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2030 NDP

ANALYSIS OF PSET TRENDS TOWARDS NDP 2030

Draft NPC Report | April 2020

The National Planning Commission is releasing

this Position Paper for public comment.

Feedback should be provided in

writing by July 6, 2020.

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Table of Contents

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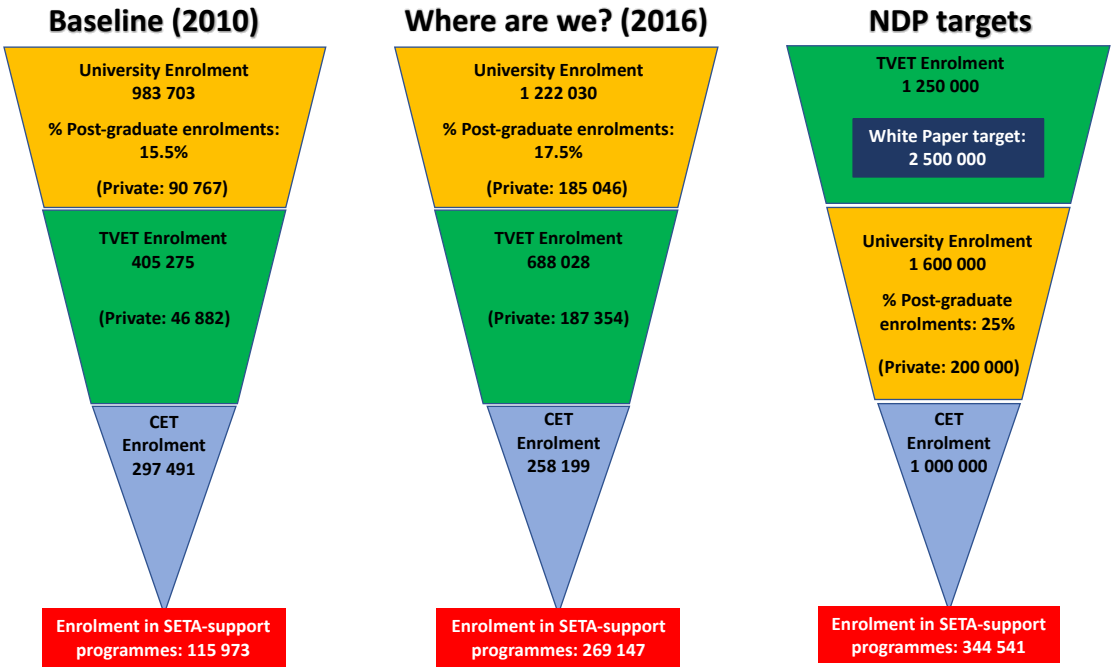
Introduction

This analysis is framed by the emergence, post 2009, of a Post-School Education and Training System, which was enabled by the creation of the Department of Higher Education and Training (DHET) and the function shift for both Adult Learning and Technical and Vocational Education and Training from the provinces to the DHET following the Further Education and Training Amendment Act, 2013 (Act No.1 of 2013).

The White Paper for Post-School Education and Training of 2013 sets out a vision for in an integrated post-school education system. The National Plan for Post-School Education and Training 2019-2030 seeks to give effect to that vision, guided by the National Development Plan. However, despite the function shift and the consolidation of Higher Education, TVET, Community Colleges and Skills Development within the DHET, the period since the formulation of the NDP to date has seen discrete plans for Higher Education, TVET and Skills Development, and almost no plan for Community Education.

There is still limited coherence in the pathways between secondary schools, community education and training centres, public TVET Colleges, skills development in the workplace and higher education. The NDP calls for the different parts of the education system to work together allowing learners to navigate the different pathways, within those institutions offering high quality learning opportunities and between education and training and the world of work. Whilst there is a need for these linkages, there is also an imperative for each post-school institution to have a clear identity and mission, and for an assessment of whether there are any gaps that may need to be addressed through new institutional types.

The diagram below captures the shift in the size and shape of the PSET system from 2010 (baseline for the NDP) through 2016 (data which forms the basis for the National Plan for PSET), and to 2030. It aligns with the NDP targets for the different levels of the system, with the exception of TVET enrolments (the NPPSET targets 2,500,000 compared for 1,250,000 for the NDP).



Section 1: NDP Targets and Progress

1.1 TVET, CET and Skills

NDP Target	Progress
Increase enrolments in TVET Colleges from 300,000 to 1,25million	688 028 enrolments in 2017
Ensure that disadvantaged students are fully subsidised	255 205 students funded by NSFAS in 2018
Produce 30,000 artisans per annum	19,100 artisans certified in 2017
An increasing proportion of TVET College students will enter directly from school before completing Grade 12	10% of TVET enrolments in 15-19 age group, most in Report 191 (N1-N3)
75% throughput in TVET Colleges	In 2013, the average throughput rate for NCV programmes was 10.8% completion within 6 years.
Address low levels of employability of college graduates, with particular emphasis on internships during studies (off base of 35%)	Employment rates just over 50%, with low earning

Participation

The NDP states that public TVET colleges should become institutions of choice for vocational education and training and a viable alternative learning pathway to secondary schools, particularly for the training of artisans and producing other mid-level skills. In addition, an increasing proportion of young people should be entering colleges before completing Grade 12.

However, the NDP highlights the inefficiencies and poor quality in the TVET College system, and while it calls for a significant increase in the student population, it also emphasises that this should be achieved by increased demand through improved quality and employability rather than purely focusing on increasing access and filling capacity.

The GER for TVET colleges more than doubled between 2010 and 2015 from 3.8% to 8% (358,393 enrolments to 737,880 enrolments), with a particular spike in enrolments in 2012, but then began to decline to 705 397 in 2016. From 2016 to 2017 there was a further decline of 2.5% to 688 028 enrolments.

Following the split of the Department of Education and the resultant creation of a Department of Higher Education and Training in 2009, the key priority was targets for increased enrolments in TVET Colleges. The National Certificate (Vocational), which was introduced in 2007, has proved to be an ineffective mechanism for growth due to poor performance on the part of students combined with weak industry demand and significant costs associated with the delivery of the qualification.

As a result, the DHET fell back on the older N-programmes as a vehicle for growth at a fraction of the cost. These programmes are shorter with lower barriers to entry and generally better student performance. This strategy proved effective in doubling enrolments between 2010 and 2015 when DHET had to cap enrolment due to funding constraints, combined with a high level of bad debt and over-enrolment (relative to the subsidy) in the college system.

Table 1: Enrolment in TVET Colleges, 2010-2017

Qualification Category	2010	2011	2012	2013	2014	2015	2016	2017
NC(V)	130 039	124 658	140 575	154 960	166 433	165 459	177 261	142 373
Report 191 (N1-N6)	169 774	222 754	359 624	442 287	286 933	519 464	492 026	510 153
Occupational Qualifications	23 160	20 799	62 359	19 000	19 825	20 533	13 642	10 969
Other	35 420	32 062	95 132	23 371	29 192	32 424	22 468	24 533
Total	**358 393**	**400 273**	**657 690**	**639 618**	**502 383**	**737 880**	**705 397**	**688 028**

Sources:
Statistics on Post-School Education and Training, 2016
TVETMIS 2017, data extracted in January 2019

As can be seen in the table above, the major contributor to the decrease between 2016 and 2017 was enrolment in NC(V); this saw an overall decrease of 34 888 and new NCV2 enrolments dropping from 89,000 to 69,000 between 2016 and 2017. This decrease took place despite Report 191 programmes continuing to attract large numbers of enrolments.

At the same time, there has been a substantial shift in the age profile of college learners. Whereas around 25% of enrolments in TVET Colleges in 2013 were aged between 15 and 19, this had reduced to 10% by 2017. The proportion of students in the age range of 25-29 had shifted from 14% to 19%. This suggests that far fewer young people were enrolling in colleges as an alternative to the senior secondary schooling system.

A key factor in this age shift, as well as the reduction in NC(V) level 2 enrolments, was the reality that school leavers, and particularly those that exited prior to completing a Grade 12, struggled to cope with the demands of the NC(V).

There is no publicly available data on the scope of distance learning in the TVET College sub-system. A relatively small number of colleges have dedicated distance/open learning campuses offering N-programmes from N1-N6 in engineering and business studies, as well as educare and tourism. The scope of enrolments in distance learning and the performance thereof is not reported by DHET.

There has also been a decline in occupational programmes to just under 11,000 enrolments, off a base of 23,160 in 2010. Along with the general spike in enrolment in 2012, occupational programmes accounted for 9% of enrolments in 2012, compared to 1.6% in 2017. This is concerning considering the National Plan for PSET indicates that occupational programmes should become the primary TVET offering. Much of this decline in occupational programme enrolments relates to the persistent disconnect between TVET Colleges and workplace-related training being funded through the SETA system. Funding for occupational training in colleges is ad-hoc and variable from year to year. In addition, colleges tend to run DHET funded programmes and occupational programmes as separate operations, thereby creating two different organisational structures within a single institution. As a result, many colleges de-emphasise their occupational training, both in terms of strategy and planning.

Throughput

It is evident that the performance of students across the board declined during the period of massive growth and then stabilised in 2015 as the enrolment numbers stabilised. There was also a significant upswing in the staff-student ratio from 40.2 in 2010 to 66.7 in 2015. On the face of it there appears to be a negative correlation between growth and poor performance. The impact on quality is evidenced by a substantial decline in completion rates, although there are some indications of recovery in results in 2015 and 2016.[1] The 2017 examination results suggest a significant improvement in success rates for N3 and N6 students, while NCV has demonstrated little improvement. Given the massive increase in enrolments in N3 and N6, there have also been a significant increase in graduates.

The large majority of graduates from TVET Colleges have business-related qualifications/part-qualifications, with the exception of N3 student who are all engineering graduates. Only around 20% of N6 and 19% of NCV graduates have graduated from engineering programmes. There is a large concentration of graduates from NCV Office Administration (32%), while more than half of N6 graduates are in Human Resource Management, Business Management, Financial Management and Management Assistant. Tourism and Hospitality programmes produce only 14% of NCV graduates and 4% of N6 graduates.

The certification rate for N3 improved from 44.6% in 2013 to 76.8% in 2017, while for the N6 programme, the certification rate increased from 36% to 92.9% (although this may be an anomaly given the 2016 certification rate was 66%). The number of successful candidates from the N6 programmes increased four–fold over the period.

The certification rates for NC(V) level 4 programmes increased by five percentage points from 2013 to 2016, with some fluctuation, but is still much lower than for the Report 191 programmes. While the output from NCV still remains relatively low (11,377 nationally in 2017), the numbers writing NC(V) Level 4 in 2016 and 2017 are noticeably higher than those in 2013, despite the reduction in NC(V) level 2 enrolments, suggesting the flow of students is improving.

In the absence of cohort studies, however, it is only possible to do a pseudo–cohort analysis in terms of throughput rates for NC(V) programmes in TVET colleges. By way of example:

- 64,399 wrote NC(V) level 2 exam in 2015
- 45,721 wrote NC(V) level 3 exam in 2016
- 26,519 wrote NC(V) level 4 exam in 2017, of which 11,377 passed

This suggests that 41% of those that wrote the NC(V) level 2 in 2015, wrote the final NC(V) level 4 exam 2 years later, and 17.7% passed within the 3-year period.

If this is compared to the 2010 cohort, 46,884 wrote the NC(V) level 2 exam while 15,334 wrote the NC(V) level 4 in 2012, with 3 715 passing – i.e. 8% of those that wrote the NC(V) level 2 exam in 2010, passed the level 2 years later.

The drop-out rate at level 2 is far more concerning and has with 28% dropping out at Level 2 in 2015, compared to 49% drop out at level 2 in 2017. If the drop-out rate at NC(V) level 2 is taken into account, the indicative throughput rate drops to 11.5%. The 2017 level 2 drop-out rate is similar to the 47% drop-out rate in 2012, with an indicative throughput rate of 10.4% after 3 years.

For Report 191 programmes, pseudo–cohort analysis is more difficult as first–year students can enter TVET at different levels and at different times of the year.

The high level of drop-out at NC(V) level 2 raises questions around the effectiveness of selection processes in colleges. This, despite the shift in age profile to older learners which would ideally suggest learners that have had the opportunity to reflect on their career goals. There is varied levels of

[1] DHET (2018) Statistics on Post School Education and Training: 2016

effectiveness in the selection processes across colleges for both NC(V) and the N-programmes. Anecdotal indications are that a portion of young people are not well informed about which programme they are best suited for and are instead incentivised by the availability of NSFAS funding rather than the career pathways offered by the programme. In addition, young people who have not done well in maths and science at school struggle with the NC(V) curriculum (particularly engineering and IT).

Due to inefficiency in the sub-system, particularly given the poor throughput, the average cost of producing an NCV graduate in 2015 is estimate to be around R454 260.

Funding of Colleges also create some challenges: the Colleges are funded upfront on the basis of an approved enrolment plan and there is no clawback of funding based on poor performance, despite this mechanism being available in the funding norms.

Labour Market Absorption

The NDP emphasises that the college sector is intended as a pathway for those who do not follow an academic path, but it suffers from a poor reputation due to the low rate of employment of college graduates. Whilst it is difficult to accurately measure the costs and returns associated with TVET College programmes, because of the absence of cohort data, it is evident that this situation has not really improved.

There have been a range of tracer studies of TVET College students over the past 2 decades with variable response rates and variable measures of labour market absorption. The results of more recent tracer studies have generally found just over half of graduates were employed within a 3-6 year period, with low level of earnings.

The significant growth in N-programme enrolments is particularly problematic considering the low employment prospects for these students. In two tracer studies of engineering graduates from N1-N3 programmes in 2001 and 2003, it was found that 25% were in employment, only 50% of which were in a job related to their qualification.[2] A further tracer study of business and engineering graduates in 2010 found that just over half of the respondents reported that they had been employed and/or were still employed during the 6-year period.[3] Only 35% of those still employed after 6 years were employed in a position that was related to what they studied.

A tracer study of NCV graduates in 2016, conducted by SSACI, found that 58% of NCV4 graduates were employed within a 5-year period, but this employment is generally impermanent and the graduates earn on average around R3000 per month.[4]

Similarly, IPSS (2017) found that 52% of all NATED graduates from a 2013 sample were employed in 2016, with 63% earning less than R5000 per month. [5]

A tracer study of NATED and NCV students in 2019, commissioned through the EU-funded Capacity Building Programme for Employment Promotion (CBPEP) programme, found an absorption rate of roughly 40% if the percentages of completers in WBL programmes, self-employment and employment from the figure below are added together. While a small percentage of both women and men who are not working were studying further, the single largest group (almost half) were not in employment or further education or training. A high percentage of graduates were in work-based learning

[2] Gewer, A (2009) Features of Social Capital that enhance the employment outcomes of FET College learners. Unpublished Doctoral Dissertation, University of the Witwatersrand.

[3] Gewer, A (2010) *Choices and Chances: FET Colleges and the Transition from School to Work*. Johannesburg: NBI

[4] SSACI (2016) Tracer Study of the Transition of NCV Students from TVET Colleges to the Labour Market – NSA Funding

[5] Papier et al (2017) Pathways of TVET College learners through TVET Colleges. HSRC/DHET LMIP 5

(learnerships, apprenticeships etc.). Engineering graduates were more likely to be employed and earning more than business studies graduates, although larger number of business studies than engineering studies graduates were working in a role that is relevant to their field of study.

This is a particular concern given the challenge reported in the NDP that approximately 65 percent of college students are unable to find work experience, which is a requirement for completing National Technical Diplomas popularly known as N diplomas.

Funding

The instruction to colleges to grow between 2010 and 2015 was not accompanied by a concomitant increase in the funding base. While government funding to the TVET sub-system rose significantly between 2010 and 2014, particularly with the substantial increase in NSFAS funding to support growth in enrolments[6], this increasing in the funding base could not keep up with the increase in enrolments, which almost doubled between 2010 and 2014. As a result, there was a real decline in the funding per FTE of 6.9%, with colleges expected to absorb this shortfall or fund from other income sources (such as occupational training funded by SETAs and NSF). This deficit has persisted and there continues to be a significant shortfall in funding, despite the reduction of targets in annual enrolment planning.

Given fiscal constraints and quality concerns, TVET enrolments targets have largely been capped since 2015 at 710,535 of which 60% must be funded by the college or from other sources. In 2016, the DHET reported to the Presidential Commission on Higher Education that, based on the fully costed funding norms, only 429 638 of the 664 748 enrolments in the TVET College sub-system were funded.[7]

The APP target in 2016/17 was 829,000 enrolments towards meeting the 2030 White Paper target, which would require a fully costed budget of R19,8billion, off a baseline of R9,072billion.[8] The DHET estimated a budget shortfall of R10.7billion.

Over the 2017 MTEF period, the estimated shortfall to meet the White Paper target was R52,3billion. Due to financial constraints, DHET implemented a revised target of 5% growth rate over the MTEF period compared to the 14.4% rate needed to reach the White Paper target. The sub-system should have reached 769,529 in 2019.

The 2019/20 approved TVET enrolment plan comprising of 562,006 headcount enrolments, against the APP target of 664,748, still has a funding deficit of R1,027billion. If the actual 2019/20 APP target of 664,748 is costed, the results would be a shortfall of R3,6billion. The 2019/20 funding levels (based on the APP target of 664,448) is therefore currently at 78% of the funding level needed to fund the targeted number of students in the APP.

NSFAS recipients from TVET colleges increased from 2013 reaching 57% of total recipients in 2015 (although the Rand Value of their financial aid compared to university student remained small), but TVET share of recipients reduced to 43,5% in 2017 following #feesmustfall. The Heher Commission concluded that NSFAS should concentrate on the financing of TVET (TVET should be free) but stated that this must be accompanied by investment in infrastructure and upgrading of programmes in line with industry demand.

[6] DNA Economics and Mzabalazo Advisory Services (2016) Volume 5: Consolidated Report on the Costing and Financing of the White Paper on PSET

[7] DHET, Funding the Post-School Education and Training Sector and the feasibility of fee-free Higher Education and Training. Presentation to the Presidential Commission on Higher Education, August 2016

[8] DHET, TVET Colleges Funding, Presentation to Commission of Enquiry into Higher Education and Training (Fees Commission), October t2016

Achieving either the NDP target of 25% GER or the White Paper target of 2.5 million TVET students by 2030 will require sustained enrolment growth of almost 13% per annum. This is considered unlikely as any increase would be off the back of negative growth, declines in funding and increasing costs.

1.2 The proposed three-stream model

In support of the NDP, and particularly the target of producing 30 000 skilled artisans a year by 2030., the Department of Basic Education (DBE) has proposed a three-stream model in order to achieve the following objectives:

- Mediate the high rate of school dropouts
- Increase the number of learners entering the vocational and occupational pathways
- Provide inclusive education
- Create opportunities for young people with disabilities

The three-stream model will comprise the following:

- The academic stream will resemble the current schooling system, with a focus on academic studies.
- The technical vocational stream will include subjects such as engineering and technical drawing and will be aimed at students who want to study trades after school.
- The technical occupational stream is aimed at producing students who can leave matric and immediately enter the workplace, with skills such as spray painting, woodwork, and hairdressing. The programmes will be theoretical (25%) and practical (75%) in nature and will articulate mainly to occupational qualifications.

Grade 9 learner will obtain the General Certificate of Education (GCE) qualification and a standardised assessment will be conducted at the end of the Grade 9 year to determine which stream is most suited (this assessment is not the focus of this paper but it is noted that the costs for a standardised assessment in Grade 9 will be costly and it is unlikely that learners that exit at this point will be able to access labour market opportunities without a Grade 12 or an equivalent. In addition though, technical and vocational programmes will also be introduced within the GCE as early as Grade 4 and learners who elect these programmes will not then follow the academic stream after Grade 9.

All learners in all three streams will do language, mathematics, and life skills although this will not be pitched at a prescribed level but rather at the learner's own level.

The occupational stream will initially be introduced at special schools with workshops due to resource constraints but the intention is to expand this more broadly and the number of schools equipped to offer vocational or occupational subjects is expected to reach 14,592 schools by 2022. 60% of learners are expected to be streamed into technical schools that offer vocational or occupational programmes. This will require significant investment in infrastructure, equipment and capacity building.

The relation of technical schools to TVET Colleges is unclear although there may be articulation from the technical schools into further study at TVET colleges, particularly if they do not go straight into the workplace. The implication of this is that DBE may offer NQF levels 2- 4 qualifications with TVET Colleges offering post-schooling qualifications.

The introduction of the three-stream model may give expression to the original tenets of the National Qualifications Framework by providing parity of recognition of a vocational and technical stream with the academic stream.

However, it is clear that the three-stream model is not a solution to the poor quality of the schooling system and will not necessarily lead to improved learner performance, particularly given the persistent learning deficits of young school learners and the challenges of teaching and infrastructural

capacity in the schooling system. This is reflected in the TVET College system which struggles to provide good quality vocational education to school leavers.

The technical occupational stream is also problematic for young learners as it may restrict labour market opportunities and limit mobility in the labour market, particular as the demand for trade skills becomes increasingly restrictive. The real danger though, is that the streaming of young people early on has the potential to further entrench inequality by forcing young people from poorer communities to choose streams which limit their opportunities later on.

1.3 CET

NDP Target	Progress
Increase enrolments in Community Colleges from 300,000 to 1million	CET system has seen no growth since 2011 and has in fact declined to 258,000 headcount enrolments in 2017

Participation

In 2010 there were approximately 300,000 students (by headcount) in Public Adult Learning Centres (PALCs), in two main qualifications – the General Education and Training Certificate also known as ABET level 4 or NQF level 1 and the Senior Certificate for youth and adults who did not pass Grade 12. PALCs operated mainly within or linked to schools, with some having satellite sites. The qualifications were offered mainly part-time, at night because of use of schools.

The Green Paper on PSET (2012) which had proposed the establishment of Community Education and Training Centres which would incorporate and transform the existing Public Adult Learning Centres (PALCs).

The Green Paper on PSET (2012) highlighted the following challenge

> "Many learners who study at adult learning centres are enrolled for secondary schooling, and write the Senior Certificate examinations, although these numbers have declined significantly since the National Senior Certificate replaced the old Senior Certificate. This suggests that very few adults move up from ABET level 4 (equivalent to NQF level 1) to the next level, and that most learners enrolled for Grade 12 are school drop-outs or people who want to rewrite the Matric examinations. Public Adult Learning Centres are currently the only state provision for this purpose. Very few of them have the capacity to offer the newly developed NASCA [National Senior Certificate for Adults], and this capacity needs to be built as the NASCA is more suitable for adults who are not just repeating a recently written NSC."

The primary focus of the PALCs on general education offered little scope for adults and young people to acquire occupational skills or skills for self -improvement. The shift to Community Education and Training was viewed as a more effective way to promote lifelong learning and offer skills (in addition to general education programmes) that could contribute to sustainable livelihoods outside of the formal sector. They should be a diverse set of institutions, including public, private and community-owned establishments.

The NDP supported this shift, indicating that the new CETCs should "offer a variety of courses ranging from adult basic education to secondary and non-formal education. Community Education and Training Centres, like all post-school institutions, must have a clear identity and purpose."

Responding to both the Green Paper and the NDP, the Ministerial Task Team on Community Education and Training Centres, appointed in 2011, recommended the establishment of Community Learning Centres (CLCs) linked to a Community College (eventually one in each municipality, initially one in each province) which should provide support and assist with the institutional and academic development of the CLCs. Community Learning Centres (CLCs), incorporating the PALCs. should offer restructured literacy and ABET programmes, the GETC, NASCA as well as vocational and occupational courses and skills.

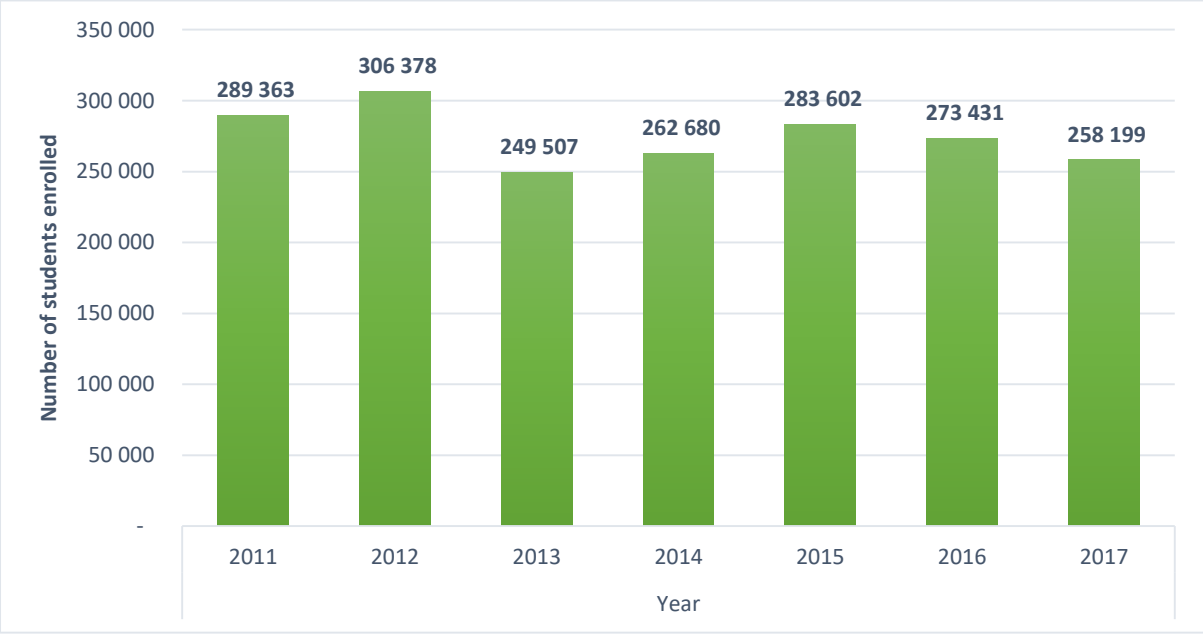
Formally promulgated in 2015, in terms of the Continuing Education and Training Act, 2006 (Act No.16 of 2006), the purpose of CETC's is to cater for the needs of unemployed youth and adults who are outside of the formal economy, poorly educated and not studying. All former PALCs were merged into nine colleges (Community Education and Training College Administrative Centres (CETCACs)), one per Province, and PALCs have been renamed Community Learning Centres. Each of the nine colleges CETCACs are meant to play an administrative role for the management and governance of the renamed PALCs, including the allocation of funding for goods and services required to deliver national programmes.

CET colleges are expected to provide for an expanded menu of programme and qualification provision (formal and non-formal) in colleges. Currently, colleges still provide predominately formal, general education and training programmes to adult students and out-of-school youth (GETC: ABET Level 4). According to national policy, Community Education and Training College shall offer programmes that are driven and funded by the State, as well as programmes that respond to the immediate needs of the community and are funded from other funding sources

There were 3 083 public and private AET centres in South Africa in 2010, with close to 300 000 learners enrolled in these centres. As of 2015 there were 3,276 CLC's comprising mostly former PALCs.

However, as illustrated in the graph below, the CET system has seen no growth since 2011 and has in fact declined to 258,000 headcount enrolments in 2017. There has been a slight decline in GER from 1.5 to 1.3 over this period. The enrolment target (2016/17) was 310,000 in the APP (if aligned to NDP target) and the projected increase over 2017 MTEF was 8.7% per annum.

Figure 1: Number of students enrolled in CET Colleges, 2010-2017



Sources:
Statistics on Post-School Education and Training, 2016
CLC_Annual_2017_20190205, data extracted in February 2019

The 2020 APP set a target of 375,035 enrolments across the 9 CET Colleges and 3,276 Community Learning Centres (CLC's) which have been incorporated into the 9 CET Colleges. The target is to reduce the number of CLC's to 200 in the medium-term. The enrolment targets are breaking down as follows:

- Skills programmes: 10%
- Grade 12: 25.7%
- AET 1-4: 58.9%
- Non-formal programmes: 5.3%

The estimated budget for these enrolments is R31,362,000 per college.

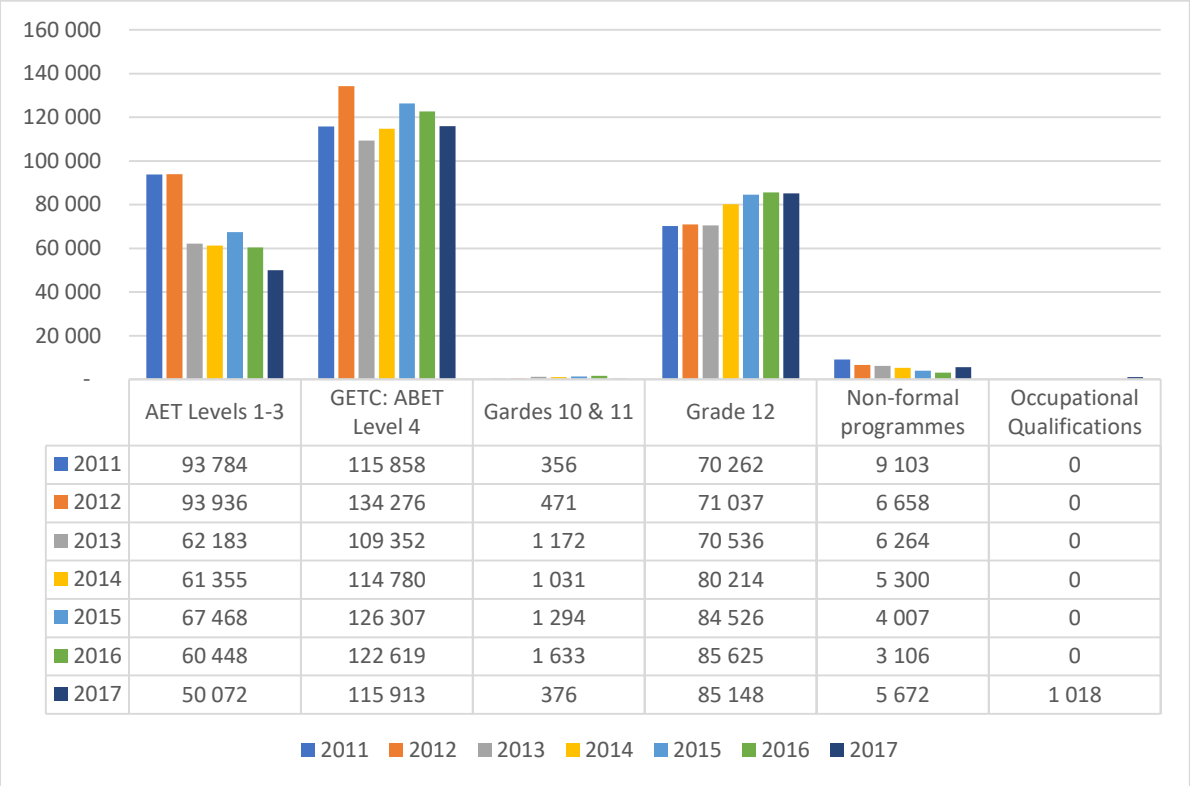
In May 2018, DHET reported ongoing challenges in the CETCs[9], including:

- CETC's not having capacity to manage their own operational budgets
- Continued predominance of academic programmes in the majority of centres and inadequate diversification on skills and non-formal programmes.
- Lecturers are inadequately prepared or in some instances lack relevant qualifications.
- LTSM provision is inadequate and irrelevant- students rely mostly on notes
- Infrastructure challenges persist as evident through poor attendance, safety issues with regard to evening classes, CLCs constantly under threats of eviction by hosting schools, storage of documents and limited or zero access to resources.
- Performance targets not achieved-generally performance is low (2015-37%, 2016-36%)

As indicated in the table below, the majority of students in CETC were enrolled for AET Level 4 programmes during 2011-2016, followed by Grade 12 and AET Levels 1-3. Grades 10 and 11 and occupational programmes recorded few enrolments during this period. While total enrolment decreased by 8.1% over the period 2011-2016 there were high increases for Grade 12 and AET Level 4 students. In 2016, more than 75% of students were enrolled for AET Level 4 and Grade 12 programmes. While this is an important mechanism for young people to complete their formal education, it also confirms the lack of diversification of programmes and the continued interest in Grade 12 or AET Level 4 qualifications, while occupational programmes have continued to decline to around 1% of total enrolments.

[9] DHET, 2018. *Latest Developments in the Community Education and Training System*.

Figure 2: Number of students in CET Colleges by programme, 2011 to 2017



	AET Levels 1-3	GETC: ABET Level 4	Gardes 10 & 11	Grade 12	Non-formal programmes	Occupational Qualifications
2011	93 784	115 858	356	70 262	9 103	0
2012	93 936	134 276	471	71 037	6 658	0
2013	62 183	109 352	1 172	70 536	6 264	0
2014	61 355	114 780	1 031	80 214	5 300	0
2015	67 468	126 307	1 294	84 526	4 007	0
2016	60 448	122 619	1 633	85 625	3 106	0
2017	50 072	115 913	376	85 148	5 672	1 018

Sources:
Statistics on Post-School Education and Training, 2016
CLC_Annual_2017_20190205, data extracted in February 2019

There is a broad spread of age groups, with the highest enrolment being in the age range of 25-34 at 34% but closely followed by 35 and over (32%) and 18-24 year olds at 31%. Youth aged 18–34 were mostly enrolled in AET level 4 programmes or Grade 12.[10] However, the large majority of enrolments across all programmes were female, making up 71% of enrolments.

Completion

The DHET only reports only GETC: ABET Level 4 results. In 2010, there were 143,530 students enrolled in the GETC: ABET Level 4 qualification, of which 75,832 wrote the exam and 17,888 were successful (12% throughput). In 2017, the number of enrolled students had reduced to 85,136 with 65,225 writing the exam and 24,757 (29% throughput). While enrolments have fluctuated between 2010 and 2017, the throughput rate has remained around 29% between 2014 and 2017.

[10] Education Series Volume V: Higher Education and Skills in South Africa, 2017/Statistics South Africa Report 92-01-05

Table 2: Number of students in CET Colleges by programme who registered, wrote and completed the GETC: ABET Level 4 qualification, 2011 to 2017

Year	Number registered	Number wrote	Number completed	Completion rate (%)
2011	107780	39856	13924	34,9%
2012	109883	55735	23325	41,8%
2013	109518	52501	19945	38,0%
2014	133363	102534	38592	37,6%
2015	117224	91603	34125	37,3%
2016	100490	78105	28024	35,9%
2017	85136	65225	24757	38,0%

Sources: National Examinations Database, November 2017

Funding

There has been a slow and steady increase in the amounts allocated to the CET sector since 2015, reaching R2.4 billion in 2018/19.

Table 3: Funds allocated to Community Education and Training (CET) (nominal) (R millions)

Year	Amount (R millions)
2015/16	1 824,0
2016/17	2 069,7
2017/18	2 234,9
2018/19	2 358,8

Source: National Treasury (2018), National Treasury (2017), National Treasury (2016), National Treasury (2015)

Spending by DHET on CETs amounted to R1 824 million in 2015/16 and R1 859 million in 2016/17, expressed in 2015/16 Rand values. The estimated 2017 MTEF shortfall to meet NDP target was R37,7billion off a 2016/17 baseline shortfall of R9,1billion.

1.4 Skills Development

NDP Target	Progress
Produce 30,000 artisans per annum	19,100 artisans certified in 2017
Strengthen the SETAs to ensure more effective spend	The total disbursement of the Skills Development Levy was R15.2 billion in real terms in 2015, up from R12.5billion in 2011

Participation

During the period of NSDS III (2011-2016) almost 1.1 million enrolments were funded by the 21 SETAs with a further 330 000 learners funded by the NSF, totalling 1.4million learners in various post-school education and training programmes.

Table 4: Total enrolments in Learning Programmes

Learning Programme	Enrolled
Learnerships	342,591
Internships	42 933
Skills Programmes	516 436
Artisanal Programmes	130 876
Bursaries	61902
Total	**1 094 638**

Source: DHET SETA QMR, 2011/12 to 2015/16

The total number of individuals registered for SETA–supported learning programmes grew at an average rate of 13.6% between 2010 and 2016, with internships achieving the highest average annual growth rate of 33.8% per year (albeit off a small base). However, there is a significant increase of investment in skills programmes from 2014 to 2016.

Table 5: Number of workers and unemployed persons registered and certified in SETA-supported learning programmes, by programme type, 2011/12 - 2017/18

	Registered				Certified			
Year	Learnerships	Internships	Skills Programmes	Total Registered	Learnerships	Internships	Skills Programmes	Total Certified
2011/12	43 871	3 452	87 906	**135 229**	29 197	878	87 527	**117 602**
2012/13	50 885	6 127	74 587	**131 599**	37 158	2 195	86 491	**125 844**
2013/14	75 782	8 017	92 508	**176 307**	38 796	2 510	109 547	**150 853**
2014/15	77 931	12 006	137 880	**227 817**	40 891	3 663	106 459	**151 013**
2015/16	94 369	13 135	123 593	**231 097**	43 322	3 352	127 144	**173 818**
2016/17	101 447	17 216	131 017	**249 680**	58 080	6 777	116 141	**180 998**
2017/18	111 681	12 935	144 531	**269 147**	48 002	6 496	122 979	**177 477**

Source:
Statistics on Post-School Education and Training, 2016
SETA Quarterly Reports, 2017/18

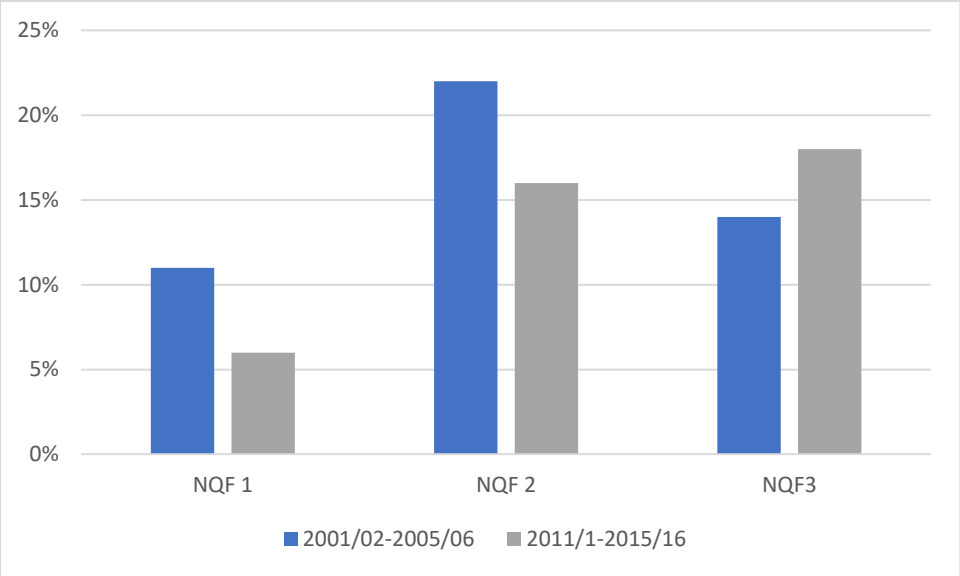
Therefore, while enrolments increased across all programmes, the major increase was concentrated in skills programmes. This coincided with the shift towards PIVOTAL skills funding (Professional, vocational, technical and academic programmes that provide training to address gaps in the areas of scarce and critical skills) following the release of SETA Grant Regulations in 2012, which increased the share of SDL funding that should be allocated to discretionary funds (by reducing the amount given to employers in the form of mandatory grants). Shorter skills programmes were discouraged in favour of full qualifications, in particular through learnerships.

A specific focus of the NSDS was the focus on facilitating progression through lower levels on the NQF. A review of NSDS II, however found that there was an over-emphasis on lower level skills. Several studies (Singizi, 2007: Nedlac SETA Review, 2008: JIPSA close-out report, 2010) found that the grant system encouraged lower level skills due to ease of access and the shorter period of time to deliver.

The NSDS III sought to address this shortcoming, through a focus of progression to intermediate and higher level skills needed for growth sectors, and to support career progression and labour market mobility. Goal 4.2 speaks of 'increasing access to higher-level occupationally-directed programmes."

Enrolment figures for NSDS III indicated some level of progress in this regard, with decreasing numbers at level 1 and 2, and increased enrolments at level 3, as indicated in the graph below.

Figure 3: Learnership enrolment rates for NQF Level 1 to 3, 2001/02-2005/06 - 2011/12-2015/16



Source: DHET QMR from SETAs, 2011/12 to 2015/16

In addition, there has been a strong focus on the development of mid-level artisanal skills, enrolling around 130,000 young people in artisan training.

Following the poor achievements of NSDS I and II with respect to unemployed, youth NSDS III also recognised the need to prioritise young people, given the high number of those not in employment, education or training. As such, 76% of all enrolments across learning programmes were 35 years or younger, and 32% of enrolments were younger than 25.

NSDS III also included a specific focus on support for small enterprises and cooperatives. SETAs were expected to identify the skills need of cooperatives and SMES in their sectors and respond to these in their planning and projects. SETA support to SMEs took various forms, including training to employees and placing learners with small firms for work-integrated learning. However, given the complexity of working with SMEs, there were fluctuations in the number of beneficiaries in SMEs between 2011 and 2015, starting at about 12 851 in 2011/12 and this reducing consistently to 8 420 beneficiaries in 2015/16. In total, SETAs supported 58 979 beneficiaries located in SMEs.

Investment in entrepreneurship education by the Service SETA provided funding for 11,483 Level 2 New Venture Creation learners between 2013 and 2017. These programmes targeted inexperienced youth rather than people who were already small business owners. While this programme contributed positively to their employability it reportedly did not contribute to the establishment of new enterprises.

Completion

A total number of 75 766 unemployed persons were certificated for SETA-supported learning programmes during the 2017/18 financial year which was 11 383 more than the target. However whilst this overachievement was recorded for skills programmes, the targets for learnerships and internships were not achieved (only (54% or 13 235).

More generally, the following increase in output has been achieved:

- An increasing number of unemployed youth have completed skills programmes between 2010 to 2017, from 10,631 to 36,995.
- The number of unemployed youth completing internships has increased by 32% per annum from 2010 to 2017.
- An increasing number of workers have completed learnerships since 2010, from 9621 in 2010 to 23,688 in 2016, while completion for unemployed youth completing learnerships has risen from 23,358 in 2010 to 34,392 in 2016. The combined annual growth in learnership completion has been 9.9%

However, low throughput rates for learnerships, internships and apprenticeships indicated high levels of inefficiency in the skills development system.

While the total number of learners registered for SETA-supported learning programmes has doubled between 2011 and 2017, the highest growth being in learnerships and skills programmes, this has been accompanied by a substantial decline in certification rates, particularly in learnerships and internships. In 2011, the total certification rate was around 87%, dropping to 66% by 2017. The decline in certification is most noticeable in learnerships, reaching a low 43% in 2017.

One-year learnership programmes that started in 2011, 2012 and 2013, had a throughout rate after 3 years of 33.8%[11]. Between 2011 and 2016, the average throughput for learnerships was 55%. Internships only achieved an average throughput of 30%.

According to the NSF, by the end of the 2015/16 financial year the country was producing 13,000 artisans annually through the considerable investment and commitment of artisan development role players.[12] DHET, however, reports 17,910 certified artisans at the end of 2015/16 (see table 8.13 below). Either way, the system is not demonstrating sufficient progress towards producing the NDP target of 30,000 per annum. After an initial period of steady increases, artisan development declined between 2014 and 1015, rising again to a peak of 19,406 in 2016. This has subsequently declined again slightly in 2017.

Only 37% of those enrolled in artisan programmes in 2011 completed their training in three years, while 38.9% completed their programmes after four years and 42.2% completed in five years. It is estimated that the amount allocated for artisan training over the five years was about R13 billion. This implies that 57.8% of apprentices do not complete their training at the end of five years (NSDS III Data Report, 2018). The cost of delayed and non-completion is calculated at R3.6 billion.

[11] National Skills Authority (2018) Evaluation of the National Skills Development Strategy (NSDS III) 2011-2016

[12] The Presidency (2019) Towards a 25-year review: 1994-2019

Table 6: Artisan development cohort analysis

Quarter entered	Completion after 3 years	Not completed after 3 years	Completions after 4 years	Not completed after 4 years	Completed after 5 years	Not completed after 5 years	Total completed by end 2015/16	Not completed by end 2015/16
2011/12Q1	33,3%	66,7%	40,7%	59,3%	42,2%	57,8%	**42%**	**75%**
2011/12Q2	45,4%	54,6%	52,3%	47,7%			**52%**	**73%**
2011/12Q3	46,9%	53,1%	49,0%	51,0%			**49%**	**93%**
2011/12Q4	27,5%	72,5%	30,6%	69,4%			**31%**	**57%**
2012/13Q1	21,3%	78,7%	25,7%	74,3%			**25%**	**46%**
2012/13Q2	30,0%	70,0%					**31%**	**59%**
2012/13Q3	34,3%	65,7%					**34%**	**66%**
2012/13Q4	29,5%	70,5%					**28%**	**52%**
2013/14Q1	25,3%	74,7%					**25%**	**47%**
	31,7%	**68,3%**	**38,9%**	**61,1%**	**42,2%**	**57,8%**	**35,1%**	**64,9%**

Source: DHET QMR from SETAs 2011/12 to 2015/16

The total number of artisans issued with national trade certificates by SETAs and INDLELA during the 2017/18 financial year was 19 100. Out of the total certificates issued during the 2017/18 financial year, almost a third of them were issued by MERSETA, followed by INDLELA (23%).

Table 7: Number of artisans certificated by SETAs and INDLELA, by economic sector, 2014/15 - 2017/18

SETA		2014/15	2015/16	2016/17	2017/18
AGRISETA	Agriculture	190	186	219	193
CATHSSETA	Culture, Arts, Tourism, Hospitality and Sports	-	1	1	-
CETA	Construction	479	582	1 058	1 500
CHIETA	Chemicals	572	861	1 020	917
ETDPSETA	Education & Training	-	-	-	-
EWSETA	Energy & Water	964	1 170	993	666
FOODBEV	Food Processing	2	-	14	63
FP&MSETA	Fibre Processing & Manufacturing	98	106	106	111
HWSETA	Health & Welfare	16	79	73	116
INDLELA	Non-SETA Candidates	4 983	3 791	3 692	4 381
LGSETA	Local Government	486	98	233	415
MERSETA	Manufacturing & Engineering	6 890	6 600	7 061	6 108
MICT SETA	Media, Information and Communication	-	-	-	-
MQA	Mining and Minerals	1 876	2 056	1 974	1 963
PSETA	National & Provincial Government	-	29	14	36
SASSETA	Safety & Security	12	21	133	168
SERVICES	Services Sector	1 685	928	1 271	1 246
TETA	Transport	1 028	1 402	1 541	1 212
W&RSETA	Wholesale & Retail	-	-	3	5
Total		19 281	17 910	19 406	19 100

Source:
Statistics on Post-School Education and Training, 2016
National Artisan Development Support Centre (NADSC) – National Artisan Recommendation for certification data management system, 2017

Employment

A tracer study for evaluation of NSDSIII found that the percentage of respondents who were employed after completion of programmes funded either by SETAs or NSF increased by 15-20%.[13]

- A far larger proportion of graduates from the SETA-funded programmes were employed following their training than those funded by NSF (67% of graduates compared with only 33% of students who completed NSF-funded programmes).
- However, only 20% of candidates in NSF-funded programmes were already employed prior to the programme, compared to 48% for SETA-funded programmes.
- Across SETA- and NSF-funded programmes proportionally more women gained employment after the training than males, but male learners were more inclined to start their own businesses than were women.

In a tracer study conducted by SSACI in 2016, it was found that 79% of newly qualified artisans found employment.[14] The study further indicated that 58% found permanent employment and a further 23% having accessed on less stable contract / temporary jobs. Of interest is that 56.5% of these graduates found jobs easily or fairly easily.

In a learnership survey conducted in 2010, it was found that 82% of the participants reported their status as employed/working directly after completion of the learnership.[15] 13% of the participants indicated that they were studying further, with 4% reporting unemployment. The study further indicated that 90% find permanent employment, with very few in unstable casual employment. The study further indicated that 52% were employed at the same workplace where they received their experiential training.

An employer survey of around 2000 employers, conducted as part of the evaluation of NSDS III[16], found a high absorption in employment following the completion of apprenticeships, learnerships and internships. However it was found that this was less true for skills programmes. Employers also reported that training has contributed to an increase in employee productivity with a decrease in errors in the workplace as well as an improvement in the quality of product or service delivered. Training has also increased the work readiness of young people entering the workplace. However, there was clear indication that there was a skills mismatch in the programmes being funded by SETAs.

Funding

The skills development levy (SDL) generated R63 billion between 2011 and 2016, of which R55 billion went to the SETAs and over R14 billion to the NSF. The annual income from the levy has been consistently above inflation, increasing from R10.1 billion in 2011/12 to R15.2 billion in 2015/16. In addition to levy income, SETAs and the NSF generate investment income and other income for invested reserve funds.

[13] Singizi (2018) NSDS Tracer Study

[14] SSACI (2016) Report on the Tracking of Newly Qualified Artisans

[15] Kruss et al (2012) Developing Skills and Capabilities through the Learnership and Apprenticeship Pathway Systems. Synthesis Report. Assessing the impact of learnerships and apprenticeships under NSDSII.

[16] National Skills Authority (2018) Evaluation of the NSDS (III) 2011-2016.

Table 8: Real (2015 R million) distribution of the Skills Development Levy

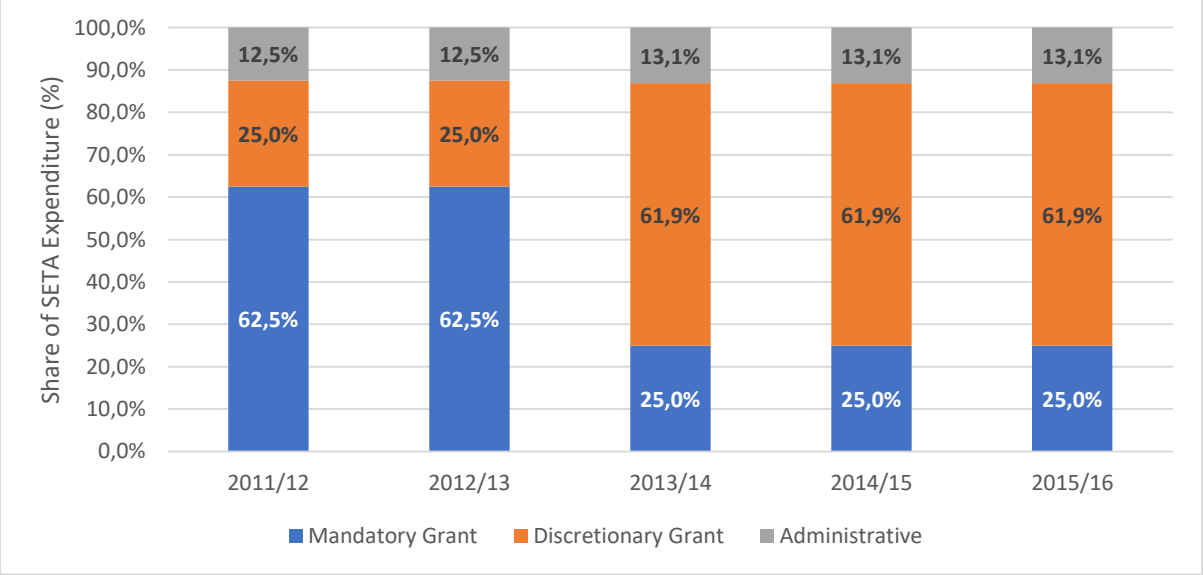
	Total disbursed by the Skills Development Levy	Distribution of Levy Funds					SETA Admin costs transferred to QCTO
		Transferred to NSF	Disbursed to SETAs	SETAs			
				Admin Costs	Mandatory Grant Allocation	Discretionary Grant Allocation	
2011/12	12 547	2 508	10 039	1 255	6 275	2 510	-
2012/13	13 421	2 684	10 737	1 342	6 710	2 684	-
2013/14	13 960	2 790	11 170	1 466	2 793	6 912	17
2014/15	14 753	2 962	11 791	1 548	2 948	7 295	30
2015/16	15 225	3 044	12 181	1 599	3 045	7 537	40
Average annual growth							
2011/12 - 2015/16	4.9%	5.0%	4.9%	6.5%	-20.3%	37.7%	52.8%

Source: Statistics on Post-School Education and Training, 2015 page 64. Average annual growth rates estimated via log-linear ordinary least squares.

As discussed above, up to 2012 firms could claim up to 50% of their levy contribution back through mandatory grants. The 2012 Grant Regulations facilitated the reduction, from 50% to 20% of the total levy amount paid by firms to SETAs, and the introduction of a payment of 0.5% of the levy for the Quality Council for Trade and Occupations (QCTO).

Since this change, there has been a shift away from mandatory grants to discretionary grants, the latter representing 62% of SETA expenditure. At this point 80% of the discretionary grants was earmarked for payment as PIVOTAL grants. This shift resulted in an increase in funding for occupational qualifications as well as programmes that assist qualified people to successfully transition into employment. However this change also meant that shorter skills programmes were deprioritised for discretionary funding in favour of learnerships and this meant the system lost some of its ability to be flexible and responsive.

Figure 4: Real (2015 R million) SETA expenditure breakdown by category



Source: Statistics on Post-School Education and Training, 2015 page 64.

The 2012 Grant regulations also sought to to improve efficiencies by transferring any uncommitted surpluses in the discretionary funds to the NSF. This was seen as important as up to that time SETAs were disbursing about 53% of committed funds. Between 2013 and 2016, almost R2.9nillion in discretionary reserves were transferred to the NSF, and 97% of all discretionary reserves had been committed by SETAs by the end of 2015/16.

In addition to the grants received from SETAs, employers can access various tax incentives for both learnerships and apprenticeships. This amounts to an addition R2billion a year for employers to fund training. These incentives are combined with the B-BBEE incentives as a key mechanisms to fund learnerships and apprenticeships. The introduction of the Employment Tax Incentive in 2014 has provided an additional incentive for learnership programmes.

The NSF received a total of R19 billion in revenue between 2011/12 and 2015/16. NSF grant disbursements increased significantly each year from about R1.3billion in 2011/12 to R 4.3 billion in 2015/16. In total, about R14 billion was disbursed by the NSF over the period under review. This was spent on various programmes. Almost 80% of this grant funding was for higher education bursaries, workplace-based learning in the different workplace sectors, occupational programmes in TVET colleges, and worker education. In particular, the NSF provided R971million towards the public TVET colleges to cover the shortfall in funding resulting from over-enrolment against the available.

This amount created a pool of resources that funded learners who could not be funded from voted funds (the so called 'over enrolment') and unemployed learners in occupational programmes such as learnerships, skills programmes and some apprenticeships. The NSF is acknowledged as having made it possible to provide a significant proportion of these students with the means to pay the fees and sustain themselves during their studies.

1.5 Universities

NDP Targets	Progress
Increase enrolments from 950,000 to 1,62million (GER of 30%)	1,085 million headcount in universities in 2018 GER increased from 17.7% in 2010 to 21.6% in 2018
Ensure that disadvantaged students are fully subsidised	In 2016 26.4% of university graduates were supported by NSFAS funding
Increase graduates from 170,000 to 425,000, particularly in scarce skills areas	227,188 graduates in 2018
Increase doctoral graduates from 1,420 per annum to 5,000 per annum (100 per million)	Increase in doctoral graduates from 28 per million in 2010 to 58 per million in 2018
Expand the number of PhD qualified staff from 34% to over 75%	Average of all academic staff with PhDs was 47% in 2018 and 35% in 2010
A quarter of all degrees obtained should be post-graduate degrees (with emphasis on black-African and female students)	22% in 2018
Expansion of distance education	Enrolments in distance programmes have increased at Unisa by 80 000 (or 27.4% growth from 2010).
75% throughput (Note: A throughput rate must not be confused with a graduation rate. A graduation rate; is simply a ratio of graduates in a given year divided by enrolments in that year.)	The overall graduation rate was 20, 9% in 2018
Increase research outputs in form of research publications	Research publications have increased by 93% between 2010 and 2017
Create research environment that is welcoming to all	Female doctoral graduates and African male plus female graduates have increased to 1,440 in 2018.
Strengthen universities that have embedded culture of research	Although informally acknowledged as a sub-group of traditional universities, "research universities' are not funded as such.

The *National Development Plan's* proposal and recommendations for higher education are based on a view that universities fulfil these main functions in society:

- They educate and train people with high level skills for the employment needs of the public and private sectors.
- They are the dominant producers of new knowledge.
- They critique information and find new local and global applications for existing knowledge.
- Given the country's apartheid history, universities provide opportunities for social mobility, and can strengthen equity, social justice and democracy.

The *National Development Plan 2030* adds that various requirements must be met if the university system is to satisfy the functions listed above. A selection of a limited number of five of the requirements which can be extracted from the *National Plan* is listed in the points below.

- The university system must be expanded. This will require growth in total student enrolments as well as in participation rates in the university system.
- The proportions of postgraduate students must increase.
- The qualifications of academic staff must be improved.
- Graduation rates must be improved.
- Doctoral graduates, and other research outputs, must increase.

The selection of the five points above was based on a decision that the focus of this discussion should be on the knowledge production functions of universities, and in particular their student enrolments, academic staffing, outputs of graduates, and high level knowledge outputs in the form of doctoral graduates and research publications. Space limitations have precluded any discussion of the fourth function of universities which the *National Development Plan* describes as providing opportunities for social mobility, and as strengthening equity, social justice and democracy.

Participation

Expansion over the period 2010-2018

The official data of the national Department of Higher Education and Training (DHET) for 2010 and 2018 are summed up in Table 1 which follows. The year 2010 was selected as the base year because DHET tables for 2010 would have been the latest data available when the *National Development Plan 2030* was being considered and approved by the National Planning Commission during 2011 and 2012. The year 2018 has been selected as the end date because this is the latest year for which the DHET has been able to make available current enrolment data and other university data.

Table 9: Summary of head count enrolments in public universities

	Head counts		% of total enrolment		Average annual growth rate: 2010-2018
	2010	2018	2010	2018	
Undergraduates	754 333	908 458	84%	84%	2.4%
Postgraduates	138 610	177 110	16%	16%	3.1%
Total	892 943	1 085 568	100%	100%	2.5%

(1) Source: DHET: HEMIS Student Statistics Table 2.12 for 2010 and 2018.
(2) In a *head count student enrolment* total, each student is counted as a unit even if she/he is studying part-time and is registered for only a portion of an annual full-time curriculum.
(3) The term *"postgraduate"* applies here to all postgraduate diplomas and certificates, honours degrees, masters degrees and doctoral degrees

The data in the Table 1 show that, over the period 2010 to 2018, two of the requirements related to the expansion of the university system were met:

- Total head count enrolments in the public university system increased by 192 000 (or a total of 22%) in 2018 compared to 2010. The average annual growth rate was 2.5%.
- Postgraduate enrolments increased by 38 500 in 2018 compared to 2010, at an average rate of 3.1% which was higher than the undergraduate rate of 2.4%.

The increase in total student enrolments reflected in Table 1 improved the *gross* participation rates of students in university education in 2018 compared to 2010. The participation rate is termed a *gross rate* because of the way in which it is calculated. In a gross participation rate calculation, the totals of all higher education students in a system, regardless of age, are divided by the totals in the population in a specified age group. For purposes of international comparison and standardisation, this age group is normally taken to be that of 20-24 year olds. A *nett participation rate* involves more difficult calculations in which the population age group selected is based on the national school-leaving age plus 4 years, and the student group is restricted to only those who actually fall into this age group.

The *gross* participation rates for 2010 and 2018 for *public* universities in South Africa are summed up in Table 2 below.

Table 10: Gross participation rates in SA public universities in 2010 and 2018

	2010	2018	Average annual growth rate
SA population in 20-24 age group	5 018 500	5 019 160	0.0%
Total head count enrolments	886 641	1 084 495	2.5%
Gross participation rate	17.7%	21.6%	

Sources: Stats SA: Mid-year population estimates 2010 and 2018, Report PO302
DHET: HEMIS Student Statistics Table 2.7, 2010 and 2018

The table shows that SA's gross participation rate in public university education increased by nearly 4 percentage points in 2018 compared to 2010 This increase was the result of two factors: head count enrolments grew at an annual average rate of 2.5% while the numbers in the 20-24 age group increased by only 760 or 0.02% in 2018 compared to 2010.

The gross rate of 21.6% is not the final figure for 2018, because account has to be taken of enrolments in private higher education institutions. This is not easy because of problems with the availability of enrolment data for private universities. Table 3 summarises the latest data which the DHET has been able to publish.

Table 11: Head count enrolments in private universities

	Female	Male	Total
2011	54 160	48 876	103 036
2013	64 335	55 606	119 941
2015	80 532	66 516	147 048
2017	105 983	77 754	183 737
Average annual growth rate	11.8%	8.0%	10.1%

(1) Source: *DHET: Statistics on Post-school Education & Training*, 2017
(2) Enrolment data for 2010 could not be found, and data for 2018 is not yet available
(3) The DHET report expresses concerns about the completeness and quality of private university data

If it is assumed that the 2010 and 2018 head count enrolment totals for private universities are the same as the 2011 and 2017 totals reflected in Table 3 and if these were added to the 2010 and 2018 public university head count totals, the gross participation rate would be 19.7% for 2010 and 25.3% for 2018.

Enrolment targets for 2030

The *National Development Plan 2030* sets two broad student enrolment targets:

- Total student enrolments in public plus private universities must reach 1 650 000 by 2030.
- The gross enrolment rate for universities must be 30% by 2030.

A number of assumptions have to be made before the reasonableness of these targets can be assessed. The assumptions are these:

- The total of the SA population in the age group 20-24 years remains constant at around 5 000 000 during the years up to 2030.
- The average annual growth rate in head count enrolments in public universities remains the 2.5% measured for the period 2010 to 2018.
- The head count enrolment in private universities increases from the 2017 total of 187 000 to at least 200 000 by 2030.

The application of these assumptions to the actual enrolment data for 2010-2018 results in the projections summarised in Table 4 which follows. The data in Table 4 show that the targets set by the *National Development Plan 2030* could be achieved. As far as head count enrolments are concerned, applying an assumption of an average 2.5% growth in public universities and an assumption that private university enrolments will remain flat at around 200 000 , generates the 2030 university head count enrolment target of 1 650 000. The 2030 gross participation rate, on these projected numbers and the assumption that population totals in the group 20-24 years remain static, would exceed the *National Development Plan's* target of 30%.

Table 12: Actual and projected head count enrolments and gross participation rates

	Actual		Projected
	2010	2018	2030
Public universities	887 000	1 084 000	1 460 000
Private universities	103 000	187 000	200 000
Total head count enrolment	990 000	1 271 000	1 660 000
Population in 20-24 age group	5 019 000	5 019 000	5 000 000
Gross enrolment date	19,7%	25,3%	33,2%

Sources: (1) Actual data were extracted from Tables 1 to 3 above.
(2) Private university enrolments for 2011 were assumed to be data for 2010 and enrolments for 2017 were taken to be data for 2018 data.

Increasing the proportions of postgraduate students

The *National Development Plan 2030* refers to the need for masters and doctoral students to increase, and sets as a target for 2030 a requirement that by 2030 "*over 25 percent of postgraduate enrolments should be at postgraduate level" ((National Development Plan 2030, 319).*

Table 5 offers a summary for 2010 and 2018 of head count enrolments in public universities in the qualification types which the DHET classifies as "postgraduate".

Table 13: Head count enrolments in public universities by qualification type

	Head counts		% of total enrolment		Average annual growth rate: 2010-2018
	2010	2018	2010	2018	
Undergraduates	**754 333**	**908 458**	**85%**	**83%**	**2.4%**
Postgraduates	**138 610**	**177 110**	**15%**	**17%**	**3.1%**
Postgraduate below masters level	80 321	92 364	9%	9%	1.8%
Masters degrees	46 699	61 096	5%	6%	3.4%
Doctoral degrees	11 590	23 650	1%	2%	9.3%
Overall total	**892 943**	**1 085 568**	**100%**	**100%**	**2.5%**

(1) Source: DHET: HEMIS Student Statistics Tables 2.12 for 2010 and 2018.
(2) *"Postgraduate below masters"* includes postgraduate diplomas and certificates, and honours degrees

Table 6 contains a summary of the public plus private university system, using the latest available private university data which are for 2017 and the public university data for 2018.

Table 14: Summary of head count enrolments in public and private universities by qualification type

	Public universities 2018	Private universities 2017	Total public + private: 2018 +2017	
Undergraduates	**908 458**	**167 227**	**1 075 685**	**85%**
Postgraduates	**177 110**	**17 829**	**194 939**	**15%**
Postgraduate below masters level	92 364	10 090	102 724	8%
Masters degrees	61 096	7 411	68 507	5%
Doctoral degrees	23 650	378	24 028	2%
Overall total	**1 085 568**	**185 046**	**1 270 624**	**100%**

Sources: (1) for private universities: *DHET: Statistics on Post-school Education & Training*, 2017
(2) For public universities: DHET: HEMIS Student Statistics Tables 2.12 for 2018

The final column in Table 6 shows that the public plus private university system was in 2018 well short of the *National Development Plan's* target of 25% of head count enrolments to be in postgraduate programmes. The 2018 picture was that 85% of an enrolment total of about 1.3 million students were in undergraduate programmes. Enrolments in postgraduate programmes amounted in 2018 to only 195 000 or 15% of the total; compared to the *National Development Plan's* target of 25%.

The important issue which arises is whether the public plus private university systems would be able to reach the target of 25% postgraduates by 2030. Table 7 below sets out two broad scenarios of what the shape of enrolments could be in 2030 on different sets of assumptions. The main assumption for both scenarios is that the total head count university enrolment must be the 1 650 000 set in the *National Development Plan 2030.* Scenario Y matches the requirement that 25% of enrolments should be in postgraduate programmes. The key driver in Scenario X is the assumption that the shares which undergraduates and postgraduates have of the enrolment totals will remain unchanged up to 2030. Table 7 shows that a consequence of the realisation of this assumption would be that the

postgraduate total would fall below the 2030 targets; the masters total by 66 000 and the doctoral total by 29 000.

Table 15: Two head count scenarios for the shape of the public + private university systems in 2030

	Scenario X		Scenario Y		Scenario Y less X	
Undergraduates	**1 378 000**	**83%**	**1 245 000**	**75%**	**-133 000**	**-10%**
Postgraduates	**282 000**	**17%**	**415 000**	**25%**	**133 000**	**47%**
Postgraduate below masters level	149 000	9%	187 000	11%	38 000	**26%**
Masters degrees	100 000	6%	166 000	10%	66 000	66%
Doctoral degrees	33 000	2%	62 000	4%	29 000	88%
Total	**1 660 000**	**100%**	**1 660 000**	**100%**	**0**	**0%**

Notes: (1) The overall enrolment totals in the scenarios are taken from Table 4 above.
(2) The shape proportions in Scenario X are those for 2018 calculated in Table 5
(3) The postgraduate totals in Scenario Y are based on assumptions that the 415 000 postgraduate enrolments in 2030 would be divided in these ways: 45% in postgraduate qualifications below master's level; 40% in master's qualifications, and 15% in doctorates.

Neither of these two scenarios could be regarded as acceptable within the framework of the *National Development Plan.* Scenario X sets for 2030 postgraduate targets which fall well below the required targets. To achieve the postgraduate target of 25% of enrolments, Scenario Y would require undergraduates to remain essentially flat; rising at an average annual rate of 1% from the public + private total of 1 076 000 in 2018 to 1 245 000 in 2030. This would clearly have effects on targets designed to broaden access to higher education. If Scenario Y is rejected, then the solution would have to involve reductions or adjustments to the *National Development Plan's* broad postgraduate target of 25%. The most sensible adjustments would be (a) to set the postgraduate targets in terms of masters and doctoral enrolments, for example 10% to be master's enrolments and 5% doctoral enrolments, and (b) not to have separate targets for undergraduates and for other qualifications below masters level, but rather a combined undergraduate plus postgraduate below masters target of 85%, with the balance of 15% being allocated to masters plus doctoral student enrolments.

Throughput

Graduation rates

The text of the *National Development Plan* describes the target of this requirement as "*increasing the throughput rate for degree programmes to more than 75%".* This is an unfortunate description, because it confuses a *throughput rate* with a *graduation rate*. The calculation of a throughout rate is a lengthy process which involves the study over successive academic years of the progress of a specific cohort of students. Suppose that the cohort contained in 2013 1 000 students registered for BX, a 4-year undergraduate degree. Suppose also that 750 of the 2013 intake of BX students had graduated by 2018 (which would be minimum time for degree plus 2 years). The *throughput rate* for this 2013 cohort would be 750/1000 = 75%.

A graduation rate is easier to calculate because it is simply a ratio of graduates in a given year divided by enrolments in that year. Suppose that in 2018 BX's total enrolment was 6 000, which included the 2018 intake as well as all students from earlier intakes who had not yet graduated. Suppose too that

1 100 BX students graduated in 2018. The *graduation rate* for BX for 2018 would then be 1100/6000 = 18%.

Table 10 below sets out the graduation rates in the public universities for 2010 and 2018. These were calculated using the enrolment and graduation totals for the qualification types in each of the two years.

Table 16: Calculation by qualification type of graduation rates for public universities

	Enrolments		Graduates		Graduation rate: graduates/enrolment	
	2010	2018	2010	2018	2010	2018
Undergraduate	754 333	908 458	113 617	165 086	15%	18%
Postgraduate below masters	80 321	92 364	30 083	44 871	37%	49%
Masters	46 699	61 096	8 621	13 887	18%	23%
Doctors	11 590	23 650	1 420	3 344	12%	14%
Total	892 943	1 085 568	153 741	227 188	17%	21%

Sources: Enrolment data are those contained in Table 5 above.
Graduation data: HEMIS Student Statistics Table 2.13 for 2010 and 2018
Note: Graduation data for private universities were not available

The performance of the university system in 2010 and 2018 in terms of graduation rates can be assessed using the graduation rate targets by qualification-type which have been used, between 2005 and 2018, by SA's national Department of Higher Education and Training and by research groups such as CHET and CREST. These graduation targets are summarised in Table 11 below.

Table 17: Graduation rate targets for public universities

	Graduation rate targets
Undergraduate	25%
Postgraduate below masters	50%
Masters	25%
Doctors	15%
Average for all qualifications	26%

These graduation rate targets can be applied to the 2010 and 2018 head count enrolments of public universities summarised in Table 10 to generate what can be termed "expected graduate totals" for 2010 and 2018. The performance of the public university system can then be judged by comparing actual with expected graduate totals. This is done in Table 12 below.

Table 18: Actual and expected graduate totals of public universities in 2010 and 2018

	Actual graduate totals		Expected graduate totals on target graduation rates		Differences: actual graduates less expected			
	2010	2018	2010	2018	2010		2018	
Undergraduate	113 617	165 086	188 583	227 115	-74 966	-66%	-62 029	-38%
Postgraduate below masters	30 083	44 871	40 160	46 182	-10 077	-33%	-1 311	-3%
Masters	8 621	13 887	11 675	15 274	-3 054	-35%	-1 387	-10%
Doctors	1 420	3 344	1 739	3 548	-319	-22%	-204	-6%
Total	153 741	227 188	242 157	292 118	-88 416	-58%	-64 930	-29%

The calculations in this table show that the public university system underperformed in both 2010 and 2018 as far as the production of graduates was concerned. The system's performances in 2018 did however show major improvement over those of 2010. Some examples are these:

- In 2010, the public university system's total production of graduates in all qualifications was 88 000 (or 58%) below the expected total. This improved in 2018 to a shortfall of 65 000 (or 29%).
- In 2010, the public university system's actual production of graduates in undergraduate programmes was 75 000 (or 66%) below the expected total. This improved in 2018 to a shortfall of 62 000 (or 38%).
- In 2010 the shortfall in doctoral graduates was 319 (or 22%). This fell in 2018 to a shortfall of 204 (or 6%)

The breakdown offered in Table 12 depends on use being made of what has become a standard set of graduation rates of the kind discussed earlier. A similar analysis is offered in Table 13 of what the graduate output should be from the required head count enrolments for 2030.

Table 19: Calculation of graduate totals for public universities for 2030 on *National Development Plan*

	NDP enrolment targets 2030	Projected graduates in 2030	Actual graduates 2018	Increase in graduates: projected 2030 compared actual 2018	
Undergraduate	1 217 000	304 250	165 086	139 164	84%
Postgraduate below masters	122 000	61 000	44 871	16 129	36%
Masters	86 000	21 500	13 887	7 613	55%
Doctors	35 000	5 250	3 344	1 906	57%
Total	1 460 000	392 000	227 188	164 812	73%

Notes:

(1) Because graduate data for private universities are not available, the *National Development Plan's* enrolment target column in Table 13 refers only to the public universities' 2030 projected total of 1 460 000 students.
(2) The graduate totals for 2030 were calculated by multiplying the 2030 enrolment projections by the graduation rate targets in Table 11.
(3) The actual 2018 graduation totals are those included in Table 10 above.
(4) The final column in the table was calculated by subtracting the actual 2018 graduate totals in the fourth column from the projected 2030 graduate totals in the third column.

The final column in Table 13 sets different 2030 graduate total requirements for different qualification types. Compared to 2018 it requires, for example, total graduates to increase in 2030 by 73%, doctoral graduates by 57%, and graduates in undergraduate programmes by 84%. These required/projected graduate totals are reasonable, and probably achievable. The discussion in this subsection has shown that the *National Development Plan* description of a required that *"throughput rates"* must be increased to 75% is flawed. It should be replaced by a requirement that *graduation rates* be set for different qualification types as illustrated in Table 11. The performance of the university system should then be judged in relation to these target *graduation rates* and the numbers of graduates they produce when linked to the enrolment numbers required by the *National Development Plan.*

Doctoral graduates and of research publications

Increasing doctoral graduates

The *National Development Plan* used as a performance measure a ratio between the annual production of doctoral graduates and the totals in the population. The ratio proposed is:

100 doctoral graduates per million of the population.

The SA university system fell short of this ratio in both 2010 and 2018. In 2010 the population estimate was 50 million and the doctoral graduate total was 1 420; the 2018 totals were population = 57 million and doctoral graduates = 3 344. The ratio of doctoral graduates per million would therefore be 28 in 2010 and 58 in 2018 which are both well below the *National Development Plan's* target for 2030 of 100 doctoral graduates per million of the population.

It seems likely that the target would also be missed in 2030. The doctoral graduate total for 2030 was calculated in Table 13 as being 5 250. If the population in SA were to reach 68 million in 2030 (an average increase of about 1% per annum), the *National Development Plan's* ratio would be 5250/68 = 77 doctoral graduates per million of the population. On an assumed 2030 population total of 68 million, the National Development Plan's target would require an output of 6 800 doctoral graduates in 2030. This is certainly too high, given the projection in Table 13 that the doctoral graduate total would on a high estimate reach only 5 250 in 2030.

The *National Development Plan's* performance measure for doctoral graduates clearly needs to be reconsidered and revised.

Increasing research publications

Table 14 contains three different data elements:

- The first row of the table contains data on research publication outputs for the public universities for 2010 and 2017. Because research publication data for 2018 were not available, the data table ends with outputs for 2017. These research publication counts include only published research articles, published conference proceedings, and published research books (which cannot include text books for teaching students).
- The second and third rows contain permanent academic staff totals for 2010 and for 2017, to be consistent with the available research output data.
- The fourth row was calculated by dividing the research publication totals in the first row by the academic staff totals in the second row.

Table 20: Research publication and academic staff totals for 2010 and 2017

	2010	2017
Research publication units	9 748	18 851
Permanent academic staff total	16 684	19 629
Permanent academic staff with doctorates	5 855	8 842
Ratio total academic staff	0.6	1.0
Ratio total academic staff with doctorates	1.7	2.1

The ratios in the final two rows can be used as performance measurements. Targets which are consistent with those set by the Department of Higher Education and Training would include requirements that the public university system produce annually 1.0 research publications per total permanent academic, and 2.0 research publications per total permanent academic with a doctorate. The public university system met these targets in 2017 but not in 2010. The reason is clear from the data in the table. The total number of research publications increased by 90% in 2017 compared to 2010; while the staff members total increased by 18% and the academics with doctorates totals increased by 51%.

The earlier calculations of the *National Development Plan's* set academic staffing requirements for 2030. These calculations were that the academic staff total for 2030 should be 31 000, and for academic staff with doctorates on the 75% target would be 23 250. If the targets per academic remain those applied to Table 14, then the expected research publication units for 2030 would be:

- For total academics would be 31 000 x 1.0 = 31 000 units;
- For total academics with doctorates would be 23 250 x 2.0 = 46 500 units;

Given the increases that occurred between 2010 and 2017, a target of 31 000 publication units in 2030 could be reasonable. But the high total of 46 500 is probably not and would indicate again that the target of 75% of academics having doctorates needs to be amended downwards.

Qualifications of academic staff members

The *National Development Plan* introduces this requirement by linking it to a need for the academic profession to be renewed if knowledge production is to be secured. It says that the "*academic profession requires renewal if South African universities are to expand, compete and drive the knowledge society and economy".* The second link is a quantitative one which maintains that "*South Africa needs to increase the percentage of PhD qualified staff in the higher education sector from the current 34 percent to over 75 percent by 2030". (National Development Plan 2030, 317 & 319)*

The focus in the notes which follow is on the specific requirement that the proportion of permanent academic staff with doctorates should be 75% by 2030.

The first data table employed in the discussion is Table 8 which compares for 2010 and 2018 the total number of permanent staff in all categories employed in the public university system. The main purpose of this detailed summary is that of giving an account of the employment context in which academic staff in public universities are required to operate. A set of explanatory definitions of terms is attached as notes to Table 8.

Table 21: Permanent staff members by staffing category employed by public universities

	2010	2018	Average annual growth rate
Academic staff	35%	32%	2,2%
Executive/management professionals	4%	3%	0,8%
Specialist/ support professionals	9%	8%	2,6%
Technical	7%	5%	-2,0%
Administrative	32%	32%	3,7%
Crafts/trades	2%	2%	5,2%
Service	11%	18%	9,9%
Total permanent staff	47 144	62 171	3,5%

(1) Source of the data DHET: HEMIS Staff Statistics Tables 3.3 for 2010 and 2018
(2) Definitions of terms employed:

- *Permanent staff* are employees who contribute to an institutional retirement fund. There are two categories of permanent staff*: professional* and *non-professional.*
- .*Non-professional staff* occupy posts which do not have a higher education qualification requirement, and are in the categories of technical, administrative, crafts/trades, and service.
- *Professional staff* occupy posts which set at least a four-year higher qualification as a minimum requirement, and are staff in the categories of academic, executive management and specialist/support
- *Academic staff* are professional employees who spend at least 50% of their official time on duty on instruction and/or research activities
- *Executive/management professionals* are employees who head the various operational sections of the university.
- *Specialist/ support professionals* are employees who do not carry major management responsibilities.

The data in Table 8 show that the public universities employed totals of 47 144 permanent staff in 2010 and 62 171 in 2018. Academic staff members totalled in 2010 16 684 or 35% of the permanent employee total, and in 2018 19 781 or 32% of the permanent total. The average annual growth rate between 2010 and 2018 in academic staff was 2.2%. This was below the average annual growth of 2.5% in head count enrolments between 2010 and 2018. The largest growth in permanent staff in 2018 compared to 2010 was in the service staff category which covers employees in such activities as gardening, cleaning, catering, and security services. The number of service staff in the public university system doubled from 5 255 in 2010 to 11 204 in 2018, which was primarily the result of numbers of universities reversing decisions to outsource these activities to private companies and to re-employ privately contracted staff as permanent university staff members.

Table 9 below indicates what the highest formal qualifications were of the permanent academics employed in the public universities in 2010 and 2018. The table shows that the number of permanent academics with doctorates increased by 3 423 or 58% in 2018 compared to 2010. The proportion of academics with doctorates increased from 35% in 2010 to 47% in 2018, but this was still well below the *National Development Plan's* target of 75% of academics to have doctoral qualifications. If the 75% target had been met in 2018, the total with doctorates would have had to be 14 835 or 5 557 higher than the actual 2018 total. For example, more than half of the nearly 11 000 permanent academic who held either master's degrees or qualifications below masters and qualifications would have to be upgraded to doctoral degrees.

Table 22: Permanent academic staff in public universities by highest formal qualification

	2010		2018		Average annual growth rate: 2010-2018
Doctoral degree	5 855	35%	9 278	47%	5,9%
Master's degree	5 349	32%	6 298	32%	2,1%
Below masters	5 480	33%	4 205	21%	-3,3%
TOTAL	16 684	100%	19 781	100%	2,2%

(1) Source DHET: HEMIS Staff Statistics Tables 3.4 for 2010 and 2018
(2) Data for the private universities are not available.

The high growth levels required to have 75% of permanent academics holding doctorates by 2030 makes this a target which will almost certainly be missed. The following points need to be noted:

- The head count student enrolment in 2030 is supposed on the *National Development Plan's* targets to be 1 650 000. If student to staff ratios are to be retained at current levels, then the total number of permanent academics required by universities in 2030 would be 31 000. On the 75% target, 23 250 of these academics would have to hold doctoral degrees which would require an increase of more than 14 000 on the 2018 total of academics with doctorates.
- The average annual growth rate between 2018 and 2030 of academics with doctorates would have to be at least 8%. This implies that more than 1 000 new academics with doctorates would have to be recruited each year into the university system. At current levels of doctorates this would be equivalent to about one third of the university system's annual production of doctoral graduates moving directly into university posts.

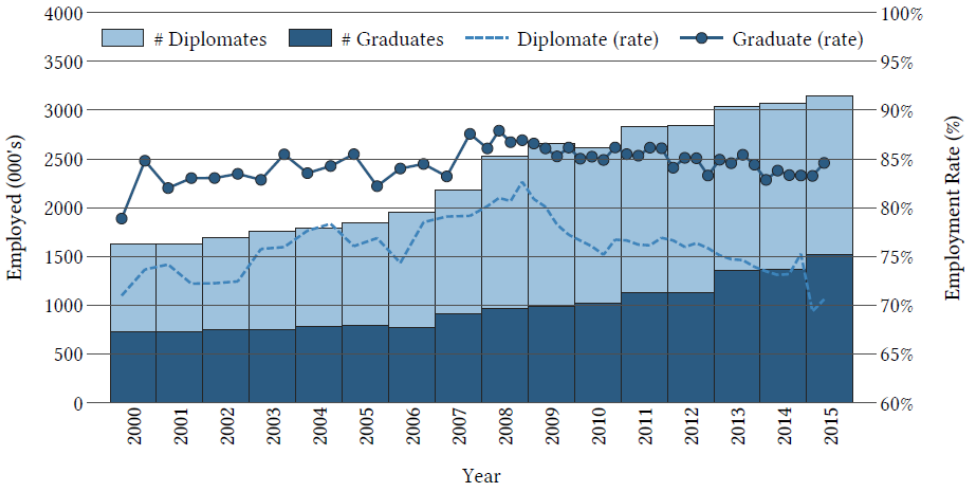
It should be accepted that the *National Development Plan's* target of 75% of academics to have doctoral qualifications is unreasonably high and should be reduced. A proportion which is currently employed in SA university performance evaluations is 60%. This reduced target lowers the projected 2030 requirement of academics with doctorates from the 23 250 referred to in the points above to 18 600. This would be an increase of 9 300, at an average annual rate of 6%, which would result in a doubling of the 2018 total of academics with doctorates.

This 60% target of academics to have doctoral qualifications by 2030 is more reasonable than the 75% target, but would still be difficult for the university system to achieve.

Labour Market Absorption

Van Broekhuizen et al (2016) found that higher education graduate employment rates have consistently been higher than 80% since 2001 and graduate unemployment rates have been on a long-term downward trend since 2000 and are low in relation to overall unemployment in the country. More specifically, the graduate employment rate (i.e. from degrees) has consistently been between 5 and 10 percentage points higher than the diplomate employment rate between 2000 and 2015.

Figure 2: Employment and employment rates (%) for graduates and diplomates (2000 - 2015)



In addition, the gap between the unemployment rates for black and white graduates has narrowed considerably between 2000 and 2015. This is important given the significant increase in black graduates over the past 25 years (while the number of white graduates produced annually has increased from about 27 500 to just over 35 000, the number of black graduates produced has increased from about 3 400 in 1986 to more than 63 000 in 2012). However, while graduates generally fare better in the labour market than other education cohorts, expected level of unemployment among white graduates is still far lower, on average, than it is among black and coloured graduates, regardless of the historical status of the higher education institution attended. Further, graduates who are likely to have graduated from HDIs have statistically significantly higher probabilities of being unemployed than their counterparts from HAIs

Bhorat et al (2017) found most of the 2010 sample from 4 public universities in the WC were in the labour market and employed (almost 90%).[17] The study confirms that African graduates are less likely to be employed than other graduates. Those who study Health and Education are at a relative advantage, while those who study Humanities and Social Sciences are at a relative disadvantage. Having a certificate or diploma decreases employment probability while having a postgraduate degree increases it compared with those individuals with an undergraduate degree.

Funding

As a share of GDP, public expenditure on universities increased from 0.64% in 2010 to 0.99% in 2018 (just short of the 1% commitment made by the President of South Africa's response to the Heher Commission of Inquiry into Higher Education and Training on 16 December 2017), although the share of DHET's budget allocation to universities remained consistent at 60%.[18]

Student fees, including NSFAS, became an increasingly important source of funds for public universities during the period 2000–2015, due to the decline in government subsidies and "third stream" income. The average annual increase in fee income between 2010 and 2014 per student FTE was 9.2%; significantly above inflation, implying that the decrease in the state subsidy has likely resulted in higher fees for all students. Gross student debt rose from R2,48million to R11,063million, and it has becoming increasingly difficult for universities to recover student fees as indicated by the increase in the number of days of uncollected debt from 83 days in 2010 to 136 days in 2018.

[17] Bhorat H, Lilenstein A, Lilenstein K, and Oosthuizen M (2017) Youth Transitions from Higher Education into the Labour Market. LMIP

[18] DHET (2019) Post–School Education and Training Monitor: Macro–Indicator Trends

Uncollected as % of total fee billings has increased from 23% to 37%. The NSFAS contribution has become more significant in the post #feesmustfall period (see below), but university expansion is still likely to be affected by the challenging fiscal environment.

Figure 5: Main source of income for public universities

Source: CHET (2017). Notes: Income source information for SPU, UMP, and SMHSU only available for 2015

In 2013, NSFAS accounted for 11% of student fee income. In 2014, 27% of first year students in universities received NSFAS funding, with 64% coming from Quintile 1-3 schools.[19] A similar figure was achieved in 2016.[20] Before the #feesmustfall initiative, NSFAS was projecting 205,000 university students would receive financial assistance annually in 2019 and 2020. Following #feesmustfall, this projection increased to 377,050 in 2019 and 469,978 in 2020.[21] The latter represents 44% of the total target enrolments in universities of 1,070,000.

While university income averaged 5.7% per annum between 2000 and 2015, this growth slowed to 3.9% between 2010 and 2015.[22]

[19] NSFAS Research Report 4 2018/19: NSFAS beneficiary profile
[20] Dr Randall Carolissen, Presentation to the Portfolio Committee on Higher Education and Training (PCHET), 4 November 2019
[21] NSFAS Annual Performance Plan 2018/19
[22] DHET (2019) Post–School Education and Training Monitor: Macro–Indicator Trends

Table 23: Income and Expenditure of Public Universities (R million) 2000-2015

Year	Nominal		Real (2015=100)	
	Income	Expenditure	Income	Expenditure
2000	12603	11745	27409	25543
2001	13914	12934	28628	26612
2002	15357	14872	28857	27946
2003	17878	17738	31789	31540
2004	18650	17131	33393	30673
2005	23207	20919	40712	36698
2006	26328	22903	44736	38916
2007	29695	25334	47512	40542
2008	32429	28992	47155	42157
2009	36722	33283	49781	45119
2010	40879	37175	53252	48427
2011	44434	40181	55118	49842
2012	49905	45818	58553	53757
2013	52563	49170	58304	54541
2014	58999	54205	61660	56649
2015	63192	58710	63192	58710
Average Annual Growth (%)				
2000-2005	13,0%	12,2%	8,2%	7,5%
2005-2010	12,0%	12,2%	5,5%	5,7%
2010-2015	9,1%	9,6%	3,5%	3,9%
2000-2015	11,3%	11,3%	5,7%	5,7%

Source: CHET (2018). Notes: Nominal Income and Expenditure expressed in R million. Real Income and Expenditure expressed in R million. Income and Expenditure data missing for the following institutions for certain years: WSU (2001, 2002, 2004, 2005), DUT (2000), UZ (2001), UCT (2004), UL (2004)

The number of FTE students grew at 3.5% per year between 2010 and 2015, although enrolment growth dropped substantially to 1.8% between 2010 and 2015 from 4% in the previous 5 year period, with first enrolments showing a negative growth of -0.4% in this period. [23] Enrolment growth between 2010 and 2015 was therefore driven by students remaining longer rather than new enrolments. This slow rate of throughput increases the cost per student over the duration of their undergraduate studies and may point to inefficiency within the university system.

1.6 The contribution of NSFAS

NSFAS provided grants to just over 3-million students between 2010 and 2017, at a total cost of R70,8 billion.

NSFAS recipients from TVET colleges increased notably from 2013 reaching 57% of total recipients in 2015 (although the Rand Value of their financial aid compared to university student remained small), but TVET share of recipients reduced to 43,5% in 2017 following #feesmustfall.

[23] DHET (2018) Investment Trends in Post-School Education and Training In South Africa

Due to prevailing cost sharing model, poor students who cannot carry the financial burden have to date been underrepresented among academically eligible students, due to the continued reliance on fee income to supplement subsidy and NSFAS income. Therefore, those that could not access NSFAS were restricted in their ability to pay or sustain university fees.

Students receiving NSFAS support perform academically better than non-NSFAS students in terms of throughput and retention.[24]

The increased demand for PSET from both school leavers and NEETs will place significant pressure on NSFAS to support the expansion of the system towards to NDP target. It is projected that the PSET allocation from fiscus could increase from R65 billion in 2017/18 to R172 billion in 2022/23, or from about 1.4 to 2.5% of GDP.

The Heher Commission concluded that fee free higher education and training was not viable, and recommended funding through income-contingent loans from commercial banks, which should be guaranteed by government.

Also recommended was that NSFAS should concentrate on the financing of TVET (TVET should be free) but this must be accompanied by investment in infrastructure and upgrading of programmes in line with industry demands.

[24] DHET (2019) 2000 TO 2016 First Time Entering Undergraduate Cohort Studies for Public Higher Education Institutions

Section 2: What needs to be done to ensure that goals and targets set are achieved by 2030? Is course correction needed?

This section draws on the data analysis above and provides recommendations around what needs to be done to achieve the targets outlined in the NDP, but also highlights where the NDP goals and targets can be strengthened and refined to better reflect the PSET context. The section then tries to give more clarity to the manner in which indicators have been defined, while also highlighted where indicators are not clearly reflective of the real issues in PSET and need to be adjusted and differently formulated. The section then recommends additional indicators that are not currently reflected at all in the NDP but will add value to the NDP in terms of tracking progress in the PSET sector. Finally, the section outlines the key conditions that are required for the recommendations to be realized.

2.1 PSET and link with industrial strategy and economic development

This paper has highlighted the on-going challenges with respect to labour market outcomes. Many explanations are offered to explain this persistent challenge including the absence of foundational education, issues of quality of teaching and the lack of relevance of the programmes (qualification and curricula). One concern that is posited in this regard is that the interventions that are made to address this mismatch tend to focus only on supply. We are suggesting that in order to ensure that the provision of vocational skills development (VSD), which include the continuum of vocational skills including TVET and through to higher education, is responsive to the demands of industry, it is necessary to embed Vocational Skills Development Programmes that inform sectoral TVET, HET and Skills Development strategies into emerging industry sector masterplans. This requires a focus on the development of national TVET and HET (particularly universities of technology) strategies that have sufficient flexibility such that they are informed by the industrial strategies and that these strategies in turn can take these programmes into account when making decisions about work organization and technology.[25]. These sectoral strategies can provide a nuanced and more coherent set of targets that are relevant for the sectors concerned and both provide a gauge of real demand but also allow for a the decisions about ways to ensure that the availability of certain skills can enable decisions about the workplace. This requires of DHET and the SETAs that they develop an appropriate mechanism for planning and resource allocation.

At a sectoral level, it will then be critical to build effective relationships between TVET (public/private and workplace providers), HET institutions and companies to realise this alignment. Such alignment requires flexible provision arrangements (including the recognition of the value of workplace providers that can offer a significant proportion of the qualification) as well as programmes and qualifications that accommodate/support changing technology and workplace requirements. However, in order for this alignment to be realized, the conditions will need to be created in colleges to support effective delivery of programmes and qualifications in a flexible and high-quality manner. This has implications for funding, infrastructure and capacity.

These proposals are made not-with-standing that there are existing initiatives, such as the Centres of Specialisation programme, which is also aimed at enhancing demand-driven delivery while addressing the perceived shortages in artisan skills in key trades for strategic infrastructure development. This has been the primary intervention for shifting colleges towards occupational training, however this has had variable success across colleges, depending on their pre-existing readiness to deliver occupational training. Further, the Centres of Specialisation programme is not a scalable solution to

[25] This takes learning from recent research into the Automotive, FoodBev and Clothing industries undertaken by REAL into account.

demand-driven occupational training in colleges – it is costly and resource intensive, relies on strong employer commitment over a protracted period of time, and does not guarantee absorption into employment after three years. Recent findings from the Dual System Project Pilot (DSPP) which has been a forerunner to the Centres of Specialisation suggests that employers are likely to release candidates once they complete their apprenticeship due to not being able to afford to retain them, in order to make space for new trainees which are provided at no direct cost to the employer.

Addressing the other end of the demand continuum, CET College should play a specific role in supporting township and village economies, including a particular focus on second chance matric. This will require a consideration of the most effective mechanism to unlock demand in a township / village context and then aligning skills to this demand, as well as intensive support to CET Colleges to introduce and deliver programmes that meet this demand. The unlocking of demand in the township/village economy must uncover the potential of the informal sector in particular to grow and train and create jobs for young people.

In this context, we are suggesting that given the nature and profile of informal enterprises, and the focus on entry-level opportunities, the focus of CET Colleges should primarily be on shorter skills programmes that are responsive to the immediate demands of these enterprises. This would enable CET Colleges to respond more rapidly to opportunities and to cater for larger numbers of students. These programmes should be highly practical in nature and focus on preparing the learner for the particular occupational role.

2.4 Participation

It is possible that the university sub-system could reach the NDP enrolment and gross participation targets if an average 2.5% growth is achieved and there aren't significant changes in the population numbers. However, it depends on a number of conditionalities, including an increase in senior permanent academics, all with doctoral qualifications, expansion of teaching and research space, and the increased demand for student funding.

This target of 25% of university enrolments to be postgraduates requires an amended definition to include only masters and doctoral enrolments. An appropriate target proportion which takes only masters and doctors students as postgraduate would be 15%, but would need to be differentiated based on the institutional type. Similarly, the NDP should set lower and differentiated targets for academics to have doctoral qualifications, again based on institutional types with differing mandates.

The TVET and CET sub-systems, however, are far off from achieving the NDP targets, and the budgetary constraints combined with low capacity and a problematic policy environment suggests that these targets are unlikely to be achieved. The decision from DHET to cap enrolments in TVET Colleges over the past few years in favour of addressing quality (although this was also impacted by budgetary restrictions and increased levels of debt within colleges), has not been offset by an increase in occupational programmes, which are expected to be a significant growth area and alternative funding stream for TVET Colleges.

Given the throughput trends and employment outcomes for graduates from current TVET College programmes, it would seem that growing numbers in current programmes in order to meet the targets could result once again in reduced throughput and increased graduate unemployment. Similarly, there would be an immediate tendency to see distance learning as a solution to expansion. Besides the low levels of throughput currently evident in distance learning in Higher Education, the introduction of distance learning will not be effective in preparing pre-employed learners for the world of work. Occupational training demands practical skills, both in the institution and in the workplace, to prepare young people for entry-level jobs. However, there is significant scope, particular in the current context for increased use of technology to deliver flexible, blended learning so to encourage self-managed learning and limit the need for large classes.

The National Plan for PSET emphasizes the increase in occupational training in colleges (alongside the traditional general vocational qualifications) as a mechanism for expansion and responsiveness. Occupational training, however, must be demand-driven and must balance off the demand for skills linked to entry-level jobs and the demand for qualifications.

Given the push for increased short skills programmes linked to jobs in the Presidential Youth Employment Initiative, it would seem the immediate imperative would be to grow the capacity of colleges to first identify and respond to the demand for skills, particularly in the SME environment, and to ensure the SETAs/NSF are able to fund these, while the more gradual introduction of occupational qualifications can be achieved in the medium-term and funded jointly by the national fiscus (for institutional training) and the skills development sub-system (for workplace training).

Therefore, the focus of the NDP in terms of participation should be on expansion of short skills programmes and occupational qualifications, responsive to demand-side opportunities.

This will place pressure on infrastructure and capacity in colleges, particularly to balance the delivery of qualifications and shorter skills programmes. This will require much higher levels of flexibility in the management and delivery of shorter programmes.

Similarly, in the CET system, the limitations of available funding and lack of programme differentiation has restricted growth and limits the scope of unemployed youth to gain entry into labour market opportunities. While access to Grade 12 rewrites and ABET level 4 certificates should be freely available to all youth who have not completed schooling, there is a need to expand non-formal skills programmes and occupational qualifications. Currently, there is variable capacity and resourcing within community colleges to deliver these. The low completion rates for ABET Level 4 is also concerning and suggests variable quality. The focus in the CET sub-system must be on continued expansion of Grade 12 and ABET Level 4 (with the condition of improvement in quality), complemented by expansion of non-formal skills programmes and occupational qualifications to meet local demand for skills. As with TVET Colleges, the infrastructural, equipment and capacity building interventions will be key conditions for success and will need a structured and well-managed roll-out strategy.

2.3 Throughput

The targeted throughput rate for universities is also problematic in terms of definition, and should rather be replaced with “graduation rates” defined as graduates in a given year divided by enrolments in that same year. The targets for these rates should be set for different qualification types and the performance of the university system should then be judged in relation to these target *graduation rates* and the numbers of graduates they produce when linked to the enrolment numbers required by the NDP. The NDP’s target for 2030 for graduates, based on a head count enrolment of 1 650 000 students would be 392 000 based on a 75% *graduation rate*, and should be linked to the same conditionalities outlined for enrolment growth.

The NDP did not set targets for total research publications in universities, or for ratios between academic staff and outputs of research publications. This makes impossible any attempt to project what the 2030 output totals should be, and how the performance of the university system should be assessed. This is a major weakness, given that a key function of the traditional universities in particular is to produce high-level research-based knowledge.

In the absence of meaningful cohort data, throughput in TVET Colleges and CET Colleges is difficult to measure, particularly for the N-programmes which have multiple entries and exit points at different times of the year. Currently, TVET and CET performance is measured through completion rates at the highest level of the programme or qualification (i.e. NCV4, N6, N3 and ABET Level 4), while not taking

into account the dropout and completion at lower levels (i.e. NCV 2 and 3; N4 and N5 etc.). This distorts the true picture of efficiency in the system which limits effective enrolment planning.

A lack of effective selection processes are a key factor in the dropout and poor performance of learners. This has a knock-on effect in particular for TVET College students who are unable to continue their studies due to financial challenges as they are unable to access further NSFAS support once the fail. In addition, there are issues with the quality of teaching and learning, and the conditions of services attached by lecturers which limit scope for workplace exposure and incentives to improve quality and relevance of instruction. As such, lecturers are generally still dependent of textbooks and curriculum coverage, and there is little innovation and link to the world of work.

There are indications, however, that the progression of NCV and N programmes students is improving since the enrolment numbers have been capped (and in fact reduced in the case of NCV), measured in by the numbers that are registered and writing exams at higher levels. Therefore, the emphasis on quality rather than expansion appears to have had some positive effect.

In order to truly measure the performance of the TVET, CET and Skills Development sub-systems, there is a need for cohort data so as to track progression and outcomes throughout qualifications. In the absence of this, throughput targets are meaningless. Given the current "pseudo-throughput" of around 17.7% for NCV, the target of 75% set by the NDP is likely to unattainable and needs to be reviewed. Similarly one-year learnerships have been achieving throughput rates of around 43% as of 2017, which is lower than what was being achieve at the start of NSDS III and has probably declined partially due to the massive increase in learnership enrolments between 2011 and 2017. 3-year learnerships for higher level qualifications achieved around 32% throughput. Throughput in artisan training over a three-year period was 37% in 2013/14.

Differentiated targets for throughput should be set across the TVET/CET/Skills sub-systems, to cater for the persistent pressures of expansion and growth on performance.

Another key challenge for throughput is the inability of many UoT and TVET Colleges to complete their national qualifications due to a lack of access to the required internships needed for qualification purposes. The NDP makes reference to more TVET College students needing workplace exposure during studies to enhance their employability. While this is an important aspect of curriculum relevance, the more fundamental challenge is gaining access to workplace learning as part of meeting qualification requirements for National Diplomas and occupational qualifications (particularly new occupational qualifications that will be delivered by colleges rather by employers). As such there is a need to expand workplace opportunities and for the SETA system to more substantially direct funding to this workplace learning so UoT and TVET students can complete their qualifications. Critically this needs to be tracked in order to enable focused support to be provided to this cohort; at present it is not only difficult for these learners to access these opportunities it is also complicated to track these learners and provide support in this regard.

2.4 Labour Market Absorption

Various studies of labour market transitions from higher education have found high levels of employment. However, while the gap between white and black employment rates have narrowed, the expected level of unemployment among white graduates is still far lower, on average, than it is among black and coloured graduates. In addition, the probability of employment changes depending on the field of study and the qualification level. Therefore, it would be important to disaggregate the targets for graduate employment in line with the differentiated enrolment and graduation targets outlined above, taking into account participation in different qualifications as well as fields of study. Further there is a need to recognise the studies that point to the reality that if the numbers of graduates simply expands, without a concomitant increase in the economy, there is likely to be an increase in graduate unemployment.

With respect to specific programmes, as highlighted above, one particular challenge for learners in both Universities of Technology and TVET Colleges (N6) that require workplace learning as a requirement for the qualification (National Diplomas and Occupational Qualifications), is the inability of these learners to complete their qualifications. This in turn compromises their ability to access the labour market. This reinforces the need for better coordination of the demand-side funding mechanisms, partnerships and monitoring to enable this. This is particularly the case for the SME environment where many opportunities for workplace learning and employment exist, but where companies generally do not benefit from skills levies and there is therefore a need for alternate mechanisms to encourage these companies to become involved in this system.

In addition, targets for labour market absorption are meaningless in the absence of effective cohort data. While studies in higher education have been reasonably successful in tracking student cohorts into the labour market, tracer studies in the TVET Colleges have been restricted by limited samples and low response rates. In addition, the definition of employment in the latter tracer studies has been inconsistent and needs to be strengthened and standardized. Given that many young people "bounce" in and out of employment in their transition journey, there needs to more fluidity in the measurement of employment and cohorts needs to be tracked at multiple points in their journey.

A key element of effective labour market absorption is the key role of intermediaries in facilitating the interaction between supply and demand. Intermediaries act as potential aggregators of demand where institutions struggle to engage individually in demand activation and responsiveness. With the rapidly developing utility of technology to build effective AI platforms to support large numbers of young people into employment, self-employment and entrepreneurship, it becomes increasingly important to explore how such platforms can support public institutions (particularly TVET and CET) to enhance their access and responsiveness to labour market opportunities.

2.5 Funding

There is a common theme of insufficient budget across the PSET system (more so TVET and CET than universities) to support expansion towards NDP targets.

There is likely to be increased demand for funding in the wake of #feesmustfall and the expansion demanded by the NDP targets. While free higher education has been extended to students from poor households, the state has still not followed through on its commitment to fund the "missing middle" which is problematic considering these are the students that are in general better prepared for university and more likely to succeed. Therefore, the successful expansion of the university sub-system will depend on the ability of the state to implement fundings solutions that ensure greater access and inclusivity.

For TVET Colleges, there has been a real decline in funding and colleges are consistently severely underfunded and carrying high levels of financial risk. Their continued over-reliance of funding from the fiscus is also restricting growth. At the same time, levy monies are not complementing fiscus funding to support the delivery of skills programmes and occupational qualifications which are linked to labour market demand.

In order to fund the expansion of the TVET and CET sub-systems in a meaningful and impactful manner, the fiscus and levy monies need be leveraged in systemic ways to address priorities (including through funding and explicit partnerships across TVET Colleges and private and workplace providers). This speaks to the realization of alignment with industrial strategy outlined above but also allows for a broadening of scope for entry into workplace learning and absorption. There is a need to shift the focus of both TVET Colleges and CET Colleges to the broader SME environment, particularly for entry level programmes and qualifications. This requires that the scope of discretionary funding from SETAs to SMEs, as well as other demand-side incentives such as tax allowances, must be expanded and made

more manageable, from a bureaucratic and compliance point of view, for smaller companies, to stimulate increased workplace learning and absorption.

Therefore, a joined-up funding strategy is required, which will consolidate programme funding from the fiscus, industry (as part of the 6% skills development spend for B-BBEE compliance), the SETAs and the NSF, will be developed to ensure that all required occupational programmes in TVET and CET College are effectively funded. This requires a complementary focus on resourcing and capacity building to ensure colleges are able to respond to skills demand in a flexible and high quality manner.

The introduction of the 3 stream models adds additional complexity given the budgetary constraints and the scale of investment needed to reach the targets set by DBE. It will require a careful mapping of how the three-stream models aligns and articulates to the PSET environment to avoid duplication and further confusion on the different roles and mandates of the various institutions.

2.6Existing Gaps in NDP Indicators

Based on the above analysis and discussion, as well as a review of the NDP, it is suggested that, in addition to the recommendations for the current indicators in each of the sub-systems, the following indicators be added into the NDP. These indicators will provide a more nuanced understanding of the factors that promote or inhibit success and transformation in the PSET system.

Additional Indicators for TVET

- Participation: Enrolments in Occupational Programmes as % of enrolments
- Throughput: Graduates as % of enrolments (NCV, Occupational Qualifications, National Diplomas)
- Labour Market Absorption: Access to Workplace Learning as % of Enrolments (as part of qualification)
- Labour Market Absorption: Access to Workplace Learning as % of Enrolments (for non-qualification purposes)
- Capacity: Sustainable College-Industry Partnerships that ensure integrated delivery
- Funding: State funding as % of GDP

Indicators for CET

- A model of CET for every district in the country
- Freely available second-chance matric
- Diversified programmes that respond to township and village economy demand

Additional Indicators for HE

- Throughput: Graduates as % of enrolments
- Capacity: Staff : student ratios
- Research: Publications per academic staff
- Research: Highly-cited scientists
- Funding: State funding as % of GDP

- Funding: Student debt (uncollected fees in days)
- Graduate employability (still to be defined)

Note that this review focuses mainly on the role of universities, as a part of the overall PSET system, in teaching and skills development. However, university also have an important role in the science system, alongside the private sector and science councils. This is articulated in the NDP (pages 326-327). Key areas identified by the NDP for improving the science system include:

- Coordination
- Research capacity
- Stable funding for research
- Movement of people and ideas; SA as a knowledge hub in the region
- World-class centres for research

It is understood that the recommendations in this report are important for these imperatives although it was not possible to do justice to these areas within this paper.

2.7 Conditions for Achieving NDP Targets / Course correction

The following conditions are necessary for achieving the NDP targets and the course corrections recommended above:

1. There should be planned growth across the PSET system, but particularly in TVET and CET, based on available capacity and resources. This includes an integrated approach that takes account of the current programmes being offered and the scope for new programmes in response to labour market demand in key sectors.
2. There must be sufficient funding for "missing middle" in universities as well as increased funding funding for TVET learners for both national and occupational programme. This requires optimal utilization of supply and demand-side funding and incentives to support the expansion of participation (particularly for TVET and CET). With regards to TVET and CET, fiscal funding should target a broader set of programmes within colleges, to make provision for the implementation of occupational programmes and qualifications, while SETAs and the NSF should prioritise the funding of workplace learning for all students, but particularly those enrolled in occupational programmes and qualifications, as well as N6 students that require workplace learning to achieve their qualification. Similarly, the latter funding must be applied to National Diploma students from UoTs.
3. A policy environment must created which allows the system to respond to broad demand (at the level of enrolment planning and qualifications) and be responsive to immediate demand (through greater flexibility of qualifications and demand led training). This requires a differentiated funding and resourcing strategy that provides for the security of longer qualifications but also incentivizes demand-driven programmes. In particular, it requires a focus on the conditions of service for TVET and CET staff to ensure flexible remuneration for non-qualification programmes.
4. There should be a focus on priority sectors for growth, expressed through a strategy with specific frameworks to drive post schooling education and training strategies for key formal industry sectors. This should be supported by TVET strategies that are embedded in industrial strategies and are supported in terms of funding, lecturer development and focused work with relevant companies.

5. There should be institutional incentives to drive improvement in quality, throughput and placement. This needs to be managed such that one allows institutions to plan effectively (as in there needs to be certainty and then some adjustments made based on performance). This measure should also recognize where institutions take in learners that require specific support such that there is not a disincentive to become inclusive.
6. The over-reliance on distance education as a solution for participation is not desirable, especially given poor quality and throughput. Rather, new solutions for flexible, blended learning should be designed and tested so to better optimize access and use of resources. This requires a strategy on how to generate appropriate content that can support young people to self-manage their learning and apply such content in the institutional and workplace context. Universities are already taking on this challenge, and this has picked up pace in light of the Covoid-19 pandemic, However, TVET Colleges are not very advanced in this regard and in particularly lack the necessary online content with which to guide learning. Access to flexible, blended learning will particularly be a challenge for TVET and CET students, given their limited access to technology and data. Therefore, a systemic solution for flexible, blended learning in TVET and CET is required to enable broader access and effectiveness in delivery.
7. Determine clear strategies for supporting township/village economy. The key here is a clear overarching framework for development in the township/village economy, taking into account the challenges of informal micro and small enterprises. The persistent challenges of market access, combined with limited operational capacity and access to funding, limits the scope of enterprises within townships and villages to grow and train and created jobs. Therefore, in order to unlock the potential of the township/village economy for skills and employment creation, a structured programme of support is required for those enterprises that demonstrate entrepreneurial and growth potential, enabling them to gain greater market access, but ensuring that as this happens they train and employ young people.
8. There should be meaningful partnerships between colleges and industry (including workplace providers) to ensure optimal usage of resources, improved quality and increased relevance. There are a range of examples of how this has been achieved in the best couple of decades, with variable success, but with a particular focus on sectoral, collective approaches rather than diffused individual partnerships. The lessons from these past initiatives should be drawn to guide the development of an appropriate framework and strategy.
9. Ensure meaningful workplace experience that takes the reality of the workplaces we have into account (rather than the ones we wished we had). This requires a recognition of the reality that we cannot simply develop guidelines that ask of workplaces that they offer access to experiences that are not possible within the company (either because the company does not utilize a particular skill or because the company believes that the learner is not ready to undertake this task or that it contravenes their health and safety requirements). This requires an acceptance that there needs to be a greater focus on practical training and simulation either in education and training institutions or through partnerships with workplaces that have training facilities.
10. Realising the tenets of the NPPSET requires coordination across the different parts of the system in terms of resourcing, pathways and recognition. This requires a clear mapping of institutions, the relevant programmes and the pathways therein, particularly taking into account the role of the three-stream model in being a potential feeder mechanism into a differentiated PSET system.

3.3 Other activities

In order to realise the recommended targets and course corrections, it is critical that the following be undertaken:

- The development and implementation of a national system for tracking graduate cohorts through their studies and into the labour market for HE and TVET (an important quality proxy). This tracking must take account of the various qualification requirements and must be guided by clear definitions of employment or self-employment.
- Engagement in a process to review and refine indicators and targets, based on available resources and capacity as indicated in the recommendations above.