



**Human Resource Development Council for South Africa
(HRDC)**

TVET COLLEGES IN SOUTH AFRICA:

PATHWAYS WORKSTREAM

15 August 2014

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This brief report was compiled by **Underhill Corporate Solutions** for the HRDCSA Secretariat, as an input for the work of the HRDCSA Technical Working Group and Council. The assistance of advisory group and/or working group members is gratefully acknowledged.

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1 Introduction

The vision of the White Paper for the TVET Colleges is: “to train young school leavers, providing them with the skills, knowledge and attitudes necessary for employment in the labour market. They primarily provide training for the mid-level skills required to develop the South African economy, and tend to concentrate on occupations in the engineering and construction industries, tourism and hospitality, and general business and management studies.” (White Paper 2013: 11). The White Paper also envisages the development and support of an articulated post-school education and training system, one where bridges are created between vocational or occupational programmes and academic programmes (both vertically and horizontally) in such a way that there are no dead ends for learners.

However, TVET Colleges are currently grappling with a number of challenges. Where pathways are concerned, specific challenges include:

- There is a lack of clarity regarding the existing pathways, in respect of:
 - Entry routes (into a college)
 - Exit routes (out of a college), whether it be to higher learning, employment or self-employment
- There is inadequate articulation between qualifications as well as programmes which span more than one sub-qualification framework, which leads to dead ends for learners.
- The programmes and qualifications in the colleges are currently considered to be complex to administer, difficult to understand and often poorly quality-assured. It is believed that a review of all programmes is required.

The purpose of the work stream on pathways is to identify examples of TVET College pathways that will ensure smooth transitions for students from college to employment, self-employment and higher learning.

This work stream report will aim to provide the following:

- A critical review of existing pathways, in respect of accessibility to colleges as well as exit routes.
- Recommendations of pathways for TVET Colleges in South Africa to ensure that both the vision outlined in the White Paper and the proposed purpose of the TVET College sector are achieved.

2 **Study Methodology**

The methodology used for this research contract was a desktop review of existing literature and articles on pathways at TVET Colleges in South Africa, to provide an overview of the existing pathways, with regards to accessibility to college and exit routes, as well as consideration of best practices in other parts of the world that are relevant to the South African context. Once all relevant information was at hand, numerous discussions were had with experts in the field. A gap analysis between existing and proposed ideal states was then conducted and recommendations provided. Our client, the HRDC, and the TVET Technical Task Team were consulted in depth throughout the duration of this research for their input, expertise and guidance which formed the cornerstone of this process.

3 Pathways in South Africa

According to the White Paper for Post-School Education and Training (2013), the DHET is expecting an increase in enrolments in TVET Colleges from 650,000 in 2013 to one million by 2015, and 2.5 million by 2030 (White Paper 2013). Gewer (2013) asserts that, with some exceptions, TVET Colleges are mainly weak institutions so there needs to be phased, as well as more rapid, expansion and diversification needed throughout the sector. One of the biggest dangers of these institutions is the expectation that they should be all things to all learners, because of the lack of alternatives.

The DHET believes that TVET Colleges must (DHET 2012):

- Become institutions of choice for young school leavers, offering general vocational training as well as providing academic and theoretical education for apprentices;
- Articulate with universities so that those who choose a vocational training route can later continue their studies at university level if they choose to do so;
- Develop close ties to workplaces in the public and private sectors, becoming responsive to the needs of the employers in their surrounding communities, and offering tailor-made programmes where possible in addition to their core programmes;
- Develop close ties to SETAs, which will play an increasingly important role in linking colleges with employers.

TVET Colleges offer mainstream programmes through Nated (N) 191 programmes (N1-N6) and the National Certificate Vocational (NCV) programmes. Colleges also offer skills programmes and learnerships through a range of SETAs. As colleges and education and training authorities do not have tracking systems to trace learner progression into employment there is no research data showing whether learners achieve employment after studying at a TVET College (Pathways Discussion Paper 2013).

Policy interventions to date have sought to position colleges primarily to offer a sound general-vocational qualification to a critical mass of school leavers in preparation for higher education or for entry-level employment and further training in the workplace, as well as self-employment (Gewer 2010). However, colleges are currently challenged with offering mainstream pathways to work and further learning. These challenges are a result of external factors, such as the current global recession, geographic location and systemic issues. They are also caused by numerous internal factors such as poor linkages with local industry, negligible tracking systems for learner progression, and uneven relationships with SETAs and higher education (Pathways Discussion Paper 2013). The failure of the South African education system to direct learners towards courses of study which are likely to maximise their natural talents is one of the myriad complex systemic, social, economic, and personal reasons for the high dropout rates (Gewer & Akoobhai 2012).

3.1 Access into a college

3.1.1 Current state of access into a college

The National Certificate (Vocational), or NCV:

The DHET introduced the NCV at public TVET Colleges in 2007 in an effort to tackle the priority skills demands of the South African economy. The NCV comprises 20 vocational programmes and is offered at levels 2, 3 and 4 of the NQF. According to Gewer (2013) the rationale behind the curriculum was to provide school leavers with the necessary foundation to enter into the workplace and be easily trained into specialised mid-level occupations. The practical component of study may take place in the workplace or in simulated environments at the TVET College (DHET, TVET guide 3rd edition).

Three compulsory subjects (Language, Maths or Maths Literacy, and Life Orientation) must be taken, as well as four vocational subjects. Of the four vocational subjects, three are generally compulsory and one can be chosen from the pool of optional subjects.

Originally meant for young people completing Grade 9 (White Paper 2013), individuals who have completed Grades 9, 10, 11 and 12 can enter a TVET College and begin with an NCV2 (DHET, TVET guide 3rd edition). This means that those who have already completed a Matric, for example, are at the same level as someone with a Grade 9 and therefore have to redo certain subjects even though they have already passed them (White Paper 2013).

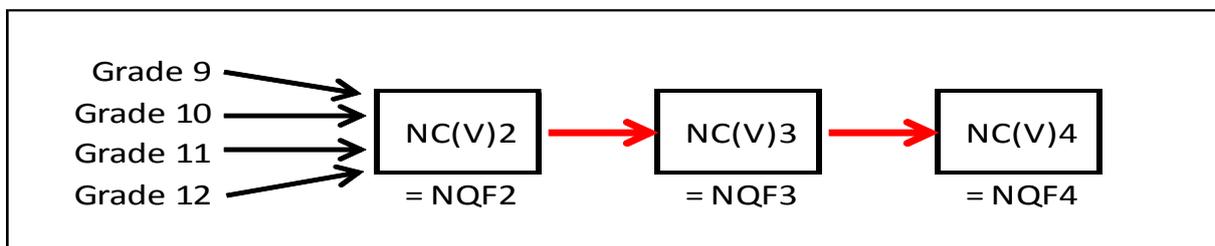


Figure A: Current pathways into a TVET College for the NCV programme

The Report 191 or Nated (N) programmes:

Individuals can also enrol for Report 191 or Nated (N) programmes. Business and Services-related programmes begin with N4 and have an entry requirement of Grade 12. For Engineering Studies, Part 1 involves N1-N3 and has an entry requirement of Grade 9. Competency-Based Modularised Training (CBMT) should underpin Part 1 of the training (N1-N3), and workplace training is required before a trade test can be written. Between 1998 and July 2013, 83 weeks was the minimum period of on-the-job, practical training to be completed before a candidate could apply for a trade test. The 2013 Trade Test Regulations removed all reference to time, making competence (as determined by the employer and/or an RPL process) the only criterion for eligibility (Duncan 2014). Part 2 involves N4-N6 and has an entry requirement of N3. Achievement of an N6 results in an N6-certificate. Learners can then complete 18 months or 2 years (depending on the programme) of relevant work experience which results in a National N Diploma (NQF level 5) (DHET, TVET guide 3rd edition).

The N programmes are purely vocational (no fundamental subjects). They also do not run as long as the NCV programmes – for Engineering Studies each level requires four subjects and runs for ten weeks or a trimester, and for Business and Services-related programmes each level requires four subjects as well and is six months or a semester long.

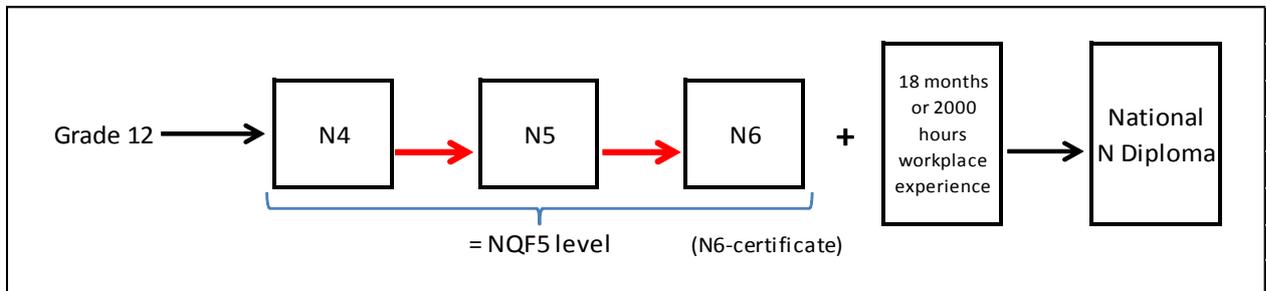


Figure B: Current pathways into a college for the N-programmes in Business and services-related programmes

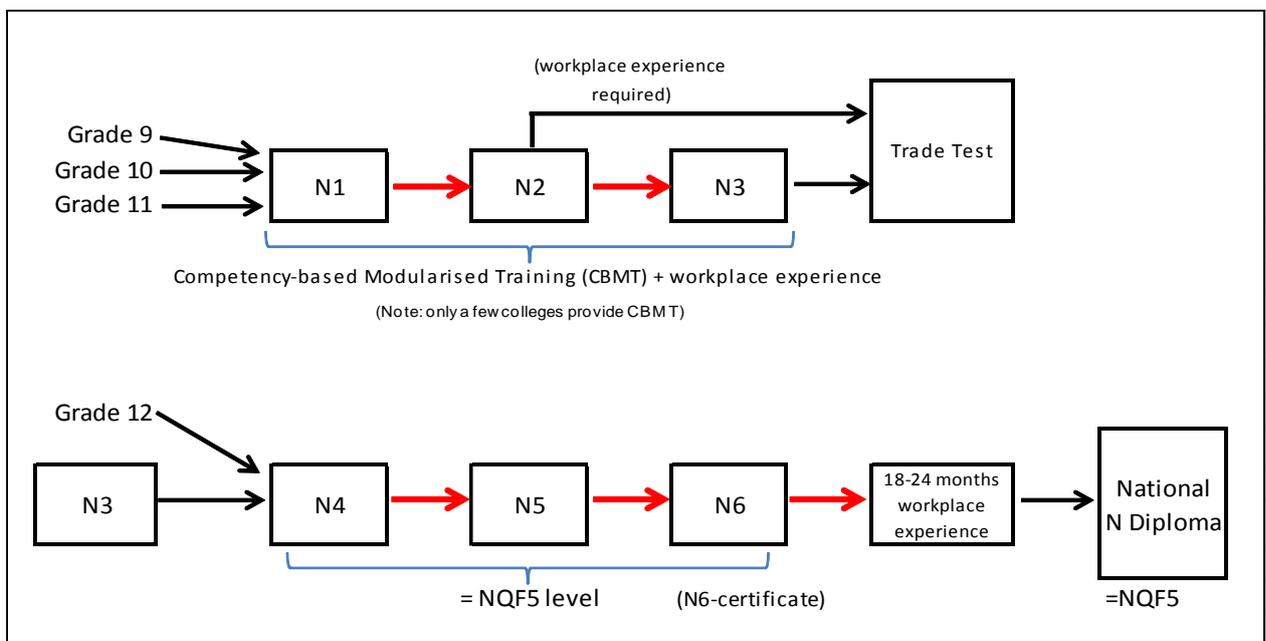


Figure C: Current pathways into a TVET College for the N-programmes in Engineering Studies (Duncan 2014)

The NCV programme for those who have not completed Grade 9:

According to the Green Paper (2012), an adult between the ages of 15 and 55 years who has not finished Grade 9 can complete ABET levels 1–4 courses at a Public Adult Learning Centre (PALC). Completion of level 4 is equivalent to NQF 1 which allows the individual to then enter a TVET College and begin an NCV(2) or N1 (both of which are equivalent to NQF 2). However, there is no data available to determine whether this articulation is occurring in practice (Needham 2013).

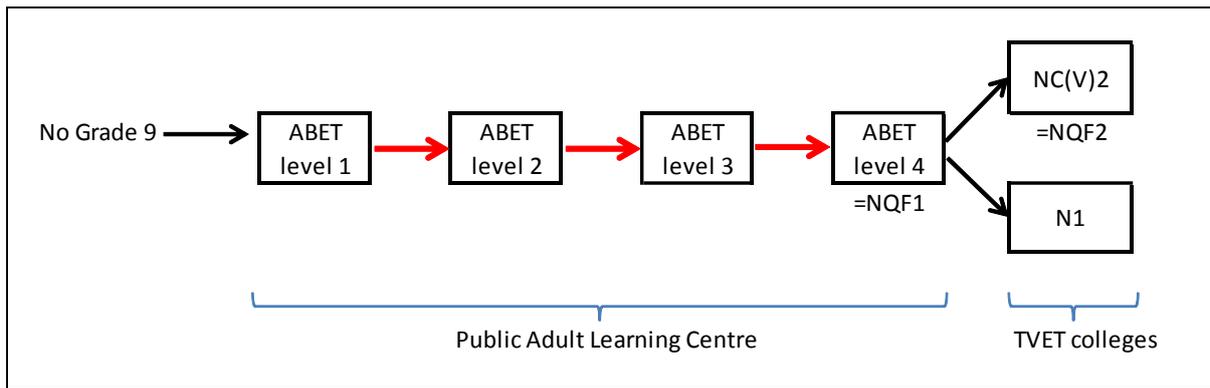


Figure D: Pathways into a Public Adult Learning Centre for adults who have not finished Grade 9

3.1.2 Literature review and expert input on access into a college

The NCV

According to the White Paper (2013), the DHET's vision for public TVET Colleges is to be the institutions of choice for vocational skills development for artisans as well as other occupations at a similar level in fields such as engineering and construction, tourism and hospitality, and general business and management studies. The NCV was originally meant as a general-vocational qualification for young people completing Grade 9, as an alternative pathway to intermediate occupations, but colleges began to allow, and even to encourage, learners who had finished schooling levels up to the National Senior Certificate (NSC). Research is showing that more than 50% of students who enrol in TVET Colleges have completed Grade 12. The NCV thus seems to have a dual role – as a parallel, and vocationally oriented, qualification to the NSC for those who leave school at Grade 9, and as a post-secondary qualification. This has made life difficult for lecturers, who must deal with students with vastly different educational levels in the same class. It has also led to dissatisfaction among students, many of whom must repeat much of what they have previously covered in the fundamental subjects in school (White Paper 2013). There are also two very different cohorts of students in the same classroom. Gewer (2013) states that pre-Grade 12s generally struggle to cope with the demands of the curriculum. Colleges are expected to remedy a deficit created by the schooling system through a curriculum which has been shown to be equally or more demanding (see section on Access to Higher Learning for more detail). Many of these students either drop out or fail. For post-Grade 12s, Cosser (2010) states that this suggests a waste of human resource utilisation, as most of these learners revert to a level of learning lower than their highest qualification (the Senior Certificate). Post Grade 12s cope better with the NCV and as a result TVET Colleges offer the majority of NCV entrances to individuals who have completed Grade 12 (Gewer 2013).

The following table shows the percentage increase or decrease of learners between grades from 2007 to 2012 in upper secondary school education in South Africa. With such large dropout rates, and considering the lack of alternatives for Grade 9s to 12s alike, it is not hard to understand why the NCV is under pressure to serve all cohorts.

Percentage increase/decrease in total number of learners in both ordinary public and independent schools in South Africa			
	Grade 10 (from Grade 9 in previous year)	Grade 11 (from Grade 10 in previous year)	Grade 12 (from Grade 11 in previous year)
2012	+ 5%*	- 20%**	- 35%
2011	+ 8%	- 18%	- 37%
2010	+ 12%	- 17%	- 34%
2009	+ 13%	- 18%	- 33%
2008	+ 12%	- 19%	- 35%

Table A: Percentage increase/decrease in total number of learners in both ordinary and public and independent schools in South Africa

*Read as: there was a 5% *increase* in the total number of learners from Grade 9 in 2011 to Grade 10 in 2012.

**Read as: there was a 20% *decrease* in the total number of learners from Grade 10 in 2011 to Grade 11 in 2012.

Source: ASS & SNAP Surveys (conducted on the 10th school day)

While the Green Paper suggests that Grade 9 learners who choose to leave the traditional school system could be directed elsewhere, no literature was found on how to address the high dropout rates being seen between Grades 10 and 12. One possible solution is to consider major education and career guidance interventions during Grade 9, to mitigate dropout in later years. According to Stumpf *et al.* (2012), Australia has invested heavily in assisting students to make appropriate choices. Their initiatives involve schools, technical and further education colleges, local communities, industry and the learners themselves. Australia has realised that merely creating opportunities for strengthening vocationally-oriented and vocational education is insufficient unless accompanied by strong support, guidance and decision-making information initiatives. In a similar vein, a “pre- profiling” programme was introduced in Russia in Grade 9 (comprising 100 study hours or 3 hours per week) to help students to make their choices in Grade 10. The structure of this programme was identified as follows: 2 hours per week to be used for 2 types of courses: subject courses (to deepen knowledge and understanding in particular subjects depending on the student’s interests, or it is assumed to trigger an understanding of what their interests and strengths are) as well as orientation courses (to help students choose an educational profile for upper-secondary school); one hour per week to be used for information courses about the local educational institution, rules of enrolment and other practical details (Maclean & Pavlova 2013). In contrast, learners in South Africa have to make choices at the end of Grade 9 regarding their future school or further education and training college studies, largely in the absence of any immediate and future information, support and guidance systems.

The Green Paper (2012) confirmed the DHET’s commitment to the NCV because it sees its value in general vocational learning which includes foundational subjects as well as access to learning in a hands-on way about areas related to aspects of the working world. The White Paper (2013) believes that a review of all the programmes offered by TVET Colleges is required, as well as an evaluation performed on how they articulate with other post-school programmes and qualifications, what the challenges are, and how the system can be rationalised to be easier to understand, more efficient and user-friendly, in order to meet the economy’s need for mid-level skills.

While the White Paper's vision is for TVET Colleges to provide practical training where necessary, Gewer (2013) states that colleges are in reality not effectively managing the development of practical skills, either in the workshops or in workplaces. Many colleges face infrastructural and resource challenges associated with the delivery of practical skills in the workshops, and there are high costs associated in the practical skills training components in the workshops of the NCV programme. Additionally, the demands of the NCV, considered to be an intensive curriculum, places pressure on the timetabling of sufficient workshop time. As such, NCV students do not necessarily have sufficient time to practice the application of the theory they have acquired in the classroom. Feedback from some industries is that, while the theoretical knowledge of NCV graduates is fairly sound, graduates are often seen to be significantly lacking in practical skills (FETI 2013).

The UK's University Technical Colleges (UTC) model is based on collaboration between colleges, universities and employers, with UTCs offering students under the age of 16 a vocationally-focused curriculum. The colleges are sponsored by universities and offer 14 -19 year olds vocational courses with clear routes into higher education, or further learning at work such as apprenticeships. The curriculum is heavily influenced by local and national employers, who also provide support and work experience for students. Courses such as engineering, product design, health sciences, construction, and land and environmental services are taught in modern classrooms with the most up-to-date equipment. Students also learn business skills and the use of ICT (British Council 2012).

Wolf (2011) reports that, across the developed world, including Germany's vocational schools, a more or less entirely common curriculum until the age of 16 years is the norm, with specialisation becoming postponed until later years. She also found that young people frequently change (or want to change) what they are doing, and the changes are often major ones, including vocational (or sector) change. She therefore believes that all 14-16 year olds need to follow a broad education and avoid premature specialisation.

The N programmes

According to Gewer (2013), the N programmes have experienced much higher growth over recent years than NCV programmes. The N programmes are cheaper to run, operate for shorter periods of time, and most colleges do not provide practical training (note: only a few colleges provide practical training in reality). N programmes also allow flexibility in terms of the number of subjects that the student can enrol in and the time of the day in which they can be offered.

Gewer (2013) states that many students who enrol in the N1-N3 programmes do not meet the minimum school-leaving requirements to enter into an apprenticeship (Grade 12 with minimum 50% pass in Maths and Physical Science) and therefore have little chance of finding an apprenticeship. Furthermore, many engineering campuses are located in areas where there are few workplaces available for artisan training. Some colleges have used the N programmes as a basis to grow student numbers even if the programmes have low success rates and regardless of whether such programmes will lead to skills necessary for local employment opportunities. Gewer explains that college budgets have remained relatively static since 2010, so, given the budget shortfall, the inevitable decision of colleges

will be to enrol individuals into the N programmes which provide space for more students at a lower cost. The N programmes also face many of the same challenges associated with the NCV – weak competence amongst lecturers and student support staff to address shortcomings in cognitive capacity amongst school leavers. Therefore, there is concern as to whether students who succeed in the N1-N3 engineering programmes will merely become part of the unemployed population. This has not moved the college sector forward in terms of building industry confidence that the skills provided are suited to their needs.

Higher learning offerings at TVET Colleges

TVET Colleges have limited autonomy on their education and training provision and there is minimal differentiation within the TVET College system. This affects the internal ability of TVET Colleges to develop relevant pathways to employment/self-employment, occupations and further learning (Pathways Discussion Paper 2013).

According to SAQA CAT policy (2013), although Quality Councils have a responsibility to collaborate with other QCs to ensure effective credit accumulation and transfer (CAT) across the three sub-qualification frameworks (CHE, QCTO and Umalusi), a policy debate which was affecting articulation is the frameworks' scope. All three wanted to lay claim to NQF5 (UWC FETI 2012) which has caused numerous grey areas and which has further blurred possible lines of articulation between TVET Colleges and HEIs (Pathways Discussion Paper 2013). While a decision was made in 2013 to officially exclude Umalusi from the right to attain any claims on NQF5, the White Paper (2013) has reopened the debate and suggested that QCs may have an extended remit in the sense that they can quality assure qualifications on NQF levels from which they were previously restricted. Another complication is that QCTO currently have very few programmes on offer (most are still in development), which means that articulation between occupational qualifications and higher learning does not exist at the moment (Needham 2013). This is an important matter to the issue of Pathways because NQF5 is at the juncture of further and higher learning. According to the Higher Education Qualifications Framework, NQF5 is an entry-level higher education qualification which is primarily vocational or industry oriented. It serves to provide students with the basic introductory knowledge, cognitive and conceptual tools and practical techniques for further higher education studies in their chosen field of study. The knowledge emphasises general principles and application. This qualification signifies that the student has attained a basic level of higher education knowledge and competence in a particular field or occupation and is capable of applying such knowledge and competence in an occupation or role in the workplace. The Higher Certificate (NQF5) typically includes a simulated work experience or work integrated learning (WIL) component. SAQA believes that specific attention must be paid to Levels 5 and 6 in the HEQSF and OQSF as a critical level where diverse options for credit accumulation and transfer must be developed.

Cosser (2010) states that intermediate level qualifications such as NQF5 and 6 are not the natural preserve of universities and should therefore be offered by other institutional types, to serve for the individual either as an end in themselves or as access into a higher education institution. In the context of the need in South Africa to develop technical skills at the intermediate level, it is necessary to build a fully-fledged TVET system that articulates with both the labour market and with higher education, particularly in the form of UOTs.

Such a system should be pegged not at levels 2 to 4 on the NQF, but at levels 2 to 6, thereby building a bridge between school and higher education for those on the technical / vocational track.

According to Stumpf *et al.* (2012), completion of the Higher Certificate at a TVET College would enable students to proceed to the NQF Level 6 Advanced Certificate or to a Diploma on the basis of accumulated credits in the Higher Certificate or Advanced Certificate being recognised for Diploma studies. The minimum entry requirement for the Higher Certificate is presently a National Senior Certificate obtained in traditional schooling or an NCV4, qualification subject to certain conditions. Stumpf *et al.*'s recent study of ten TVET Colleges in South Africa revealed that some colleges already seem to be playing a significant role in providing some form of higher education (as represented by the N4–N6 programmes), and in many instances the provision of the N4-6 programmes constitutes the majority of the colleges' offering. Formalising this role for some TVET Colleges by allowing them to offer NQF Level 5 Higher Certificates and possibly even NQF Level 6 Advanced Certificates in selected areas therefore indicates a logical next step.

Stumpf *et al.* (2012) state that, with the exception of Early Childhood Education, the study areas covered on the N4–N6 level correspond very well with study areas offered by UOTs in particular, and to some extent with the programme areas of comprehensive universities. This means that formalising the offering of HEQF-aligned programmes such as the Higher Certificate at TVET Colleges could open the way to an articulation route at a UOT or a comprehensive university for students who wish to follow such a pathway. The same study showed that about an additional 1,600 learners could be enrolled at each college without the college requiring anymore human resources, infrastructure and equipment. Therefore, a reasonable number of students could be accepted for qualifications on NQF levels 5 and 6 without any additional capacity being required. However, funding of post-NQF 4 programmes is an issue for the colleges as funding sources appear to be quite adhoc.

International best practice

The below section offers some literature on a selected number of examples of best practice around the world which may be considered relevant to the South African context.

Wolf (2011) notes that aspirations for higher level study are very widespread. British, European and North American experience demonstrates that people will, if given the choice, select pathways and options which help them to progress and keep options open. Wolf states that if people do not move directly into higher education, some will be keen to do so later. This is in line with South Africa's White Paper which states that there should be no dead ends for learners (2013), thus helping to create sustainable livelihoods.

Moodie *et al.* (2009) distinguish between single-, dual- and mixed-sector institutions. Single-sector institutions have almost their entire student load in one sector - VET or higher education (at least 97%). Dual-sector institutions offer a substantial proportion (at least 20%) of their load in each sector and report to two levels of government, while mixed-sector institutions are predominantly either VET or higher education institutions with some offerings in the other sector (a maximum of 20%), with these offerings being a small (or

growing) part of their provision. They are not yet under the same pressure as dual-sector institutions to develop dual structures, and most arrangements for programmes in the other sector can be handled as exceptions to their normal structures, systems and processes. Moodie *et al.*'s findings included that mixed-sector institutions were finding the different reporting, quality assurance and accreditation requirements quite onerous, although most are in the process of developing distinct organisational structures to manage these processes. In South Africa, as the various TVET Colleges are currently in different states of growth, it may be necessary for some to remain single-sector institutions for the medium term, some to become mixed-sector institutions (perhaps those with a focus on differentiation in one or two fields), while others with some established capacity and the ability to grow more rapidly become dual-sector institutions in the medium-long term.

Bathmaker (2010) discussed how researchers in a number of countries, including Australia, the USA, Scotland and England, note that dual-sector institutions suggest the possibility of creating a seamless system of lifelong education which overcomes the boundaries between different sectors in post-secondary education. The researchers argue that this system promotes social justice by improving progression into higher education by those traditionally under-represented in higher learning. In practice, Bathmaker's research in two dual-sector institutions in England showed that, even though the institutions offer both further and higher learning, they do not necessarily try to align or bring together their work across two sectors. Bathmaker cautions that epistemological boundaries between further and higher learning must be navigated rather than ignored, if students are to be supported in crossing them. Additionally, with one of the primary aims of duality being of widening participation, she advises that the development of duality should ensure that these institutions open up the pathways to disadvantaged students in terms of class, race etc.

Bathmaker (2010) also found that dual-sector institutions are positioned at the lower end of the higher learning hierarchy. Wheelahan (2009) believes that they will always be lower in status because of the numerous access they are required to provide, however their status will increase if pathways provide access to elite higher education as well as to universal higher education. Wheelahan emphasises that all tertiary education qualifications need to provide two outcomes: the first is a vocationally specific outcome, and the second is the knowledge and skills needed to study at a higher level within the field. She believes that this is what lifelong learning means in practice and therefore should underpin national lifelong learning policies. Governments should therefore ensure that opportunities for entry and progression within higher education are not limited in ways which reinforce patterns of inequality, by developing policy which increases access to elite higher education (Wheelahan 2009).

Stumpf *et al.* (2012) state that the United Kingdom terms the provision of both further education and training and higher education as dual-sector or mixed-economy providers. This model has grown significantly in the UK in recent years, with approximately 300 further education colleges also offering some higher education qualifications, and with approximately 40 universities offering further education programmes. According to the British Council (2012), the colleges' certificates and diplomas are work-related higher level qualifications that focus on skills as well as academic knowledge in a wide range of subject areas. They enable learners to go onto higher education, as well as develop the vocational

skills and knowledge needed to progress within the workplace. They are recognised by employers and universities, and can lead onto degrees or membership of professional bodies. A certificate usually takes one year of full-time study to complete and a diploma would typically take two years of full-time study to complete, with the student receiving credits towards a degree. This has resulted in the level of higher education provision showing a steady annual increase.

In the USA, students at community colleges can follow a further education and training vocational or vocationally orientated programme, but can also obtain a two-year associate baccalaureate degree from the community college and then transfer to a four-year college or university to complete the last two years of a liberal arts baccalaureate degree if desired (Stumpf *et al.* 2012).

3.2 Exit routes: Employment, Higher Learning and Self-Employment

3.2.1 Employment

3.2.1.1 Current state of employment as an exit route

NCV programmes:

An individual with an NCV4 qualification will enter the marketplace with little or no practical training (as discussed in previous sections). A few colleges have training centres on site where learners are able to gain some practical experience.

N programmes:

- An individual with an N qualification might enter the marketplace with some workplace experience. A learner who wants some practical training at a college would have to pay for additional courses and receive simulated, as opposed to real-world, practice.
- An individual with a National N Diploma will enter the marketplace with 18 or 24 months of workplace experience.

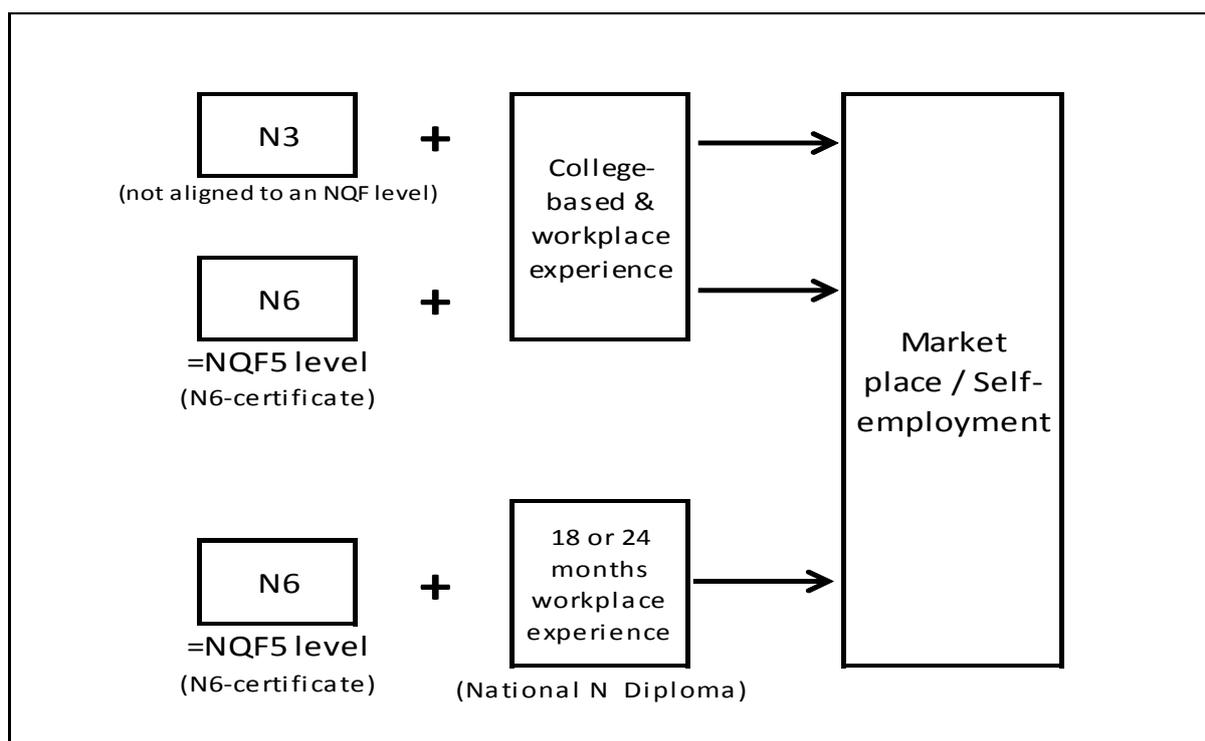


Figure K: Pathways into employment for an individual with an N programme qualification

3.2.1.2 Literature review and expert input on employment as an exit route

Cosser (2010) states that about two thirds of TVET College graduates are either unemployed or not economically active. While these figures have as much to do with poor labour market

absorption, owing to a lack of formal employment opportunities, as with skills supply, the extent of disarticulation remains a concern. Gewer & Akoobhai (2012) state that entry into college programmes does not necessarily result in favourable employment outcomes because companies, particularly in the artisan training arena, prefer higher achievers and do not fully trust the quality of college delivery. Cosser reinforces this by stating that TVET Colleges are not perceived to be providing relevant, credible programmes in sought-after technical and vocational learning areas that will lead to uptake in the labour market. He adds that there are also too few institutional options in the TVET band to cater for the demand for further learning and which provide a pathway into the labour market, thereby pushing learners to seek higher education.

According to the Pathways Discussion Paper (2013), despite an increased policy focus the scale and scope of vocational and occupational education and training provision in South Africa is largely unknown. The National Skills Development Strategy III (NSDS III) notes that there is currently no institutional mechanism that provides credible information and analysis with regard to the supply and demand for skills. Data on throughput from TVET Colleges into occupations and trades is not currently available. While separate studies have been conducted on artisans, apprenticeships and learnerships etc (HSRC 2011 and FETI 2013), none are able to provide a full picture of TVET College pathways into trades and occupations.

The NCV

The NCV was introduced as an alternative route to a level 4 “matric”. However, according to a DBSA report by Anthony Gewer (2010), the NCV policy also stipulated that the NCV at level 4 “enables students to acquire the necessary knowledge, practical skills, applied competence and understanding required for employment in a particular occupation or trade, or class of occupations or trades, or entrance into higher education.” Therefore, the implication was that the NCV graduate would be ready to enter into a job. The NCV was introduced to provide a general-vocational post-school qualification that could be delivered to a large mass of young people. It is constructed around the delivery of theory and practical components within a college environment. The general feedback from industry is that the NCV provides a general grounding which must then be further developed in the workplace in order to develop the necessary occupation or trade skills. However, there is a concern that the content of the NCV does not always accurately align with skills requirements in the industries concerned. According to Chabani (2013), a lack of hard data in South Africa makes it difficult to understand which skills are required for employment, the most promising practices that train youth to become productive citizens and employees and how to identify programmes that do this best.

Artisan development

The Pathways Discussion Paper (2013) states that FETI’s 2013 study of the supply and demand for artisans in the Western Cape focused on the engineering sector and showed strong employer preferences for the N programmes, whereas other sectors appear to favour NCV programmes as a route to artisanship, owing to strong and industry-relevant curricula.

Where workplace training is concerned, the current uptake of apprentices by engineering firms is negligible, with reasons provided including onerous labour legislation, poor quality of training and the current economic recession (FETI 2013). To mitigate this problem somewhat,

a range of interventions have been developed which are seeking to strengthen artisan training for employment, such as:

- merSETA's Accelerated Artisan Training Programmes (AATP): introduced in 2007 by merSETA as a way of increasing the artisan training pipeline, this programme represented, at the time, the shortest route to an artisan qualification allowed under current regulations. It involves training and qualifying a junior artisan in 18 months to 2 years, and extends work experience into the next 2 years for further development rather than design a training programme for 4 years. Training is rigorous, controlled and monitored closely. The rationale was that the artisan in training is capable of being productive and a contribution to company profitability after the second year of an apprenticeship but is not yet able to function independently and therefore will likely still need extensive mentoring. Companies overall found the graduates to be well-rounded but felt that their workplace experience was still too limited. Other findings included that mostly large companies participated – this is problematic because support from smaller companies is needed as well but they do not have the funds to provide crucial in-house apprenticeships and to use private providers (FETI 2013).
- Swiss South Africa Cooperation Initiative's programme involving accelerated apprenticeship in smaller businesses using public colleges: in response to the challenges experienced during the AATP, the objective of the SSACI initiative was to develop a model of accelerated apprenticeships that can be implemented through small-to-medium sized enterprises, by opening up the training capacity of smaller companies, thereby providing more workplace experience opportunities for more artisans in training. Selected trainees, who must have at least an N4 qualification in relevant trade theory, are enrolled for 24 weeks for intensive practical training at an accredited training college before being placed in workplace-based training for a further 56-60 weeks. This training leads to the national trade test and is presently the quickest route to artisan status permissible under current regulations. By mid 2012, 50 apprentices had been trained, with all 22 participating employers satisfied with the quality of the apprentices. In this programme, it is noteworthy that both public and private colleges were used (FETI 2013).

It should be noted, however, that the above initiatives are ultimately not significantly shorter than traditional routes to artisanship - longer workplace experience being seen as necessary by industry as well as a higher qualification level serving as a requirement for entrance indicate that the overall training period for a learner is in effect very similar to traditional routes (FETI 2013). However, the experiences of these interventions can serve as key learnings for TVET Colleges going forward in the new model proposed – specifically, the importance of rigorous and consistent workplace training throughout all stages of training (including CBMT for early levels as well as lengthier and more specialised training for the higher levels of a programme). TVET Colleges will need to be able to access a steady and constant supply of funding in order to ensure that workplace training is made a sustainable provision to learners, to enhance their employability.

Workplace training

Where workplace training is concerned, research findings show that learners who have some work experience from college had increased odds of 82% of finding a job appropriate to their qualifications compared to those who had no experience from college. However, research showed that more than half of learners are not getting any work experience at all (Magnus *et al.* 2013). The Minister's 2013 Budget Speech reflected this understanding when he stated that one of the DHET's priorities is to link education and training institutions and the labour market because practical experience during training increases a student's chances of finding employment. More recently, the White Paper further expressed this sentiment by arguing that for much education, a combination of both theoretical knowledge and practical experience is not only important, it is essential, and that work-integrated learning should therefore be a central component of the college programmes. In line with the statement that one of the primary purposes of TVET Colleges is to prepare students for the workplace, the White Paper believes it essential that colleges develop and maintain close working relationships with employers in their areas of study. Emphasis must be placed on strengthening partnerships with employers, both at the system level and that of individual colleges in order to assist the colleges to locate opportunities for work-integrated learning and help them to place students when they complete their qualifications. The White Paper wants to see a curriculum that responds to local labour market needs or that can respond to requests from SETAs, employers or government to meet specific development goals. This ability to be responsive to local needs is particularly important for those colleges choosing to differentiate.

In order to facilitate the establishment of workplace training as the cornerstone of the TVET College purpose, it is believed that SETAs need to play an integral role in forging relationships between colleges and employers, using not only their contacts but also their resources to incentivise employers to take on students for workplace learning opportunities. Partnerships between colleges and SETAs will be facilitated by the establishment of offices representing the SETAs in each college. It is the DHET's aim that sector structures are enabled to focus on engaging with stakeholders in the workplace, to establish their needs and agree on the best way of addressing them, to then facilitate access to relevant programmes and ensure that providers have the capacity to deliver programmes that have a genuine impact. A key role of the skills system structures will be to support efforts to implement workplace learning that complements formal education and training (White Paper 2013). The new SETA Grant Regulations came into operation on 1st April 2013 – they require 80% of the discretionary grant to fund PIVOTAL programmes which lead to substantive qualifications. They also require SETAs to target funding towards structured workplace learning and experience, and thus promote these crucial partnerships between education and training institutions and employers (DHET Budget Speech 2013). Magnus *et al.* (2013) suggest that the PIVOTAL grant be managed in a standardised way and used to introduce one national grant for 'occupation' work placements at companies or departments.

The Minister's 2013 Budget Speech stated that the DHET had established a dedicated Unit on "Work Integrated Learning Partnerships and Innovation" which engages with employers in both the private and public sector as well as with SETAs in order to promote and institutionalise WIL. It is believed that government departments and state-owned companies are starting to step up their intake of young people for apprenticeships,

learnerships and internships, and that the private sector also has great potential to step up training opportunities. Needham (2013) believes that public TVET Colleges have struggled to provide workplace training for employment owing to a lack of dedicated funding that would allow for long-term training of occupational routes. He cautions that funding supplies will need to become steady and consistent. In the UK, more than two thirds of UK colleges have a business unit responsible for developing links with employers, and work in partnership to improve the employment prospects of their learners (British Council 2012).

The White Paper (2013) also acknowledges the importance of improving and updating the industry knowledge and experience of educators by providing appropriate workplace exposure for TVET lecturers.

Occupational qualifications

According to Stumpf *et al.* (2012), an occupational qualification is defined in the Skills Development Act No. 97 of 1998 as: 'a qualification associated with a trade, occupation or profession resulting from work-based learning and consisting of knowledge unit standards, practical unit standards and work experience unit standards' (p. 104). The QCTO is currently developing fit-for-purpose occupational qualifications which will result in Occupational Certificates. These awards will name the relevant occupation that the learner is now competent to practice. According to Mashabela and Matjabe (2014) occupational programmes will span NQF levels 2 – 8 (with a focus on 4 – 6 where it is believed there is the greatest need), and their aim will be the development of occupational competence which leads to higher chances of employment because of the programmes' foci on knowledge (theory), practical skills and workplace experience (sometimes the latter two being merged). The occupations in development are aligned to the Organising Framework for Occupations (OFO). Skills and tasks associated with each occupation and the kind of work experience required to develop competence are being discussed and evaluated in close partnership with industry, including professional bodies, unions and training providers, with the intention that the curricula and qualifications are directly linked to labour-market skills needs (Matjabe 2014).

Matjabe (2014) states that, as per the White Paper, part qualifications will be developed and will replace the current system of unit standards. The new part-qualifications will be made up of the three core components (knowledge, practical skills and workplace experience), will be strongly influenced by industry as well and will directly relate to a set of roles or skills in the workplace. This is being done so that learners can work towards a qualification in their own time, but in such a way that the completion of a part-qualification increases their occupational skill-set and employability.

Both Mashabela and Matjabe (2014) confirmed that articulation between the new occupational qualifications and other programmes which span the three sub-qualification frameworks is an aspiration they are working towards and that the systems are in place. However, more development is required, especially with regards to implementation. It is believed that articulation with the NCV is necessary, but this will take some time while the NCV is being reviewed and educational policy is in transition. There is also some uncertainty with regards to how workplace experience will be secured for all learners.

Stumpf *et al.*'s recent study of ten TVET Colleges around the country showed that, with one or two exceptions, enrolments in occupational programmes are low and a cause for concern. The reasons for this were not immediately obvious during the study but the researchers believe that this could be partly explained by the difficulties experienced by TVET Colleges in establishing longer-term partnerships with industry to secure workplace experience for students on these programmes. However, Needham (2013) states that the NSDS III reorientation of SETA funding provision to public TVET Colleges resulted in an increase in enrolments. It is believed, though, that the colleges' capacity is currently inadequate and will need to be strengthened.

Bird (2014) separates occupations from jobs and notes that occupations are nationally determined. She states that it is important that a person is prepared for a range of jobs linked to market or state-driven projects or self-employment. Also, while colleges must be able to be responsive to local employers, occupational curricula should not be "localised" as this will restrict learners' mobility prospects. Bird also states that the focus of colleges, historically, has been on the provision of theory for trades (where trades must be understood as broader than Engineering). She asserts that trades need to be the anchor qualification for TVET, with the higher level occupations being options for progression for learners once the trade is securely in place. This need to have an increased focus on occupational routes is reflected in the White Paper, which states that the primary purpose of TVET Colleges is developing skills for employment, with articulation across sub-qualification frameworks being necessary to avoid any dead ends should learners want to progress.

Professional occupations

According to Needham (2013), there are a range of potential occupations that are currently not accessible. SAQA requires that professional quality assurance bodies register their occupations with them, meaning that all professionals within these fields need to have completed accredited qualifications. However, articulated pathways that provide for a range of occupations leading up to professional designations are minimal and are heavily protected by stakeholder bodies. An example of this would be para-professionals within the legal industry unable to articulate to higher education qualifications required for law. Similarly, Early Childhood Development practitioners with an NQF level 5 qualification are not accredited for years of experience should they wish to articulate to a B. Ed degree in Foundation Phase Education. Healthcare workers with SETA qualifications cannot enter into nursing qualifications unless they satisfy higher education entrance requirements. This results in additional years of learning and lack of access to employment.

Short courses

According to Akoojee (2013), non-accredited short courses to develop ancillary skills should be provided by colleges so that a learner develops an income-generating skill, either for the marketplace or for self-employment. This is particularly applicable for adults who do not have the time or funds to complete a lengthier qualification such as the NCV, and for post-school learners with low levels of formal schooling. This is somewhat in line with the White

Paper's aim to create a post-school education and training system which is responsive to the needs of individual citizens (White Paper 2013).

3.2.2 Higher learning

3.2.2.1 Current state of higher learning as an exit route

NCV4 graduates

Legislation states that NCV4 graduates are able to gain access to HEIs, however admission is only permitted to qualifications which are in line with the vocational (core) subjects completed at college. Approximately 30% of the core subjects offered at TVET Colleges are recognised by HEIs for degree purposes and a pass rate of 60% for core subjects is an entry requirement (higher than the pass rate required for a traditional matric). However, traditional universities only have capacity to take on a small percentage of applicants which apply and to date have largely ignored the NCV being a legislated pathway to HEIs (Needham 2013).

Not all NCV programmes meet the minimum requirements for university degrees (Needham 2013).

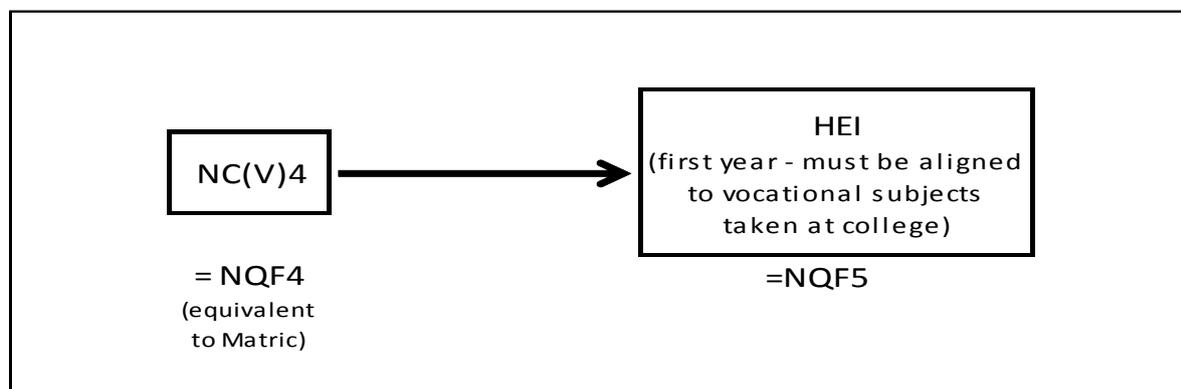


Figure F: Current pathways into an HEI for an individual with an NCV4

N programme graduates

An individual with a Grade 9, 10 or 11 and an N3 (or higher) cannot gain access to HEIs since the N programmes do not contain the fundamental subjects (Language and Maths). Only N learners with a Grade 12 (or NCV4) are able to gain access to HEIs because they have completed the fundamental subjects which are required for entry into universities.

An individual with a Grade 9, 10 or 11 and an N6 National Diploma in Engineering Studies (and who therefore has an NQF 5) cannot access Universities of Technology (UOTs).

An individual with a Grade 12 and an N6 National Diploma in Engineering Studies (and who therefore has an NQF 5) has minimal access to UOTs. Access is dependent on adhoc relationships between colleges and UOTs.

An individual with an N6 in Business or services-related studies has minimal access to UOTs. Access is dependent on adhoc relationships between colleges and UOTs.

3.2.2.2 Literature review and expert input on higher learning as an exit route

The NCV as an access point to HEIs

In 2009, a government gazette legislated the NCV programmes as an access route into higher education institutions (HEIs). However, the discretion of universities and faculties to recognise the NCV programmes for entrance purposes was acknowledged in addition to selected NCV programmes for university entrance. To date there is no research data on university uptake of NCV students (Pathways Discussion Paper 2013). The Green Paper (2012) states further that universities do not normally admit NCV graduates, even if their marks are good. The University of the Free State and Nelson Mandela Metropolitan University do admit NCV4 graduates into their higher education programmes, with each level (Higher Certificate, Diploma and Bachelor's degree specifying different entry requirements) (Papier 2013 and Nel & Baatjes 2013), however owing to the timing of this paper - mid December 2013 - it was not possible to obtain data on enrolment and graduation numbers from either institution.

A study conducted on the NCV in 2010 by Umalusi (2012) made the following findings, some of which are very positive and which therefore bodes well for NCV articulation into HEIs in practice:

- Where Maths is concerned, the NCV at Levels 2, 3 and 4 covers *more* content that is at a higher level than the NSC curricula for Grades 10, 11 and 12.
- Where Maths Literacy is concerned, there was considerable difference between the NCV and NSC curricula in terms of breadth. It was concluded by the researchers that learners who completed Levels 2 to 4 of the NCV cannot be considered to have sufficiently covered similar content to learners who have completed Grades 10 to 12 of the NSC.
- Regarding Physical Science, it was found that about 90% of the topics in the NSC curriculum and NCV curriculum are common to both curricula. Therefore, in terms of breadth of content coverage, the NCV and NSC curricula are very similar to one another. The evaluation team found that none of the content that is not common to the respective curricula is sufficiently core as to be detrimental to a learner who wishes to transfer between the NCV and NSC streams. However, it was found that teachers of the NCV curriculum are not given guidance as to how to structure the required discovery-based learning programme.
- Regarding English First Additional Language, it proved difficult to compare the exit levels of the two curricula because the NCV lacks consistent continuity and sequencing of content and skills across the three levels. It was therefore very difficult to draw a conclusion about the comparability of the NSC and NCV in terms of breadth of content and skills.

The N programmes as an access point to HEIs

TVET Colleges were once able to articulate with technikons, with primary progression being from the N4-6 programmes. These led to technician and mid-level professional qualifications (UWC FETI 2012). However, the transition from technikons to universities of

technology (UOTs) in 2007 and the current reformulation of qualifications against the requirements of the Higher Education Qualifications Framework (HEQF) has resulted in the loss of historic access routes from TVET Colleges to UOTs.

According to Stumpf *et al.* (2012), the difficulty with the N4–N6 programmes is that their status as higher education programmes has always been unclear. Universities differ widely in their levels of recognition of learning credits of these N4–N6 programmes for higher education diploma and degree study in terms of the HEQF. Universities also do not appear to have systems in place to allocate places for TVET College students as they are currently overwhelmed by applications from secondary school Matriculants. Furthermore, Stumpf *et al.* (2009) state that departments of universities often present admission and academic requirements that are beyond those stipulated in the initial articulation agreement structured at institutional level. There are also cases of in-principle agreement on articulation frameworks between HEIs and TVET Colleges which have not been taken further and implemented, mostly owing to a lack of funding and/or doubts within the university academic community on the feasibility of such articulation frameworks working in practice. However, even if an articulation agreement is successfully implemented, they are not translatable across provinces or across HEIs owing to the differing governance arrangements for HEIs and TVET Colleges, thereby confining such agreements to the participating institutions only.

In order to make the N programmes more relevant to the world of work and facilitate articulation into higher education, the Minister of Higher Education and Training, in his 2013 Budget Speech, stated that a partnership with the Engineering Council of South Africa (ECSA) had been formed to improve the TVET curriculum.

Credit accumulation and transfer

Where credit accumulation and transfer (CAT) is concerned, SAQA is currently prioritising the promotion of articulation between qualifications across the 3 sub-frameworks of the NQF in order to facilitate lifelong learning and access to the workplace. Specifically, SAQA states that the design of structure and content of qualifications must facilitate the continual progress and mobility of learners, that collaboration between providers from different sectors should take place to develop cross-sector qualifications linkages, advance specific articulation and CAT, and that guidelines must be developed to guide collaboration. They have been convening a collaborative stakeholder process to implement this. According to Stumpf *et al.* (2012), New Zealand began its recognition of credit in the introduction of a common framework for qualifications, which resulted in the development of a Register of Quality-Assured Qualifications to ensure that opportunities for “pathways and staircasing” are in place. The Register’s provisions are supported by a policy on CAT.

Examples of successful pathways

FETI has successfully created a learning pathway in Financial Planning between TVET Colleges and UWC which incorporates qualifications from NQF5 to NQF8. This was a project which required intense involvement from all players including TVET Colleges, INSETA, the Financial Planning Institute of South Africa (FPI), UWC, CHE, the Financial Services Board and

FETI. An NQF5 qualification in Wealth Management was introduced at certain TVET Colleges, which then allowed graduates to enter the 2-year Advanced Diploma in Management at UWC's School of Business and Finance (SBF), which is NQF6. Graduates can then enter a Post Graduate Certificate in Financial Planning (NQF8). All of these steps require a predetermined number of years' workplace experience. Two key requirements from this project were the support from INSETA and professional recognition of their qualification from FSB, as well as FPI enabling universities to trust articulation arrangements through professional quality assurance and designations (UWC FETI 2012).

The University of the Free State has created direct in-house articulation to higher learning for students of N-programmes and certain NCV4 courses. This was made possible through collaboration with the UOT and a Nursing College. College classes were taught by the university lecturers who were thus able to prepare the learners appropriately for the move to higher education (Needham 2013). This is similar to Australia's "dual-sector" model.

False Bay College in the Western Cape offers an NCV2-4 in Tourism & Hospitality. This then leads into an N 4-6 in Tourism & Hospitality (equivalent to an NQF 5). These learners are then able to access CPUT's Hotel School where they will complete a B.Tech qualification (NQF 6). Note: so far there has been a 100% work placement rate (Needham 2013).

On a positive note, the White Paper (2013) has proposed that educational institutions should not necessarily be limited to offering qualifications in a particular sub-framework. They illustrated this sentiment with the example that TVET colleges may be in a position to offer programmes on the Higher Education Qualifications Framework, such as on NQF level 5 or 6. These programmes would then be quality assured by the appropriate Quality Council, and that where there is uncertainty over which QC should be responsible for the quality assurance of a particular qualification, SAQA must, after consultation, resolve the issue speedily.

3.2.3 Self-employment

3.2.3.1 Current state of self-employment as an exit route

TVET Colleges primarily provide entrepreneurship training through the New Venture Creation programmes, with a range of these being sponsored by government departments and SETAs. This forms a minority of TVET College provision (Pathways Discussion Paper 2013).

A Technical Task Team for entrepreneurship is currently conducting research in this area and their report with findings will be completed at the end of November 2013. Specifically, their research is focusing on the following:

- The New Venture Creation programme's impact.
- The contents of the Business Management course.
- The curriculum's effectiveness: does the curriculum adequately equip an individual to start a business.
- The reasons why 52 colleges don't offer any courses on entrepreneurship.
- Quality of lecturing and whether teachers are adequately prepared to teach entrepreneurship.

Chitsa (2013) confirmed that the following findings have emerged from the research so far:

1. The importance of entrepreneurship education is generally acknowledged, being seen as an appropriate response to the challenge of youth unemployment. Thus, entrepreneurship is seen predominantly as a response to a negative stimulus rather than in terms of its positive contribution to economic growth and wealth-creation. Many colleges therefore see themselves and their students as standing on a burning platform as far as the employment prospects of their graduates is concerned.
2. Other than being included in the curriculum for business studies, there is no specific policy on entrepreneurship education per se for colleges. The result hereof is that entrepreneurship education activities are not funded by DHET and any activities beyond classroom teaching of entrepreneurship are seen as optional, with the result that not much beyond classroom teaching is taking place to encourage actual business start-up by students.
3. Entrepreneurship education is taught only in management studies and not in technical studies such as engineering. To drive entrepreneurship education across all disciplines, this needs to be reviewed.
4. Most of the teaching of entrepreneurship is actually teaching "about entrepreneurship" (with virtually no practical component) rather than training for actual business start-up. As a result, entrepreneurship education programmes are not translating into any business start-ups and are therefore not fostering self-employment and job creation.
5. Related to the above point, business plans developed by students to meet the requirements for completion of N4 are used only for academic purposes (but are not actually assessed and no feedback is given) and are therefore not meant and used as a practical tool to aid business start-up. Completing business plans at the end of N4 is also too early in the student's learning activities to make them useful as a tool for business start-up.

6. The curriculum on which current entrepreneurship education is based is old and has not been revised for quite some time and so is seen as being outdated in certain important respects.
7. Many colleges have undertaken several adhoc small business development projects, mainly taking the form of outreach activities to local communities and dominated by small business training. These projects, which are short term in nature, are mainly driven by funding from external sources. Their impact is generally not evaluated and many have limited connection with the teaching of entrepreneurship within the college and the promotion of business start-up by students. Thus, internal entrepreneurship education activities and external small business development activities are disconnected from each other.
8. There is widespread, project-focused collaboration with a range of external role players such as provincial government (Departments of Economic Development), municipalities, SETAs, and SME development agencies. There is virtually no collaboration between TVET Colleges and universities.
9. Pedagogically, the focus is mainly on the teaching of theory, with virtually no practical component such as the use of business simulations, invitations of guest speakers from the business sector, and encouragement of business start-up by students.
10. During the entire 18 months of internship / workplace experience, there are no activities focused on encouraging business start-up by students. This creates too long a gap between the learning of entrepreneurship during N4-N6 and the completion of studies. As a result, virtually no students see starting a business as their first option after completing their studies as they lack confidence in their ability to successfully set up and run a business (this is also a function of the purely academic nature of entrepreneurship studies).
11. There are no programmes to motivate entrepreneurship educators and strengthen their knowledge and capacity to effectively teach entrepreneurship and foster actual business start-up. Therefore the passion and drive to develop and sustain meaningful entrepreneurship activities is generally weak.
12. Entrepreneurship education in isolation, which is not accompanied by efforts to change society's view of entrepreneurship as a viable career option means that because of societal negativity towards self-employment, not many students have the necessary courage and ambition to seriously explore starting their own business.
13. On the positive side, most students reported that they found their studies of entrepreneurship beneficial because they exposed them to self-employment and business ownership as a possible postgraduate career option.

3.2.3.2 Literature review and expert input on self-employment as an exit route

It is very common for entrepreneurship education initiatives to concentrate on participants who already have intentions to pursue entrepreneurial ventures, by offering courses to assist them with business plans and new venture startup (Linan *et al.* 2011). However, when substantially increasing the levels of entrepreneurial activity is a major concern for a country, as is the case in South Africa, a wider approach to entrepreneurship education should be used. The Global Entrepreneurship Monitor (GEM) tracks early-stage

entrepreneurial activity (TEA) around the world, with South Africa's TEA rates consistently being shown to be among the lowest when compared to those in similar economies (GEM South Africa Report 2012). It is therefore crucial for institutions in South Africa to effectively create awareness for and stimulate entrepreneurial behaviour. However, studies have consistently shown that it is difficult to predict whether an individual will want to become an entrepreneur out of choice (ie. not out of necessity), which makes trying to stimulate entrepreneurial behaviour among youth a challenging task. Adding to this complexity is the fact that some findings indicate that youth entrepreneurs are less likely to succeed at steering their companies into established phases than older entrepreneurs (GEM South Africa Report 2012).

However, more emergent research has also shown that the best predictor of behaviour is intention, ie. that behaviour is preceded by an intention to perform the behaviour (Ajzen 1991). This realisation resulted in a number of studies to understand entrepreneurial intentions, with these researchers proving that intentions are formed as a result of an interaction of factors, or determinants, and that these could be developed (Linan *et al.* 2011). These determinants of entrepreneurial intentions were the subjects of much research and resulted in two very similar theories which are the most universally accepted and still used today as a basis for the nature of entrepreneurship education provision as well as further research: Shapero and Sokol's Entrepreneurial Event Theory in 1982 and Ajzen's Theory of Planned Behaviour in 1991.

Considering Shapero and Sokol's theory, entrepreneurial intentions are determined by an individual's perceptions of desirability of entrepreneurship as a career choice as well as his/her perceptions of feasibility to become a successful entrepreneur. Therefore, an increase in these perceptions increases the likelihood of intention, and therefore eventual behaviour. As a result, researchers globally believe it more important for educational institutions to prepare a young adult for a *potential* career as an entrepreneur, by developing their confidence and entrepreneurial skills, than to focus on actual new venture creation. A significant amount of research has shown that effective entrepreneurship education programmes have lead some youth to consider entrepreneurship as a potential career choice in the future, while providing others with a more realistic perspective of what the career entails (therefore, an effective programme may result in an individual choosing *not* to pursue entrepreneurship). Entrepreneurial skills are considered higher order skills, which include critical thinking, problem-solving, creativity, innovativeness, initiative, risk-taking, strategic thinking, etc. Important to note is that the development of entrepreneurial skills should not be seen in isolation, as applying only to self-employment. Rather, these skills are considered to be transversal in nature, so both the individual and society at large benefit from the development of these skills whether entrepreneurship is eventually pursued or not. Given South Africa's consistently very low pass rates for Maths, which is a key subject for the development of learners' higher order thinking abilities, the provision of entrepreneurship education programmes which develop these skills becomes a crucial college offering.

Development of the entrepreneurial intention could be considered as the first element to be addressed through education (Linan *et al.* 2011). To enhance perceptions of desirability

and feasibility, therefore, it is acknowledged that curricula should aim to achieve the following:

- Address the important role that entrepreneurs play in economic growth and development would help improve participants' valuation of entrepreneurship.
- Address the roles and aspects of entrepreneurship, together with the problems usually faced.
- Identify the abilities needed by entrepreneurs, making it clear that they can be developed, and doing so by providing the means/techniques. Experiential learning (practical training involving simulations, workplace placements, actual start-up of small businesses, animations, role-plays, group discussions and debates, group assignments, reflective sessions where learners and facilitator discuss "lessons learnt and mistakes" through interaction etc) is widely accepted as the most effective way to develop entrepreneurial competencies (eg. problem-solving, innovative, creative, initiative, critical thinking, teamwork, negotiation, conflict management, etc). It should be noted that entrepreneurial skills are transversal and any investment into entrepreneurship education should therefore be seen as beneficial to all professions and work-places (whether the individual chooses to become an entrepreneur or not).
- Make explicit the successive steps involved in both the start-up and the firm-development processes.

Some recent studies have indicated that a course consisting only of the production of a business plan may have a negative effect on desirability. This result would strengthen the case for a wider entrepreneurship education programme, including some or all of the contents described in this section as a complement to the business planning (Linan *et al.* 2011).

Pedagogically, studies have shown that it is crucial that the teaching of entrepreneurship is done in an entrepreneurial manner and that teachers themselves are entrepreneurially-minded.

A 2007 research study assessed the levels of entrepreneurship education and training at the Further Education and Training (TVET) level in a South African context (Isaacs *et al.* 2007). The researchers refer to experts in the field of entrepreneurship who believe that the contribution of small to medium-sized enterprises (SMEs) to the growth of South Africa can be much higher if entrepreneurship education is implemented at further education and training levels. Entrepreneurship is now one of the outcomes of Grades R – 12. The researchers of this paper refer to general agreement by experts in the field of entrepreneurship that more emphasis should be placed on entrepreneurship education and training as opposed to business education. Business education has a more limited coverage than entrepreneurship education and training, which include additional topics such as innovation and risk-taking (Isaacs *et al.* 2007).

The International Labour Organisation, which is involved in global initiatives to increase entrepreneurial capabilities as well as perceptions of desirability where entrepreneurship as a career choice is concerned, state that EMS and Business Studies in South Africa focus primarily on the basic functions of a business, such as general management, purchasing,

production, marketing, PR, HR, administration and financing. They believe that entrepreneurship education needs to become more embedded in high school curricula and must focus on the development of higher order thinking skills, including soft skills, life skills, decision-making, negotiation, problem-solving, communication, risk-taking, creativity, change orientation, responsibility, mastering empathy, interpersonal relations. It is the organisation's experience that these are best taught through experiential learning, which is less about content and more about mindset and method of functioning. This will require teachers to be developed as facilitators of learning rather than as communicators of knowledge. Partnerships with industry will therefore also become crucial so that teachers are exposed to the real business world environment.

4 Recommendations

4.1 Summary of findings

Workplace training

Research findings show that learners who have some work experience from college had increased odds of 82% of finding a job appropriate to their qualifications compared to those who had no experience from college. merSETA and SSACI's successful accelerated apprenticeship programmes (for artisan development) highlighted the importance of rigorous and consistent workplace training throughout all stages of training (including CBMT for early levels as well as lengthier and more specialised training for the higher levels of a programme) to increase learners' employability. However, research has also showed that more than half of learners at TVET Colleges are not getting any work experience at all. Colleges are in reality not effectively managing the development of practical skills, either in the workshops or in workplaces.

The Minister's 2013 Budget Speech addressed this concern by stating that one of the DHET's priorities is to link education and training institutions and the labour market because practical experience during training increases a student's chances of finding employment. The 2013 White Paper then reflected this commitment with the vision that the primary purpose of TVET Colleges will be to develop skills for employment. The White Paper argued that work-integrated learning (WIL) should therefore be a central component of the college programmes. The DHET believes it essential that colleges develop and maintain close working relationships with employers in their areas of study. Emphasis must be placed on strengthening partnerships with employers, both at the system level and that of individual colleges in order to assist the colleges to locate opportunities for WIL and help them to place students when they complete their qualifications. The White Paper wants to see a college sector that responds to local labour market needs or that can respond to requests from SETAs, employers or government to meet specific development goals.

It is believed that government departments and state-owned companies are starting to step up their intake of young people for apprenticeships, learnerships and internships, and that the private sector also has great potential to step up training opportunities. It is understood that public TVET Colleges have struggled to provide workplace training for employment owing to a lack of dedicated funding that would allow for long-term training of occupational routes.

Occupational occupations

The QCTO occupations currently in development will result in Occupational Certificates, and will name the relevant occupation that the learner is now competent to practice. The aim will be the development of occupational competence which leads to higher chances of employment because of the programmes' foci on knowledge (theory), practical skills and workplace experience (at times the latter two may need to be combined). Part-qualifications will be developed and replace the current system of unit standards. Each part-qualification will also be made up of the three core components (knowledge, practical skills and workplace experience), will be strongly influenced by industry as well and will directly relate

to a set of roles or skills in the workplace. This is being done so that learners can work towards a qualification in their own time, but in such a way that the completion of a part-qualification increases their occupational skill-set and employability.

While the QCTO confirmed that articulation between the new occupational qualifications and other programmes which span the three sub-qualification frameworks is an aspiration they are working towards and that the systems are in place, more development is required, especially with regards to implementation. It is believed that articulation with the NCV is necessary, but this will take some time while the NCV is being reviewed and educational policy is in transition. For the time being, then, QCTO qualifications are being developed in isolation which means that articulation between programmes spanning the 3 sub-qualification frameworks is not being considered in reality, and will be extremely difficult to address after programmes are implemented. There is also some uncertainty with regards to how workplace experience will be secured for all learners.

The NCV

The NCV has a dual role – as a parallel, and vocationally oriented, qualification to the NSC for those who leave school at Grade 9, and as a post-secondary qualification. This is problematic because there are two very different cohorts of students in the same classroom: pre-Grade 12s who generally struggle to cope with the demands of the curriculum, and post-Grade 12s who have to repeat subjects and revert to a level of learning lower than their highest qualification. Most colleges are not able to offer practical training components in the NCV programme, owing to a lack of funds and resources, and because of a curriculum considered already very intensive and demanding, leaving little time for practical training.

N programmes

Only the N programmes lead to an Artisan qualification. The programmes are sometimes criticised by industry for not being strong in theory and foundational subjects. While they were intended to be strong in practical training, many students who enrol in the N1-N3 programmes do not meet the minimum school-leaving requirements to enter into an apprenticeship and therefore have little chance of finding an apprenticeship. Furthermore, many engineering campuses are located in areas where there are few workplaces available for artisan training. Only a few colleges provide some practical training themselves.

Professional occupations

Articulated pathways that provide for a range of occupations leading up to professional designations are minimal and heavily protected by stakeholder bodies. For example, para-professionals within the legal industry are unable to articulate to higher education qualifications required for law. This results in additional years of learning and lack of access to employment. Legislation prevents professional bodies from offering an articulated range of qualifications.

Higher learning

It is believed that intermediate level qualifications such as NQF5 and 6 are not the natural preserve of universities and should therefore be offered by other institutional types, to serve for the individual either as an end in themselves or as access into an HEI. However, qualifications on NQF 5 level are not offered at the vast majority of TVET Colleges. While some articulation exists between colleges and HEIs, in reality this is not happening. TVET Colleges have limited autonomy on their education and training provision and there is minimal differentiation within the TVET College system. With NQF5 being at the juncture of further and higher learning, the internal ability of TVET Colleges to develop relevant pathways to employment/self-employment, occupations and further learning is hampered, as is their ability to offer suitable qualifications to Grade 12s. Although Quality Councils have a responsibility to collaborate with other QCs to ensure effective credit accumulation and transfer (CAT) across the three sub-qualification frameworks (CHE, QCTO and Umalusi), a policy debate which was affecting articulation is the frameworks' scope. All three wanted to lay claim to NQF5 which has caused numerous grey areas and which has further blurred possible lines of articulation between TVET Colleges and HEIs. While a decision was made in 2013 to officially exclude Umalusi from the right to attain any claims on NQF5, the 2013 White Paper has reopened the debate and suggested that QCs may have an extended remit in the sense that they can quality assure qualifications on NQF levels from which they were previously restricted.

While legislation exists to allow articulation for NCV4 graduates from TVET Colleges to HEIs, this does not occur often in reality. Demand for higher learning is greater than supply, and HEIs are overwhelmed with applications from learners at traditional schools. There is also a lack of awareness and understanding at HEIs regarding articulation for NCV 4 graduates.

TVET Colleges were once able to articulate with technikons, with primary progression being from the N4-6 programmes. These led to technician and mid-level professional qualifications. However, the transition from technikons to universities of technology (UOTs) in 2007 and the current reformulation of qualifications against the requirements of the HEQF has resulted in the loss of historic access routes from TVET Colleges to UOTs. Additionally, the difficulty with the N4–N6 programmes is that their status as higher education programmes has always been unclear. Universities differ widely in their levels of recognition of learning credits of these N4–N6 programmes for higher education diploma and degree study in terms of the HEQF.

Self-employment

TVET Colleges primarily provide training for entrepreneurship through the New Venture Creation programmes, with a range of these being sponsored by government departments and SETAs. These programmes focus only on business start-up and business plans. Their impact is largely unknown, although early research findings indicate that most of the teaching is usually “about entrepreneurship” (ie. very theoretical with virtually no practical component) rather than training for actual business start-up. As a result, programmes are not translating into any business start-ups and are therefore not fostering self-employment and job creation. The curriculum also appears to be outdated.

South Africa's TEA rates consistently being shown to be among the lowest when compared to those in similar economies. Experts in the field of entrepreneurship believe that the contribution of small to medium-sized enterprises (SMEs) to the growth of South Africa can be much higher if entrepreneurship education is implemented at further education and training levels. It is therefore crucial for institutions to effectively create awareness for and stimulate entrepreneurial behaviour. Research has shown that it is not possible to predict behaviour, but that it is possible to increase intentions to do so by developing learners' perceptions of feasibility (which is the self-confidence and belief that they possess the skills to pursue entrepreneurship if they so desire), as well as perceptions of desirability towards entrepreneurship as a career choice. Global research findings, including those in development states, show that the best way to develop these perceptions is through entrepreneurship education programmes that develop entrepreneurial skills. These are higher order thinking skills such as critical thinking, problem-solving, creativity, strategic thinking, etc. Important to note is that the development of entrepreneurial skills should not be seen in isolation, ie. as applying only to self-employment. Rather, these skills are considered to be transversal in nature, so both the individual and society at large benefit from the development of these skills whether entrepreneurship is eventually pursued or not. Given South Africa's consistently very low pass rates for Maths, which is a key subject for the development of learners' higher order thinking abilities, the provision of entrepreneurship education programmes which develop these skills becomes a crucial college offering.

Specific blockages with regard to entrepreneurship education programmes were found to include:

- No specific policy on entrepreneurship education per se exists for colleges.
- Entrepreneurship education courses and activities are not compulsory or consistently invested in and funded by the DHET.
- There is an apparent lack of awareness and understanding of the importance of entrepreneurship education focusing on the development of entrepreneurial skills rather than on business start up and business plans.
- Programmes involving entrepreneurship are taught in management studies only.
- The curriculum is outdated and not practically-oriented enough.

Given the above challenges, and in order to achieve the DHET's primary vision for TVET Colleges to provide young school leavers with the skills, knowledge and attitudes necessary for employment in the labour market, as well as to develop and support an articulated post-school education and training system, three broad blanket recommendations are proposed (which incorporate more detailed recommendations):

4.2 Recommendation 1

Develop specific pathways which lead to employment and further learning opportunities. These should be targeted at Grade 9s, Grade 12s, NEETs and those looking for occupational/professional careers.

4.2.1 Grades 9 - 11

Considering the proposed purpose, and in line with one of the White Paper's considerations, it is recommended that TVET Colleges become institutions *of choice* for Grade 9s who are interested in pursuing a technical/vocational career path. These learners would embark on a 3-year foundational qualification (possibly the NCV) which has a general-vocational orientation (starting at the Grade 10-equivalent level), culminating in an NQF4 qualification which would articulate to higher learning as well as the marketplace. The review of the NCV should consider retention of the fundamental subjects, and the inclusion of other foundational subjects such as Science, History and Geography. All young people should receive a high quality core education which equips them to progress, whether immediately or later, to a very wide range of further study, training and employment. Practical skills training would need to underpin this qualification in order to achieve its status as a general-vocational qualification. Vocational specialisation would therefore be achieved through the new occupational qualifications currently being developed.

The general-vocational programme should also be a pathway to enter an apprenticeship leading to an artisan qualification, with the strong components of the NCV and N programmes being combined. These programmes will need to take into account training gaps identified by companies such as engineering drawing and appropriate levels of Maths and soft skills training (Needham 2013). Upon completion, learners would then be able to embark on a qualification equivalent to NQF5 if so willing.

4.2.2 Adults (ABET level 4 and RPL)

Adults who have completed ABET level 4, as well as individuals with Recognised Prior Learning (RPL) may opt to enter a TVET College and begin with a foundational NCV2 - 4 over 3 years, or pursue a modularised version of the NCV, the latter designed to cater for adults who may be working and/or have other commitments.

Adults with NQF 1 and those with RPL may also opt to pursue an occupational qualification (see subsequent sections).

4.2.3 Grade 12 and NCV4 graduates

Individuals who have finished Grade 12 or an NCV4 and who either choose to further a vocationally-oriented path or have not gained entrance to university may opt to study at a TVET College where they will begin with an NQF level 5 qualification (Higher Certificate), which is vocational by nature and therefore contains practical training as a core part of the curriculum, in order to increase employability. Similar to the UK model, this should lead to a qualification on NQF level 6 (Advanced Certificate or Diploma) if so desired. NQF5 qualifications should be introduced in the short-medium term, while NQF6 qualifications in the medium-long term. This does not imply that all colleges should offer higher education qualifications, but that differentiation legislation for the TVET system should be put in place to allow for expanded provision (Needham 2013).

In the medium term, it may be necessary to offer individuals who have completed Grade 12 an accelerated 2-year NCV programme (ie. no Maths or English) to ensure that subjects are not being repeated.

4.2.4 Workplace training

Gaining workplace training and experience to increase employability needs to become the cornerstone of all programme provision (Indaba 2014). The PIVOTAL grant should be used to introduce one national grant for 'occupation' placements at companies or departments so that all learners are exposed to workplace training (Magnus 2013).

Practical skills training should underpin the training of Artisans. This either needs to be conducted at the TVET Colleges through a steady supply of funding, or otherwise workplace experience needs to be state-funded owing to the lack of companies able to fund apprentices themselves (Needham 2013). This would help to create more Artisans. Individuals on the path to accessing UOTs should then, as normal, be exposed to 18-24 months work experience, but the content and quality of which are more specialised.

For those colleges focusing on differentiation, sophisticated, high-tech and up-to-date practical training centres should be developed to ensure that learners are exposed to as much high quality practical experience at the college as possible, to serve as a preparation and/or complement to their workplace training. Additionally, for those colleges focusing on differentiation, strong linkages should be developed with companies that are aligned, to provide relevant workplace experience for learners and employment opportunities for graduates.

4.2.5 QCTO qualifications

Industry is playing a large role in the development of the curricula for QCTO's new occupational qualifications (which span NQF levels 2 - 8). This is a positive step but collaboration with colleges and HEIs will be necessary as well to ensure that articulation between programmes spanning the sub-qualification frameworks (Indaba 2014). The

current issues being discussed, such as the NCV and N programmes review, as well as the pending legislation allowing TVET Colleges to offer qualifications on NQF levels 5 and 6, therefore need to be implemented as a matter of urgency so that articulation with QCTO can begin. It will be extremely difficult to address this after the QCTO programmes are implemented. It is absolutely crucial that individuals' desires to move from a qualification falling in one sub-qualification framework to a qualification in another are prioritised. Therefore, instead of perpetuating parallel systems, conversations about programme strategy and development should involve all three Quality Councils to ensure that articulation will become an ongoing and automatic outcome of the process. While important across the board, this integration is particularly crucial for colleges who wish to differentiate, to enable them to become centres of excellence in their chosen fields.

It is also imperative that lecturer development occurs concurrently with programme development (Duncan 2014). Further to this, funding mechanisms will need to be adjusted to enable colleges to build permanent staff capacity for QCTO programme provision. QCTO qualifications currently provide fundamental learning from NQF levels 1 – 4 only, so it will be important that fundamental subjects are introduced at the higher levels in QCTO's qualifications to enable articulation with higher learning as well as parity of esteem (Needham 2013).

4.2.6 Professional occupations

There are a range of potential occupations for which articulated pathways leading up to professional designations are minimal and heavily protected by stakeholder bodies, for example para-professionals within the legal industry unable to articulate to higher education qualifications required for law. Legislative provisions should be made for professional bodies to offer an articulated range of qualifications leading to professional designations that may span all three sub-qualification frameworks (Needham 2013).

4.2.7 Higher learning

In the context of the need in South Africa to develop technical skills at the intermediate level, it is necessary to build a fully-fledged TVET system that articulates with both the labour market *and* with higher education, and which should be pegged not at levels 2 to 4 on the NQF, but at levels 2 to 6, thereby building a bridge between school and higher education for those on the technical / vocational track.

TVET Colleges and HEIs

While legislation states that articulation between NCV4 graduates from TVET Colleges and HEIs exists, this does not occur often in reality. Therefore, HEIs should be required by law to allocate a percentage of their entrants to graduates of an NQF4 qualification in order to boost the credibility of the TVET College sector as well as to build learners' confidence, realistic levels of hope as well as garner their trust in the sector.

Articulation between TVET Colleges and UOTs

Artisans should be able to access UOTs in order to become Technicians if so desired, therefore lost linkages between TVET Colleges and UOTs need to be restored. Credits would need to be awarded for the first year of the 2-year Diploma (Needham 2013).

The Franchise model

HEIs should 'franchise' some TVET Colleges to offer certain first-year programmes (and perhaps second year as well) on their behalf. This would also cater for so-called transfer students, meaning that, upon passing, learners could enter second year at the HEI. This would require that a well worked out system of CAT is created. This could be considered for colleges which have differentiated themselves, therefore enabling a college with a first-year HE offering to become a centre of excellence in the chosen field. Lecturers from universities and UOTs should teach the first year of a higher education programme while the college develops its own capacity. Funding modalities for higher learning would therefore need to be adapted to accommodate this (Stumpf *et al.* 2009). Legislation would need to be changed to allow TVET Colleges to offer programmes higher than NQF level 4.

Detailed research (Papier 2009) has been conducted on lecturers' vocational qualifications, educational qualifications and workplace experience in four provinces. This research should be expanded to all provinces in order to ascertain which TVET Colleges could teach expanded occupational and vocational programmes at post-NQF level 4, in the short-, medium-, and long-terms.

College-owned higher education qualifications

TVET Colleges could be granted the right to offer a limited number of specific HE qualifications in their own right. The most appropriate qualification for this purpose would be the Higher Certificate, which is a 120 credit, NQF level 5 qualification, primarily vocationally-oriented, so it includes a period of Work Integrated Learning (WIL). This would then allow learners to proceed to an Advanced Certificate or a Diploma, accredited by CHE. As per the previous recommendation, this could be considered for colleges which have differentiated themselves, further reinforcing the college as a recognised centre of excellence in the chosen field (Stumpf *et al.* 2009).

In order to position the TVET College sector as a credible post-school education system, a qualification on NQF level 6 should also be aimed for in certain colleges, particularly those which choose to differentiate (Needham 2013). A short-medium term goal should be the provision of qualifications equivalent to NQF5, while a medium-long term goal could be the introduction of qualifications equivalent to NQF6.

As previously mentioned, legislation would need to be changed to allow TVET Colleges to offer programmes higher than NQF level 4.

The Residency clause (Joint Statutes 1918) which states that a learner has to complete at least 50% of the qualification at a particular university before that university will award the learner the full qualification has had a negative effect on articulation and needs to be discussed concurrently with the debate to award colleges the right to offer NQF5 and 6 qualifications, in order to ensure that learners at a TVET College will not be hampered from completing a degree at an HEI afterwards if they so wish (UWC FETI 2012).

Not only should these qualifications, on NQF 5 and 6, articulate with programmes at HEIs, they should also be an end in themselves, by being recognised by industry and therefore increasing learners' employability.

4.3 Recommendation 2

Develop conversion, or bridging, courses, to allow for flexibility and mobility within the college sector. This is important to achieve the vision of an articulated post-school education and training system, one in which there are no dead ends for learners.

- Grade 12s who wish to pursue higher learning may not have all the foundational subjects required to access certain programmes (eg. QCTO occupational programmes, higher learning qualifications, etc). Therefore, it should be possible for these learners to complete a bridging programme which offer subjects to close the gaps and allow them the opportunity to meet the entrance requirements (Indaba 2014).
- Tightly defined programme provision can block weaker students trying to access colleges. Grade 9s – 11s wishing to complete general-vocational or N programmes but have poor levels of Maths, English and Science should be able to access bridging programmes (Indaba 2014).
- Learners wishing to change vocational or occupational streams should receive credits for common subjects and be able to complete subjects which are outstanding to avoid repeating entire years of study.
- Non-accredited short courses to develop ancillary skills should be provided by colleges with an area of specialisation so that a learner develops an income-generating skill for the local marketplace (Akoojee 2013). The focus should be to use QCTO's part qualifications which are currently being developed to achieve this purpose, in order to increase the learner's employability. The use of part-qualifications would also allow them to complete the qualification at a later stage if desired.
- Career guidance initiatives, similar to Australia's and Russia's, should be designed and introduced to learners in Grade 9, so that informed decisions can be made about their futures. Included in these initiatives should be information on the learners' funding options, as well as the availability of TVET Colleges as a pathway to a technical/vocational career. These initiatives should also seek to encourage learners to consider those pathways that are closest to their interests and strengths. Learners' choices should not be influenced by perceptions of poor programme quality and delivery from any of the institutions being presented as options to them, therefore the achievement of parity of esteem must be seen as another primary objective in the education sector as a whole. An additional recommendation is that schools and TVET Colleges collaborate to create networks of retired individuals from all professions and vocational fields, who can serve as additional sources of information. Retired individuals could be invited to schools to talk with experience about what their profession involved and what an individual would be able to expect by choosing that particular career path. A different profession/sector could be discussed each week. It is hoped that effective career guidance interventions would assist Grade 9s to choose career paths that are in line with their interests and strengths, and therefore that dropout rates in later years (particularly during Grades 10 and 11) would naturally decrease over time.

4.4 Recommendation 3

Develop entrepreneurial skills (higher order thinking skills rather than business start-up skills only) across all disciplines in the TVET College sector, on a compulsory basis, through the provision of universal entrepreneurship education programmes.

Entrepreneurship Education Programmes

- Given South Africa's consistently very low pass rates for Maths, which is a key subject for the development of learners' higher order thinking abilities, the provision of entrepreneurship education programmes which develop these skills becomes a crucial college offering. Therefore, entrepreneurship education courses and activities should be compulsory across general-vocational and N programmes and consistently invested in and funded by the DHET.
- The ILO's startup&GO entrepreneurship education programme which was recently found by the HRDC to be the best in South Africa should be considered for this purpose.
- The pedagogical method used to develop entrepreneurial skills must be experiential learning and incorporate the following activities:
 - Simulations
 - Animations / multimedia
 - Games and scenarios/role-plays
 - Group discussions and debates (where creativity is encouraged and there are no wrong answers)
 - Group assignments
 - Reflective sessions upon completion of any assignment where learners and facilitators constructively discuss lessons learnt and mistakes made
 - Brief workplace placements
 - Actual start-up of small businesses
- Colleges should have links with organisations, business schools and other TVET Colleges which specialise in the development of start-ups, to ensure that learners who have been inspired by the entrepreneurship education programmes have access to pathways to pursue entrepreneurship.

Entrepreneurship Educators

- Entrepreneurship educators need to be entrepreneurially-minded and developed to be facilitators of learning instead of communicators of knowledge.
- Partnerships with industry must be prioritised so that entrepreneurship educators can become fully engaged with the real business world environment.
- Programmes to motivate entrepreneurship educators and strengthen their knowledge and capacity to effectively teach entrepreneurship should be fully researched and implemented, concurrently with the research and introduction of entrepreneurship education courses and activities.

Small business development and support

Since the vision for TVET Colleges is that they provide learners with the skills, knowledge and attitudes necessary for employment, but considering South Africa has among the lowest entrepreneurial rates in the world, it is crucial that certain colleges (at least one per

province) become specialists in actual business start-up development, in order to support the intentional entrepreneurs with the resources and knowledge required to increase their businesses' chances of success. For this to be achieved, the following actions will be required:

- The current Business Studies curriculum needs to be updated and relevant.
- Colleges need to establish sophisticated on-campus business incubators.
- Experienced mentors need to provide budding entrepreneurs with strong support and advice, particularly during the early startup phase of their business.

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