 billion (approx. € 493 million). While the budget allocated to TVET was 3% in 2011, it went down to 2% of the total budget in 2017. As can be seen, the share of the TVET funding in the total education budget was reduced by 30% over the last 8 years. The bulk of this funding goes to infrastructure, the wage bill, equipment and other consumables. On average, a TVET student costs ZAR 60,000 (€ 4,000) per year.

After 2016, South Africa's economic growth slumped and that adversely impacted the TVET budget allocation as it was reduced by 20%. For example, in 2019 Gert Sibande college in Standerton, which has 6 TVET centres and 12,000 students, registered a shortfall of ZAR 47 million (nearly € 3 million), a sum that the school needed to generate from other sources. As Gert Sibande college is located in a rural area, it is even harder for them than it is for schools in wealthier regions like The Cape or Durban where businesses are more numerous and wealthier.

In addition to government funding, businesses are subjected to a Skills Development Levy (SDL) to encourage learning and development. This levy is set at 1% of the total wage cost of an employer. In 2015, this levy helped collect 1 billion Euro. The proceeds are remitted to the – South African Revenue Services (SARS). They are allocated as follows:

- 80 % are allocated to the various government education and training sectors – Sector Education and Training Authority (SETA) – which use them to further improve and develop the skills of their employees, but also to fund grants for students who undertake in-company apprenticeship;
- 20 % are credited to the National Skills Fund Plan (NSFP). These funds are used as an additional budget to reinforce vocational training projects in TVET colleges with a special focus on the training and professional integration of the less well-off and early school leavers.

TVET colleges' own and direct resources are quite scarce as they amount to a mere 1% of their total budget. Some of these schools develop partnerships with local authorities by means of which they offer courses leading to qualifications adapted to the needs of the local economy.

4.2. Processes of job and economic potential analysis

4.2.1. At national level: a combination of two dynamics

- Sectoral analyses of SETA

In the Apartheid era, there were 33 training entities linked to a given economic sector; they were called Industry Training Boards. Thanks to these joint bodies, TVET worked rather efficiently because each economic sector worked in close collaboration and vocational training schemes (NATED) were customized to the needs of the market and economic development. Private sector stakeholders were behind training centres. However, TVET was working only for a minority of the population, i.e., the Whites.

The first multiracial elections, held in April 1994, signalled the end of Apartheid and made TVET accessible to large swathes of the population. The consequence was that the existing system could not meet the training demand of the youth.

In 1998, the South African parliament passed a law named "Skills Development Act". This act defined 21 sectoral entities (Sector Education and Training Authority – SETA) which were initially attached to the ministry of labour and, in 2009, were placed under the Department of Higher Education and Training (DHET) within the ministry of education. Initially, these government entities' role was to transfer training levies, payable by all employers of their sector, and to ensure skill development by striking a more favourable balance between training offerings and the demand of the economic sector. In fact, each SETA develops for its own trade an annual sectoral and socio-economic analysis (Sector Skills Plan - SSP) using their own methods. SETAs analyse a wide range of quantitative data including the Provincial Skills Development Sector (PSDS) reports that provinces compile annually. The compilation of the regional report is supported to some extent by the business sector, depending on the economic weight and dynamism of the province. PSDS is based on a yearly assessment of skills needed (Workplace Skills Plan) carried out by the same companies that pay the levy.

However, a number of elements limit the scope and relevance of some of these sectoral assessments. Therefore, the quality of the quantitative data is to be considered with a measure of prudence because companies' needs in terms of skills are sometimes distorted so as they get a more substantial refund of the tax. Also, companies are much less interested in the training tax since the refund they are entitled to has been reduced from 50% to 20%. So much so that many companies were not keen on drafting their Workplace Skills Plan. Lastly, more often than not, SETAs merely copy the needs of other companies without carrying out any additional prospective studies and assessments of their own steam. In fact, the private sector questions the reliability of these WSPs as it does not identify with them. SETAs are too much subjected to government decisions and their management and governance are perceived as lacking in efficiency. For all these reasons, and unlike the relationships between the former Industry Training Boards and the stakeholders in the economic sector, the collaborations became ineffectual. To make matters worse, there are no sectoral federations. What we see is a multitude of sectoral sub-federations that do not speak with one voice and do not put forward their needs in a collective manner, all things which make it harder for SETAs to cover the entire sector.

Though the 5-year NSFP, which includes the key intersectoral skills, does exist, SETAs do not really seek to integrate their efforts and the consequence is that that limits the scope of some trades within one sector. For example, the plumbing trade is included in many SETAs but no integration effort was made for one single OCF.

Lastly, and this is perhaps the most critical aspect in the updating of OCF and curricula, as that is rarely looked into (see section 4.3), there is not much evidence to show that sectoral studies are taken into account. Also, over the last few years there have been instances where the introduction of new trades or the maintenance of existing ones was not justified by the needs of the sector but was the result of political decisions. Courses were offered where demand was almost non-existent. In other cases, training in some trades was still offered although there was a surplus of qualified people in that trade who could not find a job (e.g.: electricians).

For all these reasons, private economic operators distance themselves from TVET, thus resulting in a widening gap between needs and demand.

- « Skilling South Africans for SIP and through SIP »

In parallel, president Zuma rolled-out, in 2012, an ambitious modernization and infrastructure development plan for the country, based on 19 sectoral studies, called "Strategic Integrated Project (SIP)". These SIPs were expected to be the drivers of South Africa's economic growth and social development. To remedy the urgent shortage of technical skills in the country without having to import foreign skilled labour, these SIPs are also intended to strengthen national expertise. The motto of the SIPs is: «Skilling South Africans for SIP and through SIP»

It is worth recalling that this time round the sectoral assessment, together with a skill development plan (OCF), was carried out in a real spirit of partnership with multiple

stakeholders representing various ministries, SETAs, provincial authorities and, last but not least, economic operators. These studies and benchmarks are in line with the needs of the market and integrate the short-, medium- and long-term needs. More importantly, the economic world is in favour of this initiative and supports it.

However, instead of adjusting or replacing existing programmes or schemes, it was decided to add a new training scheme based on the dual system and called "Centre of Specialisation - CoS" (see section 4.4). While it is still in its pilot phase, CoS enjoys the support and effective involvement of economic operators.

Moreover, these two types of superposed sectoral studies, together with the SIPs launched by president Zuma at the national level and the SSP run by each SETA, exacerbate the feeling of confusion and lack of clarity in the overall TVET system.

4.2.2. At the regional local levels: TVET Colleges

TVET colleges are administered by a TVET College Council composed of members representing local economic operators, trade unions, state-owned companies, chamber of commerce and local government bodies. This is a statutory requirement. The governance body's role is to ensure that the training programmes/courses serve well the needs of the local sector. As they enjoy a significant autonomy, schools are free to strike out or add programmes in consultation with local economic players. However, the involvement of the latter depends on how economically dynamic the region is. Of course, economic activity is usually concentrated in urban regions (Durban, Gauteng and Western Cape) and that is where operators are most involved and interested in the profiles and level of competence of TVET graduates. Some regions carry out their own assessments of the skills needed by their economic fabric so as to customize NCV and NATED programmes to the specific requirements of the firms that operate there. However, to avoid having to undertake a stringent revision of programmes, TVET colleges informally add training modules. Those modules are taught by the firms, against no fee, and students are not assessed on them. Depending on how dynamic a TVET college is, programmes are updated every year or every two years in collaboration with the corporate community.

Usually, TVET colleges that are located in rural areas are taken care of by government. That results in the fact that training programmes are rarely adjusted to the needs of local private sector operators, and that process is left in the sole hands of their governing body.

Just as no linkage between training needs and demand is established, there is no system to manage and regulate learners either. Clearly, TVET is more into achieving social goals rather than occupational integration. It is not uncommon for young people to be kept on the training programme for as long as they have not found a job.

4.3. Development processes for work situation analysis (WSA), occupation-competencies framework, training frameworks and evaluation frameworks

4.3.1. At the national level:

- The framework

The 2008 National Qualifications Framework Act⁴ regulates the accreditation and registration of TVET programmes in two sub-structures, i.e.: (1) UMALUSI, which is an accreditation and quality assurance agency that validates OCF and training and assessment curricula for technical education (Technical High School) and NATED for L1 to L3 ; and (2) QCTO, which is another similar agency that validates NATED-affiliated OCF and training and assessment curricula, from N3 to N6, as well as the NCV for levels 2 to 4 in relation to the « Occupational Qualifications Sub-Framework » (OQSF).

UMALUSI design their various curricula with the almost exclusive assistance of academic experts. Also, their training syllabi are totally theoretical. QCTO revise existing curricula and develop new ones, on request, for the private sector.

QCTO tend to seek the assistance of stakeholders from the public sector. However, those public sector experts are hired directly by QCTO, without involving sectoral federations. The drawback of this approach is that the opportunity of having a large and diverse panel is discarded.

- OCF

In 2015, under the oversight of DHET, QCTO was tasked with reorganising and rationalising the trades qualifications system by reforming the occupation-competencies frameworks (OCF). While in the initial framework there were some 2,000 such occupations-competencies, developed in an uncoordinated manner by 21 SETAs, and which divides occupations into too narrowly defined and compartmentalized manner, QCTO carried out a substantial work of revision and grouping ("Single National Programme"), thus reducing the number of occupations to 300 in total - a nomenclature which is both consistent and reasonable.

For example, 17 OCFs for the same trade of electrician were, in the past, scattered in various SETAs under the same heading but with different contents. QCTO regrouped them to present the trade exhaustively with a transsectoral and holistic perspective.

- Training curricula

As things stand today, NATED lists 129 training curricula. These curricula are exclusively theoretical and none was based on the CBT approach. In contrast, the 19 training curricula identified in NCV are developed in a way as to ensure some balance between theory (30%) and practice (70%). For reasons reported in more detail under section 4.5, it seems that the

⁴ National Qualifications Framework Act, 2008 (Act. No 67 of 2008 « the NQF Act »).

proportion between theory and practice is not observed properly. In fact, we observed that the proportions were reversed, sometimes with very little room left for practice; some vocational schools even reported that only 10% were dedicated to practice.

Training frameworks are developed or revised by DHET. Just as is the case with OCFs, the economic sector's involvement is quite limited and remains consultative in nature. Experts are also hired directly by DHET without consulting with employers organizations or trade branches. Also, these frameworks, developed for NATED way before the end of Apartheid and in 2009 for NCV, have seldom been reviewed and updated.

These frameworks do not provide interlinkages between sets of skills needed at some point or other of the performance of tasks and operations. We did not identify any skills matrix or flowchart.

In contrast, where the dual system (Centre of Specialisation) was concerned, the 13 training and assessment curricula were designed and developed in close synergy with the federations of the trade concerned (SEIFSA⁵ for mason, electrician, foreman, boilermaker, carpenter, joiner, rigger, welder, fitter-assembler, engine fitter; RMI⁶ for automotive mechanics trades, Diesel engine mechanics; IOPSA⁷ for the plumbing trade; and SAIW⁸ for welders). The curriculum is organized with an effective alternation of six weeks at the college and six weeks at the workplace, and this for three long years.

- [Assessment curricula](#)

Upon completion of the NCV training pathway (3 years in college), learners take up theoretical and practical tests in the workshop. However, as the opportunities to conduct practicals are rather scarce, the quality of such practical tests is questionable. Especially that, on completion of the 3 years, learners are awarded level 4 certificates, which do not offer them much chance in terms of finding a job anyway, for they do not meet the requirements of the labour market.

Nonetheless, there are certified centres called "Trade Test Centres" which hold evaluation tests to assess effectively the competencies of the learners by means of integrated assessments. It is the National Artisan Moderation Body (NAMB), placed under DHET, that coordinates and ensures the quality of the Trade Test Centres by accrediting them. There are 3 ways of taking up these tests, i.e.: (1) By performing an 18-month apprenticeship after the 3-year NCV training; (2) by attending a dual type of training; (3) by validating professional experience. Developed with the genuine input of labour market stakeholders, these integrated assessments are effectively based on the CBT approach. Candidates must be able to perform the task assigned to them and to explain it.

⁵ Steel and Engineering Industries of South Africa.

⁶ Retail Motor Industries.

⁷ Institute of Plumbers of South Africa.

⁸ South African Institute of Welding.

4.3.2. At the regional and local levels

Training and assessment curricula are rarely updated and customized by the schools. On the one hand, that depends on how economically dynamic the area, where the TVET college and its campuses are located, is. But it also depends on the college itself, whether there is real leadership in the college's governance. On the other hand, administrative burdens are another important challenge for the updating of training and assessment curricula, in addition to an extremely long validation process that has to go through numerous intermediaries. When, for instance, a school applies for the accreditation of a new training curriculum, or of an updated version of it, the application must be filed before a SETA then vetted by the QCTO, which carries out an audit in situ to assess the capability to implement the new curriculum (competency of trainers, capabilities in terms of practicals). Thereafter, the application goes to the South African Qualifications Authority (SAQA). Once registered, the accreditation will have to follow the opposite direction until it reaches the applicant school. This process takes so much time (often more than a year) that some schools, when seeking to update a syllabus conducted with a local company, forget about accreditation and, instead, add up modules which are then implemented by the staff of the local company free of charge.

To our knowledge, there are no pedagogical guides nor is there any pedagogical and material organization to facilitate these bureaucratic procedures.

4.4. Implementation of curricula in accordance with the CBT approach

Following our field observations and meetings, we are of the opinion that the implementation of curricula in accordance with the CBT approach is rather limited. As has already been pointed out, the two major programmes (NATED and NCV) are quite inadequate and do not adequately satisfy the needs on the ground.

In most cases, teaching is almost exclusively focused on content and remains theoretical. It is hardly focused on the learner who is deprived of hands-on learning opportunities. Clearly, all will depend on the collaborative momentum with the private sector and on the actual setting up of workshops. Although they had received funds when the new NCV scheme was introduced in 2009, schools claim complain that the means are not sufficient for their implementation. Many TVET colleges resort to collaborative arrangements with the private sector - when such opportunities do exist - to benefit from the additional resources they need to invest in apprenticeship workshops.

Besides, there are 30 students per class on average. The workshops lack equipment to cater for all of them and most trainers do not have enough field experience to provide practical training.

Also, private sector stakeholders feel that three years of studies (in the case of NCV) before taking up an apprenticeship in a company is far too long. Thus, the stakeholders are reluctant to offer internships to students who spent too much time outside the real work environment.

Only the new dual system (« Centre of Specialisation » – CoS), which was set up in close collaboration with the private sector, is compliant with the CBT approach. Relying on the clear support of 350 companies, an apprenticeship agreement is signed between each student and one of the companies. Those companies also participated in the selection of apprentices and validation of campuses (practical training capabilities, competence of trainers, etc.) The new programme augurs well for the future implementation of a genuine CBT-based curriculum whereby six weeks are to be spent at school and six weeks in apprenticeship alternately. On completion of the training pathway, the students will have to take up the Trade Test recognised by the State.

As a reminder, 13 training programmes were implemented in 3 years. Each one was introduced in two vocational training centres, thus enabling the deployment of the test phase in 26 centres (30 students per centre). Although it was initiated in 2017, implementation in the schools actually started in 2019. It is therefore too early to draw any conclusions.

With this choice of an ambitious and broad pilot phase, many challenges, relating to the DHET's ability to implement it, to finance it and to provide pedagogical support, were met successfully.

- [Management of Colleges](#)

TVET colleges enjoy a large management and decision-making autonomy. They have the power to hire their own trainers and to initiate collaborations with the local private sector. They are also free to choose the curricula they consider as most relevant. When 12 training trades were introduced in the wake of the new NCV programme, in 2009, TVET colleges freely chose the trades they wanted.

This extensive autonomy is a good thing in itself. However, accountability is not all that effective and, in actual fact, the least dynamic colleges are not regulated.

- [Social considerations](#)

As learners have not had, so far, the occasion to practice during their learnership, and with technology not being up to date, skills gained do not match the needs of the labour market. Consequently, many students are unable to find work after having completed their training. Therefore, it is not uncommon for these unemployed youth to be kept on the training programme for as long as they have not found a job. This shows that the training plays a social role rather than integrating the graduates in the labour market.

[4.5. Training trainers on CBT teaching methods](#)

According to 2018 data, there were more than 10,000 trainers who teach to over 700,000 students in the 50 TVET colleges across the country. Around 50% of them are under-qualified or not qualified at all to teach.

There is no specific CBT component in the initial training pathways for trainers. And we did not identify any in-service training dedicated to CBT.

The quality of the training of trainers is seriously questioned during our meetings. The main criticism in their regard is that most of them do not have any experience of work in a company; they join VTCs right after they complete their studies with hardly any educational/pedagogical expertise.

In 2014, a survey was carried out with all the teaching personnel. 5,712 out of 7,789 trainers provided information on their level of qualification. The survey results showed that:

- 12% of the trainers were deemed unqualified both academically and professionally;
- 38.6 % of the trainers were deemed academically qualified but not professionally;
- 34.5 % were deemed academically and professionally qualified but for the mainstream educational system;
- only 15% of respondents were deemed qualified both academically and professionally for technical and vocational education and training (TVET).

One of the reasons why TVET trainers are under-qualified (including for mainstream education) is thought to be in the transition period that followed Apartheid era and during which many qualified TVET trainers left the country. That led to a decline in the quality of teaching, coupled with an incompetent leadership and the weakened governance of schools (e.g.: lack of investment in the creation of workshops). Trainers did not have the required competency to conduct practicals. So much so that sometimes new workshops remain unused for a long time because of the lack of qualified and competent teaching staff.

When a curriculum is updated, trainers should be able to follow a refresher course at university. These training programmes are funded. In contrast, as no funds are earmarked for the hiring of substitute teachers (replacement staff), school managers cannot afford to let their permanent staff attend such refresher courses.

Through the Work Integrated Learning (WIL) project, Swiss cooperation (SSACI) has been assisting in the professional development of trainers by offering them work experience placements in companies (since 2012). This scheme was rolled-out in 28 colleges (no data on the number of individual beneficiaries was provided). More recently, a new training initiative dubbed « Lecturer Development Framework » was initiated and carried out with two universities. These are the first educational training schemes targeted at TVET trainers.

4.6. Development of occupational certification frameworks

The government vocational training system is built on a national qualifications framework made up of ten levels, each corresponding to a diploma. SAQA determines national assessment standards which must match the level expected in the National Qualification Framework and in the National Quality Assurance. SAQA also issues accreditation of diplomas and certificates. Levels 1 to 4 fall under vocational training while level 5 (engineer) is placed under higher education. Occupation or level of skills by occupation is not an indicator for diplomas. For the same occupation, a student may have as many as 5 types of

vocational training programmes to choose from. Each type leads to a level 4 diploma, in terms of certification.

The Department of Higher Education and Technical and Vocational Education and Training oversees 3 certifying bodies, i.e.:

- The Council on Higher Education (CHE) issues accreditation for higher education academic programmes;
- UMALUSI certifies technical training curricula (technical secondary, NATED levels 1, 2 and 3).
- QCTO certifies vocational training curricula (NATED L3 to L6, NCV, Unit Standard Learnerships and CoS). It instructs SETAs to design OCFs and validates the latter. As previously stated, QCTO made important efforts, over the last 3 years, in rationalising OCFs (from 2,000 down to 300), bringing them together and streamlining them across sectors. However, their alignment with existing training curricula is not effective yet.

These quality control bodies focus their assessment on the proper conduct of training processes and curriculum evaluation, paying little attention to content (coherence between training and labour market needs). By contrast, QCTO audits campuses to determine the compatibility and quality of infrastructure and tools that are necessary for a proper delivery of training programmes.

4.7. Impact of CBT approach on the quality of TVET products

DHET has no system in place to trace TVET graduates. Certainly, there are career guidance units on campuses but they do not compile quantitative data.

Some studies show that in the case of NATED and NCV, only 40% of graduates manage to find a job within 6 to 24 months after their graduation. Of these, 76% studied craft trades and 6% entrepreneurship. Overall, NCV pathway tends to train too many students irrespective of the number of apprenticeship openings, offered by companies, without which students cannot sit their Trade Test.

While figures are not available, students who completed level 5 (engineers) in mechanical engineering, electronics and industrial engineering find work more easily.

Surveys on the level of employers' satisfaction with the new graduates are also lacking. However, the various interactions we have had with economic operators show that the latter have mixed opinions on the quality of graduates and their practical skills. In contrast, whenever there is a collaboration with the local economic stakeholders, integration and satisfaction rates seem to increase naturally. Economic operators clearly expressed their enthusiasm and optimism in respect of the dual system of training.

5. Methodology

5.1. References

Documents consulted are provided under Annex 3 ("References").

5.2. Collection, analysis and interpretation of data

The collection of preliminary data, from reviewed literature, was supplemented by other data compiled during semi-structured interviews that were carried out with most stakeholders who were directly or indirectly involved in the CBT approach implementation process, and who may have influenced the customization and generalization of CBT. Consequently, the various strategies supported by the data collected enabled the triangulation of such data and, thus, instilled a greater reliability to the findings and recommendations suggested in this report.

The data was collected then processed in order to extract the most relevant elements therein. The analysis of the interviews carried out with stakeholders and actors on the ground (beneficiaries, teachers, managers, support staff) and the cross-checking of data served to highlight findings and recommendations.

Lastly, a brainstorming workshop where observations were shared, following the two missions carried out in Morocco and Senegal, was held and enabled consultants as well as IFEF and UNESCO representatives to agree on the methodology, to adjust some strategies and to discuss the scoping of the content of the country report (and possibly the synthesis report). The subsequent reading of all country reports by all the members ensured a shared understanding of the recommendations and information contained therein.

6. Conclusions

6.1. General remarks

Although the South African TVET system was built on a sound institutional and structural foundation - which, in recent history, proved its efficiency and effectiveness for a minority of the population -, with the end of Apartheid a transitional period occurred. The transition is not over yet. That troubled period where important reforms and changes had to be made to ensure integration on a very large scale was not well managed and, consequently, the quality of the TVET system suffered greatly while it was disconnected from CBT considerations (with economic operators clearly rejecting those reforms and TVET).

Prior to 1994, the country had a TVET system which was partly based on an efficient competency-based approach, at least in so far as collaboration with economic operators was concerned. Since 2017, a glimmer of hope and enthusiasm was born with the introduction of the dual system (CoS), thus enabling an effective and close collaboration between the training community and the labour market. However, it is still too early to draw conclusions and mark the end of that transitional period. Several major challenges persist including the

ability to host, train and place on the labour market large numbers of learners over the coming years.

6.2. Extent and evolution of establishments

Between the dismantling of the old system and the setting-up of new entities and structures, the transition period brought with it good practices that are fairly compliant with CBT and on which TVET may be built upon, at least in part. Thus:

- A genuine collaboration with the private sector was initiated in 2012 for the preparation of 19 sectoral studies which would serve to identify 13 priority trades in CoS ;
- A better collaboration between quality assurance bodies and private sector operators was highlighted; closer ties have been forged:
 - QCTO involves private sector operators when developing OCFs; more progress is to be done though;
 - Although there is still room for improvement in the collaboration with the private sector, SETAs have become key players in their respective sectors. These entities play a critical role in the establishment of trade centres, like the role they play at present in the establishment of CoS.
- QCTO streamlined the distribution and establishment of trades across the country (from 2,000, OCFs were brought down to 300) thus ensuring their coherence while keeping a wide enough scope to satisfy various sectors. Today, a framework for the development of OCFs exists;
- A centralized accreditation system is in place and QCTO's renewed effort in streamlining OCFs is key and should ideally be followed by the streamlining of training curricula and the matching of curricula with the different trades;
- A template for the development and updating of training frameworks exists and is used by all schools;
- Cos helped private sector and TVET to instil a new momentum in the development of training programmes, alternation between theoretical learning and practicals as well as assessment of integrated tests with the participation of private sector operators. It is hoped that tangible and effective improvements to the quality of training will be registered and that the CBT approach will be included in the system;
- Administrative, educational and financial autonomy of TVET colleges may prove to be a valuable asset in collaboration efforts with the private sector and the customisation of training programmes, provided that an effective accountability

system is in place to ensure quality at all levels and the involvement of all TVET colleges.

- The training levy fosters the involvement of companies. Although a more coherent policy is needed, it is a positive momentum that prompts a continuing training policy and engages private sector operators in TVET.

- All private and state-run training centres must obtain accreditation (guarantee of quality) before initiating a programme.

However, for the system to become effective and move in the right direction, several major impediments must be eliminated.

- Policy choices must be guided by a long-term vision and should not be adversely effected by changes in government. The gap between the formal willingness to make of TVET a policy focus and the dearth of financial investment is a perfect illustration of such political delays and hesitations.

- The "multi-layered cake" sort of practice, whereby a plethora of initiatives pile up on top of each other instead of one initiative replacing another, should be avoided as that makes the system particularly complex and hard to figure out; examples:

- the duplicated system of sectoral studies (SSP and SIP);
- the types of training offered, as they are segmented, inefficient for the most and do not complement each other;
- the types of training programmes offered, as they are segmented, duplicated and not easy to figure out.

- A certification framework implemented in all sectors. However, the certification framework is not geared toward the labour market;

- Absence of a flexible mechanism which would allow frequent reviews (according to needs) of OCFs and training curricula;

- Burdensome administrative procedures that are required for the design or updating of training programmes hamper severely the regulation of the system and lead to informal and unfunded updates. Addition of new modules is dependent on the willingness and interest of private partners to substitute for the State and implement them;

- The critical shortage of sufficient infrastructure and equipment on campuses is another hurdle which must be eliminated to secure quality training;
- Closely related to the previous point: trainers' low level of qualification or of practical experience is a central issue because trainers are the first agents who guarantee the quality of an educational system. Yet, there is no specific training on CBT for trainers.
- Not all TVET colleges have the same approach when collaborating with the local private sector. Most TVET colleges that are located in remote rural areas are geographically far from economic activity areas, and linkages with the local needs of economic operators are rarely established;
- The autonomy of TVET colleges has a consequence as it is not accompanied by monitoring or accountability obligations. That explains the impunity that less dynamic TVET colleges enjoy;
- The private sector's involvement in training remains a major challenge because it greatly varies according to the specific interests of the sector concerned, the economic vitality of the regions or the leadership of training centres;
- Training is not regulated in a uniform manner: information relating to work placement is not compiled systematically no is it used to adjust available training offerings.

6.3. Potential avenues for future action

Our study on the implementation of the competency-based approach in South Africa's TVET lead us to conclude that few training programmes are actually in line with the CBT. In the post-Apartheid era, the effective involvement of economic operators in efforts to identify the skills needed dwindled rapidly and greatly. Yet, over the last few years we noted a resumption of collaborations thanks mostly to new training initiatives such as the Centres of Specialisation (dual vocational training). However, although they are promising, these initiatives are still at the experimental stage.

It is with this backdrop that we identified several aspects which need to be improved or attended to, namely:

- **Put forward coherent training offers which match the needs of the market**

Until now, most training programmes (whether NATED or NCV) offered in vocational training centres had been developed a long time ago. Very few were updated since then with a very

limited input from the economic sector. It is, therefore, important to update these programmes in close cooperation with the stakeholders.

Also, there are many programmes which, for the same study level or sector or for different study levels, have the same designation but with different content. Example: the curriculum for the training of electricians may be found in other trades with different contents but not harmonized. It is necessary to harmonize across sectors (trades), in line with the OCFs which QCTO revamped and made more consistent.

- **Build trust and make TVET more efficient and intelligible in order to restore the partnership momentum**

As was mentioned on several occasions, collaborations established with the private sector at the local, regional and national levels are limited. Two interrelated areas for improvement were identified to help resume those collaborations, i.e.: (1) simplify the system to make it more efficient and intelligible, and (2) restore a sense of trust.

As it stands, the TVET system is complex and not easy to figure out. It is akin to a "multi-layered cake" made up of structures, entities and initiatives that pile up on top of each other. Indeed, the new initiatives (new types of training programmes, new quality assurance bodies, national development studies adding up to sectoral assessments carried out by SETAs) do not replace or complete the previous ones. Rather, they pile up on top of each other. The consequences of all of this are more confusion, an obvious loss in efficiency and energy which, in turn, produce less visibility to the extent where initiatives that are genuinely positive get lost and diluted in the older ones in spite of their degree of efficiency and value. Simplification efforts are therefore necessary to make the overall TVET system more attractive and more credible.

Also, the quality of collaboration efforts raises questions in relation to the three main entities which make the core of CBT: (1) identification of needs by SETAs; (2) implementation of OCFs by QCTO and SETAs; and (3) development of training curricula by DHET.

The reputation of SETAs is questioned by economic operators. These do not feel that they are sufficiently involved and/or have little faith in the assessments of required skills contained in the sectoral studies conducted by SETAs. The view is that those studies are not matured enough and lack substance. To be able to conduct quality sectoral studies and link them up to OCFs, the skills and capabilities of SETA employees need to be upgraded. They should also to be made aware of the need to look at economic operators as genuine partners and not just as people who contribute a training levy.

Lastly, SETAs are rightly viewed as too dependent on government decisions (the change made to the refund of the training levy - from 50% to 20% - is the most blatant example). Therefore, the decision-making powers of these entities should be balanced between the private sector and the relevant ministry. However, in fairness to SETAs, few sectors speak in one voice because the fragmentation into many sub-sectoral federations hampers an effective collaboration which would address the realities of all sectors. The private sector

should also do its part by simplifying and proposing a joint entity representing the entire sector.

The process for the accreditation of a training programme is very slow. The process should be made leaner and the number of players should be reduced. One key measure would be to enhance the human and financial resources of QCTO so that accreditation tasks be carried out by this entity alone.

Also, DHET expertise should be strengthened so that they will be able to design better curricula. That would include the ability to link up the assessment of sectoral needs and the adjustment of curricula accordingly.

- **Support and promote new learning initiatives (CoS in particular)**

So far, the participation of economic sector federations and stakeholders in the establishment of centres of specialisation (CoS) in the 26 TVET colleges has been intensive and positive. The colleges are very enthusiastic about this new programme. The fact is that these CoS seem to present a unique opportunity to revive a real and effective collaboration between TVET stakeholders (DHET, SETAs and TVET colleges) and economic operators, but also to implement an alternate training which is relevant and compliant with the spirit and aims of CBT. However, the project is an ambitious one and it faces numerous challenges. It is vital that DHET provide the means needed to achieve their goals. To support their trainers, they need to enhance their educational and curricular competences. DHET should ensure that infrastructure and equipment are available and that these perfectly match the requirements of local businesses.

- **Enhance the capabilities of TVET colleges and their campuses**

One of the challenges that needs to be addressed relates to those employers who prefer to continue working with private training providers instead of using public TVET colleges. This persisting reluctance is due, among other factors, to the fact that the curricula of the colleges are outdated (especially that ministerial accreditation of syllabi is a slow process) and that the quality of the trainers' own training is far below the level required to teach those syllabi.

The dilapidated state of most of the training facilities and equipment in TVET colleges is another deterrent: "Technology in the industry evolves much faster than TVET schools and that situation is exacerbated by industry's preference to work with private training centres rather than with public vocational training centres" (Scott, 2018; Ward, 2018). This is why it is important to invest in up-to-date equipment in sufficient quantity while ensuring that the trainers know how to use such equipment.

Boosting the financial resources of schools would be another key for making these important investments. The idea is to instil an entrepreneurial spirit in the management of training establishments in order, for instance, to promote income-generating activities but also to create partnerships with local business operators so that they may get more involved in such investments and, eventually, reap the benefits of a skilled and competent labour force.

Last but not least, in the context of this partnership, it would be necessary to devise a lean and simple process for the validation of programmes within shorter deadlines at the local level, in order to foster the review and updating of such programmes locally. That would make it possible to align vocational training offerings on the needs in terms of competences and profiles of the local private sector operators.

ANNEX 1 – Interview Guidelines

Themes	Sub-themes	Questions
1. History and institutional context of CBT introduction	Implementation conditions and history	<ul style="list-style-type: none"> • Could you please explain the history of CBT implementation? • How and by whom was it initiated? <ul style="list-style-type: none"> ○ Who made the decision to initiate it? ○ What type of CBT approach was adopted (what external support) and how was it adapted to country conditions? ○ What contributions have been made by government, TFPs, private sector and civil society? ○ What was the level of commitment of each of these actors? • How is TVET organised: technical education and vocational training, apprenticeship? • What is the status of CBT roll-out across the different sectors and regions? (Management of the transition) <ul style="list-style-type: none"> ○ What have been the difficulties or obstacles to roll-out? ○ What are the roles of regional and local actors in CBT implementation (education system, link between TVET and the private sector)? • What influence do private school operations (e.g., Don Bosco) have on CBT?
	Political and institutional framework	<ul style="list-style-type: none"> • What key legal documents are required for the implementation of the CBT approach? • How has the CBT approach influenced TVET operations and institutions? • How did you (do you) establish linkages with socio-economic development priorities by sector? • Has the partnership inherent to CBT implementation helped to organise partnership governance mechanisms? <ul style="list-style-type: none"> ○ What is the scope of that partnership? ○ How about its national, regional, local and sectoral roll-out?
	Issues of financing	<ul style="list-style-type: none"> • Who funded (is funding) CBT implementation? <ul style="list-style-type: none"> ○ And, has CBT implementation facilitated private sector involvement in funding the mechanism? ○ What has been the trend in the level of government involvement? Has it increased or decreased? • What was the impact of transition to the CBT approach on funding?

		<ul style="list-style-type: none"> • What was the extent of funding invested in CBT teaching and training and what were the funds used for? Question on CE and apprenticeship.
2. Processes of job and economic potential analysis in the countries	Background and analytical process	<ul style="list-style-type: none"> • Before CBT implementation (or in the case of non-CBT design programmes), what process was used to analyse jobs and economic potential? <ul style="list-style-type: none"> ○ What has changed since CBT implementation?
	Job analysis process	<ul style="list-style-type: none"> • What mechanism was used to analyse jobs by priority economic sector? • How are priorities set to select economic sectors or industries for CBT programme design? • How are new occupations identified? • What is the decision-making framework/process for developing new fields/occupations or for discontinuing fields that no longer meet needs? <ul style="list-style-type: none"> ○ How is the situation of trainers in the discontinued fields being dealt with? • How are businesses/employers associated in decision-making? <ul style="list-style-type: none"> ○ At what level are decisions made? At public, private, partner level? • Has the training method facilitated CBT implementation?
	Managing and regulating the flow of students	<ul style="list-style-type: none"> • How does the CBT approach help manage/regulate the flow of students?
	Consideration of distinctive features of regional/local development	<ul style="list-style-type: none"> • How are the distinctive features of regional/local development factored in to training programme development/revision? • Have vocational training centres (VTCs) begun specialising in sectors according to the qualification needs of businesses in their respective economic environments and geographical areas?
	Monitoring mechanism	<ul style="list-style-type: none"> • Is there a monitoring mechanism to support regular revision and adaptation of training programmes to meet new qualification needs? <ul style="list-style-type: none"> ○ Is the system revised on a regular basis to meet the needs of the labour market? ○ What organisation or body organises or deals with programme revision? Is the private sector involved? • Has CBT approach facilitated the monitoring of the supply of training and the productive sector's demand for skills and needs in terms of qualification (regulation of certification)? <ul style="list-style-type: none"> ○ What is the structuring effect of CBT approach in streamlining the needs or their analysis? ○ Has the CBT approach helped facilitate the decision-making process? ○ Have CBT practices in private training centres had an impact on the practices of public institutions?

3. Development processes for work situation analysis (WSA), occupation-competencies framework (OCF), training frameworks and evaluation frameworks	Development and validation processes	<ul style="list-style-type: none"> • Is the CBT programme design process supported by a normative and/or methodological framework (e.g., CBT guide) or is reflected in a government policy? Who is involved in programme design (oversight and decentralisation)? <ul style="list-style-type: none"> ○ What is the subsequent validation process for the programmes developed? • What body(ies) are involved in CBT programme development? • What is the validation process? <ul style="list-style-type: none"> ○ Who validates the certification/evaluation standards?
	Partnership approach	<ul style="list-style-type: none"> • Were standards designed in partnership with all stakeholders in vocational training and notably with the participation of the employers organisations, businesses and industries, as well as government?
	Management of the transition	<ul style="list-style-type: none"> • How substantive is the transition? <ul style="list-style-type: none"> ○ Is the CBT implemented alone (pure CBT) or is there a transition between outcome-based training and CBT (in the country)? Within a VTC? Within a single programme (e.g., a CBT approach but a conventional assessment system)? • What are the obstacles to a full transition? <ul style="list-style-type: none"> ○ How long has the transition been taking place? • What is the degree of acceptance/ownership of CBT use? <ul style="list-style-type: none"> ○ Has the transition been successful? ○ Do donors still invest in the transition? • What major changes have been observed since the adoption of the CBT approach?

4. Status of CBT programme implementation	Independent management of vocational training facilities (including their finances)	<ul style="list-style-type: none"> • How was the CBT implementation process set in motion? <ul style="list-style-type: none"> ○ What is the current status of roll-out? ○ What are the obstacles and leverage for its deployment? ○ How well is the process accepted? • Are all VTCs given administrative, financial and pedagogical autonomy? <ul style="list-style-type: none"> ○ Can they hire professional trainers? ○ Do they devise their own strategic and operational planning? ○ Do they manage their own budgets? ○ Has the CBT approach led training centres to generate funds through production units (financial innovation) and/or influenced their teaching methods (application)? ○ Has the CBT approach helped training centres develop a lifelong learning plan? ○ Have VTCs become players in the economic development of their respective areas? Or communities? ○ Is budget adapted to CBT requirements (materials, infrastructures, equipment, working materials)? • Is there an accountability mechanism in place? If so, how does it work?
	Organisation of learner-centred teaching	<ul style="list-style-type: none"> • What teaching changes have been made as a result of CBT (more specific questions)? • What is the role of the student in the learning process? • What learning strategies were put in place: subject-to-modular approach; multidisciplinary approach; reflective learning, etc.? • What percentage of training time is used for practicals? • What is the ratio of workstations (tool sets) to learners per class?
	Training environment modelled on the working environment	<ul style="list-style-type: none"> • What changes have been noted in the training environment as a result of CBT? • Are technical and professional tools in line with what is used in the local industry? • Are the consumables used the same as the ones used locally? • Beyond compliance, is there any added value that can enhance the quality of production locally?
	Partnership dynamics	<ul style="list-style-type: none"> • What changes resulting from the introduction of CBT are observed on local partners? <ul style="list-style-type: none"> ○ Has a school-environment consultation framework (professional environment, NGOs, etc.) been put in place? ○ Have teaching methods used for training in conjunction with companies (work-study, apprenticeship), or in the workplace, been adopted and coupled with CBT approach? ○ Are they followed?
	Quality assurance system	<ul style="list-style-type: none"> • What changes resulting from the introduction of CBT are observed in the quality assurance systems of training centres?

		<ul style="list-style-type: none"> • Is there a mechanism to gauge the status of CBT implementation (quality over the mid to long term)?
	Degree of compartmentalisation (roll-out)	<ul style="list-style-type: none"> • What stage have you reached in the roll-out of the CBT implementation process? • What are the challenges that hindered, or the levers that helped, the roll-out (to other sectors and geographical areas) of CBT?
5. Training trainers on CBT teaching methods	Training trainers	<ul style="list-style-type: none"> • How are trainers trained on CBT methods? <ul style="list-style-type: none"> ○ Duration; and ○ Resources. • Do trainers have access to standards and guides? • Do trainers use the standards and guides (and do they understand them)? <ul style="list-style-type: none"> ○ What challenges and/or difficulties are encountered? • What changes in teaching practices resulted from the training of trainers? • Who, in the VTC, is officially in charge of the implementation, coordination and management of CBT? • Is there a teaching methods unit within the VCT (or outside the centre, such as inspectors, sectoral, regional/national) for the purpose of pooling trainers learning or for sharing/sustaining the training of trainers? • What strategies are in place to support trainers' acceptance of, or commitment to, CBT implementation? <ul style="list-style-type: none"> ○ What are the main challenges faced? • Were apprentice instructors and trainers, seconded from businesses, trained on CBT? <ul style="list-style-type: none"> ○ Are they supervised? ○ Do they have access to documentation (standards, guides)?
	Training of other VTC players	<ul style="list-style-type: none"> • Are teaching consultants and/or inspectors, entrusted with the revision and development of syllabi (or with the facilitation of implementation), trained in CBT? <ul style="list-style-type: none"> ○ Are they trained at the same time as the trainers? ○ What kind of training do they receive? • Are VTC administrative and management staff trained on CBT? <ul style="list-style-type: none"> ○ Are they trained at the same time and in the same place as the trainers? ○ What is the content of the training they receive (what are they trained on? Merely teaching methods or on their implications as well)?

6. Development of occupational certification frameworks	Development and/or revision of certification/qualification frameworks	<ul style="list-style-type: none"> • Has the introduction of CBT impacted the development and/or revision of certification/qualification frameworks? • Is there a linkage between certification/qualification framework and the national occupational framework? • Has CBT approach facilitated the development/revision of systems for the validation of acquired experience? • Does the qualification and certification framework work? • How are professional organisations involved in the assessment and certification process? • What is the impact of the CBT approach on creating bridges between TVET and other educational sub-systems (basic education, basic entry level for illiterates) and higher education? • How has CBT changed the certification offer (creation of new degrees and diplomas)?
7. Impact of CBT approach on the quality of TVET products	Business satisfaction	<ul style="list-style-type: none"> • How has business satisfaction changed in relation to staff recruited after their graduation from TVET following the introduction of the CBT approach? <ul style="list-style-type: none"> ○ Have actual improvements been observed in the professional act of freshly graduated staff? ○ What are the main differences observed? • What systems to collect business operators' feedback were put in place to feed and facilitate CBT implementation? • What tools are used to gauge business satisfaction?
	System to measure employability	<ul style="list-style-type: none"> • Is there a tool to monitor the professional integration of graduates? <ul style="list-style-type: none"> ○ In the affirmative, are there elements to determine whether the CBT approach facilitated their employability? If so, what changes have been observed in the measuring of professional integration following CBT implementation?

ANNEX 2 - List of persons/entities contacted/met

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	Pretoria		
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5.	M. Geoffroy GANTSORY	West coordinator of Africa – GIZ Pretoria	
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		African Co-operation Initiative	
10.	Preggy CHETTY	Coordinator of the CoS projects – SEIFSA	
Capricorne College, Polokwane (region of Limpopo)			
11.	M. Alan RIBA	Deputy Director of Studies	
12.	Mme SWANGA	Project manager	
13.	M. Titus LWEHKELE	Acting deputy principal Academic	
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14.	Ms MARAIS	Chief and teachers of the Ehlanzeni TVET College – 29, Bell Street Nelspruit	mmarais@ehlanzenicollege.co.za
15.	Suzanne	Teacher in business study	
16.	Louis	Teacher in business study	
17.	Mr. Rebrof NIAGUNGWE	Teacher in Electrical Engineering	
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23.	Ms LAZEL VON GREMBACK	Recognition of prior learning – COSATU	

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32.	Mr. Sello Lucas SETHUSHA	Director: Lecturer Development – Department Higher Education & Training	sethusha.s@dhet.gov.za
33.	Mr. Vijayen NAIDOO	Chief Executive Officer – Quality Council for Trades & Occupations	Naidoo.v@qcto.org.za
34.	Mr. Craig PARERA	Director – Olifantsfontain Trade Test Center Olifantsfontain	
35.	Mr. Mustak ALLY	Head of Skills Development – Minerals Council South Africa	mally@mineralscouncil.org.za

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ANNEX 3 – References

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Main laws and regulations

South African Qualifications Authority (SAQA) Act No. 58 (1995): provides for the development and implementation of NQF; establishment of SAQA.

National Education Policy Act (1996): articulates the policy, legislative and monitoring responsibilities of the Minister and formalises the relations between national and provincial education authorities.

Higher Education Act No. 101 (1997): provides a unified system of higher education; established the Council on Higher Education.

Skills Development Act No. 97 (1998) – amended in 2008: creates the National Skills Agency, established Quality Council for Trades and Occupations, regulates skills development apprenticeships and learnerships.

General and Further Education and Training Quality Assurance Act No. 58 (2001): establishes UMALUSI as the quality council for FET colleges.

National Qualifications Framework (NQF) Act No. 67: manages the NQF, its qualifications and quality assurance.

Internet resources

TVET Colleges in South Africa: http://www.tvetcolleges.co.za/Site_Public.aspx/

UNEVOC: https://unevoc.unesco.org/wtdb/worldtvtdatabase_zaf_en.pdf

Wikipedia South Africa:

https://fr.wikipedia.org/wiki/%C3%89conomie_de_l%27Afrique_du_Sud#Une_%C3%A9conomie_marqu%C3%A9e_par_l%27apartheid

Population data: <https://www.populationdata.net/pays/afrique-du-sud/>

Statistics South Africa: <http://www.statssa.gov.za/>

SETA Information Website: <https://www.vocational.co.za/>