



**national planning
commission**

Department:
The Presidency
REPUBLIC OF SOUTH AFRICA

giz Deutsche Gesellschaft
für Internationale
Zusammenarbeit (GIZ) GmbH



ANALYSIS OF PSET TRENDS TOWARDS NDP 2030

**Final Report to
National Planning Commission**

22 August 2020

ANALYSIS OF PSET TRENDS TOWARDS NDP 2030

**Final Report to
National Planning Commission**

22 August 2020

This report was written by:

Carmel Marock, Dr Anthony Gewer, Nasima Badsha, Emeritus Professor Ian Bunting, Professor Nico Cloete and Dr Francois Van Schalkwyk

TABLE OF CONTENTS

Acronyms	1
Executive Summary	2
Introduction	12
Section 1: NDP Targets and Progress	14
1.1 <i>TVET</i>	14
1.2 <i>The proposed three-stream model</i>	21
1.3 <i>CET</i>	23
1.4 <i>Skills Development</i>	29
1.5 <i>Universities</i>	43
1.6 <i>The contribution of National Student Financial Aid Scheme (NSFAS)</i>	67

TABLE OF CONTENTS

Section 2: What needs to be done to ensure that goals and targets set are achieved by 2030? Is course correction needed?	69
<i>2.1 PSET and link with industrial strategy and economic development.....</i>	<i>69</i>
<i>2.2 Participation.....</i>	<i>71</i>
<i>2.3 Throughput.....</i>	<i>73</i>
<i>2.4 Labour Market Absorption.....</i>	<i>75</i>
<i>2.5 Funding.....</i>	<i>76</i>
<i>2.6 Existing Gaps in NDP Indicators.....</i>	<i>77</i>
<i>2.7 Additional steps emerging from this review</i>	<i>79</i>
<i>2.8 Summary and Conclusion.....</i>	<i>80</i>

ACRONYMS

ACRONYM	MEANING
AET	Adult Education and Training
ABET	Adult Basic Education and Training
B-BBEE	Broad-based Black Economic Empowerment
CET	Community Education and Training
CETC	Community Education and Training Centre
CLC	Community Learning Centre
DHET	Department of Higher Education and Training
GCE	General Certificate of Education
GER	Gross Enrolment Ratio
GETC	General Education and Training Certificate
HE	Higher Education
MTEF	Medium-Term Expenditure Framework
NASCA	National Senior Certificate for Adults
NATED	National Accredited Technical Education Diploma
NC(V)	National Certificate: Vocational
NDP	National Development Plan
NPPSET	National Plan for Post-School Education and Training
NSC	National Senior Certificate
NSDS III	National Skills Development Strategy III
NSF	National Skills Fund
NSFAS	National Student Financial Aid Scheme
PALC	Public Adult Learning Centre
PSET	Post-School Education and Training System
SETA	Sector Education and Training Authority
SMEs	Small and Medium-sized Enterprises
SSACI	Swiss-South African Cooperation Initiative
TVET	Technical and Vocational Education and Training
VSD	Vocational Skills Development

EXECUTIVE SUMMARY

This analysis is framed by the emergence after 2009 of a Post-School Education and Training System (PSET), which was enabled by the creation of the Department of Higher Education and Training (DHET), and which includes community education and training, skills development, technical and vocational education and training, and, higher education and training. The Department was also supported by the function shift for both adult learning and technical and vocational education and training (TVET) from the provinces to the DHET following the approval of 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 an integrated post-school education system. The National Plan for Post-School Education and Training (NPPSET) 2019-2030, which has not yet been officially released, seeks to give effect to that vision within the context of the National Development Plan (NDP). The NDP calls for the different parts of the education and training 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.

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 continued to see discrete plans for higher education, TVET and skills development, and almost no plan for community education. Further, 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.

While 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.

This report details progress towards achieving the NDP targets across the PSET system and analyses the factors that contribute to or inhibit such progress. It further recommends areas of course correction that are needed, changes that are needed with respect to measurement and targets, and the conditions that are required for these to be achieved.

1. Progress towards achieving NDP targets

Technical and Vocational Education and Training (TVET)

The analysis of trends in the TVET college sub-system since 2010 suggests that achieving either the NDP target of 25% gross enrolment ratio (GER) or the White Paper target of 2.5 million students by 2030 is unlikely - any increase would be off the back of negative growth, declines in funding and increasing costs, particularly since 2015.

EXECUTIVE SUMMARY

continued

Enrolments in TVET colleges more than doubled between 2010 and 2015 but have declined since. The performance of students in TVET colleges declined during the period of massive growth and then stabilised in 2015 as the enrolment numbers stabilised, and there appears to be a negative correlation between growth and performance. Further, the persistently high drop-out level at National Certificate (Vocational) (NC(V)) level 2 raises questions about the effectiveness of the selection processes in colleges and also creates an inefficiency.

There has also been a substantial shift in the age profile of college learners suggesting that colleges are enrolling older students. Furthermore, there has been a decline in occupational programmes offered by TVET colleges, accounting for only 3% of enrolments in 2018, largely due to the persistent disconnect between TVET colleges and the Sector Education and Training Authority (SETA) system. This of particular concern as a range of tracer studies of TVET college students over the past two decades shows variable measures of labour market absorption with just over half of graduates securing employment (with low levels of earning) or work-based learning within a 3-6 year period after graduating.

The instruction to colleges to grow between 2010 and 2015 was not accompanied by a concomitant increase in the funding base. This decline in funding resulted in a capping of enrolments in order to address both fiscal constraints and quality concerns. Funding has continued to be a challenge with TVET colleges being underfunded by 54% in the 2019/20 financial year.

The proposed three-stream model

Over and above the programmes offered by the TVET colleges, the Department of Basic Education (DBE) has proposed a three-stream model, comprising an academic stream, technical vocational stream and technical occupational stream. The particular stream will be determined through a standardised assessment at the end of Grade 9, although technical and vocational programmes will also be introduced within the General Certificate of Education (GCE) as early as Grade 4. This report raises concerns about costs of the Grade 9 assessment, the currency of the Grade 9 certificate and the significant investment that will be required in infrastructure, equipment and capacity building to meet the target numbers. Articulation with TVET colleges is also unclear, and this may simply create greater pressure on resources to ensure the relevant infrastructure is in place across these different institutions. The technical occupational stream may further entrench inequality by forcing young people from poorer communities to choose streams which limit their opportunities in future.

EXECUTIVE SUMMARY

continued

Community Education and Training (CET)

The NDP set a target of 1 million enrolments in CET off a base on 300 000. However, the CET sub-system has seen no growth since 2011 and has in fact declined in headcount enrolments in 2017. Formally promulgated in 2015, the purpose of CET colleges is to cater for the needs of unemployed youth and adults who are outside of the formal economy, poorly educated and not studying. CET colleges are expected to provide an expanded menu of programmes and qualifications (formal and non-formal), offering skills that contribute to sustainable livelihoods outside the formal sector. Currently, colleges still provide predominately formal, general education and training programmes to adult students and out-of-school youth (GETC: ABET Level 4 and Grade 12).

CET colleges face a number of ongoing challenges with respect to management and teaching capacity, limited programmes and poor infrastructure. There is a broad spread of age groups with the highest enrolment being in the 25-34 age range and with the large majority of enrolments across all programmes being female, making up 71% of enrolments. While enrolments have fluctuated between 2010 and 2018, the throughput rate since 2014 has remained constant at around 29%.

There has been a slow and steady increase in the amounts allocated to the CET sector since 2015, and the estimated 2017 Medium-Term Expenditure Framework (MTEF) shortfall to meet NDP target was R37,7 billion off a 2016/17 baseline shortfall of R9,1 billion. Together with the poor performance of the sub-system, this limitation in funding makes meaningful growth in the medium-term unlikely.

Skills Development

During the period of National Skills Development Strategy III (NSDS III) (2011-2016) almost 1.1 million enrolments were funded by the 21 SETAs with a further 330 000 learners funded by the National Skills Fund (NSF), totalling 1.4 million learners. Following a significant increase in lower level skills programmes in earlier NSDS periods, there was a shift towards funding new entrants to access intermediate and higher PIVOTAL skills funding (Professional, vocational, technical and academic programmes that provide training to address gaps in the areas of scarce and critical skills). This led to a significant upswing in learnerships as well as the development of mid-level artisanal skills.

Although it is difficult to clearly track trends in SETA-supported learning programmes, there has been a substantial increase in the number of unemployed youth completing skills programmes, internships and learnerships. However, high growth in enrolments has been accompanied by declining throughput rates for learnerships, internships and apprenticeships, indicating high levels of inefficiency in the skills development system. The system is also not demonstrating sufficient progress towards meeting the NDP target of 30 000 artisans per annum and the large majority of

EXECUTIVE SUMMARY

continued

artisan candidates who are completing artisan training are doing so in 4-5 years with significant cost implications. Further, the intended focus on small- and medium-sized enterprises (SMEs) in NSDS III was generally not successfully implemented due to complexities in the sector.

While there has been high absorption in employment following the completion of apprenticeships, learnerships and internships, and employers report that SETA-funded training has increased the work-readiness of young people entering the workplace and contributed to an increase in employee productivity, this was less true for skills programmes. However, the shift to funding of PIVOTAL programmes has reduced the system's level of flexibility and responsiveness due to the shift to full qualifications, particularly through learnerships. These are also incentivised through the Broad-Based Black Economic Empowerment (B-BBEE) codes and the Employment Tax Incentive.

NSF-funded grant disbursements have increased significantly each year mostly for higher education bursaries, workplace-based learning in the different workplace sectors, occupational programmes in TVET colleges, and worker education.

Higher Education

The NDP set a range of indicators for the higher education sub-system including the expansion of university enrolments and participation, an increase in the proportion of postgraduate students, improved graduation rates, an increase in doctoral graduates and other research outputs, and financial stability and sustainability.

Expansion of the university system is largely on track with an annual growth rate of 2.5%, while postgraduate enrolments have increased at an average rate of 3.1% per annum. As a result, the gross participation rate in public university education increased by nearly 4 percentage points in 2018 compared to 2010.

The NDP set a target for total student enrolments of 1 650 000 and requires that the gross enrolment rate for universities must be 30% by 2030. However, in 2018 the university sub-system was well short of the NDP's target of 25% of headcount enrolments to be in postgraduate programmes. The analysis of different scenarios in this report suggests the most sensible approach is a combined undergraduate plus postgraduate below masters level target of 85%, with the balance of 15% being allocated to masters plus doctoral student enrolments.

The report suggests that rather than the NDP target of 75% throughput it would be more appropriate to measure graduation rates. Against this measure, it can be seen that the university system showed a substantial improvement in performance and that it came much closer to achieving its expected number of graduates in 2018 than it had in 2010, suggesting that the required graduation rate by 2030 is achievable

EXECUTIVE SUMMARY

continued

The NDP set a target of a 100 doctoral graduates per million of the population. The ratio of doctoral graduates per million increased from 28 in 2010 to 58 in 2018, but it seems likely that the target will not be reached by 2030 when the level of output envisaged is measured against the rising population numbers.

The NDP also stipulates that the proportion of permanent academic staff with doctorates in public universities should be 75% by 2030. While the proportion of academics with doctorates increased from 35% in 2010 to 47% in 2018, it is still way below the NDP target. Given the average growth in academic staff, limitations on the number of current staff that would need to be upgraded or new academic staff with doctorates that would need to be employed makes this target unlikely. However, with respect to research publications the target of 31 000 publication units in 2030 could be reasonable.

Higher education graduate employment rates continue to be relatively high, particularly for those with postgraduate degrees. However, while the gap between the unemployment rates for black and white graduates has narrowed considerably, white graduates generally fare better in the labour market than other education cohorts. Further, graduates who are likely to have graduated from historically disadvantaged institutions have statistically significantly higher probabilities of being unemployed than their counterparts from historically disadvantaged institutions. In addition, graduates from Health and Education faculties are at a relative advantage, while those who study Humanities and Social Sciences are at a relative disadvantage.

Although not explicitly stated, the NDP indicates concern with the financial stability and sustainability of public universities. Analysis of university financial statements suggests the public university system is in good financial health. However, the overall picture when combining income statements and balance sheets is that while traditional and comprehensive universities could be described as financially stable and sustainable, the same would not hold true of universities of technology. As such public universities are a mix of financially strong and financially weak institutions and cannot be regarded as a system which has met the NDP requirement of being financially stable and sustainable.

The contribution of the National Student Financial Aid Scheme (NSFAS)

NSFAS provided grants to just over three million students between 2010 and 2017, at a total cost of R70,8 billion. The increased demand for PSET from both school leavers and those not in education, employment, or training (NEETs) will place significant pressure on NSFAS to support the expansion of the system to meet the NDP target. It is projected that the PSET allocation from the 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.

EXECUTIVE SUMMARY

continued

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

The second section of the report draws on the data to provide recommendations around what needs to be done to achieve the targets outlined in the NDP and highlights where the NDP goals and targets can be strengthened and refined to reflect the PSET context. The section tries to give more clarity to the manner in which indicators have been defined, while highlighting where indicators are not clearly reflective of the real issues in PSET and need to be adjusted and differently formulated. It recommends additional indicators that are not currently reflected in the NDP but will add value 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.

PSET and link with industrial strategy and economic development

Improvement in labour market outcomes requires that vocational skills development (VSD), which incorporates the continuum of vocational skills including TVET and through to higher education, is embedded into industry sector masterplans. This requires a VSD strategy, which integrates skills development, national TVET and higher education (particularly universities of technology) strategies that have sufficient flexibility such that they are both informed by, and responsive to, the industrial strategies. These industrial strategies should in turn consider the demand for skills (technical and vocational) within the context of decisions about work organization and technology. This requires a move away from silo approaches to planning and is dependent on appropriate and conducive planning mechanisms, and effective relationships between skills development, TVET, higher education institutions and companies. It also requires flexible provision arrangements as well as programmes and qualifications that accommodate and support changing technology and workplace requirements.

While the Centres of Specialisation programme has been the primary intervention for shifting TVET colleges towards occupational training, it is not a scalable solution to demand-driven occupational training and cannot be the sole response to the need to ensure that providers are able to meet demand. Alternate models, drawn from industry should be considered as part of this frame and in particular, a greater alignment between demand and supply should also be supported through meaningful partnerships between colleges and industry (including workplace providers) to ensure optimal usage of resources, improved quality and increased relevance.

Addressing the other end of the demand continuum, CET colleges should play a specific role in supporting township and village economies by responding to demand for skills and employment in the informal sector. The focus of CET colleges should extend to sectors that are required within the community and provide a more balanced mix between qualifications and shorter skills programmes that are responsive to the immediate demands of these enterprises.

EXECUTIVE SUMMARY

continued

Participation

It is possible that the university sub-system could reach the NDP enrolment and gross participation targets if the current growth is maintained and there are no significant changes in the population numbers. However, it depends on a number of conditions and the need for differentiated targets based on institutional types. Cutting across the system is the need for planned growth across the PSET system, and particularly in TVET and CET based on available capacity and resources.

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 challenging policy environment suggests that these targets are unlikely to be achieved. 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 in reduced throughput and increased graduate unemployment once again. The expansion of occupational training as a mechanism for growth, however, must be demand-driven and must balance the demand for skills linked to entry-level jobs and the demand for qualifications. Therefore, the focus of the NDP in terms of participation should be on expansion of short skills programmes that meet the immediate demand in sectors that are expanding and that support occupational qualifications that build knowledge and includes sufficient flexibility to be responsive to demand-side opportunities. This requires a focus on building strong institutions that have effective selection processes and qualified lecturers who have appropriate conditions of services.

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 access to labour market opportunities. While access to the Second Chance Matric Programme and ABET level 4 certificates should be freely available to all youth who have not completed schooling, there is a need to expand formal and non-formal skills programmes and occupational qualifications, coupled with an appropriate focus on quality.

Throughput

The report proposes the performance of the university sub-system should be judged in relation to targeted graduation rates (rather than throughput rates) and the numbers of graduates that can be produced when linked to the target enrolment numbers required by the NDP.

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

EXECUTIVE SUMMARY

continued

In addition, the lack of access to workplace learning for both university of technology and TVET college students inhibits successful completion of qualifications and compromises labour market entry. This requires better coordination of the demand-side funding mechanisms, industry partnerships, and monitoring to enable these learners to access this experience and complete their qualifications. This should ensure meaningful workplace experience that takes the reality of the workplaces we have into account (rather than the ones we wished we had).

Labour Market Absorption

Various studies of labour market transitions from higher education have found high levels of employment. However, employment outcomes are dependent on a number of factors, including race, field of study and qualification level. Therefore, targets for graduate employment should be disaggregated accordingly and should also take account of the potential negative effects of expansion in the face of limited economic growth.

Targets for labour market absorption also requires systemic tracer studies that recognises varying definitions of employment given the fluid labour market context and allows for more effective feedback into the programme qualification mix. A key element of effective labour market absorption is the important role of intermediaries in facilitating the interaction between supply and demand, by acting as potential aggregators of demand where institutions struggle to engage individually in demand activation and responsiveness.

Funding

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

There is likely to be increased demand for funding in the wake of the #feesmustfall protests and the expansion demanded by the NDP targets. The successful expansion of the university sub-system will depend on the ability of the state to implement funding solutions that ensure greater access and inclusivity, particularly for the “missing middle”. Given the critical role of universities in knowledge production, university funding should also support the achievement of meaningful research outputs.

For TVET colleges, there has been a real decline in funding and colleges are consistently severely underfunded and carrying high levels of financial risk. Meaningful expansion of the TVET and CET sub-systems require a consolidated funding strategy by combining fiscus and levy monies, linked to 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. Such funding must explicitly support partnerships across TVET colleges and private and workplace providers. In addition, funding must support increased access to workplace learning, particularly in SMEs.

EXECUTIVE SUMMARY

continued

Further, there should be institutional incentives to drive improvement in quality, throughput and placement.

Finally, there is a need to consider the introduction of the three-stream model and the way that it will complement the existing system and avoid duplication and further confusion on the different roles and mandates of the various institutions.

Existing Gaps in NDP Indicators

Based on the analysis and discussion above 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 to 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 a percentage of enrolments
- Throughput: Graduates as a percentage of enrolments within the same cohort (NC(V), occupational qualifications, National Diplomas)
- Labour Market Absorption: Access to workplace learning as a percentage of enrolments (as part of qualification)
- Labour Market Absorption: Access to workplace learning as a percentage of enrolments (for non-qualification purposes)
- Capacity: Sustainable college-industry partnerships that ensure integrated delivery
- Funding: State funding as a percentage of GDP

Indicators for CET

- A model of CET for every district in the country
- Number of CET students enrolled in the NASCA/NSC
- Diversified programmes that respond to township and village economy demand

EXECUTIVE SUMMARY

continued

Additional Indicators for Higher Education (HE)

- Throughput: Graduates as a percentage of enrolments within the same cohort
- Capacity: Staff to student ratios
- Research: Publications per academic staff
- Research: Highly-cited scientists
- Funding: State funding as a percentage of GDP
- Funding: Student debt (uncollected fees in days)
- Graduate employability (still to be defined)

Additional steps emerging from this review

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

- A policy environment must be 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). 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.
- Distance education, as a solution for participation, is not desirable, especially given poor quality and throughput. Instead new solutions for flexible, blended learning should be designed and tested so as to better optimize access and use of resources.
- 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.
- Finally, realising the tenets of the NPPSET requires coordination across the different parts of the system in terms of resourcing, pathways and recognition.

INTRODUCTION

This analysis is framed by the emergence after 2009 of a Post-School Education and Training (PSET) System, which was enabled by the creation of the Department of Higher Education and Training (DHET), and which includes community education and training, skills development, technical vocational education and training and higher education and training. The Department was also supported by the function shift for both adult learning and technical and vocational education and training (TVET) from the provinces to the DHET following the approval of the Further Education and Training Amendment Act, 2013 (Act No.1 of 2013).

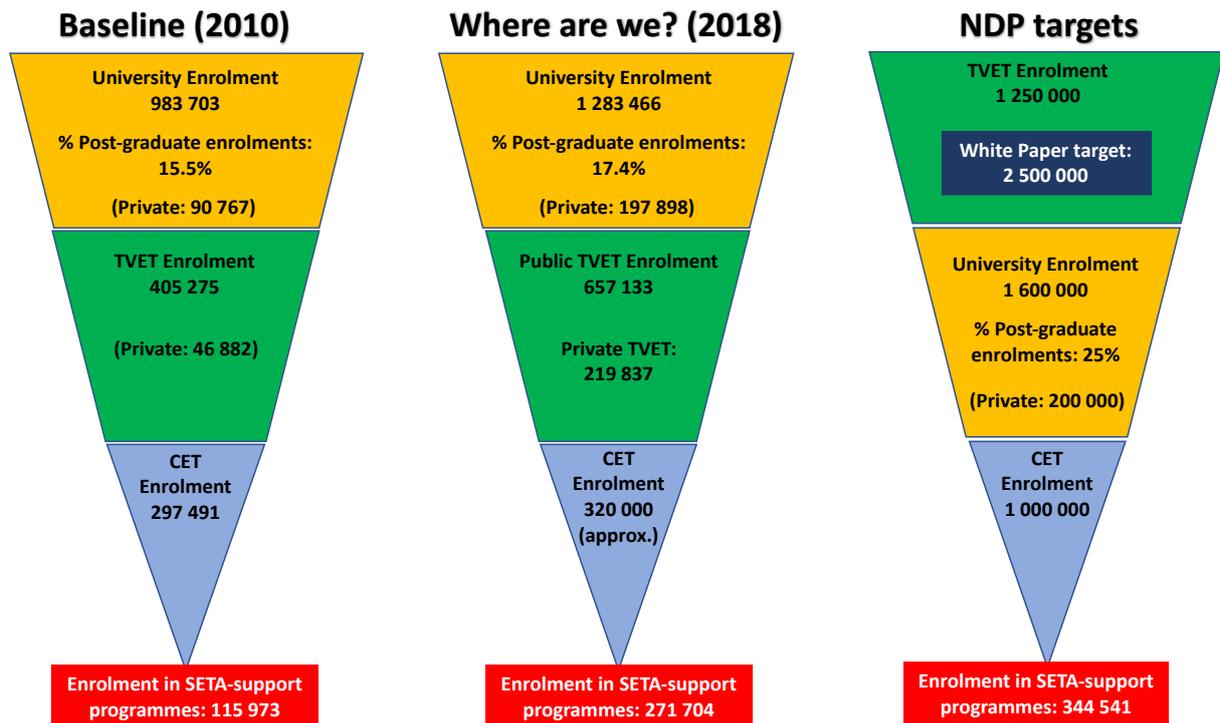
The White Paper for Post-School Education and Training of 2013 sets out a vision for an integrated post-school education system. The National Plan for Post-School Education and Training (NPPSET) 2019-2030, which has not yet been promulgated, seeks to give effect to that vision within the context of the National Development Plan (NDP). 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.

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. Further, 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.

While 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.

INTRODUCTION
continued

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 NPPSET), and to the 2030 targets. It aligns with the NDP targets for the different levels of the system, with the exception of TVET enrolments (the NPPSET targets 2,5 million compared for 1,25 million for the NDP).



SECTION 1: NDP TARGETS AND PROGRESS

1.1 TVET

NDP TARGET	PROGRESS
Increase enrolments in TVET colleges from 300 000 to 1,25million	657 133 enrolments in 2018
Ensure that disadvantaged students are fully subsidised	255 205 students funded by NSFAS in 2018
Produce 30 000 artisans per annum	19 355 artisans certified in 2018
An increasing proportion of TVET college students will enter directly from school before completing Grade 12	11% 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 NC(V) 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.

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 2018 there was a further decline of 6.8% to 657 133 enrolments.

SECTION 1: NDP TARGETS AND PROGRESS

continued

The National Certificate (Vocational) or NC(V), which was introduced in 2007, has proven to be an ineffective mechanism for growth due to the poor performance on the part of students combined with weak industry demand and the significant costs associated with the delivery of the qualification.

As a result, the DHET fell back on the older National Accredited Technical Education Diploma (NATED) or Report 191 programmes as a vehicle for growth at a fraction of the cost. These programmes are shorter with lower barriers to entry and generally result in 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, 2010-2018

QUALIFICATION CATEGORY	2010	2011	2012	2013	2014	2015	2016	2017	2018
NC(V)	130 039	124 658	140 575	154 960	166 433	165 459	177 261	142 373	131 212
Report 191 (NI-N6)	169 774	222 754	359 624	442 287	286 933	519 464	492 026	510 153	482 175
Occupational Qualifications	23 160	20 799	62 359	19 000	19 825	20 533	13 642	10 969	20 106
Other	35 420	32 062	95 132	23 371	29 192	32 424	22 468	24 533	23 355
Total	358 393	400 273	657 690	639 618	502 383	737 880	705 397	688 028	657 133

Sources: *Statistics on Post-School Education and Training, 2017*
TVETMIS 2018, data extracted in November 2019.

As can be seen in the table above, the major contributor to the decrease between 2016 and 2018 was enrolment in NC(V) - this saw an overall decrease of 46 049 and new NC(V) level 2 enrolments dropping from 89 000 to 64 010 between 2016 and 2018. This decrease took place despite Report 191 programmes continuing to attract large numbers of enrolments, although these have fluctuated over the past four years.

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 11% by 2018. 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.

SECTION 1: NDP TARGETS AND PROGRESS

continued

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 Report 191 programmes from N1-N6 in engineering and business studies, as well as educate 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 offered by TVET colleges to just under 11 000 enrolments in 2017, off a base of 23 160 in 2010, increasing again to 20 106 in 2018. Along with the general spike in enrolment in 2012, occupational programmes accounted for 9% of enrolments in 2012, compared to 3% in 2018. This is concerning considering the NPPSET 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 performance. This is evidenced by a substantial decline in completion rates, although there are some indications of recovery in results in 2015 and 2016.¹ The 2018 examination results suggest a significant improvement in success rates for N3 and N6 students, while NC(V) has demonstrated marginal improvement. Given the massive increase in enrolments in N3 and N6, there have also been a significant increase in graduates from these part-qualifications, while the number of graduates from NC(V) has remained static over the past few years.

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

SECTION 1: NDP TARGETS AND PROGRESS

continued

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 NC(V) graduates have graduated from engineering programmes. There is a large concentration of graduates from NC(V) 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 NC(V) graduates and 4% of N6 graduates.

The certification rate for N3 improved from 44.6% in 2013 to 83.2% in 2018, while for the N6 programme, the certification rate increased from 36% to 87%. 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 5 percentage points from 2013 to 2016, with some fluctuation, but is still much lower than for the Report 191 programmes. While the output from NC(V) still remains relatively low (11 837 nationally in 2018), the numbers writing NC(V) Level 4 since 2016 are noticeably higher than those in 2013, despite the reduction in NC(V) level 2 enrolments, suggesting the flow of students is improving.

These certification rates therefore provide some indication of improvements in the college sub-system. Given the nature of programmes being offered by colleges it is not easy to apply a singular logic in the tracking of college students. While cohort tracking should be relatively straightforward for programmes that extend over a period of time and result in a qualification, it is more difficult for students that enrol in shorter programmes that have flexible entry and exit points (including the N1-N3 programmes).

In the current college context, throughput rates could be measured in the NC(V) qualification and in the National Diploma (N4-N6 + workplace experience). However, the lack of effective systems to track cohorts through these programmes limits a meaningful analysis of their efficiency and effectiveness. Certification rates do not take account of the high numbers of drop-outs that occur within a cohort as it progresses through a qualification. In the case of the NC(V) in particular, which is a three-year qualification, there are large numbers of young people enrolling at Level 2 and low numbers being certified at Level 4 each year. Therefore, an analysis of throughput rates, being the total number certified at Level 4 against the total number enrolled at Level 2 for the same cohort (at least three years prior), provides an indication of the number of Level 2 enrolments that successfully complete the qualification within a stipulated period of time.

SECTION 1: NDP TARGETS AND PROGRESS

continued

A deeper look at this data follows in order to better understand these throughput rates for NC (V) studies. The throughput rate for NC (V) was calculated through a pseudo-cohort analysis as there are no cohort studies. By way of example:

- 67 232 wrote NC(V) level 2 exam in 2016
- 27 483 wrote NC(V) level 3 exam in 2017
- 21 987 wrote NC(V) level 4 exam in 2018, of which 11,837 passed

This suggests that 33% of those that wrote the NC(V) level 2 in 2016, wrote the final NC(V) level 4 exam 2 years later, and 17.6% passed within the three-year period.

In comparison, 46 884 wrote the NC(V) level 2 exam in 2010 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. This would suggest that the 2016 cohort of students outperformed those that enrolled in 2010, indicating an improvement in throughput.

The drop-out rate at level 2 is far more concerning and has worsened since 2016 - 27% dropped out at Level 2 in 2016, compared to 44% dropping out at level 2 in 2018. This high level of drop-out at Level 2 reduces the NC(V) throughput for the 2016 cohort to 13%.

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

Due to inefficiency in the sub-system, particularly given the poor throughput, the average cost of producing an NC(V) graduate in 2015 was estimated to be around R454 260.2 The funding mechanisms currently disincentivise improvement in performance in that 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 national funding norms.

²DNA Economics (2016) Volume 2: An analysis of existing Post-School Education and Training Expenditure and Revenue - Final Report. Based on 2013 performance data, it was estimated that only about 10.6% of learners complete the 3-year National Certification Vocational (NC(V)) qualification in six years or less. Thus, even though the average spending per NC(V) learner per year was only R26,738, the average total spending over six years to produce an NC(V) graduate is estimated to be R454,260.

SECTION 1: NDP TARGETS AND PROGRESS

continued

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. While 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 two 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 levels 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 with only 50% of which were in a job related to their qualification.³ 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.⁴ Only 35% of those still employed after six years were employed in a position that was related to what they studied.

A tracer study of NC(V) graduates in 2016, conducted by the Swiss-South African Cooperation Initiative (SSACI), found that 58% of NC(V)4 graduates were employed within a 5-year period, but this employment is generally impermanent and the graduates earn on average around R3 000 per month.⁵

Similarly, the Institute for Post-School Studies (2017) found that 52% of all NATED graduates from a 2013 sample were employed in 2016, with 63% earning less than R5 000 per month.⁶

A tracer study of NATED and NC(V) students in 2019, commissioned through the EU-funded Capacity Building Programme for Employment Promotion programme, found an absorption rate of roughly 40% if the percentages of completers in work-based learning programmes, self-

³ Gewer, A (2009) Features of Social Capital that enhance the employment outcomes of FET College learners. Unpublished Doctoral Dissertation, University of the Witwatersrand.

⁴ Gewer, A (2010) Choices and Chances: FET Colleges and the Transition from School to Work. Johannesburg: NBI

⁵ SSACI (2016) Tracer Study of the Transition of NC(V) Students from TVET Colleges to the Labour Market - NSA Funding

⁶ Papier et al (2017) Pathways of TVET College learners through TVET Colleges. HSRC/DHET LMIP 5

SECTION 1: NDP TARGETS AND PROGRESS

continued

employment and employment from the figure below are added together. This takes into account that a high percentage of graduates were in work-based learning (learnerships, apprenticeships etc.). Of concern is that the single largest group (almost half) were not in employment or further education or training. Engineering graduates were more likely to be employed and earning more than business studies graduates, although a larger number of business studies than engineering studies graduates were working in a role that is relevant to their field of study.

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 enrolments⁷, this increase 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 full-time equivalent 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 enrolment 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.⁸

The Annual Performance Plan (APP) target in 2016/17 was 829 000 enrolments towards meeting the 2030 White Paper target, which would require a fully costed budget of R19,8 billion, off a baseline of R9,072 billion.⁹ The DHET estimated a budget shortfall of R10.7 billion.

Over the 2017 Medium-Term Expenditure Framework (MTEF) period, the estimated shortfall to meet the White Paper target was R52,3 billion. 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 562 006 headcount enrolments, against the APP target of 664 748, still has a funding deficit of R1,027 billion. If the actual 2019/20 APP target of 664 748 is costed, the results would be a shortfall of R3,6 billion. The 2019/20 funding

⁷ DNA Economics and Mzabalazo Advisory Services (2016) Volume 5: Consolidated Report on the Costing and Financing of the White Paper on PSET

⁸ 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

⁹ DHET, TVET Colleges Funding, Presentation to Commission of Enquiry into Higher Education and Training (Fees Commission), October 2016

SECTION 1: NDP TARGETS AND PROGRESS

continued

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. Of greater concern is that if the capped target of 710 535 had been maintained since 2015, i.e. if the target enrolment number had remained static as anticipated in 2015, the current funding level reduces to 54%.

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 the TVET share of recipients reduced to 43,5% in 2017 following the #feesmustfall protests. The Heher Commission concluded that NSFAS should concentrate on the financing of TVET (i.e. TVET should be free) but stated that this must be accompanied by investment in infrastructure and upgrading of programmes in line with industry demand.

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. 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.

SECTION 1: NDP TARGETS AND PROGRESS

continued

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.

Grade 9 learners 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 to their academic abilities. In addition, technical and vocational programmes will also be introduced within the GCE as early as Grade 4 and learners who elect these programmes will then not follow the academic stream after Grade 9.

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 high and it is unlikely that learners that exit at this point will be able to access labour market opportunities without a Grade 12 qualification or an equivalent.

A further concern is that the number of schools equipped to offer vocational or occupational subjects is expected to reach 14,592 by 2022 and 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. Yet the relationship between these schools to TVET colleges, which also struggle with infrastructure and equipment, is unclear and this may simply create greater pressure on resources to ensure the relevant infrastructure is in place across these institutions.

It is possible that there may be articulation from the technical schools into further study at TVET colleges, particularly where learners 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. 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 who do not have the necessary foundational learning despite, in the majority, already having completed Grade 12. 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.

SECTION 1: NDP TARGETS AND PROGRESS *continued*

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 (GETC) also known as ABET level 4 or NQF level 1, and the National Senior Certificate (NSC) 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) proposed the establishment of Community Education and Training Centres (CETC) 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 dropouts 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.

SECTION 1: NDP TARGETS AND PROGRESS

continued

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 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 CETCs is to cater for the needs of unemployed youth and adults who are outside the formal economy, poorly educated and not studying. All former PALCs were merged into nine colleges (Community Education and Training College Administrative Centres), one per province, and PALCs have been renamed Community Learning Centres. Each of the nine colleges 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 an expanded menu of programmes and qualifications (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 Colleges 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

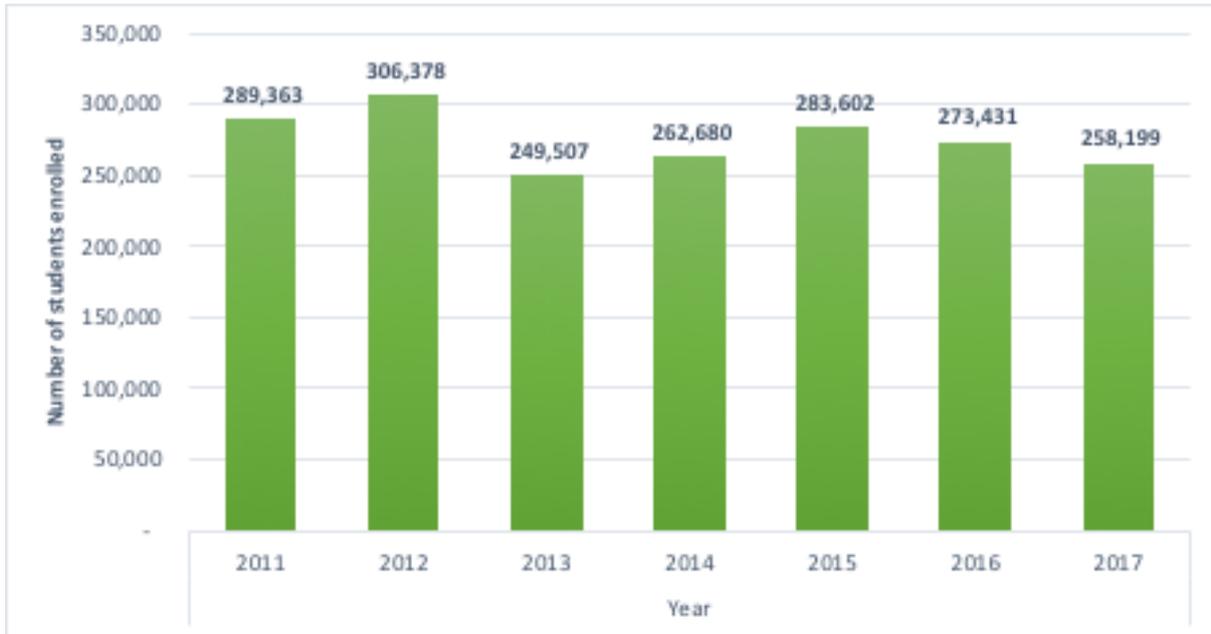
There were 3 083 public and private Adult Education and Training¹⁰ (AET) centres in South Africa in 2010, with close to 300 000 learners enrolled in these centres. As of 2015 there were 3 276 CLCs comprising mostly former PALCs.

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 in the 2016/17 APP was 310 000 (if aligned to NDP target) and the projected increase over 2017 MTEF was 8.7% per annum.

¹⁰ AET is adult education and training that is broader than ABET and could include any of the programmes that are offered by community education institutions etc. ABET is adult basic education and training and is up to level 1 on the NQF (so equivalent of school leaving level)

SECTION 1: NDP TARGETS AND PROGRESS
continued

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 nine CET colleges and 3 276 Community Learning Centres (CLCs) which have been incorporated into the nine CET colleges. The target is to reduce the number of CLCs to 200 in the medium-term. The enrolment targets can be broken down as follows:

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

SECTION 1: NDP TARGETS AND PROGRESS

continued

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

In May 2018, DHET reported ongoing challenges in the CETCs¹¹, including:

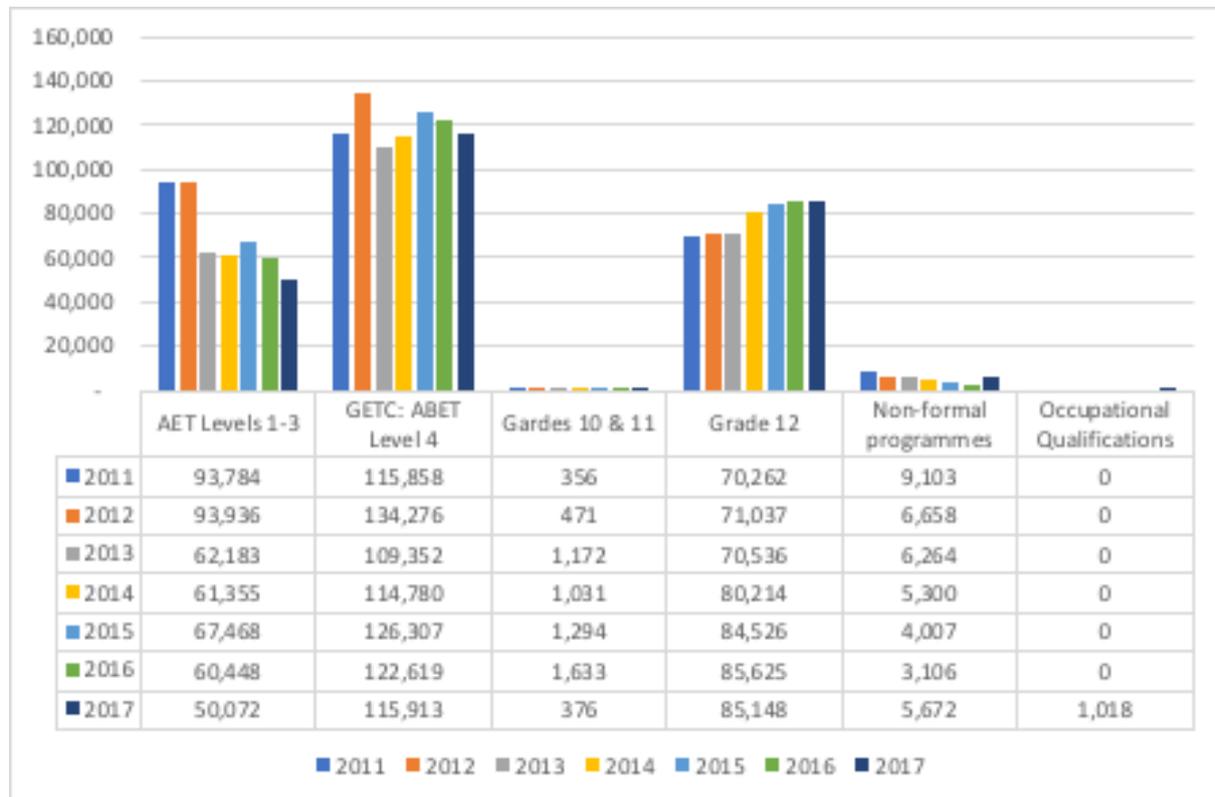
- CETCs not having capacity to manage their own operational budgets
- Continued predominance of academic programmes in the majority of centres and inadequate diversification on skills and non-formal programmes.
- Lecturers are inadequately prepared or in some instances lack relevant qualifications.
- 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 2011-2016 period, 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.

¹¹ DHET, 2018. Latest Developments in the Community Education and Training System.

SECTION 1: NDP TARGETS AND PROGRESS
continued

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



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 25-34 age range 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 12.¹² However, the large majority of enrolments across all programmes were female, making up 71% of enrolments.

¹² Education Series Volume V: Higher Education and Skills in South Africa, 2017/Statistics South Africa Report 92-01-05

SECTION 1: NDP TARGETS AND PROGRESS *continued*

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 2018, the number of enrolled students had reduced to 89 644 with 64 700 writing the exam and 28 154 passing (31% throughput). While enrolments have fluctuated between 2010 and 2018, the throughput rate since 2014 has remained constant around 29%.

Table 2: Number of students in CET Colleges by programme who registered, wrote and completed the GETC: ABET Level 4 qualification, 2011 to 2018

YEAR	NUMBER REGISTERED	NUMBER WROTE	NUMBER COMPLETED	COMPLETION RATE (%)
2011	107 780	39 856	13 924	34,9%
2012	109 883	55 735	23 325	41,8%
2013	109 518	52 501	19 945	38,0%
2014	133 363	102 534	38 592	37,6%
2015	117 224	91 603	34 125	37,3%
2016	100 490	78 105	28 024	35,9%
2017	85 136	65 225	24 757	38,0%
2018	89 644	64 700	28 154	43,5%

Sources: *National Examinations Database, November 2018*

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.

SECTION 1: NDP TARGETS AND PROGRESS
*continued***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 R37,7 billion off a 2016/17 baseline shortfall of R9,1 billion.

1.4 Skills Development

NDP TARGET	PROGRESS
Produce 30 000 artisans per annum	19 355 artisans certified in 2018
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 R12.5 billion in 2011

Participation

During the period of National Skills Development Strategy III (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 1.4 million learners in various post-school education and training programmes.

SECTION 1: NDP TARGETS AND PROGRESS
continued

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	61 902
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 between 2013 to 2014.

Table 5: Number of workers and unemployed persons registered and certified in SETA-supported learning programmes, by programme type, 2011/12 - 2018/19

SECTION 1: NDP TARGETS AND PROGRESS
continued

YEAR	REGISTERED					CERTIFIED				
	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		
2018/19	105 548	15 482	150 674	271 704	61 841	6 123	144 460	212 424		

Source: *Statistics on Post-School Education and Training, 2017*
SETA Quarterly Reports, 2018/19

SECTION 1: NDP TARGETS AND PROGRESS

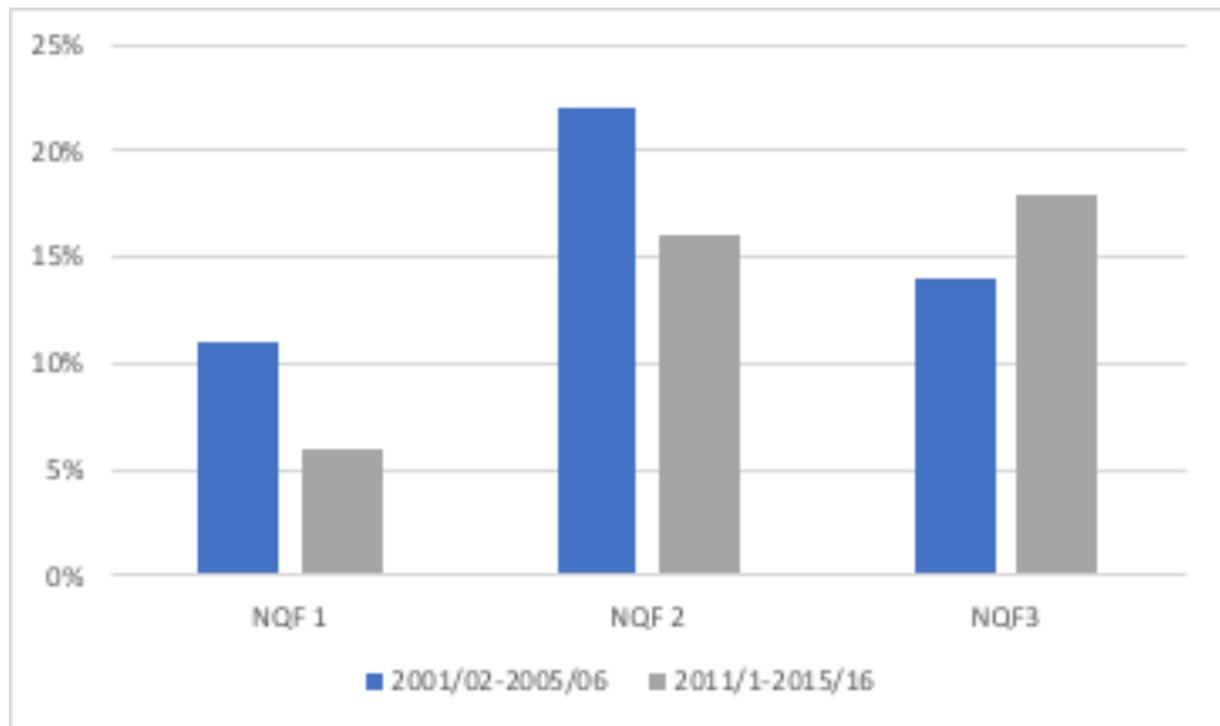
continued

Therefore, while enrolments increased across all programmes, the major increase was concentrated in skills programmes. This led to a 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 skills development levy 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. Hence there has been a significant upswing in learnerships since 2015, particularly as a basis for companies to access discretionary funding.

A specific focus of the NSDS was on facilitating progression through lower levels on the NQF. A review of the 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.

SECTION 1: NDP TARGETS AND PROGRESS
*continued***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 needed by cooperatives and small- and medium-sized enterprises (SMEs) in their sectors and respond to these in their planning and projects. SETA support to SMEs took various forms, including training of 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, which started at about 12 851 in 2011/12 and reduced consistently to 8 420 beneficiaries by 2015/16. In total, SETAs supported 58 979 beneficiaries located in SMEs.

SECTION 1: NDP TARGETS AND PROGRESS

continued

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 94 276 unemployed persons were certificated for SETA-supported learning programmes during the 2017/18 financial year which was 27 758 above the target. This represented a 216% over-achievement against the target for skills programmes and 116% achievement against the target for learnerships. Only targets for internships were not achieved. There are significant annual fluctuations in targets and achievements in the skills development sub-sector, so it is difficult to track clear trends.

However, the following increase in output has been achieved:

- An increasing number of unemployed youth have completed skills programmes between 2010 and 2018, from 10 631 to 44 073.
- The number of unemployed youth completing internships has increased by more than 32% per annum from 2010 to 2017.
- An increasing number of workers have completed learnerships since 2010, from 9 621 in 2010 to 23 688 in 2016, although this dropped to 17 761 by 2018. Comparatively, completion for unemployed youth in learnerships has risen from 23 358 in 2010 to 44 080 in 2018. The combined annual growth in learnership completion has been around 10%

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%¹³. Between 2011 and 2016, the average throughput for learnerships was 55%. Internships only achieved an average throughput of 30%.

¹³ National Skills Authority (2018) Evaluation of the National Skills Development Strategy (NSDS III) 2011-2016

SECTION 1: NDP TARGETS AND PROGRESS

continued

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.¹⁴ 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 2015, rising again to a peak of 19 406 in 2016. This has subsequently declined again slightly in 2017 and 2018.

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.

¹⁴ The Presidency (2019) Towards a 25-year review: 1994-2019

SECTION 1: NDP TARGETS AND PROGRESS
continued

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

SECTION 1: NDP TARGETS AND PROGRESS
continued

The total number of artisans issued with national trade certificates by SETAs and INDLELA during the 2018/19 financial year was 19 355. 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	2018/19
AGRISETA	Agriculture	190	186	219	193	277
CATHSSETA	Culture, Arts, Tourism, Hospitality and Sports	-	1	1	-	-
CETA	Construction	479	582	1 058	1 500	1 427
CHIETA	Chemicals	572	861	1 020	917	1 314
ETDPSETA	Education & Training	-	-	-	-	-
EWSETA	Energy & Water	964	1 170	993	666	1 202
FOODBEV	Food Processing	2	-	14	63	69
FP&MSETA	Fibre Processing & Manufacturing	98	106	106	111	189
HWSETA	Health & Welfare	16	79	73	116	59
INDLELA	Non-SETA Candidates	4 983	3 791	3 692	4 381	3 277
LGSETA	Local Government	486	98	233	415	442
MERSETA	Manufacturing & Engineering	6 890	6 600	7 061	6 108	6 320
MICT SETA	Media, Information and Communication	-	-	-	-	-
MQA	Mining and Minerals	1 876	2 056	1 974	1 963	1 978
PSETA	National & Provincial Government	-	29	14	36	15

SECTION 1: NDP TARGETS AND PROGRESS *continued*

SETA		2014/15	2015/16	2016/17	2017/18	2018/19
SASSETA	Safety & Security	12	21	133	168	260
SERVICES	Services Sector	1 685	928	1 271	1 246	1 272
TETA	Transport	1 028	1 402	1 541	1 212	1 250
W&RSETA	Wholesale & Retail	-	-	3	5	4
Total		19 281	17 910	19 406	19 100	19 355

Source: *Statistics on Post-School Education and Training, 2017*
National Artisan Development Support Centre (NADSC) – National Artisan Recommendation for certification data management system, 2019

Employment

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

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.

A tracer study conducted by SSACI in 2016 showed that 79% of newly qualified artisans found employment.¹⁶ The study further indicated that 58% found permanent employment and a further 23% accessed less stable contract/temporary jobs. Of interest is that 56.5% of these graduates found jobs easily or fairly easily.

¹⁵ Singizi (2018) NSDS Tracer Study

¹⁶ SSACI (2016) Report on the Tracking of Newly Qualified Artisans

SECTION 1: NDP TARGETS AND PROGRESS

continued

A learnership survey conducted in 2010 found that 82% of the participants reported their status as employed/working directly after completion of the learnership¹⁷ and 13% indicated that they were studying further, with 4% reporting unemployment. The study further indicated that 90% found 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 2 000 employers, conducted as part of the evaluation of NSDS III¹⁸, indicated 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 had 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 also increased the work readiness of young people entering the workplace. However, there was a clear indication that there was a skills mismatch in the programmes being funded by SETAs.

Funding

The skills development levy 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 from invested reserve funds.

¹⁷ 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.

¹⁸ National Skills Authority (2018) Evaluation of the NSDS (III) 2011-2016.

SECTION 1: NDP TARGETS AND PROGRESS
continued

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

	TOTAL DISBURSED BY THE SKILLS DEVELOPMENT LEVY	DISTRIBUTION OF LEVY FUNDS			SETAS			SETA ADMIN COSTS TRANSFERRED TO QCTO
		TRANSFERRED TO NSF	DISBURSED TO 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%	

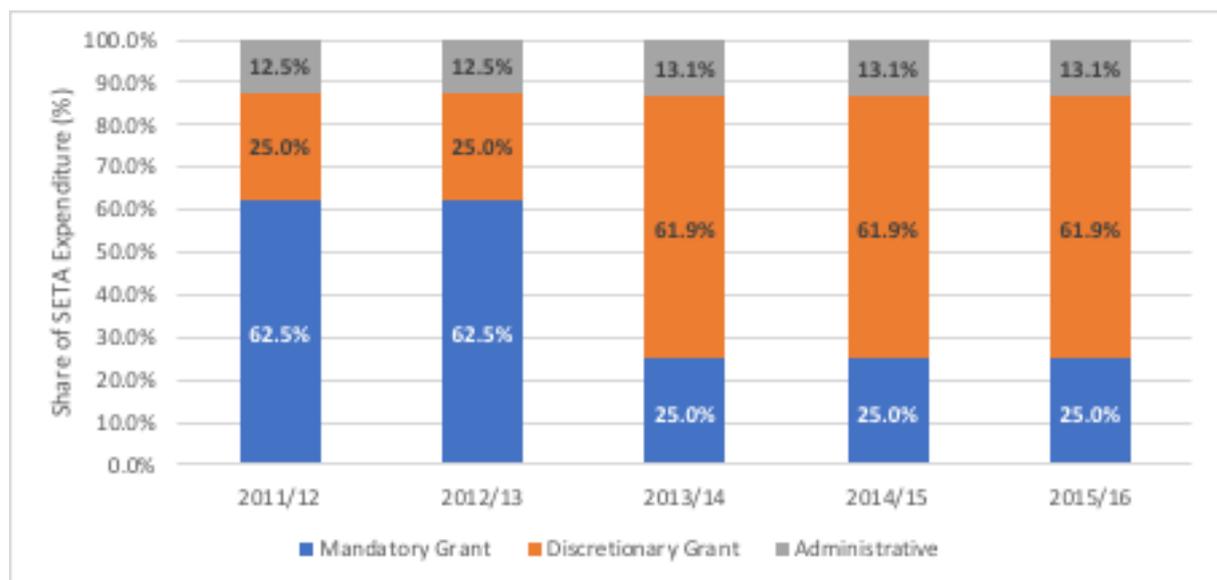
Source: Statistics on Post-School Education and Training, 2015 page 64. Average annual growth rates estimated via log-linear ordinary least squares.

SECTION 1: NDP TARGETS AND PROGRESS *continued*

As discussed above, firms could claim up to 50% of their levy contribution back through mandatory grants until 2012. The 2012 grant regulations reduced this from 50% to 20% of the total levy amount paid by firms to SETAs and introduced 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, with 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 improve efficiencies by transferring any uncommitted surpluses in the discretionary funds to the NSF. This was seen as important as SETAs were disbursing about 53% of committed funds. Between 2013 and 2016, almost R2.9 million 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.

SECTION 1: NDP TARGETS AND PROGRESS

continued

In addition to the grants received from SETAs, employers can access various tax incentives for both learnerships and apprenticeships. This amounts to an additional R2 billion a year for employers to fund training. These incentives are combined with the B-BBEE incentives as a key mechanism 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 R1,3 billion 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 with 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 R971 million towards the public TVET colleges to cover the shortfall in funding resulting from over-enrolment. 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 made it possible to provide a significant proportion of these students with the means to pay the fees and sustain themselves during their studies.

SECTION 1: NDP TARGETS AND PROGRESS
continued

1.5 Universities

NDP TARGETS	PROGRESS
Increase enrolments from 950 000 to 1,62 million (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 a 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 NDP's proposal and recommendations for higher education can be located in the policy context set by the 1997 White Paper on Higher Education Transformation, which was continued through the first formal post-apartheid policy analysis of universities in South Africa. The National Working Group (NWG) which was established in 2000 to advise the Minister of Education on the restructuring of the public higher education system undertook an analysis of the sector. The NWG was required to formulate proposals using the mechanisms of institutional mergers and incorporations to reduce the size of the public higher education system from the 36 universities and technikons which existed in 2000 to a maximum of 24. The final report of the NWG was submitted to the Minister of Education in December 2001.

SECTION 1: NDP TARGETS AND PROGRESS

continued

The NWG's focus was on what it described as “institutional fitness for purpose”, within the context of the policy requirements of the 1997 White Paper on Higher Education Transformation. The NWG summed up these requirements in a list of what it described as the “expected features” of a public higher education institution. These features are:

- There must be evidence that the participation of disadvantaged groups in the student body and in the staff complement is increasing.
- The student enrolment size must be stable and large enough to ensure a balanced spread of enrolments across a range of qualifications and fields of study.
- Adequate numbers of academic staff, who must be well-qualified, must be available to meet the instruction needs of students.
- Output rates of graduates from undergraduate as well as postgraduate programmes must satisfy national quantitative norms.
- Academic staff must produce, in line with national quantitative norms, reasonable numbers of research publication units, as well as reasonable numbers of masters and doctoral graduates.
- The institution must be financially stable and sustainable.

The NWG attached a set of quantitative performance indicators to these expected features which became the targets that universities were expected to achieve. Its final recommendations to government were based on analyses of sets of quantitative indicators and targets. These indicators, with some changes made to the quantitative targets, remained in place when the National Development Plan was finalised.

The NDP accepted the following four-point account of the functions of the South African university sub-system:

- Universities 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.

SECTION 1: NDP TARGETS AND PROGRESS

continued

The NDP, in effect, follows the basic schema of the NWG of the broad functions that the university system must meet. A selection of the requirements from the NDP is listed below.

- Requirement 1: The university system must be expanded. This will require growth in total student enrolments as well as in participation rates in the university system.
- Requirement 2: The proportions of postgraduate students must increase.
- Requirement 3: Graduation rates must be improved.
- Requirement 4: Doctoral graduates and other research outputs must increase.
- Requirement 5: The qualifications of academic staff must be improved.
- Requirement 6: Universities must be financially stable and sustainable

This selection was chosen in order to focus the discussion on the knowledge production functions of universities, and in particular on their student enrolments, academic staffing, outputs of graduates, and high level knowledge outputs in the form of doctoral graduates and research publications. It was also decided that financial sustainability had to be included because of the obvious links between these issues and the production of knowledge.

Participation

Expansion over the period 2010-2018

The official data of the national DHET for 2010 and 2018 are summed up in Table 9 below. The year 2010 was selected as the base year because it would have been the latest data when the NDP 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 that the DHET has of available current enrolment and other university data.

Table 9: Summary of headcount enrolments in public universities

	HEADCOUNT		% 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%

Source: DHET: HEMIS Student Statistics Table 2.12 for 2010 and 2018.
In a headcount 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. The term postgraduate applies here to all postgraduate diplomas and certificates, honours, masters and doctoral degrees

SECTION 1: NDP TARGETS AND PROGRESS *continued*

The data in the Table 9 shows that two of the requirements related to the expansion of the university system were met over the 2010 to 2018 period:

- Total headcount enrolments in the public university system increased by 192 000 (22%) by 2018 compared to 2010 with an average annual growth rate of 2.5%.
- Postgraduate enrolments increased by 38 500 by 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 9 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 South African 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 South Africa'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: headcount 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 11 summarises the latest data which the DHET has been able to publish.

SECTION 1: NDP TARGETS AND PROGRESS
*continued***Table 11: Headcount 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
2018	115 108	82 347	197 455
Average annual growth rate	11.4%	7.7%	9.7%

(1) Source: DHET: *Statistics on Post-school Education & Training, 2018*

(2) Enrolment data for 2010 could not be found

If it is assumed that the 2010 headcount enrolment total for private higher education institutions is the same as the 2011 total reflected in Table 11, the gross participation rate would be 19.7% for 2010 and 25.5 % for 2018.

Enrolment targets for 2030

The NDP set two broad student enrolment targets:

- Total student enrolments in public universities plus private higher education institutions 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 that:

- The total of the South African 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 headcount enrolments in public universities remains the 2.5% measured for the period 2010 to 2018.
- The headcount enrolment in private higher education institutions increases from the 2018 total of 197 000 to at least 200 000 by 2030.

The application of these assumptions to the actual enrolment data for 2010-2018 results in the projections is summarised in Table 12 below. The data in Table 12 show that the targets set by the NDP could be achieved. As far as headcount enrolments are concerned, applying an assumption of an average 2.5% growth in public universities and an assumption that private higher education enrolments will remain flat at around 200 000, generates the 2030 university headcount enrolment target of 1 650 000. The 2030 gross participation rate, on these projected numbers

SECTION 1: NDP TARGETS AND PROGRESS *continued*

and the assumption that population totals in the group 20-24 years remain static, would exceed the NDP's target of 30%.

Table 12: Actual and projected headcount enrolments and gross participation rates

	ACTUAL		PROJECTED
	2010	2018	2030
Public universities	887 000	1 084 000	1 460 000
Private higher education	103 000	197 000	200 000
Total headcount enrolment	990 000	1 281 000	1 660 000
Population in 20-24 age group	5 019 000	5 019 000	5 000 000
Gross enrolment	19,7%	25,5%	33,2%

Sources: (1) Actual data were extracted from Tables 9-11 above.
(2) Private university enrolments for 2011 were assumed to be data for 2010

Increasing the proportions of postgraduate students

The NDP refers to the need for masters and doctoral students to increase, and a target for 2030 of “over 25 percent of postgraduate enrolments should be at postgraduate level” (NDP 2030, 319).

Table 13 offers a summary of 2010 and 2018 headcount enrolments at public universities of postgraduate qualifications using the DHET classification.

SECTION 1: NDP TARGETS AND PROGRESS
continued

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

	HEADCOUNT		% 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%

Source: DHET: HEMIS Student Statistics Tables 2.12 for 2010 and 2018.
“Postgraduate below masters” includes postgraduate diplomas and certificates, and honours degrees

Table 14 contains a summary of the public plus private university system, using the latest available data i.e. 2017 for private universities and 2018 for public universities.

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

	PUBLIC UNIVERSITIES 2018	PRIVATE UNIVERSITIES 2017	TOTAL PUBLIC + PRIVATE: 2018 + 2017	
Undergraduates	908 458	180 012	1 088 470	85%
Postgraduates	177 110	17 886	194 996	15%
Postgraduate below masters level	92 364	10 835	103 199	8%
Masters degrees	61 096	6 688	67 784	5%
Doctoral degrees	23 650	363	24 013	2%
Overall total	1 085 568	197 898	1 283 466	100%

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

SECTION 1: NDP TARGETS AND PROGRESS

continued

The final column in Table 14 shows that the public plus private university system in 2018 was well short of the NDP's target of 25% of headcount enrolments required 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 in 2018 amounted to only 195 000 or 15% of the total compared to the NDP'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 15 below sets out two broad scenarios for enrolments in 2030 based 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 NDP. 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 15 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 headcount 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 masters level; 40% in masters qualifications, and 15% in doctorates.

SECTION 1: NDP TARGETS AND PROGRESS

continued

Neither of these two scenarios could be regarded as acceptable within the framework of the NDP. Scenario X sets postgraduate targets which fall well below the required targets for 2030. 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 1 088 000 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 NDP'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 masters 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 NDP 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 throughput 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 2013 cohort had 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 the 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.

SECTION 1: NDP TARGETS AND PROGRESS *continued*

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 South Africa’s Department of Higher Education and Training and by research groups such as the Centre for Higher Education Transformation and the Centre for Research on Evaluation, Science and Technology. These graduation targets are summarised in Table 17 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 headcount enrolments of public universities summarised in Table 16 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 18.

SECTION 1: NDP TARGETS AND PROGRESS
continued

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

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 breakdown offered in Table 18 uses the standard set of graduation rates discussed earlier. A similar analysis is offered in Table 19 of what the graduate output should be from the required headcount enrolments for 2030.

SECTION 1: NDP TARGETS AND PROGRESS *continued*

Table 19: Calculation of graduate totals for public universities for 2030 on NDP

	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 NDP'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 19 sets different 2030 graduate total requirements for different qualification types. Compared to 2018, it requires, for example, total graduates to increase by 73%, doctoral graduates by 57%, and graduates in undergraduate programmes by 84% in 2030. These required/projected graduate totals are reasonable, and probably achievable. The discussion in this subsection has shown that the NDP description of a requirement 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 17. The performance of the university system should then be judged in relation to these targeted graduation rates and the numbers of graduates they produce when linked to the enrolment numbers required by the NDP.

Doctoral graduates and research publications

Increasing doctoral graduates

The NDP used a ratio between the annual production of doctoral graduates and the totals in the population as a performance measure. The ratio proposed is 100 doctoral graduates per million of the population.

SECTION 1: NDP TARGETS AND PROGRESS

continued

The South African 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 while in 2018 the population estimate was 57 million and there were 3 344 doctoral graduates. The ratio of doctoral graduates per million would therefore be 28 in 2010 and 58 in 2018 which are both well below the NDP's target for 2030 of 100 doctoral graduates per million of the population.

It seems likely that the target will also be missed in 2030. The doctoral graduate total for 2030 was calculated in Table 19 as being 5 250. If the population in South Africa were to reach 68 million in 2030 (an average increase of about 1% per annum), the NDP's ratio would be $5250/68 = 77$ doctoral graduates per million of the population. On an assumed 2030 population total of 68 million, the NDP'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 NDP's performance measure for doctoral graduates clearly needs to be reconsidered and revised.

Increasing research publications

Table 20 contains three different data elements:

- The first row of the table contains data on research publication outputs for the public universities for 2010 and 2018. These research publications only include published research articles, published conference proceedings, and published research books (which cannot include textbooks for teaching students).
- The second and third rows contain permanent academic staff totals for 2010 and 2018
- 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 2018

	2010	2018
Research publication units	9 748	19 099
Permanent academic staff total	16 684	19 781
Permanent academic staff with doctorates	5 855	9278
Ratio total academic staff	0.6	1.0
Ratio total academic staff with doctorates	1.7	2.1

SECTION 1: NDP TARGETS AND PROGRESS

continued

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 annually produce one research publications per total permanent academic, and two research publications per total permanent academic with a doctorate. The public university system met these targets in 2018 but not in 2010. The reason is clear from the data in the table. The total number of research publications increased by 96% in 2018 compared to 2010 while the staff members total increased by 19% and the academics with doctorates total increased by 58%.

Given the increases that occurred between 2010 and 2020, a target of 31 000 publication units in 2030 could be reasonable.

Qualifications of academic staff members

The NDP 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”. (NDP 2030, 317 & 319).

The focus in the following section is on the specific requirement that the proportion in public universities of permanent academic staff with doctorates should be 75% by 2030. Data on the qualifications of academic staff in private universities are not available.

The data in Table 21 compares the total number of permanent staff in all categories employed in the public university system in 2010 and 2018. The main purpose of this detailed breakdown to account for 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 the table.

SECTION 1: NDP TARGETS AND PROGRESS
*continued***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 21 shows that public universities employed a total of 47 144 permanent staff in 2010 and 62 171 in 2018. Academic staff members in 2010 totalled 16 684 or 35% of the permanent employee total, and 19 781 or 32% of the permanent total in 2018. 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 headcount 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

SECTION 1: NDP TARGETS AND PROGRESS *continued*

university system doubled from 5 255 in 2010 to 11 204 in 2018, which was primarily the result of several universities reversing decisions to outsource these activities to private companies and to re-employ privately contracted staff as permanent university staff members.

Table 22 below indicates qualification breakdown for permanent academics employed in 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 NDP'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 masters degrees or qualifications below masters and qualifications should have 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%
Masters 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 NDP student headcount target for 2030 is supposed 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 this would be equivalent to about one third of the university system's annual production of doctoral graduates moving directly into university posts.

SECTION 1: NDP TARGETS AND PROGRESS *continued*

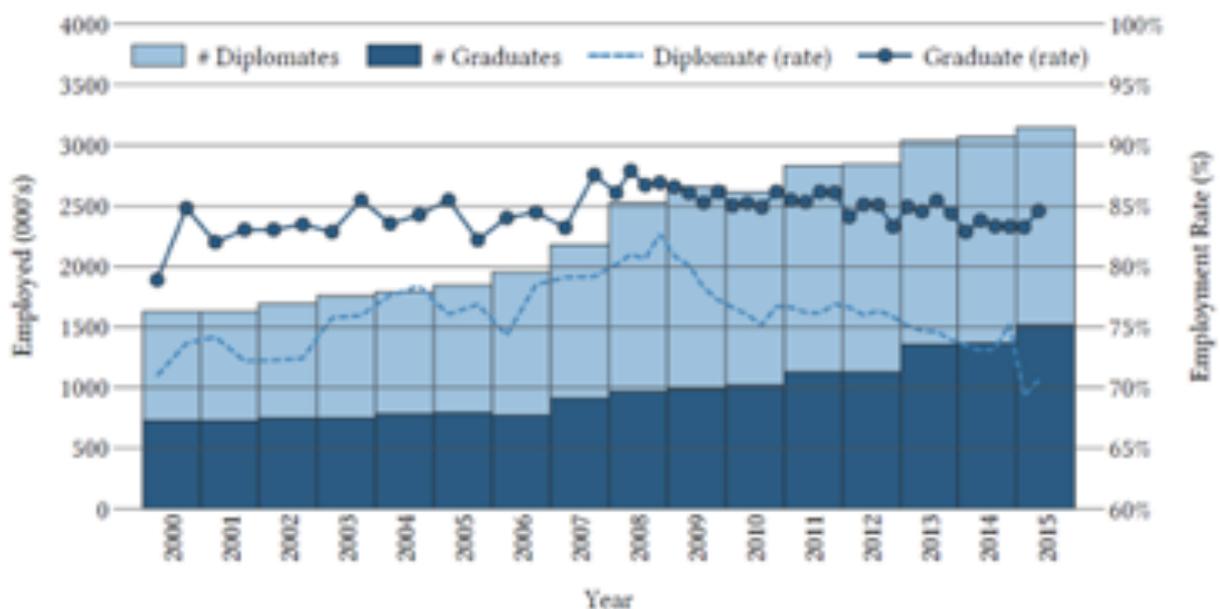
It should be accepted that the NDP’s target of 75% of academics to have doctoral qualifications is unreasonably high and should be reduced. A realistic proportion, which is currently employed in the South African university performance evaluations, is 60%. This reduced target lowers the projected 2030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

This 60% target of academics with 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)



SECTION 1: NDP TARGETS AND PROGRESS

continued

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, the 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 have graduated from historically disadvantaged institutions have statistically significantly higher probabilities of being unemployed than their counterparts from historically advantaged institutions.

Bhorat et al (2017) found that of the 2010 sample from four public universities in the Western Cape most were in the labour market and employed (almost 90%).¹⁹ 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

While the NDP does not make a specific statement about the financial stability and sustainability of public universities, there are a series of relevant comments and the recommendations made in the main body of the document. Two examples of the comments are these:

- Though some institutions perform well and have the academic expertise and infrastructure to be internationally competitive, many lack adequate capacity, are under-resourced and inefficient (p 316).
- The university sector is under considerable strain. Enrolments have almost doubled in 18 years, yet the funding has not kept up, resulting in slow growth in the number of university lecturers, inadequate student accommodation, creaking university infrastructure and equipment shortages (p 317).

¹⁹ Bhorat H, Lilenstein A, Lilenstein K, and Oosthuizen M (2017) Youth Transitions from Higher Education into the Labour Market. LMIP

SECTION 1: NDP TARGETS AND PROGRESS

continued

The NDP's recommendations include the following which have financial implications:

- Expand university infrastructure. University enrolments have almost doubled since 1994 and infrastructure has not kept up. This has a major impact on the quality of teaching and learning. (p 319).
- Strengthen universities that have an embedded culture of research and development. They should be assisted to access private sector research grants (third stream funding) in addition to state subsidies and student fees, attract researchers, form partnerships with industry and be equipped with the latest technologies (p 319)

These quotations suggest that the NDP was concerned about financial stability and sustainability, and that this should be included as an additional requirement for a well-functioning university system.

Assessing financial stability and sustainability of public universities

South African public universities have to submit externally audited financial statements to the DHET annually, under a complex system of financial reporting regulations and accounting rules. The presumption underpinning the reporting process is that a fair presentation of the financial position and performance of the university will have been achieved, because the external auditor must certify that the university is in compliance with state regulations, as well as the applicable accounting rules.

The financial statements of public universities are not confidential documents, and in most cases are published by universities on their websites. The financial statements of private universities are not made available to public scrutiny in the same way, and so no judgements can be made on their financial health. The discussion which follows gives, as a result, assessments of the financial stability and sustainability of public universities only.

SECTION 1: NDP TARGETS AND PROGRESS *continued*

In South Africa, most analyses of what may be termed the financial health of public universities focus on revenues, cost structures, and liquid unrestricted financial assets. Table 23 and 24 below offer summaries of the combined income statements of the public universities and offer pictures of a public university system which appears to be in good financial health. The revenue categories employed in the tables can be summed up in these ways:

- Government income includes amounts generated under the subsidy or block grant formula, as well as earmarked grants which are not included in the formula.
- Student source income includes student tuition fees, and in all cases the grants made by NSFAS to students enrolled at the university. It is important to note that universities and the DHET have used different accounting practices in dealing with NSFAS grants. The DHET includes NSFAS as a government grant in its published higher education budgets. The universities however do not report on NSFAS funds in its government grant total. They include NSFAS funds as student source income.
- Third stream income includes research grants not included in the block grant subsidy, research contracts, private contracts and gifts, investment income, and sales of university services.

The total revenue from all sources of public universities increased at an above consumer price inflation average annual rate of 10.5% between 2010 and 2018. The total revenue in 2010 was R35 billion, and in 2018 more than doubled to reach R78 billion. A particular point to note is that the combined public university income statements reflect surpluses of income less expenses in each year of the period 2010-2018. The surpluses calculated in this way rose from 14% in 2010, to 16% in 2013, before falling to 11% in 2014, to 10% in 2017, and finally 7% in 2018.

Table 23: Summary of revenue and expenditure of public universities in South Africa (Rand millions)

	2010	2012	2014	2016	2018	AVERAGE ANNUAL INCREASE
Total government subsidies	14 156	18 495	22 771	27 397	32 016	10,7%
Total student source income	10 155	13 219	16 548	20 223	29 318	14,2%
Total third-stream income	10 646	12 937	12 948	17 731	16 473	5,6%
Total revenue	34 957	44 651	52 267	65 351	77 807	10,5%
Total expenses	30 053	38 046	46 659	55 969	72 424	11,6%
SURPLUS: revenue less expenses	4 904	6 605	5 608	9 382	5 383	1,2%

Source: *Mark Bunting Standardisations of Financial Statements of South African Public Universities: 2007-2018*

SECTION 1: NDP TARGETS AND PROGRESS
*continued***Table 24: Proportions of public university funds in standard income categories**

	2010	2012	2014	2016	2018
Total government income	40%	41%	44%	42%	41%
Total student source income	29%	30%	32%	31%	38%
Total third-stream income	30%	29%	25%	27%	21%

Table 23 shows that the totals of government subsidy plus earmarked grants to universities increased from R14.1 billion in 2010 to R32.0 billion in 2018; an average annual increase of 10.7%. This was above consumer price inflation, but has not been sufficient, as far as public universities are concerned. They have argued that the increase is inadequate because higher education inflation tends to be far higher than consumer price inflation.

Two further aspects of the funding of universities which need to be considered in an analysis of the sufficiency of funding levels are (a) the ratio between government funding and gross domestic product, and (b) increases in NSFAS funding levels. Short accounts of these are offered in Tables 25 and 26.

Table 25 shows what the ratios have been between government subsidies for universities and gross domestic product, both expressed in Rands at current prices. The final row shows that the ratio increased steadily over the period 2010 to 2018. In 2018 it was above a level of 0.60% but was still below the ratio of 1.0% of GDP to which the South Africa government had committed itself after it had received the 2017 Report of the Commission of Inquiry into Higher Education and Training. This Commission had been established by the President of South Africa as a partial response to the #feesmustfall campaigns which had disrupted the functioning of universities during 2016.

Table 25: Subsidies of universities and gross domestic product, in nominal Rand billions

	2010	2012	2014	2016	2018
Government subsidies to universities	14,2	18,5	22,8	27,4	32,0
GDP: Rand billions	2 748,0	3 245,0	3 796,0	4 348,0	4 849,0
State subsidies as % of GDP	0,52%	0,57%	0,60%	0,63%	0,66%

Sources: (1) State subsidy totals from Table 23 above
(2) GDP totals from website of TradingEconomics.com

SECTION 1: NDP TARGETS AND PROGRESS *continued*

Table 26 turns to the issue of NSFAS funding levels. As was indicated in the notes to the income statements, universities and the DHET do not treat NSFAS grants in the same way, resulting in it not being possible to extract a consolidated picture of NSFAS grants from the financial statements of universities. The annual transfers which NSFAS receives from the DHET, and which are reported in the NSFAS financial statements as “Grants received for student awards” was used. The government’s annual appropriation bill includes the transfer to NSFAS in the University education programme, which should properly be thought of as a transfer to households or students and not strictly speaking as an amount for “university education”. The NSFAS transfer is nevertheless an allocation for higher education and can be expressed as set out in Table 26.

Table 26: State subsidies to universities plus NSFAS transfers (Rand billions)

	2010	2012	2014	2016	2018	AVERAGE ANNUAL INCREASE
State subsidies to universities	14,2	18,5	22,8	27,4	32,0	10,7%
State transfers to NSFAS	2,5	5,1	7,9	9,4	15,3	25,4%
Subsidies to universities plus NSFAS transfers	16,7	23,6	30,7	36,8	47,3	13,9%
NSFAS as a percentage of total state grants	15,0%	21,6%	25,8%	25,5%	32,3%	10,0%
University subsidies plus NSFAS transfers as a percentage of GDP	0,61%	0,73%	0,81%	0,85%	0,98%	

Sources: (1) State subsidy totals from Table 23 above
(2) Transfers to NSFAS as grants for student awards: NSFAS financial statements for 2010 to 2018

Table 26 shows that over the nine-year period, the annual transfer to NSFAS grew from R3.9 billion in 2015 to R24 billion in 2019. This was a budget increase over the period of R20 billion or 500%. The share which NSFAS took of the total of state subsidies plus NSFAS transfers grew from 15% in 2010, to 26% in 2014, and 32% in 2018. The final row in Table 26 reflects the impact which NSFAS transfers had on government funding of universities. The subsidy plus NSFAS transfer proportion rose rapidly from 0.61% in 2010, to 0.81% in 2014, and to 0.98% in 2018. The 2018 ratio would, if rounded up, have met the government commitment that this ratio would become 1%.

No firm conclusions on the financial health of public universities should be drawn from the notes and discussions of Tables 23 to 26, because they rely only on the income statements of universities. Account has to be taken of performance signals contained in the balance sheets, which are included in the audited financial statements of universities.

SECTION 1: NDP TARGETS AND PROGRESS
*continued***Assessments based on data extracted from university balance sheets**

Table 27 lists four indicators extracted from the balance sheets for 2017 and 2018 of public universities in South Africa. The various concepts and ratios used in the table can be explained in these ways:

- The highly liquid unrestricted assets (HLUA) of a university are those which it can turn quickly into cash and which can then be used at the discretion of its council. These assets include unrestricted cash, money market instruments, shares and bond investments and exclude all receivables, infrastructural assets and office and research equipment.
- The ratio of HLUA/total liabilities is derived by dividing the total of highly liquid unrestricted assets by the total liabilities recognized in the balance sheet.
- The ratio of HLUA/expenses is different because it relates the HLUA total to total expenses for a specific financial year in the income statement of a university.
- The defensive interval is derived by multiplying the HLUA/expenses ratio by 12. This indicates for how many months a university should be able to operate under a notional condition in which all revenue sources dried up.
- Unpaid student debts in days is a ratio derived by dividing the unpaid accumulated debt total by the student fee revenue total for that year and then multiplying this by 365.

Table 27: Balance sheet indicators for 2017 and 2018

	11 TRADITIONAL UNIVERSITIES		SIX COMPREHENSIVE UNIVERSITIES		SIX UNIVERSITIES OF TECHNOLOGY	
	2017	2018	2017	2018	2017	2018
HLUA/total liabilities	1,60	1,51	1,50	1,45	0,79	0,88
HLUA/total expenses	0,90	0,95	0,87	0,99	0,55	0,69
Defensive interval in months	11	11	10	12	7	8
Unpaid student debt in days	108	109	110	110	245	239

Source: *Mark Bunting Standardisations of Financial Statements of South African Public Universities: 2007-2018*

SECTION 1: NDP TARGETS AND PROGRESS *continued*

Two points to note about the data in Table 27 are these:

- The last row in Table 27 expresses gross accumulated student debt (unadjusted for managerial estimates of unrecoverable amounts), R9 119 million in 2017 and R10 655 million, as proportions of the student fees income of a particular year, and converts these to an equivalent of total days of unpaid fees. These ratios for both traditional and comprehensive universities were acceptable in 2018 at 109 and 110 days. The ratios for universities of technology were more than double those of traditional and comprehensive universities.
- The average defensive intervals in 2017 and 2018 of the three categories show that the universities of technology display considerably more financial weaknesses than the traditional and comprehensive universities. The second last row in the table indicates that if all their revenue sources dried up and if they had to rely only on their highly liquid unrestricted assets, traditional universities would on average be able to survive for 11 months, comprehensive universities also for 11 months, and universities of technology for less than 8 months.

Summing up of financial stability and sustainability of public universities in South Africa in 2018. The overall picture which emerges from Table 27, taken together with the income statements in Table 23, is that if traditional and comprehensive universities were taken to be coherent groupings with merged income and expenses totals, then they could be described as financially stable and sustainable. The same would not true of universities of technology, because of weaknesses reflected in 2017 and 2018 in both their combined income statements and combined balance sheets.

These broad conclusions are however misleading because the financial and governance independence of universities in South Africa require individual institutional assessments to be made of their financial health. This can be done by calculating balance sheet indicators for individual universities and applying to them the targets in Table 28. Individual universities could then be rated (a) as being in strong financial health if they met all four of the balance sheet targets, (b) as being in moderate financial health if they met only two of the targets, and (c) as being in weak financial health if they met at most one of the targets

Table 28: Balance sheet targets for individual universities

BALANCE SHEET RATIOS	TARGETS FOR INDIVIDUAL UNIVERSITIES
HLUA/total expenses	at least 0.8
Defensive interval in months	at least 8
HLUA/total liabilities	at least 1.8
Unpaid student debt in days	at most 100 days

SECTION 1: NDP TARGETS AND PROGRESS

continued

When the assessments of individual universities are concluded they show that if the public universities in South Africa are not regarded as an interdependent system, then they are, in effect, a mix of financially strong and financially weak institutions. This can be seen in Table 29 which summarizes for 2018 the balance sheet ratings of public universities:

Table 29: Rating of public universities in 2018 on basis of balance sheet targets met

	TRADITIONAL UNIVERSITIES	COMPREHENSIVE UNIVERSITIES	UNIVERSITIES OF TECHNOLOGY	ALL PUBLIC UNIVERSITIES	
Strong = meets all four targets	4	2	0	6	26%
Moderate = meets at least two targets	3	2	0	5	22%
Weak = meets at most one target	4	2	6	12	52%
Total	11	6	6	23	100%

A major problem which emerges from Table 29 is that only 6 of the 23 public universities are rated as being in strong financial health, 5 are rated as being in moderate financial health, and 12 (or more than half the institutions) are rated as being in weak financial health.

A hard conclusion has to be drawn from the various assessments and discussions offered in this subsection. Public universities in South Africa cannot be regarded as a system which has met the NDP requirement of being financially stable and sustainable.

1.9 The contribution of National Student Financial Aid Scheme (NSFAS)

NSFAS provided grants to just over three 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 the TVET share of recipients reduced to 43,5% in 2017 following the #feesmustfall protests.

Due to the 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 the fee income to supplement the subsidy and NSFAS income. Therefore, those that could not access NSFAS were restricted in their ability to pay or sustain university fees.

SECTION 1: NDP TARGETS AND PROGRESS

continued

Students receiving NSFAS support perform academically better than non-NSFAS students in terms of throughput and retention.²⁰

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 the 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.

²⁰ 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 highlighting 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. 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 decisions about VSD programming, within the context of sectoral TVET, higher education and skills development strategies, into industry sector masterplans.

This requires a focus on the development of national TVET and higher education (particularly universities of technology) strategies that have sufficient flexibility such that they are informed by the industrial strategies, and, that these industrial strategies in turn considers the demand for skills (technical and vocational) within the context of decisions about work organization and technology.²¹ 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 create a basis for skills to contribute to changes in the workplace including those related to productivity and inclusive growth. This requires of DHET and the SETAs that they develop an appropriate mechanism for planning and resource allocation within the context of sectoral strategies. This suggests a shift away from a model that reduces supply and demand to a list of qualifications required based on an analysis of the industrial strategy that is after the fact, towards a model that focuses on skills formation (including qualifications and the nature of provision) as part of the development of the industrial strategy.

²⁰ This takes learning from recent research into the Automotive, FoodBev and Clothing industries undertaken by REAL into account.

SECTION 2: WHAT NEEDS TO BE DONE TO ENSURE THAT GOALS AND TARGETS SET ARE ACHIEVED BY 2030? IS COURSE CORRECTION NEEDED? - *continued*

At a sectoral level, it will then be critical to build effective relationships between TVET (public/private and workplace providers), higher education 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 and 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 notwithstanding 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 demand-driven occupational training in colleges – it is costly and resource intensive and limits access to specific geographies. Further, it relies on strong employer commitment over a protracted period of time in ways that are typically not consistent with the current nature of the workplace and, in many cases, without the relevant support to enable workplaces to manage additional requirements. This is not to suggest that these efforts should not be sustained, however it is evident that they cannot be the sole response to the need to ensure that providers are able to meet demand. Alternate models, drawn from industry should be considered as part of this frame. This includes models such as those within the automotive industry where the capacity to provide has been developed by the industry or, such as the case in some mining houses where the provision takes place through a partnership model.

Addressing the other end of the demand continuum, CET colleges 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 sustainable work 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 extend to sectors that are required within the community. This includes sectors such as early childhood development, the environmental sector and maintenance. There is also a need for an emphasis on ways to build the digital capacity within communities. Further, it requires a more balanced mix between programmes resulting in qualifications and 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

SECTION 2: WHAT NEEDS TO BE DONE TO ENSURE THAT GOALS AND TARGETS SET ARE ACHIEVED BY 2030? IS COURSE CORRECTION NEEDED? - *continued*

practical in nature and focus on preparing the learner for the particular occupational role. The programmes should also enable enterprises to sustainably progress and grow.

These recommendations require a dynamic relationship between supply and demand supported by an enabling policy (including inter alia policies related to qualification, skills programmes and provisioning) and funding (discussed below) environment.

2.2 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 conditions, including an increase in senior permanent academics, all with doctoral qualifications, expansion of teaching and research space, and the increased demand for student funding.

The target that 25% of university enrolments be postgraduates requires an amended definition to include only masters and doctoral enrolments. An appropriate target proportion which takes only masters and doctoral students as postgraduate could 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 budgetary constraints combined with low capacity and a challenging 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. While there is an immediate tendency to see distance learning as a solution to expansion and this is particularly the case in the context of Covid-19 this raises a number of challenges. Besides the low levels of throughput currently evident in higher education distance learning, 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 as to encourage self-managed learning and limit the need for large classes.

SECTION 2: WHAT NEEDS TO BE DONE TO ENSURE THAT GOALS AND TARGETS SET ARE ACHIEVED BY 2030? IS COURSE CORRECTION NEEDED? - *continued*

The NPPSET 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 the demand for skills linked to entry-level jobs with the demand for qualifications. 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.

As alluded to above, this requires a focus on enrolment planning that is consistent with the broad industry trends and an understanding of the priority skills. This will continue to inform the programme qualification mix planning of the colleges as this recognizes that colleges cannot change their core delivery as rapidly as demand changes (there is a need for programmes against qualifications, training of lecturers, etc). However, this is on the assumption that there is some flexibility within the programme to respond to changing demand. Further, given the push for a greater mix of programmes (between formal qualifications as well as increased numbers in short skills programmes, which may or may not be accredited, that are directly linked to jobs) in the Presidential Youth Employment Initiative, it would seem that there is an immediate imperative related to growing the capacity of colleges to first identify and respond to the demand for skills, including in the SME environment, in the short term and to ensure that 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).

This expansion 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 the Second Chance Matric Programme and ABET level 4 certificates should be freely available to all youth who have not completed schooling, there is a need to expand formal and non-formal skills programmes and occupational qualifications.

This report has noted that currently, there is uneven capacity and resourcing within community colleges to deliver these. The low completion rates for ABET Level 4 is particularly concerning and suggests variable quality. Thus, while the focus in the CET sub-system must be on the continued expansion of Grade 12 and ABET Level 4, this needs to be coupled with the condition of improvement in quality. We are also proposing that at the same time the CET sub-system needs to expand provision of occupational programmes and this requires infrastructure, equipment and capacity building interventions as key conditions for success. This will require a structured and well-managed roll-out strategy.

SECTION 2: WHAT NEEDS TO BE DONE TO ENSURE THAT GOALS AND TARGETS SET ARE ACHIEVED BY 2030? IS COURSE CORRECTION NEEDED? - *continued*

In summary, this report emphasizes that 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 that respond to labour market demand in key sectors. Such planning must provide the basis to more clearly articulate and provide for support that TVET and CET colleges will require over the short and medium term to achieve this growth, in terms of infrastructure and capacity.

2.3 Throughput

The targeted throughput rate for universities creates a challenge in terms of definition. It is proposed that this 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 headcount 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. With respect to TVET, in the absence of meaningful cohort throughput data in TVET and CET colleges, it is difficult to measure. This challenge in measuring cohort data is particularly acute 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. NC(V)4, N6, N3 and ABET Level 4), while not taking into account the dropout and completion at lower levels (i.e. NC(V) 2 and 3; N4 and N5 etc.). This distorts the true picture of efficiency in the system which limits effective enrolment planning.

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 NC(V), the target of 75% set by the NDP is likely to be 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 achieved at the start of NSDS III. Three-year learnerships for higher level qualifications achieved around 32% throughput. Throughput in artisan training over a three-year period was 37% in 2013/14.

Further, 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.

SECTION 2: WHAT NEEDS TO BE DONE TO ENSURE THAT GOALS AND TARGETS SET ARE ACHIEVED BY 2030? IS COURSE CORRECTION NEEDED? - *continued*

In addition to the emphasis on tracking throughput more effectively in order to measure change, a number of areas require attention in order to improve throughput. This includes:

- The need for an effective selection processes as this is a key factor in reducing the number of dropouts and improving the performance of learners. The challenges associated with poor performance has a knock-on effect in particular for TVET college students who are then unable to continue their studies as they are unable to access further NSFAS support once they fail.
- The need to continue to address the quality of teaching and learning as well as change the conditions of services attached to lecturers. These conditions limit the scope for workplace exposure and create incentives to improve the quality and relevance of instruction, and, partly as a result, lecturers are generally still dependent on textbooks and curriculum coverage, and there is little innovation and link to the world of work.
- 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.

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

However, even where there are positive developments in terms of quality resulting in improvements there are still challenges that affect throughput. In particular, a key challenge for throughput is the inability of many university of technology and TVET college students to complete their national qualifications due to a lack of access to the workplace learning that is required to meet qualification requirements for National Diplomas and occupational qualifications (particularly new occupational qualifications that will be delivered by colleges rather by employers). This workplace learning is important and the NDP refers to the imperative of more TVET college students accessing workplace exposure during studies to enhance their employability. However, given the challenges that are likely to increase as a result of Covid-19, there is a need to determine the package of incentives that will be put in place to encourage the expansion of workplace opportunities. This includes the need for the SETA system to more substantially direct funding to this workplace learning so that TVET and university of technology 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.

SECTION 2: WHAT NEEDS TO BE DONE TO ENSURE THAT GOALS AND TARGETS SET ARE ACHIEVED BY 2030? IS COURSE CORRECTION NEEDED? - *continued*

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 has narrowed, the expected level of unemployment among white graduates is still far lower, on average, than it is among African 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 trends that already point to the reality that if the numbers of graduates simply expand without a concomitant increase in the economy, there is likely to be an increase in graduate unemployment.

The other issue, relating to labour market absorption, as highlighted above, relates to the 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). The inability of these learners to complete their qualifications 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 more effective transitions. This is particularly the case for the SME environment where many opportunities for workplace learning and employment exists, 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.

Targets for labour market absorption require effective cohort data. While studies in higher education have been reasonably successful in tracing student cohorts into the labour market, tracer studies in the TVET colleges have typically been restricted by limited samples and low response rates. In addition, the definition of employment in many of these tracer studies should be adapted in order to take into account the reality that many young people “bounce” in and out of employment as they transition from ‘learning to earning’. Therefore, there is a need for more fluidity in the measurement of employment so that cohorts can be tracked at multiple points in their journey.

A key element of effective labour market absorption is the important 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 artificial intelligence (AI) platforms, this can be used to support large numbers of young people transition into, and through, employment, self-employment and entrepreneurship. This has been recognized in the Presidential Youth Employment Intervention, which emphasises the need for a Pathway Management Network, that enables young people to build their profile and increase their visibility

SECTION 2: WHAT NEEDS TO BE DONE TO ENSURE THAT GOALS AND TARGETS SET ARE ACHIEVED BY 2030? IS COURSE CORRECTION NEEDED? - *continued*

as they transition into and through opportunities. In this context 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 the #feesmustfall protests 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 funding solutions that ensure greater access and inclusivity. In particular, there must be sufficient funding for the “missing middle” in universities as well as increased funding for TVET learners for both national and occupational programmes. This requires optimal utilization of 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 universities of technology.

The funding of HET needs to also support and enable research, which is vital both for the quality of higher education and to contribute to the broader vision for South Africa as laid out in the NDP. 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.

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. This suggests the need for a combined funding strategy, which

SECTION 2: WHAT NEEDS TO BE DONE TO ENSURE THAT GOALS AND TARGETS SET ARE ACHIEVED BY 2030? IS COURSE CORRECTION NEEDED? - *continued*

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. 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.

In expanding the resource base there is a need to ensure that the use of these resources are maximized such that, where possible, duplication across the system is avoided and that funding explicitly supports partnerships across TVET colleges, and private and workplace providers. This is consistent with our previous recommendation about the need to align vocational skills development with industrial strategies that also allows for a broadening of scope for entry into workplace learning and absorption.

There is a need to ensure that both TVET and CET colleges place increased emphasis on 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 for smaller companies from a bureaucratic and compliance point of view. This is vital in order to stimulate increased workplace learning and absorption.

There should be institutional incentives to drive improvement in quality, throughput and placement. This needs to be managed such that it 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 that institutions should take in learners that require specific support such that there is not a disincentive to become inclusive.

Finally, in order to avoid duplication in ways that demand more resources, there is a need to consider the introduction of the three-stream model and the way that it will complement the existing system and thereby reduce pressure on the system. This will require a careful mapping of how the three-stream model aligns and articulates with the PSET environment to avoid duplication and further confusion on the different roles and mandates of the various institutions.

2.6 Existing Gaps in NDP Indicators

Based on the analysis and discussion above, 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.

SECTION 2: WHAT NEEDS TO BE DONE TO ENSURE THAT GOALS AND TARGETS SET ARE ACHIEVED BY 2030? IS COURSE CORRECTION NEEDED? - *continued*

Additional Indicators for TVET

- Participation: Enrolments in Occupational Programmes as a percentage of enrolments
- Throughput: Graduates as a percentage of enrolments within the same cohort (NC(V), occupational qualifications, National Diplomas)
- Labour Market Absorption: Access to workplace learning as a percentage of enrolments (as part of qualification)
- Labour Market Absorption: Access to workplace learning as percentage of enrolments (for non-qualification purposes)
- Capacity: Sustainable college-industry partnerships that ensure integrated delivery
- Funding: State funding as percentage of GDP

Indicators for CET

- A model of CET for every district in the country
- Number of CET students enrolled in the NASCA/NSC
- Diversified programmes that respond to township and village economy demand

Additional Indicators for HE

- Throughput: Graduates as percentage of enrolments within the same cohort
- Capacity: Staff to student ratios
- Research: Publications per academic staff
- Research: Highly-cited scientists
- Funding: State funding as a percentage 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, universities 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; South Africa 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.

SECTION 2: WHAT NEEDS TO BE DONE TO ENSURE THAT GOALS AND TARGETS SET ARE ACHIEVED BY 2030? IS COURSE CORRECTION NEEDED? - *continued*

2.7 Additional steps emerging from this review

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

- A policy environment must be 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). There should be a focus on priority sectors for growth, expressed through a strategy with specific frameworks to drive post-schooling education and training for key formal industry sectors. This should be supported by sector-specific TVET strategies that are embedded in industrial strategies and that are supported in terms of funding, lecturer development and focused work with relevant companies.
- Clear strategies for supporting the township/village economy should be determined. 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, train and create 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.
- 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.
- A greater alignment between demand and supply should also be supported through 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 past 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 on to guide the development of an appropriate framework and strategy.
- Distance education, as a solution for participation, is not desirable, especially given poor quality and throughput. Instead new solutions for flexible, blended learning should be designed and tested so as to better optimize access and use of resources. This requires a strategy on how to generate appropriate content that can support young people to 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 Covid-19 pandemic, However, TVET colleges are not very advanced in this regard and particularly lack the necessary online content with which to guide learning. Access to flexible, blended learning will particularly be a

SECTION 2: WHAT NEEDS TO BE DONE TO ENSURE THAT GOALS AND TARGETS SET ARE ACHIEVED BY 2030? IS COURSE CORRECTION NEEDED? - *continued*

challenge for TVET and CET students, given the challenges related to foundational knowledge as well as 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. This will need to be undertaken in ways that ensure inclusivity.

- 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) must be initiated. This tracking must take account of the various qualification requirements and must be guided by clear definitions of employment or self-employment.
- There should be an process of engagement to review and refine indicators and targets based on available resources and capacity as indicated in the recommendations above.
- Finally, 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 of being a potential feeder mechanism into a differentiated PSET system.

2.8 Summary and Conclusion

Section 2 of this paper has drawn on the data provided in Section 1 to identify areas of course correction that should be considered for the NDP. In doing so, it has taken cognisance of the fact that the PSET system is fragmented and that the sub-systems are in different stages of development. While the university sub-system has shown consistent growth and is largely on track to achieve NDP targets, the TVET and CET sub-systems have seen programmes regress or stay the same. Given this context, the focus of the recommended course correction for universities is on a revision of the indicators and targets, along with a set of conditions that are required for these targets to be achieved. For the other sub-systems, the recommended course correction requires a more holistic view of the broad vocational skills development environment to develop an integrated framework for measuring and tracking progress and success. This framework should take account of the demand-side factors in the labour market and how PSET institutions should be positioned, capacitated and funded to respond appropriately to these.

In particular, the report calls for an alignment of PSET to broad industrial and economic development strategies. Given the economic challenges in South Africa, which have been exacerbated by the Covid-19 pandemic, planning around VSD for each sector must be integrated into the development of industrial strategies and PSET institutions should be more deliberately positioned and funded to support sectoral masterplans as part of a broader economic recovery strategy. This response may take particular forms in the township and village economy, where demand for skills may emanate from a plethora of informal micro and small enterprises, and where CET colleges in particular can be positioned to support government objectives for growth and development in these contexts.

SECTION 2: WHAT NEEDS TO BE DONE TO ENSURE THAT GOALS AND TARGETS SET ARE ACHIEVED BY 2030? IS COURSE CORRECTION NEEDED? - *continued*

The emerging trends across the PSET system from the past decade illustrates the dangers of creating expectations for growth without a detailed understanding of the realities on the ground. As a result, the report highlights the importance of planned growth which takes account of the different institutional types and the different types of programmes and qualifications that such institutions provide or should be providing as part of a deliberate alignment to industrial strategy or growth strategies in the township and village economy. This planned growth must be accompanied by a clear set of indicators and targets that can provide an accurate picture of the health of the PSET system as it progresses on this journey. The report identifies a number of adjustments and refinements to the current targets and indicators in the NDP, while also recommending a range of new indicators that will enable government to better track progress and guide interventions more effectively.

However, for planned growth to be effective there is a need for incentives to hold institutions accountable for quality, throughput, labour market outcomes, underpinned by principles of inclusivity. The particular structure and application of incentives requires rigorous engagement and buy-in from key stakeholders and should form the basis for future funding strategies so that the system delivers optimal return on investment. In the spirit of greater integration and effective use of resources, the required funding to support incentives and planned growth requires a rationalization and coordination of the various incentives that support learning across the PSET system (including tax, BBBEE and levy-based incentives).



ANALYSIS OF PSET TRENDS TOWARDS NDP 2030

Final Report to
National Planning Commission

22 August 2020

