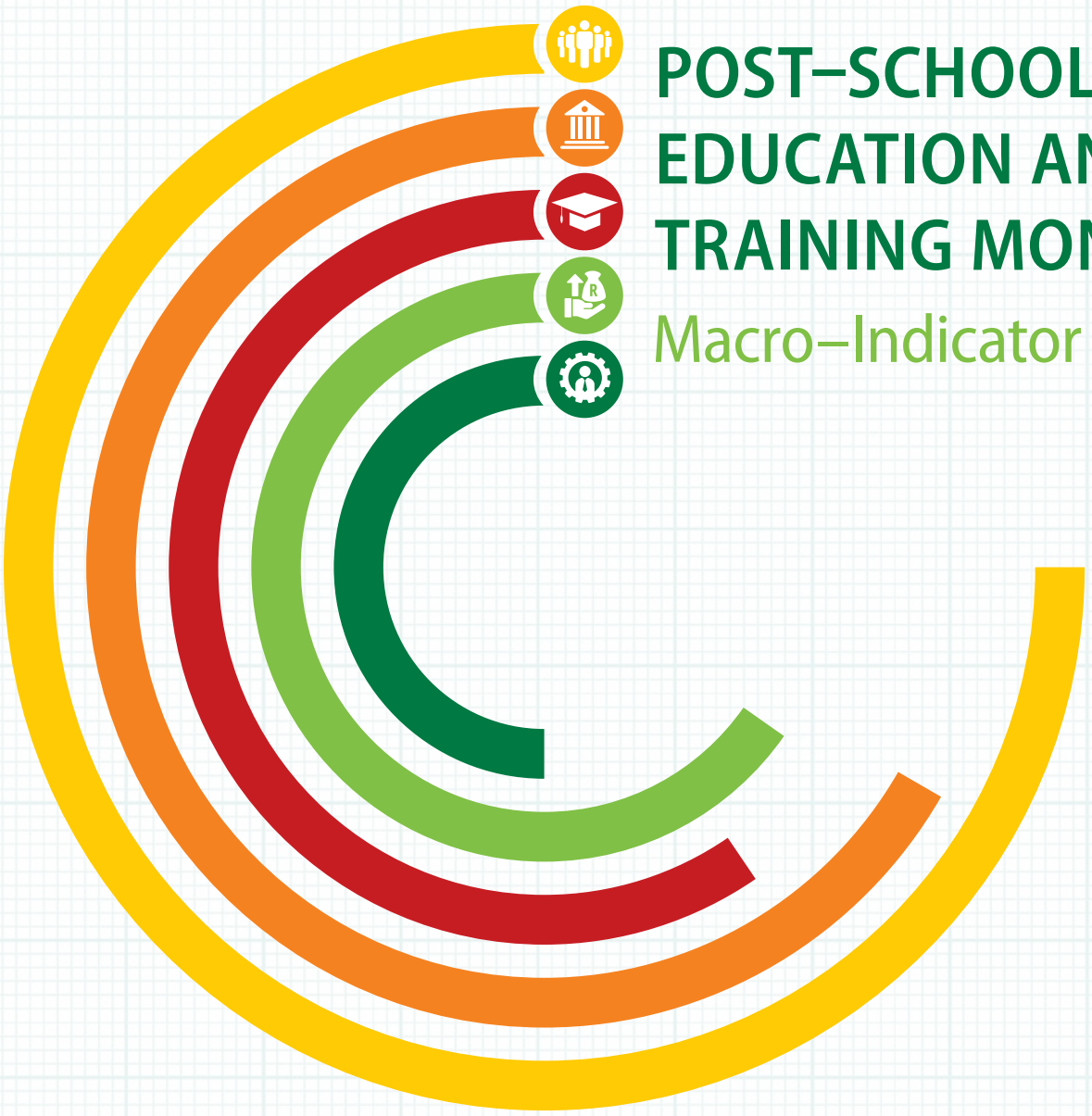
higher education & training

Department:
Higher Education and Training
REPUBLIC OF SOUTH AFRICA



POST–SCHOOL EDUCATION AND TRAINING MONITOR

Macro–Indicator Trends

MARCH 2019

POST–SCHOOL EDUCATION AND TRAINING MONITOR

MACRO–INDICATOR TRENDS

MARCH 2019

higher education & training
Department:
Higher Education and Training
REPUBLIC OF SOUTH AFRICA

higher education & training

Department:
Higher Education and Training
REPUBLIC OF SOUTH AFRICA

Department of Higher Education and Training
123 Francis Baard Street
Pretoria, 0001
Tel: 08000 87 22 22

Published by the Department of Higher Education and Training.
www.dhet.gov.za

Department of Higher Education and Training. 2019. P*ost–School Education and Training Monitor.* Pretoria. Department of Higher Education and Training.

ISBN: 978–1–77018–848–8

This report is available on the Department of Higher Education and Training's website: www.dhet.gov.za

Enquiries:
The Director: System Monitoring and Economic Analysis
Tel: +27 (012) 312 5465/5595
Email: Khuluvhe.m@dhet.gov.za

FOREWORD
By the Director–General

It is my pleasure to present to you the first Post-School Education and Training Monitor Report. The report provides an analysis of the trajectory of the Post-School Education and Training (PSET) system and tracks progress made against the goals as stated in the White Paper for Post-School Education and Training. The data in this report can provide suggestions for improvements in the design and implementation of educational policies, alert policy makers to prevailing problems, and hint at some of the causes of the problems. In addition, this report allows tracking and benchmarking educational progress against comparator countries.

The analysis is informed by a set of indicators that cover various aspects of post–school education and training including access, equity, progression, quality and efficiency. The data presented and the analysis undertaken in this report show, amongst others, that there has been substantial improvements in terms of access to the post-school education and training system. The number of students enrolled in public universities increased by almost 83 000 between 2010 and 2016 at a growth rate of 1.5%. Whilst the most rapid growth occurred among black students at an annual average of 2.8%, the Gross Enrolment Ratio for black students remain low at 16.3 as compared to white students at 55.6. Technical and Vocational Education and Training (TVET) colleges has experienced very rapid growth in the past decade or more.

The increased funding of public universities and TVET colleges, as well as increase in the National Student Financial Aid Scheme that have been announced in the medium term budget will have important consequences for further growth of the PSET system, both in terms of its magnitude and in terms of the growth of different subsectors. Strong demands for such funding in certain areas limit our capacity as government to implement the desired expansion of other parts of the system. This is a particularly pertinent issue in the case of TVET colleges. Despite a doubling of enrolment at TVET colleges between 2010 and 2016, this growth is still far below the targets stipulated in both the White Paper for PSET and the National Development Plan. The intention to increase growth of Community Education and Training colleges, which can be seen as second–chance education and training opportunities, is by its very nature a step toward greater access to the PSET system as a whole.

In terms of equity, the Gender Parity Index experienced in PSET are some of the highest achieved in the world, indicating that women enrol in tertiary education institutions and even Sector Education Training Authorities at a significantly higher rate than men, as is the case in some parts of the world. Despite this female advantage in enrolment and even more in graduation rates, higher female than male unemployment rates are found throughout the labour market, though such gender differences are diminished amongst workers with higher levels of education.

The Department will continue to monitor the performance of the PSET system through the publication of similar reports every two years. It is hoped that this report will stimulate and inform debates and discussions about the PSET system.

The Department will strive to improve the accuracy of this report and be more responsive to stakeholders' needs. Your feedback including suggestions for improvement, can be emailed to Khuluvhe.M@dhet.gov.za.

Mr GF Qonde
Director-General: Higher Education and Training
Pretoria, South Africa

ACKNOWLEDGEMENTS

The production of this report was made possible by the contributions of a number of people who have given their expertise, ideas, recommendations and invaluable time. The Department of Higher Education and Training would like to recognise and acknowledge their contributions.

- The Department wishes to first and foremost thank the authors of the report, the research team from the Department of Economics at the University of Stellenbosch, within the programme of Research on Socio–Economic Policy (RESEP) specifically Prof. Servaas van der Berg, Dr Anja Smith, Dr Chris van Wyk, Prof. Pierre de Villiers, Ms Silke Tothkegel-Van Velden, Mr Charles Adams and Ms Heleen Hofmeyr for their dedication, time, expertise and knowledge in ensuring production of the report.
- The peer reviewer, Mr Russel Wildeman for the recommendations and positive feedback.
- The HETIS officer and the data managers within the Department for providing the data and ensuring that the data presented in the report is accurate.
- Last but not least, all the colleagues from the various Branches in the Department who provided comments to ensure that the report provides a true reflection of the PSET sector.

CONTENTS

LIST OF FIGURES

LIST OF TABLES

LIST OF INFORMATION BOXES

ACRONYMS AND ABBREVIATIONS

APP	Annual Performance Plan
ASGISA	Accelerated and Shared Growth Initiative for South Africa
CET	Community Education and Training
CHE	Council on Higher Education
DHET	Department of Higher Education and Training
EMIS	Education Management Information System
ENE	Estimates of National Expenditure
FET	Further Education and Training
FTE	Full–Time Equivalent
FTEN	First–time entering
GDP	Gross domestic product
GER	Gross Enrolment Ratio
GPI	Gender Parity Index
HDI	Historically Disadvantaged Institution
HE	Higher Education
HEI	Higher Education Institution
HEMIS	Higher Education Management Information System
ISCED	International Standard Classification of Education
JIPSA	Joint Initiative for Priority Skills Acquisition
M&E	Monitoring and Evaluation
MIS	Management Information System
MTEF	Medium Term Expenditure Framework
n/a	Not applicable or not available
NCV	National Certificate (Vocational)
NDP	National Development Plan
NEET	Not in Employment, Education or Training
NGO	Non–governmental organisation
NPC	National Planning Commission
NQF	National Qualifications Framework
NRF	National Research Foundation
NSA	National Skills Authority
NSDS	National Skills Development Strategy
NSF	National Skills Fund
NSFAS	National Student Financial Aid Scheme
NT	National Treasury
OECD	Organisation for Economic Cooperation and Development
PFMA	Public Finance Management Act
PIC	Public Investment Corporation
PSET	Post–school Education and Training
QLFS	Quarterly Labour Force Surveys
RSA	Republic of South Africa
SADC	Southern African Development Community
SAQA	South African Qualifications Authority
SARS	South African Revenue Service
SDGs	Sustainable Development Goals
SET	Science, Engineering and Technology
SETA	Sector Education Training Authority
SSA	Sub–Saharan Africa
SSP	Sector Skills Plan
Stats SA	Statistics South Africa
TVET	Technical and Vocational Education and Training
TVET–MIS	Technical and Vocational Education and Training Management Information System
UIS	UNESCO Institute of Statistics
Umalusi	Council for Quality Assurance in General and Further Education and Training
UNESCO	United Nations Educational, Scientific and Cultural Organization
Unisa	University of South Africa
UoT	University of Technology
WP	White Paper

EXECUTIVE SUMMARY

BACKGROUND

Introduction and overview of the PSET system

This Post–School Education and Training (PSET) Monitor provides an overview of macro–trends in the South African PSET system. It aims to offer an analysis of the trajectory of the PSET system and tracks progress made against the goals of the system as stated in the White Paper on Post–School Education and Training (PSET White Paper) and the 2030 National Development Plan (NDP).

The analysis is informed by a set of indicators that cover various aspects of post–school education and training including access, equity, progression, quality and efficiency. These indicators are inspired by practices adopted by various international institutions such as the United National Educational, Social and Cultural Organisation (UNESCO) and the Organisation for Economic and Cooperation and Development (OECD). Most of the enrolment data utilised in the report are collected by the Department of Higher Education and Training (DHET).

The data in this report can provide suggestions for improvements in the design and implementation of educational policies, alert policy makers to prevailing problems, and hint at some of the causes of the problems. In addition, this report allows tracking and benchmarking educational progress against comparator countries. It also provides a source document for reporting on progress on international commitments, such as the Africa Union's Continental Education Strategy and the United Nations Sustainable Development Goals (SDGs).

The report focuses on the four key subsectors of the PSET system: public and private universities or Higher Education Institutions (HEIs); Technical and Vocational Education and Training (TVET) colleges and private colleges; Community Education and Training (CET) Colleges, and; Sectoral Education and Training Authorities (SETAs).

University education is provided by 26 public universities comprised of 11 traditional universities, six Universities of Technology (UoT) and nine comprehensive universities, and a growing subsector of private universities that offer local or internationally accredited degree programmes.

The TVET colleges provide vocational or occupational education opportunities, aimed at developing skills towards a specific range of jobs, employment or entrepreneurial possibilities (TVET Colleges, 2019). The NDP envisages a critical role for TVET colleges in the development of intermediate, practical and employable skills with the aim of reducing skills shortages and thereby also youth unemployment.

CET is a new type of institution intended to cater mainly for youth and adults who did not complete their schooling or who never attended school. Given the substantial and varied educational needs that cannot be addressed fully by colleges and universities, CET colleges are viewed as best positioned to offer training to youth "Not in Employment, Education or Training" (NEETs) by providing opportunities to improve levels of education and adult literacy as well as skills for self–employment.

The Skills Levy Institutions include the National Skills Fund (NSF), the National Skills Authority (NSA) and 21 Sector Education Training Authorities (SETAs). SETAs facilitate the delivery of sector–specific skills interventions to achieve the goals of the National Skills Development Strategy III (NSDS) and develop the skills needed in the labour market.

In providing an oversight role over the PSET system, DHET needs to carefully document and analyse the output and implementation successes of the PSET institutions in order to fully understand the contribution of different parts of the system, and to measure the extent to which the system has achieved the education goals as stated in the WP. The education goals used in this report are likely to still be relevant after finalisation of the National Plan for PSET. This plan will provide for the implementation of the WP and will serve as a blueprint for building an expanded, effective and integrated post–school system by 2030.

Country context

Developments in PSET post–1994

The PSET system has undergone many changes since the advent of democracy. Regulations and policies have been overhauled, new institutions have been established, old ones have been restructured, and governance and funding arrangements have been revamped.

The primary thrust of early legislative and institutional developments was related to expanding access, dismantling discriminatory institutional arrangements and creating more diverse educational opportunities. Policy also needed to respond to the challenges posed by greater integration of the South African economy with the rest of the globe and the changing structure of the economy.

Key legislative developments included the Higher Education Act (Act no. 101 of 1997) which provided for the establishment of the Council on Higher Education (CHE), and the Skills Development Act (Act no. 97 of 1998) which provided for the establishment of SETAs as well as the NSA. Between 2003 and 2005 the higher education system was rationalised. In the new system, universities were differentiated into traditional universities, universities of technology, and comprehensive universities. Traditional universities offer general formative and professional academic programmes, including undergraduate, Master's and PhD graduate programmes, while universities of technology are more focussed on providing undergraduate career–focussed programmes. Comprehensive universities combine attributes of both these types of universities.

In 2006 the Joint Initiative for Priority Skills Acquisition (JIPSA) was developed to support the policy priorities and objectives set out in the Accelerated and Shared Growth Initiative for South Africa (ASGISA), an economic growth strategy. A major outcome of these initiatives was to foreground artisan training needs. In harmony with this policy development, the Further Education and Training Colleges Act (Act No. 16 of 2006) was passed in 2006.

In 2009 the Department of Education was split into DHET and the Department of Basic Education (DBE). The new DHET also subsumed certain functions that previously resided in the Department of Labour, including implementation of the Skills Development Act and responsibility for oversight of the South African Qualifications Authority (SAQA) and the SETAs. In 2013 DHET published the White Paper for Post–School Education and Training, to set out the priorities of the Department and outline strategies to achieve them. DHET's strategy is also informed by the NDP.

Current context

South Africa has made remarkable strides in expanding enrolment and promoting equitable access to post–school education and training. However, meeting all the goals set out in the WP and the NDP will face headwinds from demographic change; unemployment; the growing number of youth not in employment, education or training (NEETs); and the prospect of slow economic growth.

Low growth has limited the ability of the government to meet rising demands for social services, in particular in PSET. Per capita GDP growth was positive during the period 1999–2008. This provided fiscal support for PSET expansion. Following the 2009 recession, growth has been relatively modest.

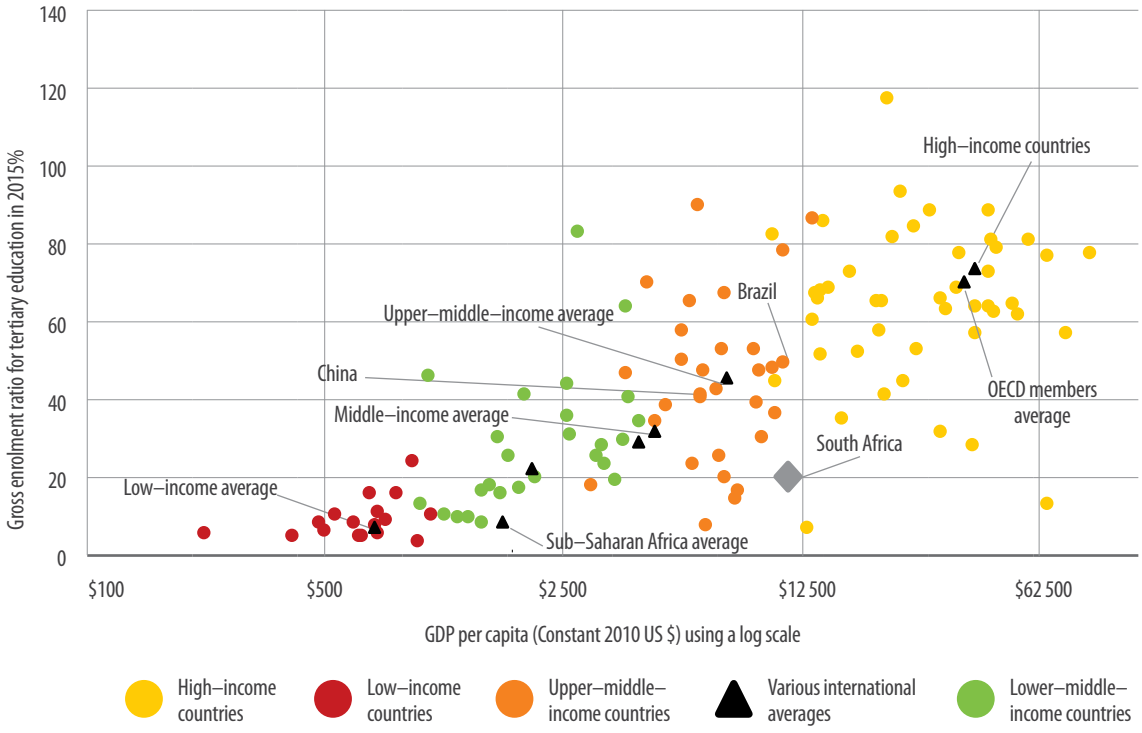
Demographic changes have a direct bearing on the PSET system as student flows determine the resources required to provide educational services. The PSET system will potentially face a significant rise in demand for education and training due to a combination of demographic factors and the growth of the student pipeline.

Many South African youth remain disconnected from the formal economy. In 2017 40% of all unemployed individuals were new entrants into the labour market. The proportion of youth aged 15–24 who are categorised as NEET has remained at about 30% over the period 2012–2017.

Relative international performance

Comparing the PSET sector against higher education outcomes of other upper–middle–income peer countries provides some perspective. The Gross Enrolment Ratio (GER) expresses enrolment (number of unique individuals) relative to a group of the population determined by age (e.g. 20–24 year–olds). It can also be used to consider equity in access to education by gender or race. GERs for various countries are presented in Figure A, with the GER on the vertical axis and the per capita GDP, a measure of the economic development and therefore the fiscal resource level of countries, on the horizontal level, expressed in dollars. A scale that tries to equate purchasing power between countries is used to convert per capita GDP to dollars, shown on a log scale. South Africa had a GER substantially below the average for upper–middle–income countries and lower than a number of comparator countries, including Brazil, China, India and Russia (together with South Africa referred to as the BRICS countries). South Africa's GER was also below that of middle–income countries, but higher than the sub–Saharan African average (8.7%).

Figure A Gross Enrolment Ratios for tertiary education by per capita income (PPP US$), 2014



Sources: World Bank national accounts data, and OECD National Accounts data files as reported to World Development Indicators; UNESCO Institute for Statistics.

Another useful measure of participation in post–school education is tertiary education enrolment per 100 000 population. South Africa also lags far behind its BRICS peers on this measure and, at 1 901, has a lower enrolment per 100 000 than the average of lower–middle–income countries of 2 113, though South Africa's enrolment per 100 000 enrolment significantly exceeds the average of the sub–Saharan African region of 765.

The Gender Parity Index (GPI), the ratio of the female GER to the male GER, stood at 1.4 in South Africa in 2014, indicating that the GER for women is 40% higher than for men. This is relatively high by international standards and higher than the average of 1.2 for high–income countries.

Education levels of the population

The population in the economically active age group of 15–64 that has university degrees has grown at a rate of 76.4% per year from 2008 to 2016, as more young people with higher qualifications entered the labour force age group while older people, who are generally less educated, left this age group. The growth was particularly spectacular amongst Indian and black people, who experienced growth of 9.7% and 10.0% per annum respectively. There are now twice as many black persons with degrees in the economically active age group as white persons. Only 3.2% of the black economically active age group had degrees in 2017, though this is a doubling from 2008. A similarly low proportion of the coloured population has degrees (3.1%), whereas the 14.5% who have degrees amongst the Indian population and 20.1% amongst white individuals reflect the still much higher proportions of these populations that access and graduate from universities.

HIGHER EDUCATION

The higher education subsector comprises 26 public universities and 123 private universities. Although increasing in importance, private universities accounted for only 14.6% of total university headcount enrolment in 2016. Rapidly expanding university enrolment requires increased public investment. Recent major infrastructure investments include the establishment of three universities during 2014 and 2015.

Access

The number of students enrolled in public universities increased by almost 83 000 between 2010 and 2016 at a growth rate of 1.5%, too low to realise the NDP goal of a 1.6 million headcount by 2030. The most rapid growth occurred among black students at an annual average of 2.8%. For both the Indian and white population groups, enrolment declined over the period 2010–2016. Black students accounted for 71.9% of all students enrolled in public universities in 2016, considerably more than the 66.7% in 2010. The GER for all students rose from 16.6 in 2010 to 19.1 in 2016. This was largely the result of strong growth in this ratio amongst black students, from 13.2 to 16.3.

Females made up a larger share of public university enrolment than males and female enrolment grew at 1.7% over the six–year period 2010–2016, considerably higher than male enrolment growth (1.2%). The field of study experiencing the highest growth was education. Foreign students constituted 7% of all students. Most come from SADC countries, with substantial numbers also from other African countries.

There has been rapid enrolment growth in private universities in recent years, at 10.7% per year over the period 2010 to 2016. Black individuals make up the majority of students (67.1% in 2016) in private universities.

Graduation rates

Graduation rates (the number of students who graduate divided by the total number of students enrolled in that year) in public universities stood at 20.8% in 2016, which represents a substantial improvement. Females have a higher graduation rate (21.9%) than males (19.3%), a gap that has widened. Whites maintain the highest graduation rate, although graduation rates improved for all population groups.

Growth in the number of four–year bachelor's degrees was quite rapid at 9.0% on average over the 2009–2016 period, as against 5.7% for three–year degrees. Overall, the number of graduates in under–graduate programmes grew at an annual average rate of 4.6%. Growth in graduation of postgraduate students increased more strongly, at an overall rate of 6.0% – growth of master's degrees was 6.8% per year and of doctoral graduates 10.6%.

Science, engineering and technology (SET) contributed 29.1% of all graduates in 2016. Business and management had the highest growth in graduations. The share of black graduates at all levels and across all fields rose from 60.0% in 2009 to 68.3% in 2016, with strong increases in all major fields of study.

Success rates

The success rate expresses the proportion of the undergraduate credit values that students complete in a particular year as a proportion of those they enrol for in that year. Success rates in universities increased over the 2010–2016 period. The success rate of contact students of 83.0% in 2016 is much higher than that of distance students (67.6%). Racial differences in success rates are narrowing, but remain large: In contact institutions the success rate of white students is 89.7%, whilst it is only 81.3% for black students.

Research output

Research output per permanently employed lecturing or research staff member at universities shows strong growth, especially since 2010. It is now approaching one journal article per academic staff member, a strong improvement and a sign that research productivity in universities is rising.

Equity

In 2016, the GPI was highest among coloureds at 1.6 and lowest among white students at 1.3. There has been very little change in the GPI, but the trend of slowly widening disparity in favour of females is likely to continue.

The female share of total headcount enrolment increased in three of the four study fields, whilst it declined for business and management. Females were in the majority in all major study fields except for SET, where they made up only 46.2% of total enrolment in 2016.

The participation rate for universities increased from 16.6% in 2010 to 19.1% in 2016. To reach the NDP's target of a 27% participation rate in universities by 2030 will require a marked increase in enrolment rates over the next 11 years.

Transformation

The female share of academic staff increased substantially by 2.8 percentage points over the 2010–2016 period to 46.9%, but remains low at senior levels. While white academic staff are still the largest group, their numbers have been declining at 0.8% per year over the period 2010–16, whilst staff numbers for the other race groups have been growing. The strongest growth was among black academic staff, which increased by 2 300 (or 53.7%) over the six–year period, followed by coloured staff. In 2010 black individuals comprised 28.6% of all academic staff and by 2016 this proportion had increased to 36.8%, while the white share declined from 55.9% to 46.1%.

In 2016 staff at lecturer level or below numbered 9 733 or 50.7% of all academic staff. This represents 3.7% growth per annum over the period 2010–2016. Senior lecturers comprised 25.5% of total academic staff and associate professors and professors 22.6%.

Women account for the majority of lecturers, junior lectures, and staff with rank below that of a junior lecturer, but men are still dominant at the rank of senior lecturer (10 percentage point gap), associate professor (20 percentage point gap) and professor (45 percentage point gap).

Quality

In 2010 black individuals made up 19.4% of staff with a PhD, a figure that rose to 27.9% by 2016. The white share declined from 67.4% to 55.1% over the same period. Black individuals make up the majority of academic staff at all qualification levels below PhD.

In 2013, enrolment in SET surpassed that of business and management to become the most popular field of study at universities, with a 30.2% share in 2016. Business and management experienced a decline in headcount. Education had strong average growth of 3.3% per annum, thereby increasing its share by two percentage points, while the headcount in the humanities increased only marginally over the period.

Efficiency

Throughput rates provide one good indicator of university efficiency. These were defined for one specific purpose as "the number of first–time entry undergraduate students of a specific cohort of a specific year who have graduated either within the minimum time, or up to two years beyond the minimum time, to the number of students in the baseline enrolments of that cohort".

Of the cohort that enrolled at contact universities for the first time in 2007, 70% had graduated by the seventh year after initial enrolment. With respect to distance students, only 19% of the 2007 cohort had graduated by the same time. Graduation rates have been improving but remain relatively low.

Not all countries report throughput rates, limiting possibilities for comparison. In Norway, 67% of new entrants into bachelor programmes in 2012 had successfully completed a three–year degree in five years (Statistics Norway, 2018). In Australia, 66% of new entrants into four–year bachelor degree programmes in 2010 had successfully completed the degree after six years of study. This can be compared to South Africa's throughput rate for three–year degrees for the 2012 cohort of only 29.1% in three years and 63.1% in five years.

An alternative way of evaluating university efficiency is by analysing dropout rates. Dropout rates for three–year degree programmes at contact institutions are high, even in the first year, though there has been some improvement: The first–year dropout rate for the 2000 cohort was 19.7%, but declined to 11.8% by 2015. By the fourth year of study, 17.9% of the 2013 cohort had already dropped out. This is nevertheless a considerable improvement on the 23.8% of the 2000 cohort.

Funding

Public universities' real income grew by an average rate of 5.7% per year between 2000 and 2015, but the rate slowed in the last five years of this period. Student fees have become an increasingly important source of income for public universities, whereas the share of university income from government declined from 49% in 2000 to 39% in 2015. However, some student fees are financed through National Student Financial Aid Scheme (NSFAS) bursaries, thus a proportion of student fees originates from government expenditure. Third stream income increased to one–third of total income between 2000 and 2007 before declining to 26% of total income by 2015.

As a share of GDP, public expenditure on universities increased from 0.7% in 2006 to 0.9% in 2016, and as a share of non–interest government expenditure from 2.8% to 3.4%. The share of DHET's total budget allocation going to universities remained largely unchanged (at 60%) over the 10–year period.

TVET COLLEGES

TVET colleges overlap with both the basic education and higher education systems. There are 50 registered TVET colleges which operate on 264 campuses. Given their objective of producing job–linked programmes and graduates that are immediately employable, expanding the TVET sector should aid in counteracting high youth unemployment by improving skills and productivity of youths.

Access

The GER for TVET colleges more than doubled between 2010 and 2016. Total TVET enrolment rose from 358 393 to 705 397. Achieving either the NDP target of 25% GER or the WP target of 2.5 million TVET students by 2030 will require sustained enrolment growth of almost 10% per year over the period 2017–2030.

Success

The number of students writing exit exams for the TVET Report 191 level N3 programmes increased from 41 201 in 2013 to 59 409 in 2016. The certification rate improved from 44.6% in 2013 to 65.8% in 2016. For the Report 191 level N6 programme, the number of candidates writing certification exams increased from 42 841 in 2013 to 91 772 in 2016 while the certification rate increased from 36% to 66%. The number of successful candidates increased four–fold over the period. The certification rates for NC(V) 4 programmes did not match the above rates and increased by only five percentage points from 37% in 2013 to 42% 2016.

Equity

The share of black students in TVET college enrolment rose from 83.9% in 2010 to 92.1% in 2016. The share of white students contracted from 4.9% in 2010 to 1.1% in 2016. However, racial and gender shares are not fully clear, as the race or gender of a large and fluctuating proportion of students in TVET colleges was not reported. Females have been enrolling in TVET colleges at higher rates than males and surpassed male enrolment from 2012 onwards. In 2010 females made up 47.7% of the total number of TVET students and by 2016 this proportion had increased by nine percentage points to 56.8%.

In 2010 the male GER (4.0%) in TVET colleges exceeded that of females (3.5%), but by 2016 this pattern had reversed: though the male GER had increased to 6.9%, that of females increased to 9.1%.

Black participation in TVET colleges (GER) grew from 3.3% in 2010 to 8.8% in 2016. Coloured students exhibit more moderate growth in participation, from an initial GER of 4.0% to 6.0% by 2016. Participation rates among both white and Indian students declined over the entire period.

Quality

TVET colleges had a staff component of 18 235 in 2015. A majority (58%) were lecturing staff, with support staff comprising 40% and management staff 2%. This implies less than two management staff members for each TVET campus. This issue may need attention to enable continued TVET growth.

The ratio of students per member of the lecturing staff rose sharply from just over 40 in 2010 to more than 60 three years later, before stabilising. Some of this is due to economies of scale being reaped after the large expansion of TVET capacity in the previous decade. However, it may also reflect weaker quality of education offered, something that the 2018/19 budget acknowledged by providing additional funding to TVET colleges to improve quality.

Efficiency

It is only possible to do a pseudo–cohort analysis in terms of examinations rates for NC(V) programmes in TVET colleges[1]. The NC(V) levels build on each other and have to be completed consecutively. While 72 033 students wrote exams for NC(V) Level 2 in 2013, 40 404 wrote the NC(V) Level 3 exam in 2014 and only 25 645 wrote the NC(V) Level 4 exam in 2015. In other words, at most 36% of those who wrote NC(V) Level 2 examinations in 2013 wrote the Level 4 examinations two years later. For the cohort starting in 2014, 41% wrote the NC(V) Level 4 two years later, reflecting some improvement over time, though these figures point to considerable dropout. The numbers writing NC(V) Level 3 in 2016 are encouraging when compared with those writing Level 2 the previous year: It appears as if flows are improving. Pseudo–cohort analysis is not possible for Report 191 programmes as first–year students can enter at different levels.

1 It is a pseudo–cohort and not true cohort analysis because individual–level data were not used in the analysis. A true cohort analysis would find lower progression rates, as some of the students at higher levels are repeating those levels.

Funding

As highlighted in the Heher report (2017), the TVET sector has come under severe financial strain. Over the period 2015/16 to 2019/20, TVET allocations are expected to grow at an average rate of 0.8% per year from R6.6 billion to R6.8 billion. This is in sharp contrast to the rapid growth experienced between 2006/7 and 2015/16, which saw allocations increase from R3.6 billion to R6.6 billion.

There was a large decrease in TVET expenditure per full-time equivalent (FTE) student from R73 400 in 2008/9 to around R24 000 in 2010/11, largely driven by the rapid increase in enrolment over this period. Some economies of scale allowed colleges to expand enrolment after initial large spending on infrastructure. Expenditure per FTE student continued to decrease thereafter and is projected to reach R14 900 by fiscal year 2018/19.

Expenditure on TVET colleges as a share of GDP increased from 0.10% in 2006 to 0.15% in 2016, or from 0.50% to 0.61% as a share of total government expenditure. The proportion of DHET's budget going to TVET colleges rose from 10.7% in 2006 to 12.3% in 2010 before dropping to 10.9% in 2016.

COMMUNITY EDUCATION AND TRAINING COLLEGES

The NDP noted that the adult education sector at the time was 'underdeveloped', suffering from low participation, having limited curricula, and with few entrants attaining the General Education Certificate. The PSET WP similarly noted the insufficient and poor quality offering in this subsector.

Although enrolment in the CET subsector has generally been lower than enrolment numbers at universities or TVET colleges, the potential demand for this service is high. UNESCO estimates that in 2015 there were 2.2 million illiterate youth and adult South Africans (older than 15 years) (UNESCO, 2018).

Access and equity

In 2016 there were 273 431 persons enrolled in CET colleges, lower than the 2010 enrolment of 297 491 in adult basic education. 45% of these were enrolled in ABET level 3 (equivalent to NQF level 1 or Grade 9) programmes and 31% were enrolled in Grade 12. These learners were accommodated in 2 795 public adult learning centres staffed by a total of 14 259 educators (DHET, 2016). The WP envisaged enrolment of one million in CET colleges by 2030.

GER in the CET subsector is measured as the ratio of the headcount enrolment over the population aged 15 to 35 years, since CET colleges primarily target an older demographic. Over the 2010–2016 period, there has been a slight decline in GER from 1.5% to 1.3%. Females have consistently outnumbered males in CET colleges and maintained a proportional enrolment of 70% or higher throughout the 2010 to 2016 period. This reflects the pattern exhibited in other subsectors of the PSET system considered above and indicates a relatively low participation by males in higher education generally.

Success, quality and efficiency

The General Education and Training Certificate: Adult Basic Education and Training Level 4 (GETC: ABET) qualification is the lowest qualification level within the CET subsector that has a registered NQF rating (NQF level 1, which is equivalent to Grade 9). It is also the qualification level which has thus far attracted the highest enrolment within the CET system, accounting for 45% of total enrolment in 2016 (DHET, 2018). The repositioning of the CET college sector will probably lead to this qualification becoming less significant though there is still a clear need for it, as the discussion of literacy in the main report indicates. The almost 80 000 individuals who wrote this qualification in 2016, though below the peak of more than 100 000 in 2014, is further illustration of the need for such second–chance education.

Completion rates in CET are measured as the number of students who passed the exit assessment, relative to the number of students who wrote the assessment. The GETC: ABET completion rates were below 50% for the period 2010–2016. The completion rate peaked in 2012 at 41.8% and by 2016 had dropped to 35.9%. Completion rates are generally higher among females than males.

Quality

One of the simplest aggregate measures of quality in the CET subsector is the ratio of students to lecturers. This ratio fluctuated between 17 and 21 over the seven year period 2010–2016. There is large variation across colleges for this indicator. Colleges with a higher urban population, such as those in Gauteng and the Western Cape, have relatively high student/lecturer ratios compared to colleges with a lower urban population.

Funding and staffing

There has been a slow and steady increase in the amounts allocated to the CET sector since 2015, from R1.8 billion in 2015/16 to R2.4 billion in 2018/19.

PRIVATE COLLEGES

Private colleges form an important subsector within the PSET system. As there is no central repository with information on private colleges, information on these colleges is limited. This section presents an overview based on available information. In 2018, DHET reported that 307 private colleges had registered with the department, implying that there are more private colleges than there are TVET campuses, although this subsector absorbed only one fifth the number of students enrolled in TVET colleges in 2016. The GER in private colleges increased from 0.5 to 1.9 between 2010 and 2016.

Success

The private college certification rate for the Report 191 N3 programme was 47.6% in 2016, constituting an increase of 16 percentage points over the 2013 rate of 31.7%. There was a moderate increase in the number of students writing exit exams for N3 programmes in private colleges over the three years with 24 587 sitting for N3 exams in 2013 and 31 988 sitting for exams in 2016. Improvements in N6 certification rates were sharper and more consistent. In 2013 the private college certification rate was 36% and in 2016 the rate increased to 57%. The number of students writing N6 exams increased from 9 211 in 2013 to 15 155 in 2016.

In contrast to the trend in Report 191 programmes, pass rates for NC(V) level 4 programmes declined from 43.0% in 2013 to 31.4% in 2016. Relative to Report 191 programmes, very few students (579 in 2016) wrote exams for NC(V) level 4 programmes in private colleges over the period. The divergence in pass rates between NC(V) and Report 191 programmes mirrors that of the TVET colleges. However, across all programmes, TVET colleges reflect higher certification rates than private colleges. There is a particularly large gap (18 percentage points) in certification rates for N3 programmes between the public and private college subsectors.

Equity and transformation

Lecturing staff in private colleges are predominantly male. In 2010 males made up 53% of total lecturing staff and in 2016 this proportion increased to 58%.

The gender distribution of students in private colleges is more balanced than is the case in TVET colleges. In 2016 females constituted 51% of total students enrolled in private colleges, seven percentage points lower than the proportion of 58% in 2010.

Considering all race groups, the GER in private colleges is low, ranging from 0.07% to 0.23% in 2016. The overwhelming majority of college–attending black and coloured individuals are in TVET colleges (as opposed to private colleges). In contrast, it appears that among those white and Indian individuals choosing a vocational higher education, there is a preference to enrol in private colleges.

The proportion of private college students who are foreign increased from 1.8% in 2013 to 2.4% in 2016.

SKILLS LEVY INSTITUTIONS

The main focus of government's skills development initiatives has been SETAs. Until recently, there were 23 SETAs delivering skills development services and training to 23 sectors. This was recently reduced to 21 SETAs.

Access

The total number of individuals registered for SETA–supported learning programmes (learnerships, internships and skills programmes) was 249 680 in 2016. Growth in registered individuals occurred at an average rate of 13.6% since 2010, with internships achieving the highest average annual growth rate of 33.8% per year from 2010 to a total of 17 216 in 2016.

Since 2011, the number of women registered for SETA–supported learning programmes has constantly exceeded the number of men, although the female share declined from a high of 61.4% in 2013 to 53.3% in 2016. The learning programme with the highest share of women in 2016 was internships, with a 57.5% female share.

In 2016, 30 817 individuals registered for artisanal programmes offered by SETAs, a number that has grown at an average annual growth rate of 4.8% since 2010.

Success

The number of individuals certificated, i.e. who successfully completed any of the three SETA–supported learning programmes, grew by 8.2% per year since 2010 to a total of 180 998 in 2016, of which 98 775 (54.6%) were female.

Funding

Total disbursement of the Skills Development Levy was R15.2 billion in 2015/16. Of the R15.2 billion, 80% was transferred to SETAs and the remainder to the NSF. There was a clear compositional shift in the 2013/14 fiscal year following the implementation of the new SETA regulations, away from mandatory grants to discretionary grants.

Equity

Equity in access is not the goal in the skills levy institutions. It is the very existence of these institutions which represents a big step toward equity. The introduction of the National Skills Levy was aimed at improving the training and productivity of workers, many of them unemployed or lowly skilled. Furthermore, the very large role that the labour unions play in the SETAs and their deep involvement in setting up training programmes are aimed at increasing equity in the labour market. To this extent, the steady growth of training in the period under consideration can be seen as a measure of the expansion of equity though training.

Efficiency

An evaluation of the National Skills Development Strategy (NSDS III) recommended that throughput rates (cohort analysis) be adopted as a measure of efficiency (National Skills Authority, 2018). Such data are currently not collected at the individual level. However, a unique cohort analysis on learnerships for those entering these programmes between 2011 and 2014 found that only 33.8% of learners completed these programmes within three years (National Skills Authority, 2018). There are thus signs of very low efficiency in this subsector. A concern was also expressed that there is inadequate attention paid to unit costs of training:

> *"Nowhere in the skills system is there a focus on unit costs. Nor is there any consistency in terms of the amount of a stipend or allowance for the various programme types. There is no analysis done within SETAs or by DHET to establish the relative cost of a single learner in different programmes and sectors." (National Skills Authority, 2018: 97).*

CONCLUSIONS

The PSET system is continuing to grow, yet there are concerns about the efficiency of parts of the system and the quality of its output. Where growth after 1994 was initially strongly focused on the university sector, TVET has experienced rapid growth in the past decade, but concerns have grown about quality and efficiency.

In terms of equity, much has been achieved, as can be seen in shifts in racial and gender composition of enrolment and outputs of universities, TVET colleges and private colleges. The intended growth of CET colleges, which can be seen as second–chance education and training opportunities, is also a step toward greater equity of the PSET system. Similarly the National Skills Fund institutions cater for unemployed and lower skilled workers, and thereby contribute to equity. But for these institutions, too, concerns have been raised about efficiency of spending, often signalled by high unit costs of providing training.

The GPIs in South Africa's PSET system are some of the highest in the world, indicating good access and throughput for females. Considering that South Africa's enrolment in tertiary education and PSET is low compared to the country's peers, the even lower enrolment rates of males should be a cause for concern. Despite the female advantage in enrolment and graduation, higher female than male unemployment rates are found in the labour market, though such gender differences are smaller amongst workers with higher levels of education.

Enrolment growth has been more rapid in private than in public universities and colleges. It is unclear whether this trend will continue (in the light of the new student funding regime introduced in 2018).

Growth in some high–level university outputs – advanced degrees and journal articles – is indicative of important system dynamics. This is occurring despite the fact that universities have had to deal with the further challenge of a major shift in the demographic profile of university students, enrolling more students from poorer backgrounds than in the past.

Lowering the cost of PSET education and training is important in a situation of enrolment rates that are still too low and fiscal constraints that prevent even more rapid rises. Reducing the average costs of PSET can take place mainly through two mechanisms: Relative growth of cheaper programmes, such as CET colleges rather than TVET, or TVET compared to universities, and a relative shift from contact to distance education. Currently CET colleges are still in their infancy and do not yet offer a viable option for training large numbers of people. In terms of distance education, the relatively rapid enrolment growth compared to the growth of contact universities does lower cost per student, but very low throughput rates in distance universities are a major cause for concern.

The increased funding of universities and TVET institutions and student grants announced in the medium term budget will have important consequences for the further growth and composition of the PSET system. Strong demands for such funding in certain areas limit the capacity of the state to also implement the desired expansion of other parts of the system. The recent World Bank report on the new funding proposals has again highlighted the fiscal constraints that operate. The report even concluded that this scheme would not be fiscally sustainable and may reduce budgetary resources that are critically needed to improve the quality of education, particularly in TVET colleges (World Bank, 2019).

The production of this report required use of many data sources. Data on universities are particularly good, but planning and measurement of progress in some PSET subsectors are being held back by inadequate or inappropriate data. The development of TVET–MIS is in this regard an important step forward. However, much more needs to be done to ensure that CET colleges, private colleges and SETAs also produce accurate data that cover the main areas needed for planning.

01 BACKGROUND

1.1 Purpose of report

The Post–School Education and Training (PSET) Monitor is intended to provide an overview of macro–trends in the South African PSET system. It aims to offer policy–makers, researchers and stakeholders an analysis of the trajectory of the PSET system by compiling in one place as many relevant indicators as is reasonable. It also serves as a summary of the past by tracking South Africa's progress over time in relation to the goals of post–school education and training, as stated in the WP on Post–School Education and Training.

The PSET or post–school system comprises "all education and training provision for those who have completed school, those who did not complete their schooling, and those who never attended school" (DHET, 2013b: xi). This report thus covers the four key subsectors: public and private universities (also Higher Education Institutions (HEIs)); Technical and Vocational Education and Training (TVET) colleges and private colleges; Community Education and Training (CET) colleges; and Sectoral Education and Training Authorities (SETAs). When referring to the education provided by the collective of PSET institutions this report uses the term post–school education provision.

Some of the discussions and debates around educational development in South Africa that occasionally surface in the press and in the academic and Non–Government Organisation (NGO) community are motivated by the publication of indicators by international bodies. The publication of such indicators provokes internal and international debate. For this reason, many of the indicators used have been adopted from international developments, in particular those related to the Sustainable Development Goals (SDGs) and indicators pertaining to the African Union's Continental Education Strategy. Where possible, indicators used by UNESCO's Institute of Statistics (UIS) and the Organisation for Economic Cooperation and Development (OECD) have also been developed for South Africa. The report also takes into account the requirements of the National Development Plan (NDP) and the PSET WP in the selection of certain indicators.

By compiling this data in one place, the report can provide suggestions for improvements in the design and implementation of educational policies, alert policy makers to prevailing problems, and hint at some of the causes of the problems. In addition, this indicator report allows the tracking and benchmarking of educational progress against that of international comparator countries. It also provides a source document for reporting on progress on international commitments, such as the African Union's Continental Education Strategy and the United Nations SDGs.

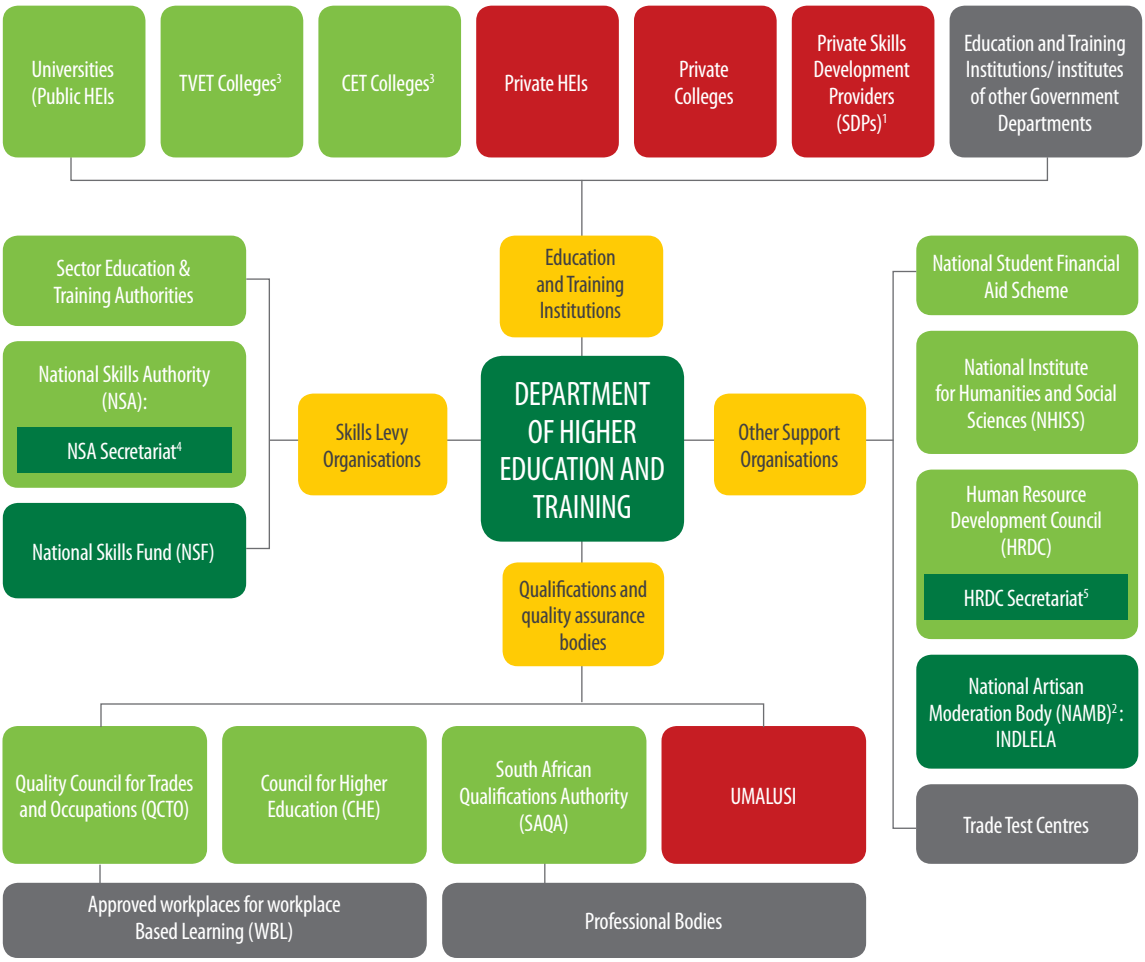
1.2 Overview of the PSET system

It is the vision of the Department of Higher Education and Training (DHET) to lead post–school education and training for growth and to provide national strategic leadership in support of an integrated PSET system, for an improved quality of life for the South Africa citizenry.

Figure 1 sets out the current structure of the PSET system. The PSET system comprises a range of institutional categories and, within each of these categories, different institutions. Funding flows within the system differ depending on the type of institutional category. For example, while education and training institutions are funded directly from taxes, skills levy organisations are primarily funded by private sector contributions (via the National Skills Fund) with only some funds channelled through DHET.

The focus of this report, however, falls on the four key subsectors of PSET: private and public universities[2]; TVET colleges (also private colleges); CET colleges (formerly Adult Basic Education and Training or ABET); and the National Skills Fund/Skills Levy Institutions, with SETAs forming the bulk of this subsector.

Figure 1 The post–school education and training (PSET) system



Legend:

- Organisations that are located IN the DHET
- Organisations that are located OUTSIDE of the DHET, and which receive funds from the DHET sourced from the Fiscus and Skills Levy.
- Organisations that are located OUTSIDE of DHET, which DO NOT receive funds from the DHET, but for which, DHET has certain legislative functions.
- Organisations that do not receive funds from DHET, nor does DHET have legislative functions in relation to these organisations. However DHET entities may have certain legislative responsibilities in relation to these organisations (for example, QCs quality assure formal programs offered by other government departments; SAQA registers Professional Bodies and QCTO accredits workplaces for WBL

Notes:

1. The Skills Development Act makes provision for SDPs.
2. NAMB is envisaged to be part of QCTO in the future.
3. 3DHET manages the personnel budget for TVET and CET Colleges (since their staff are DHET employees); however, Universities employ their own staff, and therefore manage their own personnel and other budgets.
4. The NSA Secretariat is located inside the Department and services the NSA.
5. The HRDC Secretariat is located in DHET and provides services to the HRDC.

Source: Department of Higher Education and Training (DHET), 2015.

2 Historically the term "Higher Education Institutions" or HEIs was used to refer to both universities and technikons. Since 2004, when technikons were incorporated into universities, however, the terms universities and Higher Education Institutions have become synonymous for public institutions. It is more common in ordinary speech and writing to refer to these institutions as universities.

Public higher education is currently provided by the 26 public universities comprised of 11 traditional universities, six Universities of Technology (UoT) and nine comprehensive universities. The difference between these three categories of universities lies in their programme offerings. Traditional universities offer general formative and professional academic programmes, including undergraduate, Master's and PhD graduate programmes, while UoT are more focussed on providing undergraduate career–focussed programmes. Comprehensive universities combine attributes of both these types of universities. Since 2009, three new universities, namely Sol Plaatje University in the Northern Cape Province, the University of Mpumalanga in Mpumalanga and the Sefako Makgatho Health Sciences University in Gauteng were established and they have begun to function as fully fledged universities. There is now at least one university in every province. The country's ninth medical school opened at the University of Limpopo in 2016.

In addition to public universities, there is also a growing subsector of private universities. Many of these private institutions position themselves as universities and offer local or internationally accredited degree programmes.

The TVET colleges, previously referred to as Further Education and Training (FET) colleges, provide education opportunities that are vocational or occupational by nature, implying that students receive the education and training necessary to develop skills towards a specific range of jobs, employment or entrepreneurial possibilities (TVET Colleges, 2019). The skills taught often have direct application in the workplace. According to the NDP, TVET colleges have a critical role to play in the development of intermediate, practical and employable skills with the aim of reducing skills shortages and thereby also youth unemployment. There are currently 50 TVET colleges, with over 260 campuses. There are also a number of private colleges which offer post–secondary training that may or may not be comparable to courses offered at TVET colleges.

CET colleges is a new type of institution which is intended to cater mainly for youth and adults who did not complete their schooling or who never attended school and thus do not qualify to study at colleges and universities. These institutions were created through changing the focus of the former ABET colleges, which were largely focused on literacy and numeracy skills for adults. Given the substantial and varied educational needs of the millions of unemployed members of society that cannot be addressed fully by colleges and universities, the WP asserts that the education and training system should not only provide knowledge and skills required by the economy, but should also contribute to developing thinking citizens who can function effectively, creatively and ethically as part of a democratic society, have an understanding of their society, and be able to participate fully in its political, social and cultural life. CET colleges are viewed as best positioned to offer training to youth Not in Employment, Education or Training (NEETs) by providing opportunities to improve levels of education and adult literacy as well as skills for self–employment.

The Skills Levy Institutions include the National Skills Fund, the National Skills Authority and 21 SETAs. In terms of the PSET system, SETAs are expected to facilitate the delivery of sector–specific skills interventions that help achieve the goals of the National Skills Development Strategy III (NSDS) and develop the skills needed in the labour market by employers.

In providing an oversight role over the PSET system, DHET needs to carefully document and analyse the output and implementation successes of the PSET institutions in order to fully understand the contribution of different parts of the system, and to measure the extent to which the system has achieved the education goals as stated in the WP. Although these education goals are not explicit in the WP, the education goals used in this report, namely access, equity, progression, quality and efficiency, are likely to still be relevant after finalisation of the National Plan for PSET. This plan will provide for the implementation of the WP and will serve as a blueprint for building an expanded, effective and integrated post–school system by 2030.

1.3 Key policy and legislation shifts since 1994

Since 1994, the PSET system has undergone many changes. Regulations and policies have been overhauled, new institutions have been established, old ones have been restructured, and governance and funding arrangements have been revamped.

The education system prior to 1994 was fragmented and characterised by unequal provision of services along racial lines. Post–school education and training opportunities for black students[3] in particular were limited. Post–apartheid education policy immediately aimed to reverse existing patterns and promote equitable access to education. The 1995 WP on Education and Training called for efforts to create multiple entry points into education in an attempt to broaden opportunities for all individuals, including those who previously may not have had an opportunity to access education.

In 1996 the National Qualifications Framework (NQF) was established, providing a framework for establishing quality comparisons as well as differentiation across the PSET subsectors. The NQF aimed to promote both mobility within the PSET system as well as progression through the system. Recognising government's "commitment to fiscal discipline" in the 1990s, the Department of Education in its 1997 WP acknowledged that expansion of higher education will have to be accompanied by efficiency enhancements and also higher levels of private contributions (Department of Education, 1997).

The Higher Education Act (No. 101 of 1997) provided for the establishment of a new institution: the Council on Higher Education (CHE), which was tasked inter alia with promoting quality assurance in higher education and accrediting higher education programmes. The CHE established its permanent Higher Education and Quality Committee in 2001. The CHE has since played an influential role in shaping higher education developments in its capacity as an advisory institution.

The quality assurance function in the TVET and private college sector and in CET is fulfilled by Umalusi, the Council for Quality Assurance in General and Further Education and Training. In 2001, Umalusi was established through its founding act, the General and Further Education and Training Quality Assurance Act (Act 58 of 2001), and thereby given responsibility for quality assurance of the NQF bands 1–4 (Umalusi, 2014). When the National Qualifications Framework Act (Act 67 of 2008) was promulgated in 2008, Umalusi was constituted as the Quality Council for General and Further Education and Training and now collaborates with the South African Qualifications Authority (SAQA) and other quality councils. In 1998, workplace–based training gained support through promulgation of the Skills Development Act (Act No. 97 of 1998). The Act enables recognition of workplace learning by providing for training programmes that are integrated into the NQF framework through the establishment of SETAs that establish appropriate learning programmes and allocate funding for the provision of these programmes. In addition, the Act provided for the creation of the skills levy to fund workplace training programmes. The Act established the National Skills Authority (NSA), which advises the Minister of Higher Education and Training on national skills development policy and a national skills development strategy.

The primary thrust of legislative and institutional developments was related to expanding access, dismantling discriminatory institutional arrangements and creating more diverse educational opportunities to respond to the backlog of skills development among black youth and adults. Policy also needed to respond to the challenges posed by greater integration of the South African economy with the rest of the globe and the changing structure of the economy which favoured skilled labour. The period 1994–2000 was an intensive period of policy and legislation development. Adoption and implementation of new policies then ensued at the turn of the millennium. Furthermore, a greater emphasis on system efficiency and integration came into focus.

3 Given South Africa's history, measuring progress in many fields requires some use of racial categories. This report will distinguish between black, white, coloured and Indian individuals.

Between 2003 and 2005 the higher education system, comprising public and private universities and technikons, was rationalised through various mergers, reducing the number of institutions from 36 to 23 over this period. In the new system that emerged, public institutions were differentiated into three types: Traditional universities, universities of technology, and comprehensive universities. As mentioned, traditional universities offer general formative and professional academic programmes, universities of technology focus more on undergraduate career–focussed programmes, and comprehensive universities offer combinations of both.

In 2006 the Joint Initiative for Priority Skills Acquisition (JIPSA) was developed to support the policy priorities and objectives set out in the Accelerated and Shared Growth Initiative for South Africa (ASGISA), an economic growth strategy. A major outcome of the ASGISA and JIPSA initiatives was the foregrounding of artisan training needs and implementation of strategies and frameworks for the promotion, expansion and regulation of artisan training. In harmony with this policy development, the Further Education and Training Colleges Act (Act No. 16 of 2006) was passed in 2006.

In 2009 the single Department of Education was split into DHET and the Department of Basic Education. The new DHET also subsumed certain functions that previously resided in the Department of Labour, including implementation of the Skills Development Act. This includes responsibility for oversight of SAQA and the SETAs. DHET became responsible for all functions pertaining to higher education, further education and training, as well as adult education and training. Functions relating to the governance and management of TVET and CET colleges that previously resided at provincial level were also absorbed into DHET.

Following its establishment, DHET published the third National Skills Development Strategy in 2011. The stated goals of the strategy were to improve effectiveness and efficiency in skills development with a particular focus on promoting career development and sustainable employment. The strategy proposed increased access to occupationally–directed programmes to ensure a continuous upgrading of skills in the workforce, and promoting growth of the public FET college system that is responsive to sector, local, regional and national skills needs and priorities. It further proposed a greater emphasis on improving the low level of literacy and numeracy skills among youth and adults and encouraged support for training initiatives by cooperatives, small enterprises, NGOs and the community.

In 2013 DHET published the WP for Post–School Education and Training. The purpose of the WP was to set out the priorities of the Department and outline strategies to achieve them. The WP elevated TVET colleges as its highest priority, aiming to expand enrolment to 2.5 million by 2030. It proposed improvements to the quality of TVET programmes, infrastructure enhancements, and greater alignment between programmes and skills demanded in local labour markets. The White Paper also proposed the establishment of CET colleges to replace the existing public adult learning centres. CET colleges were to expand on the offerings of the public adult learning centres and provide both formal and informal qualifications to a mass of citizens with low levels of education and limited prospects in the labour market. The priority for universities was to articulate clear differentiation across university types as well as between the university subsector and other PSET institutions with the goal of improving quality within universities.

The strategy of DHET is also informed by the NDP. The NDP, published in 2012, identified the improvement of quality of teaching and the expansion in the number of TVET colleges as a direct way to alleviate the poverty burden in South Africa. It also identified the need for a dramatic expansion of university enrolment (an increase of 70 percent from the base in 2010).

1.4 Country context within which PSET operates

As is detailed in the sections that follow, South Africa has made remarkable strides in expanding enrolment and promoting equitable access to post–school education. These successes came off a low base and were gained, in some part, during a period of historically high economic growth and a favourable fiscal environment. Future progress towards meeting the goals and objectives set in the WP and the NDP will face rougher terrain. Owing to superior private returns to post–school education in the South African labour market, the demand for this type of education is poised to increase significantly over the next decade. This trend will be exacerbated by population growth dynamics, which indicate a rise in the youth segment of the population during the next decade. The rate at which expansion in access to post–school education provision has occurred to date will need to increase to account for these factors.

Beyond ensuring placement at a post–school education institution for youth coming through the basic education system, a growing number of youth who are NEET must be accommodated within the PSET system. This requires further diversification of training opportunities offered in PSET. Moreover, the importance of matching training opportunities to skills demanded in the labour market is intensifying due to technological changes that promote mechanisation of low–skilled and, increasingly, skilled jobs. The phenomenon of unemployed – or under–employed – graduates is a more recent challenge for which countervailing strategies are needed.

Subdued economic growth over the medium term presents a further challenge to realising the goals of PSET. Slower growth will put further strain on an already constrained fiscal position, and preclude significant expenditure increases in PSET without substantive reprioritisation in public sector budget allocations. In the midst of these challenges, students in 2016 launched a countrywide protest for free higher education, which precipitated the announcement from the government promising free higher education for aspirant students from households below an annual income threshold of R350 000.

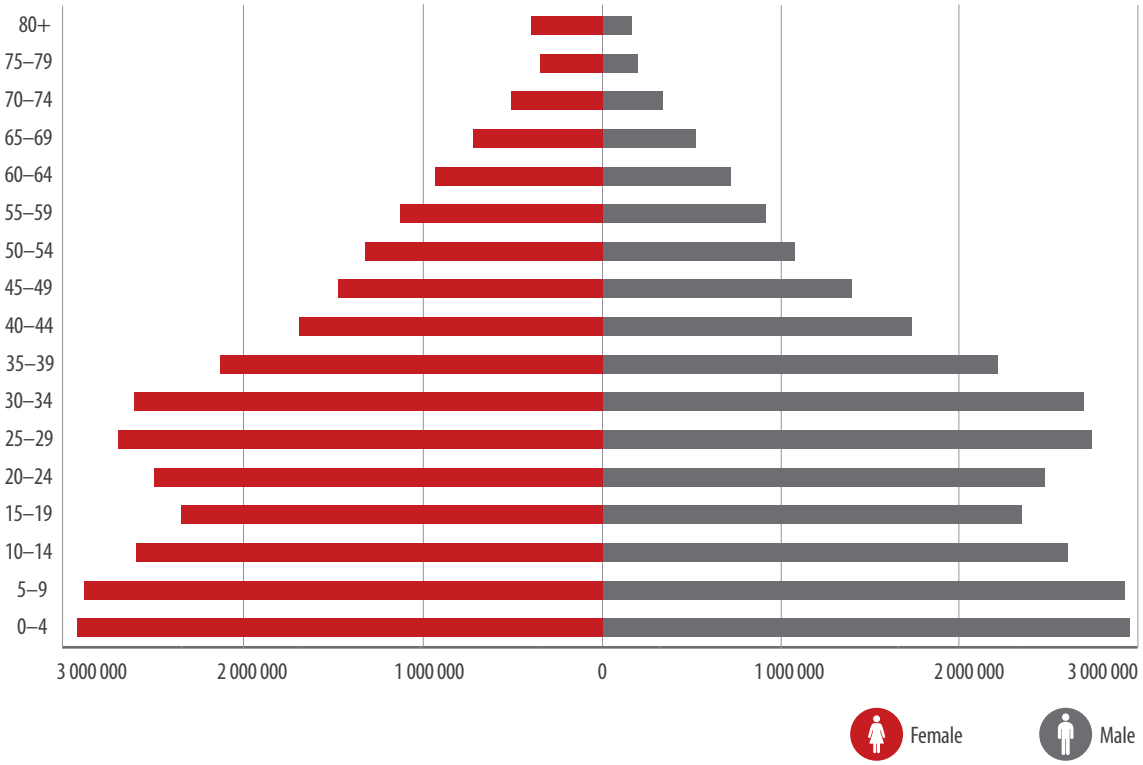
This section will highlight some key elements of these four challenges (demography, unemployment, NEETs, economic growth and expectations) and will present a few indicators on outcomes in the PSET sector in comparison to peer countries.

Demography

Demographic changes have a direct bearing on the PSET system as student flows ultimately determine the resources required to provide educational services. South Africa's population is presently growing at a higher rate than was the case 15 years ago (Statistics South Africa, 2018). The 2018 mid–year population estimates show that South Africa's population grew by 1.55% over the 2017/18 period as compared to 1.04% in 2002. This implies that larger successive cohorts can be expected to enter the PSET system over the next decade as the number of individuals in the age category 15–24 will start to increase.

Figure 2 shows the 2018 population pyramid for South Africa. The size of the 15–19 and 20–24 age categories are smaller than the two older categories (25–29 and 30–34), implying that the number of individuals in the 15–24 age group has been declining. However, this trend is set to reverse over the next 15 years with age categories 0–4 and 5–9 having the largest number of individuals of any category in 2018.

Figure 2 Population pyramid for South Africa, 2018



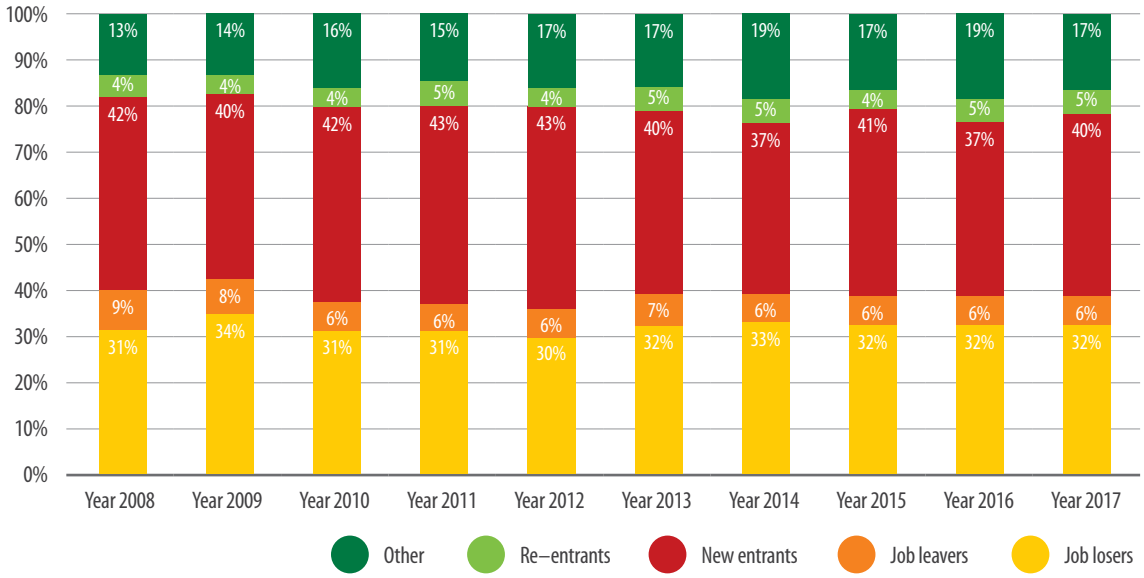
Source: Statistics South Africa, Mid–year population estimates 2018.

The current pool of youth aged 15–24, from which a majority of participants in the PSET sector are drawn, stems from cohorts born in 1994–2003. Although there was a substantial increase in the number of registered births between 1994 and 1998, the number of registered births declined during the period 1998–2003 (Gustafsson, 2018). This period of decline in registered births suggests that the population of youth aged 15–24 today is lower than it had been for any of the previous eight years. As documented by Gustafsson (2018) the number of registered births started growing significantly in 2004 and, between 2004 and 2014, maintained a higher level than was the case for any year prior to 2004. The PSET system will thus potentially face a significant rise in demand for education and training as the cohorts born in the period 2004 to 2008 start to exit the basic education system.

Unemployment

For many of South Africa's youth, education holds the promise of a better future through success in the labour market. Too many South Africans, youth in particular, remain disconnected from the country's formal economy, unable to find employment. Figure 3 shows that 40% of unemployed individuals are new entrants into the labour market. This figure has remained fairly stable since 2008 when 42% of the unemployed were new entrants.

Figure 3 Composition of unemployed, 2008–2017



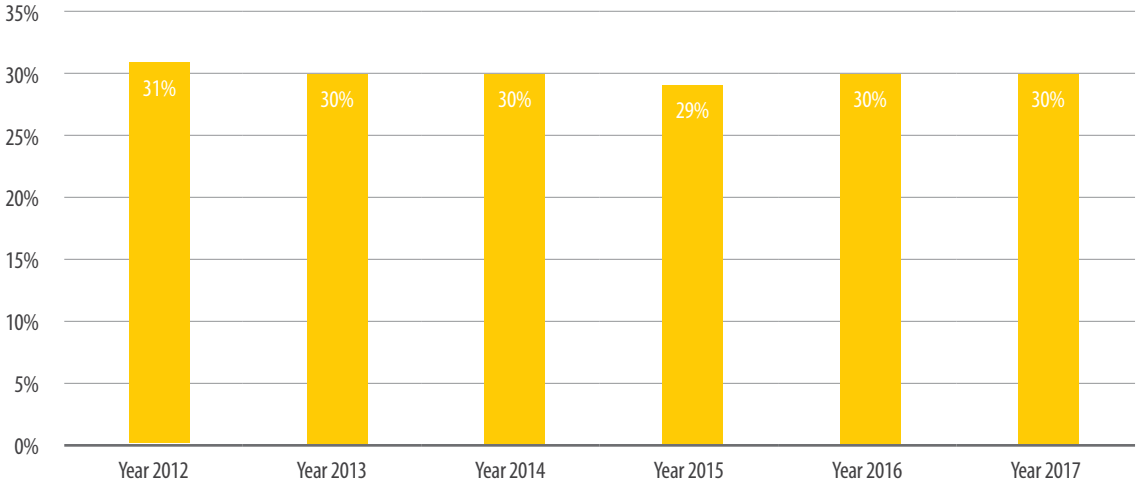
Source: Statistics South Africa, Quarterly Labour Force Surveys (2008–2017).

While many of the new entrants who are unemployed are above 25 years in age, a majority fall in the age category 15–24. The burden of unemployment falls disproportionately on the youth who are often disengaged from any formal public, private or civic institutions.

The NEET problem

NEETs are of particular concern as it is these youth who are vulnerable to the various social pathologies that characterise many of South Africa's neighbourhoods and manifest in comparatively high levels of crime at the national level. Figure 4 shows that the proportion of youth aged 15–24 categorised as NEET declined slightly, from 31% to 30%, over the period 2012–2017.

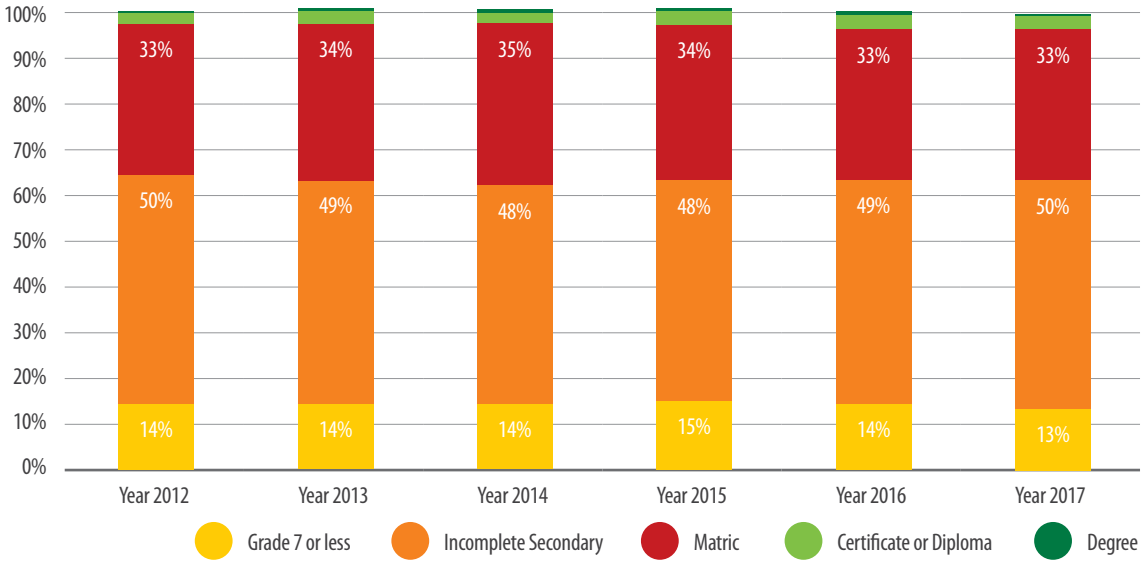
Figure 4 Proportion of youth aged 15–24 not in education, employment or training, 2012–2017



Source: Statistics South Africa, Quarterly Labour Force Surveys (2012–2017).

Figure 5 shows that there has been little change in the composition of NEETs by education level. Most of them have education levels below matric, though the proportion of matriculants in this group is quite high, at 33%. Youth who have attained a post–matric qualification[4] generally make up a very small proportion of NEETs, having comprised 3.1% of the total in 2017.

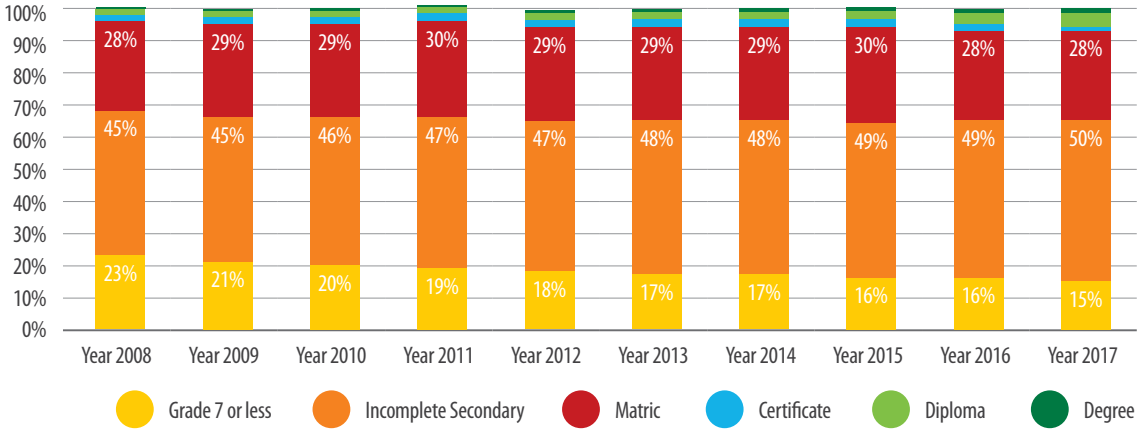
Figure 5 Youth aged 15–24 not in education, employment or training by education category, 2012 –2017



Source: Statistics South Africa, Quarterly Labour Force Surveys (2012–2017).

The slight rise in the proportion of NEETs with a post–matric qualification draws attention to the rise in the number of unemployed graduates. Figure 6 gives a breakdown of the unemployed population by education level. Graduates as a share of the total unemployed increased from 0.6% in 2008 to 1.4% in 2017, and all those with post–school education (certificates, diplomas or degrees) from 4.5% to 6.9%. In absolute terms, unemployed individuals with degrees increased from 35 789 in 2008 to 135 498 in 2017 and those with certificates or diplomas from 181 454 to 472 968. The share of matriculants among the unemployed remained roughly constant.

Figure 6 Unemployed by education level, 2008–2017



Source: Statistics South Africa, Quarterly Labour Force Surveys (2008–2017).

4 These are individuals who have attained, at minimum, an NTC 4 qualification.

Literacy

The UIS defines the adult literacy rate as the percentage of the population age 15 and over "who can both read and write with understanding a short simple statement on his/her everyday life. Generally, 'literacy' also encompasses 'numeracy', the ability to make simple arithmetic calculations" (UNESCO, 2018). Literacy is best measured using the census as the percentage of the adult population who can read, fill in forms and do simple calculations without difficulty. Table 1 shows the percentage by age group that are fully literate by this definition, as well as those who are completely illiterate in terms of meeting one of these three criteria, and the somewhat literate, who meet only some of the criteria. Illiteracy or limited literacy is more common amongst the older population. Although reported complete illiteracy is quite small (around 2.7% of the adult population), the fact that almost another tenth of the adult population is only partly literate indicates how severe this issue still is. Furthermore, the actual literacy situation is probably worse than people self–report, and South Africa's performance in the PIRLS international literacy tests indicates that many children nearing the end of primary school cannot read for meaning even in their home language.

Table 1 Adult literacy by age group, 2011

	Illiterate	Somewhat literate	Fully literate	Total
15 to 19	0.39%	4.5%	95.1%	100%
20 to 24	0.5%	2.6%	96.8%	100%
25 to 29	0.6%	3.6%	95.7%	100%
30 to 34	0.9%	4.6%	94.4%	100%
35 to 39	1.3%	6.8%	91.8%	100%
40 to 44	2.1%	9.9%	87.9%	100%
45 to 49	3.2%	14.5%	82.2%	100%
50 to 54	4.5%	18.3%	77.0%	100%
55 to 59	6.2%	22.3%	71.4%	100%
60 to 64	8.1%	25.3%	66.4%	100%
65 and above	14.7%	28.5%	56.7%	100%
Total adult population	2.7%	9.5%	87.6%	100%

Source: Calculated from 10% sample of Census 2011. Note: Adult population defines as those aged 15 and above, following UNESCO. "Fully literate" are those who indicated they could read, fill in forms and calculate change when buying something without any difficulty, while the illiterate are here defined as those not able to undertake any of these three tasks.

In the 2011 census respondents were asked various questions to determine their ability to read, write and do simple arithmetic. Three of the questions related to their ability to read newspapers, magazines or religious material, to fill in forms, or to calculate the change when buying something. As can be seen in Table 2, for the adult population, filling in forms was the aspect of literacy with which most difficulty was experienced, with only 87.9% of the adult population (ages 15 or above) indicating they could do this without difficulty, and a full 5.4%, or almost 1.8 million people, admitting that they could not do this at all. This is a reflection of the continuing need for adult education, especially considering that people tend to present too optimistic a picture when asked such questions.

Table 2 Percentage of the adult population (individuals aged 15 and older) able to read, fill in simple forms, or calculate change when buying things, 2011

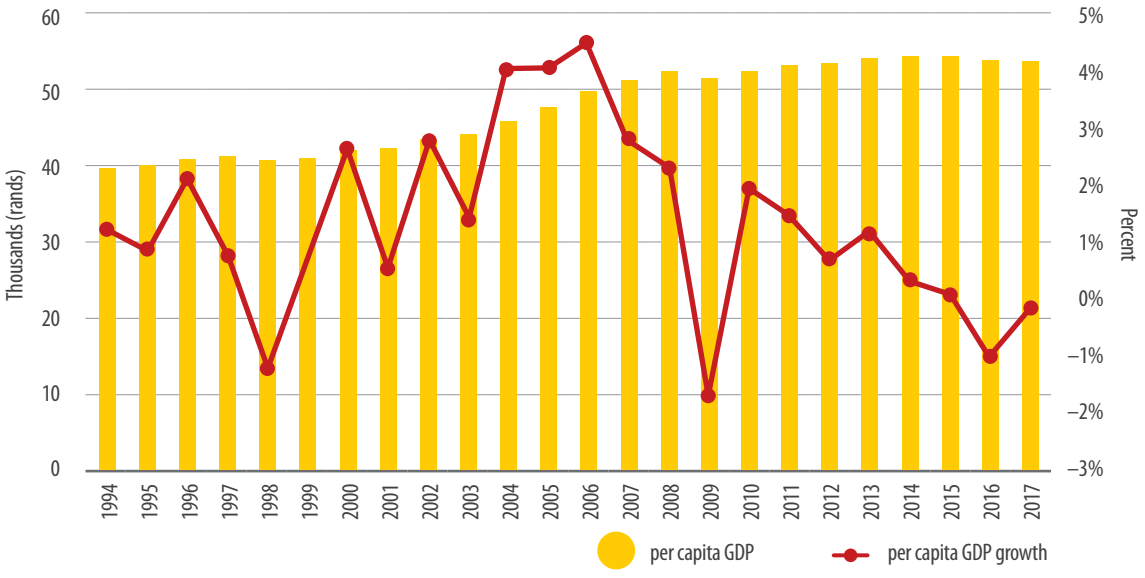
	Can read newspaper or magazine		Can fill in simple forms		Can calculate change when buying something	
	Number	%	Number	%	Number	%
Not at all	1 180 094	3.6%	1 773 057	5.4%	1 148 523	3.5%
With great difficulty	555 930	1.7%	864 775	2.6%	551 023	1.7%
With some difficulty	993 090	3.0%	1 353 054	4.1%	997 750	3.0%
Without difficulty	30 479 356	91.8%	29 080 594	87.9%	30 491 163	91.9%
Total	33 208 470	100%	33 071 480	100%	33 188 459	100%

Source: Calculated from 10% sample of Census 2011.

GDP per capita, economic growth and fiscal resource constraints

A higher national income implies higher tax collections. The resources available for PSET expenditure are thus constrained by the level of economic activity within the country. South Africa's per capita GDP growth was positive during the period 1999–2008 and particularly robust between 2004 and 2008, averaging above 2% during those four years (Figure 7). Following the 2009 recession, two years of moderate growth resulted in recovery to pre–recession levels of per capita GDP by 2011. The period 2015–2017 saw a slight decline in per capita GDP each year, resulting in a 2017 estimate of R56 016 per capita GDP. Over the nine–year period 2008–2017 per capita GDP grew by only 3.1%, at an annual average rate below 1%. This naturally limits the resources available to government for PSET expenditure.

Figure 7 Real per capita GDP and per capita GDP growth, 1994–2017



Source: South African Reserve Bank Online Statistical Query

Low growth has limited the ability of the government to meet rising demands for social service delivery, in particular in PSET. Moreover, the needs for greater education and training are large. It is therefore important to note that TVET and especially CET offer ways of providing skills that could both improve employability and productivity of students, and also do so at lower costs per student than public universities.

President's announcement on grants for university and TVET students

The domestic context within which PSET locates itself is characterised by an impending rise in the demand for PSET services by a growing inflow of secondary school graduates; an increased need for diverse training opportunities across the demographic structure to promote a skills–appropriate labour force and ameliorate unemployment; realignment of education and training programmes with the needs of the economy and society more broadly; and a stagnant economy with low growth prospects over the medium term and rising unemployment. Added to this context are the raised expectations among South Africans about the delivery of PSET services – informed by demands from the *Fees Must Fall* campaign for free higher education and the subsequent announcement by the government, in December 2017, that government would provide free education in public universities and TVET colleges for students from low–income households. The government also announced a commitment to increase subsidies to public universities to 1% of GDP over the next five years as well as the promise of infrastructure and quality improvements in the TVET subsector through the provision of additional funding and more staff appointments (News24, 2017).

A World Bank report on the viability of the new funding proposals concluded that the new grant system would not be fiscally sustainable, given the very high cost of the subsidy and the large proportion of university and TVET students who would be eligible for these grants (World Bank, 2019). They concluded that the financial aid scheme will reduce the availability of the budgetary resources critically needed to improve the quality of education, particularly in TVET colleges. As a consequence, the study argued that the projected fiscal outcome of the expansion of the financial aid scheme "casts doubts on South Africa's capacity to meet its WP enrolment targets" (World Bank, 2019: 41).

Relative international performance

The domestic context is better appreciated when considering some commonly used international indicators of the higher education sector against higher education outcomes of other upper–middle–income peer countries. Presenting recent outcomes in the context of the goals set out in the NDP and DHET's WP facilitates evaluation of the sector's comparative performance and makes it possible to track progress towards defined goals and objectives.

In 2016 2.29 million students participated in PSET of some kind (DHET, 2018b). Considering that tertiary education is defined as that part of PSET that requires secondary school completion and excluding other post–school training[5], the number of enrolled students in 2016 was 1.1 million. Expressing this number as a percentage of the age–group targeted at this level (people ages 20 to 24 years) provides a useful measure for comparison with other countries. This measure is termed the gross enrolment ratio (GER), also known as the participation rate, and in 2016 stood at 43.1% for South Africa[6] (also see Box A).

5 UNESCO (2018) describes tertiary education as follows: "Tertiary education builds on secondary education, providing learning activities in specialised fields of education. It aims at learning at a high level of complexity and specialisation. Tertiary education includes what is commonly understood as academic education but also includes advanced vocational or professional education."

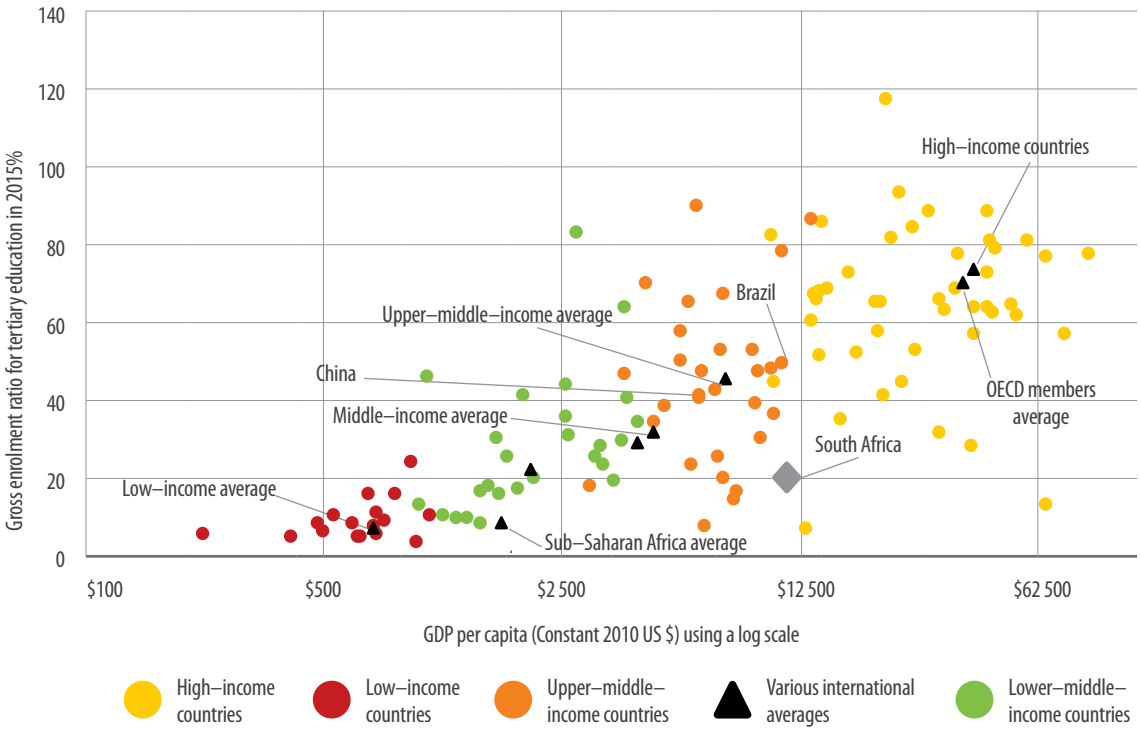
6 Note, however, that the international data reported for South Africa is drastically smaller as international definitions use a more restricted version of the PSET sector, namely the tertiary sector.

BOX A: THE GROSS ENROLMENT RATIO (GER)

The Gross Enrolment Ratio (GER) is a critical indicator in understanding access to post–school education opportunities. It can also be used to consider equity in access to education for a specific group, e.g. by gender or race. It is calculated by expressing total headcount enrolment relative to a group of the population determined by age (e.g. 20–24 year–olds). The figure is actually a percentage, but is commonly also simply expressed as a number, which should then be interpreted as if it were a percentage, e.g. 15.2% or simply 15.2. Throughout this report, the GER is presented for the PSET sector as a whole as well as the four subsectors (HEIs, TVET and private colleges, CET and skills levy institutions).

The GERs for various countries are presented in Figure 8, with the GER on the vertical axis and the per capita GDP, a measure of the economic development and therefore the fiscal resource level of countries, on the horizontal axis, expressed in dollars. A scale that tries to equate purchasing power between countries is used to convert per capita GDP to dollars[7]. South Africa had a GER substantially below the average for upper–middle–income countries and lower than a number of comparator countries, including Brazil, China, India and Russia. South Africa's GER is also below that of middle–income countries, but higher than the sub–Saharan African average (8.7%). The Gross Enrolment Ratio rose from 16.6% in 2010 to 19.1% in 2016, mainly because of strong growth in this ratio for black students, from 13.2 to 16.3.

Figure 8 Gross Enrolment Ratios for tertiary education by per capita income (PPP US$), 2014



Sources: World Bank national accounts data, and OECD National Accounts data files as reported to World Development Indicators; UNESCO Institute for Statistics.

7 Note that this axis is shown on a log scale, where equal distances represent equal proportional increases rather than equal increases.

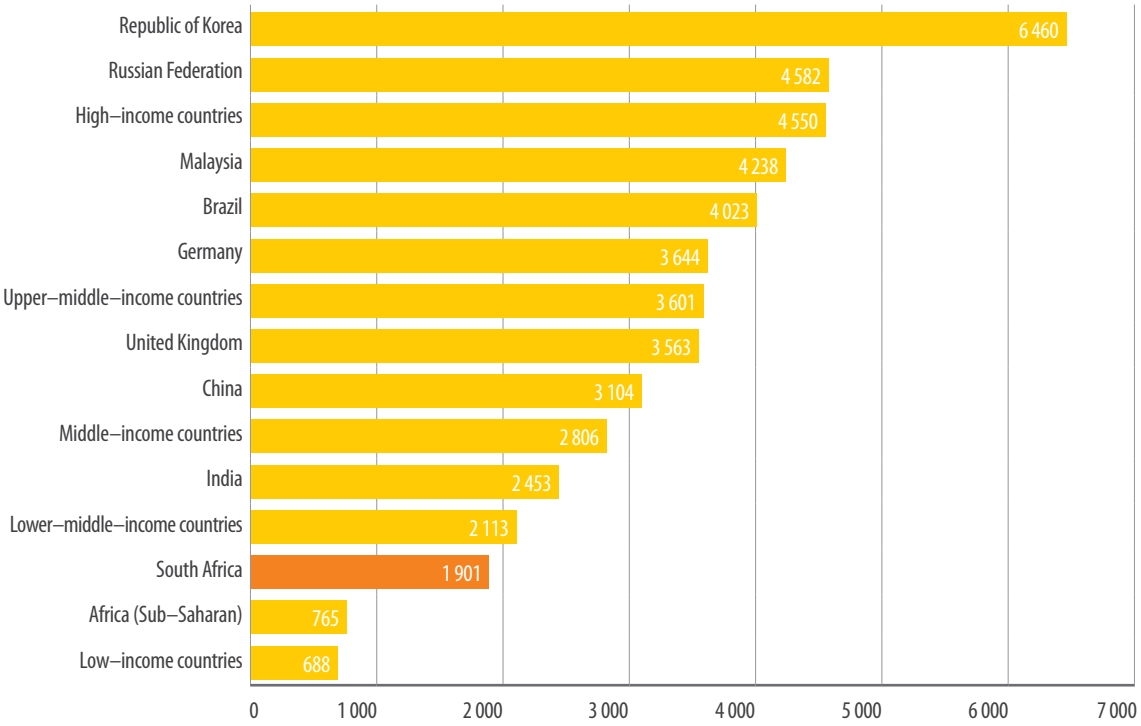
Another useful measure of participation in post–school education is tertiary education enrolment per 100 000 population (also see Box B with the formal definition of tertiary education below). Figure 9 shows that South Africa also lags behind its BRICS peers on this measure and, at 1 901, has a lower enrolment per 100 000 than the average of lower–middle–income countries, though South Africa's enrolment per 100 000 significantly exceeds the average of the sub–Saharan Africa region.

BOX B: DEFINITION OF TERTIARY EDUCATION (ISCED LEVELS 5 TO 8)

Tertiary education builds on secondary education, providing learning activities in specialised fields of education. It aims at learning at a high level of complexity and specialisation. Tertiary education includes what is commonly understood as academic education but also includes advanced vocational or professional education.

Source: ISCED, 2011

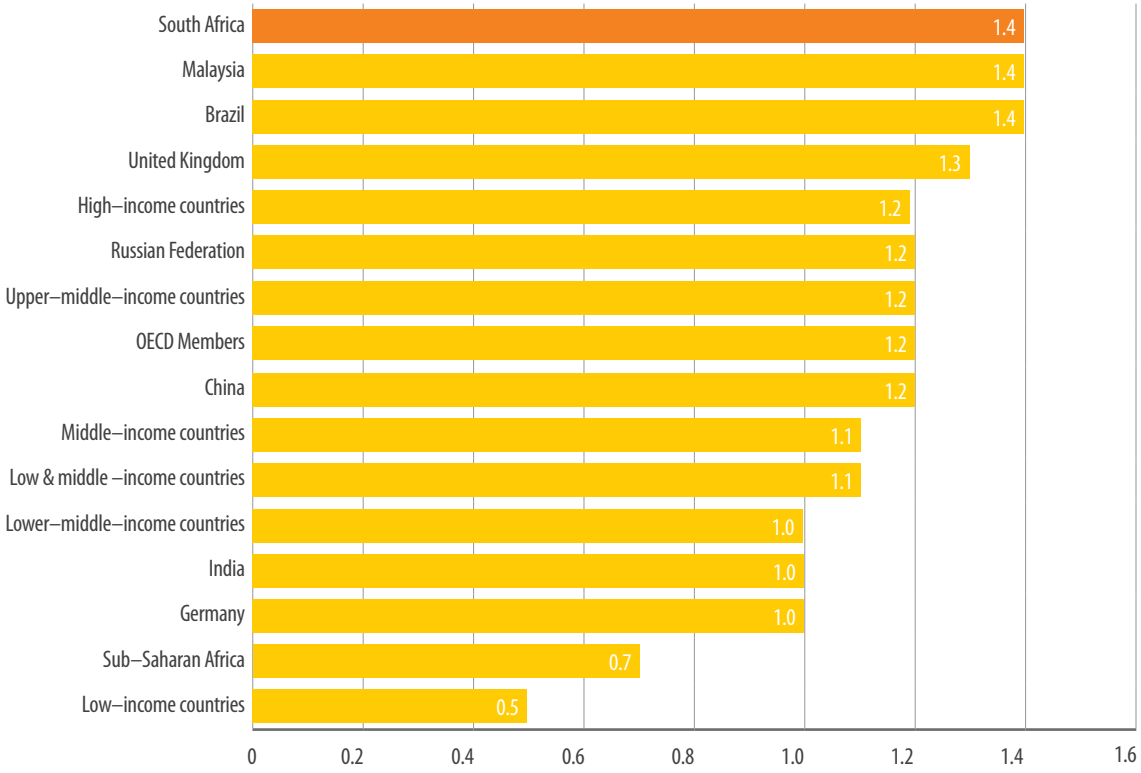
Figure 9 Enrolment in tertiary education per 100 000 of the population, 2015



Sources: World Bank national accounts data, and OECD National Accounts data files as reported to World Development Indicators; UNESCO Institute for Statistics.

The Gender Parity Index (GPI), the ratio of the female GER to the male GER, stood at 1.4 in South Africa in 2014, indicating that the GER for women is 40% higher than for men. This is relatively high by international standards and higher than the average for high–income countries (at 1.2). This indicates that females enrol in tertiary education institutions at a significantly higher rate than males.

Figure 10 **Gender parity index (GPI) for gross tertiary enrolment, 2014**

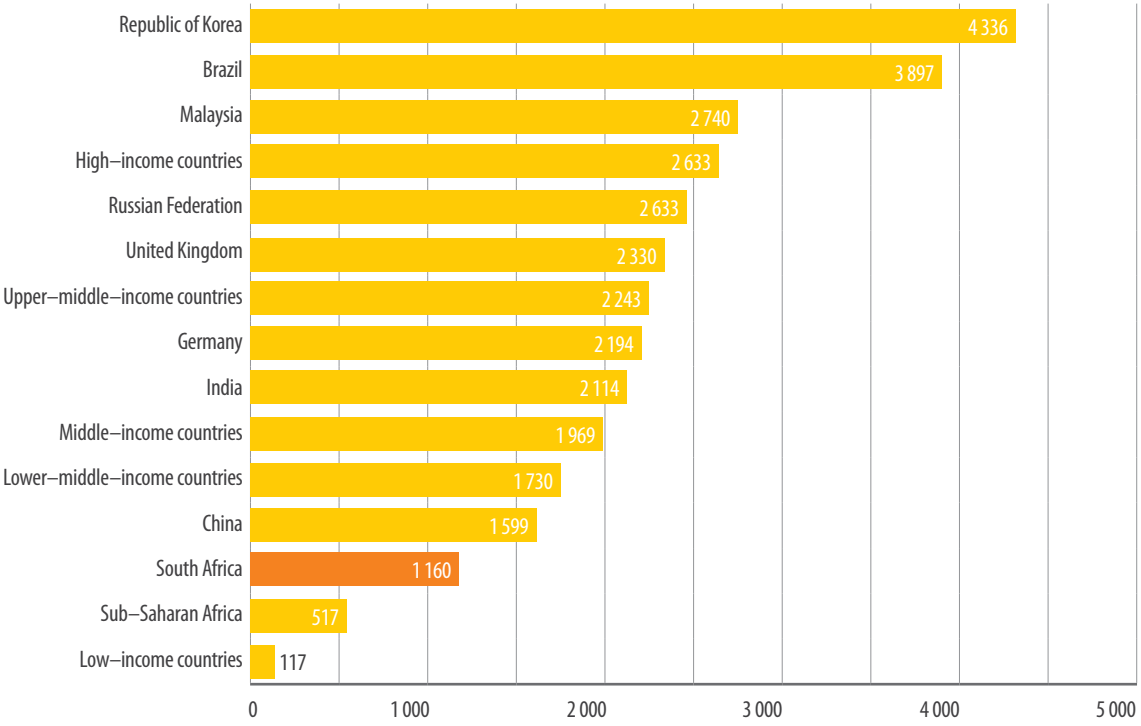


Source: World Bank national accounts data, and OECD National Accounts data files as reported to World Development Indicators; UNESCO Institute for Statistics

A more nuanced picture of international performance in higher education can be obtained by considering South Africa's performance in enrolment in International Standard Classification of Education (ISCED) 6 programmes (equivalent to 3–and 4–year degrees and postgraduate qualifications below master's degree programmes)[8] per 100 000 of the population relative to that of peer countries (Figure 11). This measure therefore provides an indication of the relative share of the population engaged in undergraduate university studies. Although South Africa performs better than low–income countries and the average for sub–Saharan Africa on this measure, it performs worse than the upper–middle–income country average (where South Africa is classified based on its economic status) but even worse than the much poorer lower–middle–income country average. Furthermore, at 1 160 per 100 000 population, South Africa's undergraduate enrolment is only 30% of Brazil's figure of 3 897.

8 See Appendix A for an explanation of the ISCED definitions.

Figure 11 **Enrolment in ISCED 6 programmes, total per 100 000 of the population, 2015**



Source: World Bank national accounts data, and OECD National Accounts data files as reported to World Development Indicators; . UNESCO Institute for Statistics

1.5 Education levels of the population

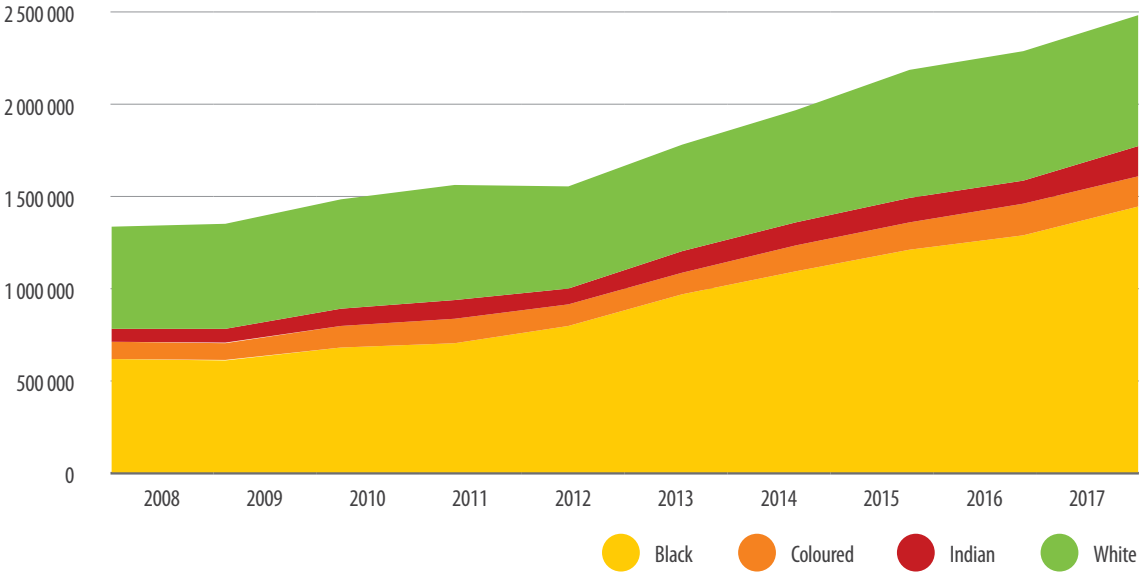
Information based on the Quarterly Labour Force Surveys (QLFS) shows that the size of the population in the economically active age group of 15–64 that has degrees has grown at a rate of 6.4% per year from 2008 to 2016. This resulted from demographic change as more young people with higher qualifications entered the labour force age group while older people, who are generally less educated, reached the normal retirement age and thus left this age group. The growth was particularly spectacular amongst Indian and black people, who experienced growth of 9.7% p.a. and 10.0% p.a. respectively (Table 3). The coloured population with degrees also experienced rapid growth. Figure 12 illustrates the extent of this growth for the different race groups and also that white economically active persons with a degree are now less than a third of the total.

Table 3 Number of individuals with degrees by race in the economically active population (age group 15–64), 2008–2017

Year	Total	Black	Coloured	Indian	White	Male	Female
2008	921 629	371 030	51 790	54 074	444 735	492 365	429 264
2009	943 317	384 289	56 817	57 681	444 530	497 587	445 730
2010	993 560	384 736	65 573	76 311	466 940	551 040	442 520
2011	1 098 739	429 865	78 255	84 617	506 002	593 952	504 787
2012	1 032 019	463 258	75 954	71 537	421 270	546 116	485 903
2013	1 167 337	565 439	68 436	93 885	439 577	607 559	559 778
2014	1 273 018	640 518	74 066	94 695	463 739	671 107	601 911
2015	1 413 373	676 199	85 756	107 031	544 387	715 377	697 996
2016	1 471 568	753 154	90 044	91 908	536 462	724 256	747 312
2017	1 614 711	874 973	97 572	124 595	517 571	779 029	835 682
Growth rate p.a.	6.4%	10.0%	7.3%	9.7%	1.7%	5.2%	7.7%

Source: Own calculations from Quarterly Labour Force Surveys 2008 to 2017

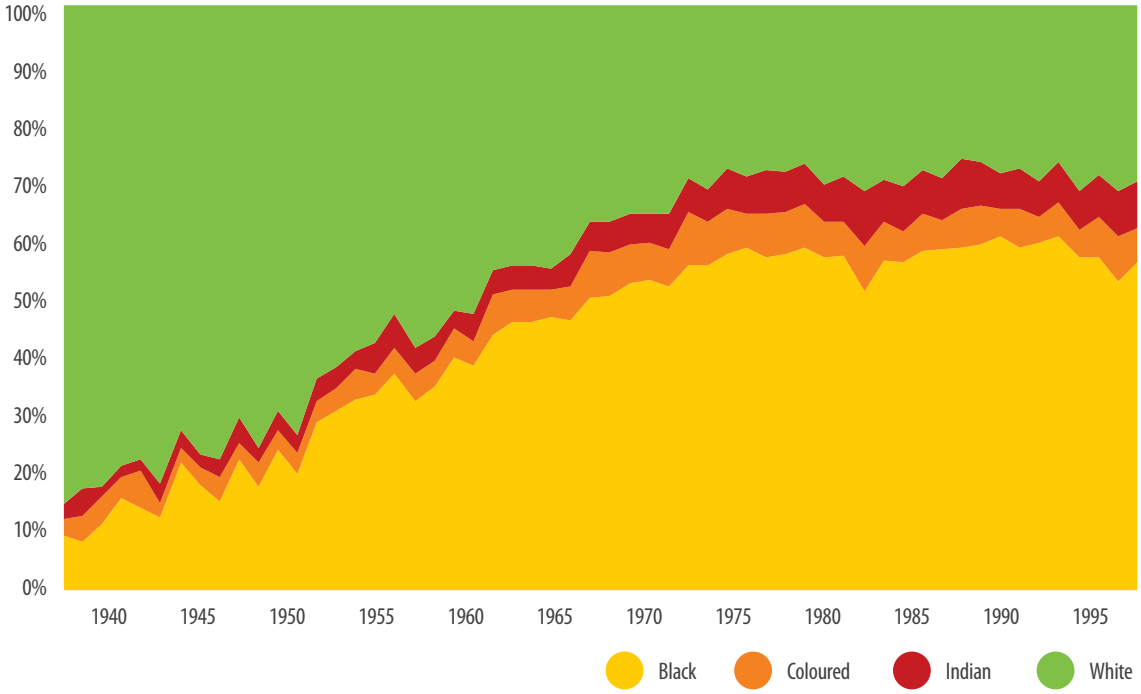
Figure 12 Number of individuals with degrees by race in the economically active population (age group 15–64), 2008–2017



Source: Own calculations from Quarterly Labour Force Surveys 2008 to 2017

Data from the large Community Survey 2016 undertaken by Statistics South Africa can be used to investigate patterns of degree holding for persons born in different years. Figure 13 shows this for persons born between 1940 and 1995 (more recent data cannot be used as many persons born after 1995 have not yet completed their university studies).

Figure 13 Percentage of degree holders by race and birth cohort, 1940–1995



Source: Calculated from Community Survey 2016

The 1967 birth cohort was the first amongst whom black individuals' share of people with degrees became the majority. While 85% of the cohort born in 1940 who have degrees are white, for the cohort born in 1995 this proportion is only 30%. This massive shift implies that the largest population group, the black population, now also constitutes the group who contributes most to the productivity and future growth of the economy. This illustrates the transformational role that the PSET system, in this case mainly public universities, has played. Unfortunately similar data on persons with TVET qualifications are not available, as responses to the Community Survey questionnaire do not always distinguish well between diplomas and certificates obtained from universities, TVET colleges and private institutions (private universities and private colleges).

Although the black population, due to its size, contains most degreed persons, the percentage of this population group that has degrees is still quite low, at 3.2% of the economically active age group in 2017 (Table 4), even though this is a doubling from 2008. A similarly low proportion of the coloured population has degrees (3.1%), whereas the 14.5% amongst the Indian population and 20.1% amongst white economically individuals are quite high levels, reflecting the still much higher proportion of these populations that access and graduate from universities.

Table 4 **Individuals with degrees as percentage of economically active age group 15–64, 2008–2017**

	Black	Coloured	Indian	White	Total
2008	1.6%	2.0%	7.2%	16.8%	3.3%
2009	1.7%	2.1%	7.7%	16.9%	3.4%
2010	1.7%	2.4%	9.1%	17.7%	3.5%
2011	1.8%	2.8%	10.2%	18.9%	3.8%
2012	1.9%	2.7%	8.9%	16.1%	3.5%
2013	2.3%	2.3%	12.1%	16.9%	3.9%
2014	2.5%	2.5%	12.2%	17.4%	4.1%
2015	2.6%	2.9%	12.8%	20.3%	4.4%
2016	2.8%	3.0%	11.6%	20.4%	4.5%
2017	3.2%	3.1%	14.5%	20.1%	4.9%

Source: Own calculations from Quarterly Labour Force Surveys 2008 to 2017.

1.6 Education and the Labour market

Advanced levels of education contribute to higher productivity and thereby make the recipients of such education more attractive to employ and also raise their wage levels. The rise in the number of qualified people contributes to productivity and thereby also accelerates economic growth. This contribution to growth cannot be measured directly, but because of the strong relationship between productivity and wages in the market economy, average wage differentials between individuals with different levels of education can be broadly associated with average productivity differentials.

Median wages[9] of workers with a degree are more than six times as large as those of workers without at least matric (Table 5). While the gender gap in median wages favours men above women at all levels of education, this gap is proportionally smallest amongst more educated workers. A similar pattern applies to race gaps: For workers with higher levels of education, these gaps are markedly smaller.

It is important to note that gaps in wages between similarly educated individuals by race or by gender do not necessarily reflect discrimination. To determine the extent of labour market discrimination in wages, attention should also be paid to factors such as age, experience, sector of employment, the institution that qualifications were obtained from, province and location (urban or rural) of individuals. It is likely that parts of the observed gaps of workers with similar education levels are the result of discrimination, but the extent of this requires careful analysis.

9 The median wage is that of the worker in the centre of the income distribution, at the 50th percentile. This measure is less sensitive to very high wages that may be earned by a small part of the population and that could raise average wages a lot.

Table 5 Median wages per month by level of education, 2016

	No matric	Matric	Certificate	Diploma	Degree	Total
Black	R2 373	R3 872	R6 846	R12 059	R13 539	R7 738
Coloured	R2 798	R4 937	R9 381	R13 390	R14 589	R9 019
Indian	R4 604	R6 676	R12 878	R13 047	R17 875	R11 016
White	R7 440	R10 116	R14 084	R15 940	R19 700	R13 456
All males	R3 019	R5 144	R9 464	R14 673	R17 838	R10 028
All females	R1 951	R4 021	R6 841	R12 113	R14 955	R7 976
Total	R2 527	R4 625	R7 992	R12 951	R16 187	R8 856

Source: Estimated from QLFS 2016

Mincerian earnings functions are one way to describe the association between earning and wages whilst holding other factors, such as age, race, gender or province, constant. A Mincerian earnings function for 2016[10] indicates that the wages of a degreed person are 153% more than those for a matriculant *with otherwise similar characteristics*. Individuals with a diploma earn 122% more than those with only a matric and otherwise similar characteristics, whilst those with a post–school certificate earn on average 56% more than matriculants with otherwise similar characteristics.

Table 6 shows that unemployment is quite high at 8% among labour force participants with degrees. However, such unemployment is on average much lower than for those without education up to matric, amongst whom it was measured at 40%, and also compared to matriculants (33%), certificate holders (31%) and even diploma holders (16%). Women are far more affected by unemployment than men, but gender differences in unemployment are far smaller for women with PSET qualifications. For women in particular, therefore, post–school education and training provides strong protection against unemployment, which may be one of the reasons why the GPI ratios at public universities and TVET colleges tend to be high.

Table 6 Broad unemployment rate by gender and level of education, 2016

	Less than Matric	Matric	Matric plus Certificate	Matric plus Diploma	Degree	Total
Males	36%	29%	27%	15%	8%	31%
Females	45%	38%	35%	18%	7%	38%
Total	40%	33%	31%	16%	8%	34%

Source: Estimated from QLFS 2016

In summary, labour market outcomes are strongly influenced by education. Patterns of outcomes can be associated with the human capital that different people bring to the labour market. This applies particularly to advanced levels of human capital, which yield high returns in a modern economy. The PSET sector plays a major role in this regard. Patterns of access, output, equity and quality of the PSET sector, discussed in more detail in the sections that follow, all play a role. It is therefore not surprising that the NDP puts such strong emphasis on the expansion of PSET.

10 The full and most simple regression is ln(Earnings)=7.131 + 0.676.Matric + 1.121.Certificate+1.472.Diploma + 1.603.Degree + 0.0261.Age –0.000226. Age2, n=445 202, R2=0.242. All variables are significant at the 99% level.

02 OVERVIEW OF THE PERFORMANCE OF THE POST–SCHOOL EDUCATION AND TRAINING SECTOR

2.1 Introduction

In this section, an overview of the performance of the PSET system with regards to the goals of access, success (efficiency and effectiveness), quality and equity is presented. While these goals have not been explicitly articulated in the policy documents that guide the development of the PSET system, they are underlying policies pursued in this sector, as evident from the following quote from the White Paper (WP) (DHET, 2013b:1):

> *"Policy developments have been aimed at democratising the education system, overcoming unfair discrimination, expanding access to education and training opportunities, and improving the quality of education, training and research…The basic principles of democracy, equity, quality, expansion of education and training opportunities [access], and the integration of education and training set out…are generally consistent with the principles guiding this White Paper on Post–school Education and Training."*

The WP also states the following with regard to objectives to be pursued in the PSET system: "If the post–school system is to serve the country well, we need more places for people to learn, more types of courses and qualifications, more financial support for students, and better quality education and training" (DHET, 2013b: 7). Ensuring availability of sufficient funding is thus also a goal of the PSET system.

There is an interdependence between the goals of access, success and quality. For instance, rapid expansion of access without expansion of system infrastructure may reduce both quality and efficiency or success of the system. On the other hand, equity can be achieved *within* each of these areas.

While detailed data on specific objectives or goals of the PSET system is provided later in this report, here a cursory overview in terms of performance regarding goals of access, success, quality, equity and funding is presented.

2.2 Access

Improving overall access has to be seen alongside improvements in access for particular subgroups. It is difficult to separate equity from access considerations. In this subsection, overall performance of the PSET system with regard to access is considered, whilst the related equity aspects (such as access for particular subgroups) is considered in the last subsection.

The WP set specific targets in terms of access to the PSET subsectors. It put forward goals for 2030 of 1.6 million head–count enrolment in public universities, 2.5 million in TVET colleges, and 1.0 million in community colleges, with an estimated 0.5 million additional enrolments in private further and higher educational institutions (DHET, 2013b: 7). Some of these targets are being reconsidered with changes, especially in funding, in the PSET sector during the last few years.

As shown in the previous section, South Africa's GER is substantially below that of the average for all upper–middle–income countries or for various upper–middle–income country comparators. It also lies below that of all the other BRICS countries (Brazil, Russian, India, China). This indicates the need to further expand access to the PSET system to bring South Africa's skill base more in line with that of countries at comparable levels of economic development. Although there has been steady growth in enrolment at public universities, this growth is low and a marked acceleration is required to achieve the goals of the WP.

Despite a doubling of enrolment at TVET colleges between 2010 and 2016, this growth was still below the WP target. In the face of quality concerns (discussed further below) there has been a slowdown in the expansion of TVET enrolment and current plans are for no enrolment growth for a few years whilst quality issues are addressed.

Participation of foreign students in the South African PSET system provides one indication of the access or openness of the system. Despite more than doubling between 2013 and 2015, foreign student numbers in TVET colleges students still constitute less than 1% of enrolment.

The growth and expansion of private PSET institutions, both universities and colleges, constitute increases in the available places of learning and therefore also access to PSET. As presented later in the report, enrolment in private universities has expanded both in absolute and relative terms, with their share of students (as a proportion of all students in the country) increasing from 9.2% in 2010 to 14.6% in 2016. Enrolment in private colleges has also expanded and in 2016, 18% of college students in South Africa were registered at private colleges.

In contrast to enrolment growth in universities and colleges, enrolment in CET colleges declined between 2010 and 2016.

There was high growth in registrations for all three SETA–supported learning programmes in the period 2010–2016 and the total number of SETA registrations more than doubled.

2.3 Success

It is difficult to define "success" for the PSET system as a whole. At its simplest, attrition (dropout) and throughput, as well as the eventual employability of the individuals who participate and successfully leave the PSET system, can be considered basic indicators of success or the lack thereof. These measures attest to both the effectiveness and efficiency of the system. An earlier report provided an operational definition of efficiency and effectiveness in the PSET system in terms of progress in structural transformation of the sector: "An effective and efficient system is one that retains the students it admits and enables as many students as possible to complete their studies in regulation time or as close to it as possible, obviously without compromising quality" (DHET, 2015d: 18).

While this report presents much data on access, less information is available on measures of success and quality, especially outside of the university sector. It is important for future system monitoring and data collection that more data relating to both success and quality be systematically collected and presented in indicator form.

Overall student success rates at universities have grown over the 2010–2016 period, but the very low success rates of students involved in distance education is worrying. The number of graduates at public universities has grown moderately since 2009, while there has also been a marked improvement in throughput rates (or graduation rates for specific cohorts) for undergraduate students at public universities. In TVET colleges there has been a steady increase and in some cases even remarkably high increases in certification rates of various qualifications offered, though this has been off a relatively low base and with available information pointing to low throughput rates. A pseudo–cohort analysis confirms the low efficiency of TVET colleges. Similarly, certification rates for SETA–supported skills development programmes have also grown at a steady rate, while the growth rates especially in certification of learnership programmes have been very high over the period under review.

Across all sectors for which data on success indicators are available, there are clear signs that success in the PSET system is improving.

2.4 Equity

Equity has to be considered across multiple subsectors of the PSET system and in terms of inputs (staff), access (enrolments or registrations) and outputs. In the South African context, the racial composition of PSET represents an important dimension of equity. Gender and disability also often constitute focus areas for evaluating the equity of the PSET system.

2.4.1. Race

While the majority of academic staff at public universities are still white, this proportion and indeed total white employment as lecturing staff have been declining since 2010. For all other race groups the number of academic staff grew, with the highest growth among black staff. As a result, the share of black academic staff rose from 28.6% in 2010 to 36.8% in 2016.

2.4.1.1. Access (enrolments and registrations)

Overall, the PSET system has experienced a large increase in enrolment and participation from previously excluded groups, in particular both black males and black females.

Black individuals accounted for 71.9% of all students enrolled in public universities in 2016, compared to only 66.7% in 2010. The GER for black university students increased from 13.2 in 2010 to 16.3 in 2016, a marked improvement. However, it still remains far too low. During the same period, the GER for coloured students increased slightly, while that for Indian students first increased and then decreased over the period 2010–2016. White students' participation in 2016 was at a similar level to that in 2010.

Disaggregation by gender as well as race shows that participation rates declined slightly for white men as well as Indian men. The sharpest rise in participation rates was among black women.

As in public universities, the share of black students in private universities increased from 60.8% in 2011 to 67.1% in 2016, while the white share decreased from 24.9% to 18.3%.

Growth in enrolment at TVET colleges grew fastest for black students, whose share grew from 83.9% in 2010 to 92.1% in 2016. The overwhelming majority of black and coloured college students are enrolled in TVET colleges, while white students and particularly Indian students are more inclined to enrol in private colleges.

2.4.1.2. Success

At public HEIs, graduation rates for white students were consistently highest over the period 2010–2016. However, graduation rates improved for all race groups over this period, with Indian students experiencing the largest improvement, from 15.8% in 2010 to 21.2% in 2016.

There are still large differences in success rates (the proportion of modules enrolled for that students passed in a given year) for different race groups for both contact and distance public universities. Though these differences are decreasing, they still require attention: In contact education the success rate of white students is 89.7%, whilst it is only 81.3% for black students.

2.4.2. Gender

South Africa's GPI for tertiary education exceeds that of even high–income countries. Given that the gender distribution of the population is relatively even, this shows that women enrol in tertiary education institutions and even SETAs at a significantly higher rate than men. The female advantage in enrolment in tertiary education finds its source in differences in qualifying for access to this type of education. In the 2008 cohort of learners exiting the school system and entering public universities, 27% more women qualified for entry than men (Van Broekhuizen & Spaull, 2017).

The WP identifies the relationship between equity of access and equity of outcomes as a substantive area of focus (DHET, 2013: 32). The female–dominated pattern of enrolment across various types of tertiary education and training institutions also holds for throughput, graduation and certification patterns. This is not unexpected. Van Broekhuizen and Spaull (2017), analysing the aforementioned 2008 cohort entering public universities, find that women are "always and everywhere 20% less likely to drop out than their male counterparts (including in traditionally 'male' fields like Engineering and Computer Science)".

Subsequent sections will show that changes in the gender distribution of academic staff across ranks during the period 2010–2016 largely favoured women. However, while gender gaps are closing, they remain large at more senior levels such as professor, associate professor and at senior management positions in public universities. This requires attention.

2.4.3. Disability

The overall prevalence of students with disabilities participating in the PSET sector is low. The system does not collect data on how (or how well) these students are accommodated, yet anecdotal evidence indicates that much can still be done to improve participation in the PSET sectors by people with disabilities.

2.5 Quality

An exact definition of quality and therefore the identification of indicators of quality is more difficult than is the case for access and equity. At its simplest, education quality in PSET can be regarded as how much and how well students learn. High quality learning and the development of high quality skills from the PSET system should bring individuals rewards later in life. The nature of some of the inputs to the PSET system, for example the qualification levels of staff or their research productivity, can provide some signals of how much learning might occur. Research output per permanently employed academic staff member, an important indicator of quality of research and a key measure of quality of public universities, almost doubled between 2006 and 2016. While this can be considered an indicator of academic excellence and therefore quality in the system, it cannot fully take into account the quality of the journals in which research was published.

The ratio between full–time equivalent (FTE) student enrolment and public universities' academic staff give an indication of the ability of academic staff to provide quality learning inputs as well as high–quality research outputs. The number of FTE students adjusts for the number of credits each student is enrolled for in a given year. Thus a student enrolled for only half the required credits of a full academic year will be counted as half an FTE student. The expansion of public universities' academic staff outpaced FTE student enrolment growth over the review period, as evidenced by the declining student to staff ratio. This should normally allow for higher quality education and an increase in the quantity or quality of research output.

In 2013 enrolment in science, engineering and technology (SET) became the most popular major field of study (Classification of Educational Subject Matter, CESM) at public universities and this continues to be the case in 2016. The rapid growth of this field of study or CESM category, often associated with technical skills required for rapid growth of a modern economy, signals that students are increasingly selecting into a field that produces skills for which there is large need in the South African economy. It also potentially indicates that there are resources available to support the production of graduates in this major field of study.

2.6 Funding

The expansion of funding and channelling of funding towards critical areas of the PSET system is integral to realising the full impact of this sector. While real income of public universities grew at an average rate of 5.7% per year between 2000 and 2015, growth decreased to an average rate of 3.9% between 2000 and 2015. Student fees became an increasingly important source of funds for public universities during the period 2000–2015, while the share of university income from government declined.

Data on funding of TVET colleges show that despite the ambitious goals that were set for this sector in the WP and large increases in expenditure during the 2000s, there has been a flattening in actual or planned expenditure on TVET colleges in the later periods (2015 to 2019).

Total disbursement of the Skills Development Levy was R15.2 billion in real terms in 2015, with 80% of these funds transferred to SETAs and the remainder to the National Skills Fund.

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.

03 HIGHER EDUCATION (PUBLIC AND PRIVATE UNIVERSITIES)

3.1 Introduction

South Africa's 26 public universities can be differentiated into 11 general academic universities, nine comprehensive universities and six universities of technology. In addition to these public universities there are 123 private universities registered with DHET (DHET, 2018b). Private universities accounted for 14.6% of total HEI headcount enrolment in 2016 (DHET, 2017b). Although increasing in importance, private universities will likely make a limited contribution in realising the NDP and PSET WP target for university enrolment of 1.6 million by 2030. Rapidly expanding university enrolment must rely mainly on increased public investment in the university subsector.

Recent major infrastructure investments in the public sphere include the establishment of three public universities during 2014 and 2015. It is expected that relatively high enrolment growth at these new institutions combined with continued growth at established institutions will aid in achieving the NDP target. Average annual growth in headcount enrolment was 3.6% over the period 2000 to 2015. Achieving enrolment of 1.6 million by 2030 will require that this rate of growth is repeated over the 2016–2030 period.

In addition to generating a skilled workforce, universities are also responsible for producing academics that will produce the research output and innovation that fundamentally drive economic growth. The aging profile of university academics, even as the population becomes younger, is thus a concern that raises the priority status of attracting and nurturing future academics.

This section explores trends in these and various other performance indicators related to public universities as a PSET subsector. The emphasis is on public universities in terms of access, success, equity and transformation, quality, efficiency and funding . An account of some performance measures in private higher education is offered where data are available.

3.2 Access

Universities absorb the major share of students enrolled in the PSET system. The number of students enrolled at universities has increased by almost 83 000 over the six years between 2010 and 2016, although at a growth rate of only 1.5%, lower than required to realise the NDP goal of a 1.6 million headcount by 2030.

There was a drop in enrolments in 2016, because of a decision by Unisa to take in fewer students and to focus more on student success. The most rapid enrolment growth occurred among black students, at an annual average of 2.8%, with growth particularly rapid in the first half of this period (Table 7). This raised the GER for black students significantly from 13.2 in 2010 to 16.3 in 2016. For both the Indian and white population groups, enrolment declined over the period 2010–2016. Part of the decline of 26 000 in white enrolment over the period relates to Unisa's lower enrolment in 2016. The white GER declined from its peak of 57.4 in 2013 to 55.6 in 2016. This is still much higher than for other race groups, with the coloured GER of 14.3 in 2016 being particularly low.

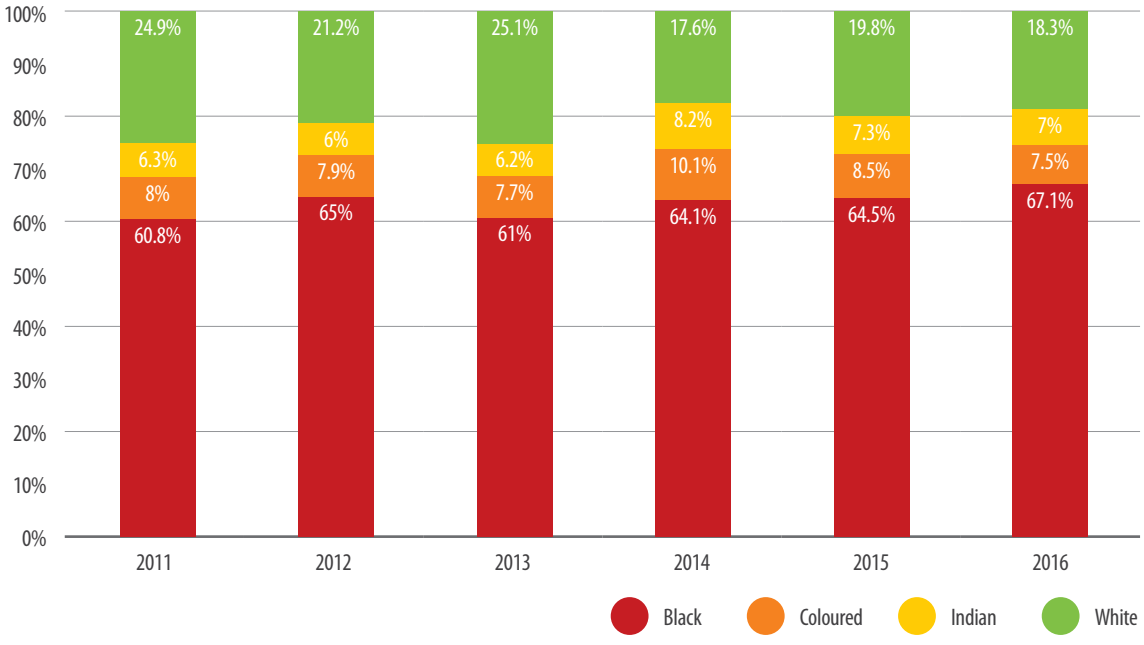
Black students accounted for 67.1% of all students enrolled in universities in 2016, a considerably higher share than the 60.8% in 2010 (Figure 14). All other race groups declined as a share of total headcount, with white students exhibiting the largest decline (6.6 percentage points).

Table 7 Universities: Total headcounts and GER by race, 2010–2016

Year	Black	Coloured	Indian	White	Unknown	Total
2010	595 783	58 176	54 492	178 190	6 295	892 936
2011	640 443	59 312	54 698	177 365	6 383	938 201
2012	662 066	58 671	52 284	172 611	7 741	953 373
2013	689 503	61 034	53 787	171 927	7 447	983 698
2014	679 800	60 716	53 611	166 172	8 855	969 154
2015	696 320	62 186	53 378	161 739	11 589	985 212
2016	701 482	61 963	50 450	152 489	9 453	975 837
Average annual growth rate						
2010–2016	2.8%	1.1%	–1.3%	–2.6%	7.0%	1.5%
Gross enrolment ratio (GER)						
2010	13.2	13.3	48.4	54.5	..	16.6
2011	14.2	13.5	48.8	55.8	..	17.4
2012	14.7	13.3	46.9	55.9	..	17.8
2013	15.4	13.9	48.5	57.4	..	18.5
2014	15.4	13.8	48.7	57.1	..	18.5
2015	16.0	14.3	49.0	57.1	..	19.0
2016	16.3	14.3	46.9	55.6	..	19.1

Sources: CHET (2018)

Figure 14 Public universities: Percentage headcount by race, 2010–2016



Source: Values for 2010–2015 from CHET (2018) and for 2016 from CHE (2016, 2018)

The number of FTE students has increased more rapidly than the headcount ratio, suggesting that there has been an increase in the number of module credits that students are enrolling for in a given year (Table 8). This indicates improved success rates, that enable students to enrol for more modules at the next level of their studies.

Table 8 Public universities: Student headcount enrolment and FTE enrolment, 2010–2016

Year	Headcount enrolment	FTE enrolment	Ratio
2010	892 936	600 002	67.2%
2011	938 201	628 410	67.0%
2012	953 373	634 549	66.6%
2013	983 698	665 857	67.7%
2014	969 154	666 946	68.8%
2015	985 212	678 842	68.9%
2016	975 837	685 297	70.2%
Average annual growth			
2010–2016	1.5%	2.2%	

Sources: Values for 2010–2015 from CHET (2018) and 2016 headcounts from DHET (2018a) Table 2.7, Table 2.9, Table 2.19

Table 9 shows that enrolment of females in SET has expanded rapidly, at 3.2% per year, while their enrolment in education grew even more rapidly.

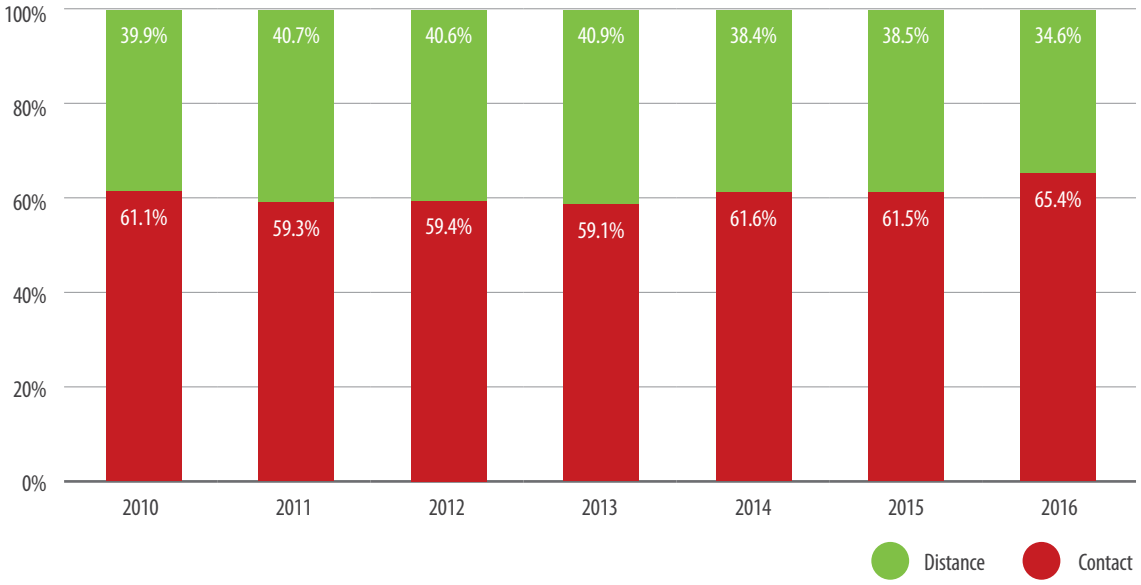
Table 9 Public universities: Enrolments in Major Fields of study by gender, 2010–2016*

Year	Science, Engineering and technology		Business & Management		Education		Humanities		Male	Female
	Male	Female	Male	Female	Male	Female	Male	Female	Total	Total
2010	138 590	112 748	122 268	156 573	38 094	107 321	81 397	135 935	380 349	512 577
2011	146 022	118 421	125 796	162 688	42 580	122 295	80 718	139 592	395 116	542 996
2012	149 766	123 513	122 689	159 607	42 511	125 950	83 402	145 770	398 368	554 840
2013	154 612	129 009	122 998	156 954	43 255	129 735	89 124	158 000	409 989	573 698
2014	155 555	131 664	119 923	152 484	41 462	124 636	87 425	156 001	404 365	564 785
2015	158 665	136 267	121 023	152 805	42 417	128 130	88 419	157 476	410 524	574 678
2016	158 854	136 520	117 001	147 931	45 434	131 549	87 407	151 119	408 696	567 119
Growth[1]	2.3%	3.2%	–0.7%	–0.9%	3.0%	3.5%	1.2%	1.8%	1.2%	1.7%

1 Average annual growth (%)
Source: CHE (2012, 2014, 2015, 2016, 2017, 2018)
Note: The total for male and female do not add up to the totals by field of study in DHET (2016d). This discrepancy is due to data on both gender and major fields of study not being available for some students.

A majority of university students are enrolled in contact institutions. This proportion increased from 61% in 2010 to 65% in 2016 (Figure 15). This trend partially explains the rise in the FTE to headcount ratio over this period since, on average, distance students are more likely to be part–time students and, thus, more inclined to enrol for fewer course credits than their contact (and full–time) counterparts.

Figure 15 Public universities: Contact and distance students, 2010–2016



Source: CHE (2012, 2016) and DHET (2018b)

The proportion of higher education students enrolled in private institutions increased sharply by 5.4 percentage points between 2010 and 2016 (Table 10), with enrolment in private institutions growing by a rapid 10.7% per year over the period 2010–16, though off a low base. While exhibiting an expanding role, private institutions, being funded primarily by fees, are unlikely to ever play such a large role in South Africa's higher education subsector as it has in some Latin American countries.

Table 10 Proportion of students in private and public universities, 2010–2016

Year	Private	Public	Total
2010	9.2%	90.8%	100.0%
2011	9.9%	90.1%	100.0%
2012	9.3%	90.7%	100.0%
2013	10.9%	89.1%	100.0%
2014	12.8%	87.2%	100.0%
2015	13.0%	87.0%	100.0%
2016	14.6%	85.4%	100.0%
Growth[1]	10.7%	1.5%	

1 Average annual growth (%)
Source: DHET (2018b) Fig 4.1 and Table 4.5.

Males make up a higher share of enrolment in private higher education institutions than females. Table 11 shows that the male share of enrolment in private institutions has increased over the 2011–2016 period and, in 2016, there was a gender difference in enrolment of 10.6 percentage points.

The racial breakdown of private institution enrolment mirrors that of public universities, with black individuals making up the majority of students (67.1% in 2016) and whites being the largest of the minority groups (18.3%) (Table 12). The black share in enrolment increased by 6.3 percentage points over the 2011–2016 period while that of white students decreased by 6.6 percentage points. Declines in white enrolments can also partially be explained by a decrease in the actual white population numbers and the fact that many white youths are going overseas to work there. In 2016 coloured students made up 7.5% of all students enrolled in private institutions and Indian students 7.0%.

Table 11 Proportions of students enrolled in private universities by gender, 2010–2016

Year	Female	Male	Unspecified	Total
2011	47.4%	52.6%	0.0%	100.0%
2012	44.8%	55.2%	0.0%	100.0%
2013	46.4%	53.6%	0.0%	100.0%
2014	45.9%	51.8%	2.3%	100.0%
2015	45.2%	54.7%	0.1%	100.0%
2016	44.1%	54.7%	1.3%	100.0%

Source: DHET (2018b)

Table 12 Proportions of enrolment in private universities for South African students by race, 2011–2016

Year	Black	Coloured	Indian	White	Total
2011	60.8%	8.0%	6.3%	24.9%	100.0%
2012	65.0%	7.9%	6.0%	21.2%	100.0%
2013	61.0%	7.7%	6.2%	25.1%	100.0%
2014	64.1%	10.1%	8.2%	17.6%	100.0%
2015	64.5%	8.5%	7.3%	19.8%	100.0%
2016	67.1%	7.5%	7.0%	18.3%	100.0%

Source: DHET (2018b)

Foreign students constituted 7% of all students studying at South Africa public universities in 2016 (Table 13). The majority of these students originated from Southern African Development Community (SADC) countries, with substantial numbers also from other African countries.

Table 13 Headcount of foreign students in South African public universities, 2009–2016

Year	SADC	Other African countries	Rest of World	Unknown	Total	Foreign students as % of total students
2009	41 892	10 677	7 011	1 276	60 856	7.1%
2010	46 091	11 226	7 448	1 416	66 181	7.3%
2011	50 591	11 170	6 884	1 415	70 060	7.3%
2012	53 058	11 352	7 065	1 384	72 859	7.5%
2013	53 800	11 922	6 727	1 410	73 859	7.4%
2014	52 947	11 947	6 640	1 465	72 999	7.4%
2015	52 878	12 128	6 742	1 212	72 960	7.3%
2016	49 403	11 895	6 649	1 434	69 381	7.0%

Sources: CHE (2012, 2016, 2018)

In 2016 the biggest group of foreign students from a single country studying at South African public universities was from Zimbabwe (37.0%), followed by Namibia (8.4%) (Table 14). These two countries' dominance in terms of student groups held throughout the 2010–2016 period. The majority of foreign students at public universities during the 2010–2016 period were studying towards an undergraduate degree (Table 15). The two most popular fields of study that attracted foreign students throughout the review period were SET and business and management (Table 16). In 2016, 36.1% of foreign students at public HEIs were studying towards a SET qualification.

Table 14 Percentage of public university students who are not South African citizens by nationality/country of origin, 2010–2016

Nationality	2010	2011	2012	2013	2014	2015	2016
Zimbabwe	29.8%	33.9%	35.7%	36.5%	36.8%	37.9%	37.0%
Namibia	10.6%	9.9%	9.2%	7.2%	7.9%	8.6%	8.4%
Nigeria	2.0%	3.8%	4.1%	4.6%	5.1%	5.5%	5.9%
Swaziland	5.5%	5.8%	5.8%	5.9%	5.8%	5.4%	5.3%
Dem Rep Congo	n/a	4.1%	4.4%	4.5%	4.9%	4.9%	5.1%
Lesotho	6.4%	5.9%	5.9%	6.6%	5.6%	4.6%	5.0%
Botswana	6.6%	5.4%	5.0%	4.2%	3.7%	3.1%	2.7%
Zambia	2.5%	2.7%	2.5%	2.5%	2.5%	2.6%	2.6%
USA	n/a	2.0%	1.8%	1.9%	1.8%	2.0%	2.1%
Kenya	n/a	2.6%	2.3%	2.3%	2.2%	2.1%	2.0%
Other Foreign	36.6%	23.9%	23.3%	23.8%	23.8%	23.3%	24.1%
Total	100%	100%	100%	100%	100%	100%	100%

Source: Stats of PSET 2016; 2015; 2014; 2013; 2010–2012 obtained from DHET

Table 15 Percentage of public university students who are not South African citizens by qualification type, 2010–2016

Qualification Type	2010	2011	2012	2013	2014	2015	2016
Occasional	5.6%	4.9%	5.0%	4.7%	4.8%	4.7%	4.8%
UG Dipl/Cert	17.9%	17.3%	16.8%	15.1%	15.5%	15.4%	13.6%
UG Degree	48.3%	49.5%	49.9%	48.5%	45.9%	44.4%	42.5%
PG<Masters	9.6%	9.8%	9.9%	10.9%	10.5%	10.6%	11.0%
Masters	12.9%	12.5%	11.8%	12.7%	13.8%	14.3%	15.6%
Doctoral	5.6%	6.1%	6.6%	8.0%	9.5%	10.6%	12.5%
Total	100%	100%	100%	100%	100%	100%	100%

Source: 2011–2016 data obtained from DHET (2013a, 2014b, 2015c, 2016d, 2017c, 2018b); 2010 data obtained from DHET on request

Table 16 Percentage of public university students who are not South African citizens by major field of study, 2010–2016

Major field of study	2010	2011	2012	2013	2014	2015	2016
Science, Engineering and Technology	32.5%	33.1%	33.5%	33.6%	34.2%	34.8%	36.2%
Business and Management	32.3%	32.4%	31.7%	30.7%	29.9%	29.3%	28.1%
Education	9.0%	9.5%	10.1%	10.1%	10.3%	9.1%	10.4%
Other Humanities and Social Sciences	26.2%	24.9%	24.7%	25.6%	25.6%	26.7%	25.3%
Total	100%	100%	100%	100%	100%	100%	100%

Source: DHET unpublished information, 2018

3.3 Success

Success in university education is multi–dimensional, with different aspects carrying different weights in different contexts, for instance, between countries and over time. It is difficult to create a universal definition of study success, or to collapse success in higher education into one dimension. One definition of study success focuses on factors such as "dropout, retention, study progress, study duration, completion and transition into the next–level study or the labour market" (Vossensteyn et al., 2015). Study success is perceived to be influenced "…by a wide variety of factors at various levels, such as education structures and pathways to higher education, national policies, financial and other incentives, institutional structures, teaching and learning approaches, curriculum design and student background characteristics and the interrelations between all of these" (Vossensteyn et al., 2015).

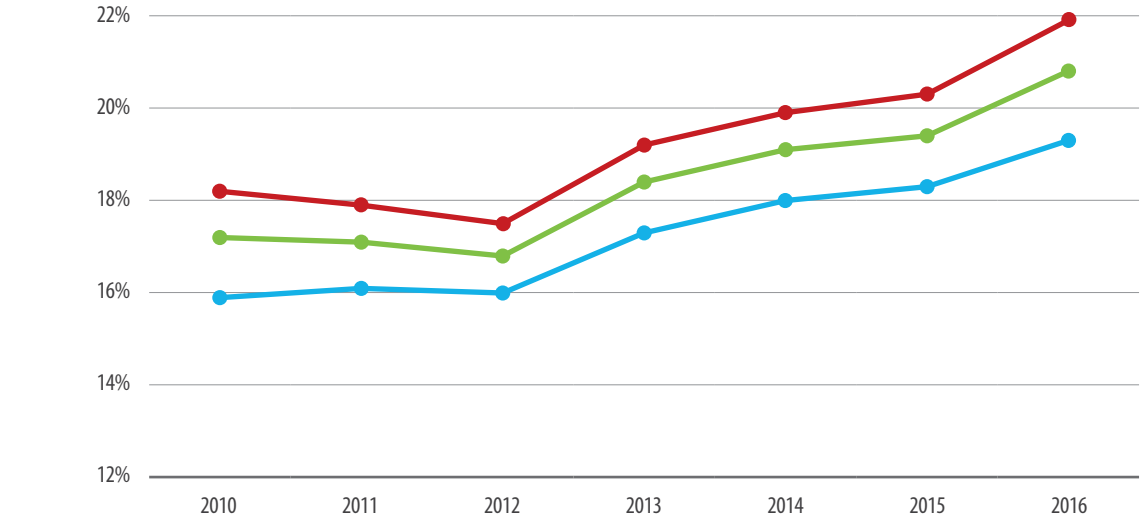
In this report, key performance metrics related to success include graduation rates, particularly the number of doctoral graduates, success rates and the publication output of academics. This section considers recent trends in these and other indicators related to university outputs.

3.3.1. Graduation rates

Due to the variety of factors that can influence graduation rates (a form of study success), graduation rates for different countries are typically not reported in international databases. The UNESCO Institute for Statistics (UIS) makes available a wide range of higher education indicators and also tertiary education indicators through an online database, UIS Stat, for a large number of countries. Only two indicators that speak to success are reported by this database: total number of graduates per country and the gross graduation ratio. The gross graduation ratio is defined as the "number of graduates regardless of age in a given level or programme, expressed as a percentage of the population at the theoretical graduation age for that level or programme" (UNESCO, 2018). Unfortunately, however, very few countries report data on this indicator to UIS. For 2016, South Africa reported a gross graduation ratio of 9.8 (up from 8.9 for 2015). To put this into perspective, the United Kingdom had reported a similar ratio of 53.6 for 2014 (the last year for which this data was reported), while Brazil had reported a ratio of 27.0 for 2014 (the last year for which Brazil reported this data).

Data on graduation rates are presented in Figure 16. Graduation rates are defined as the number of students who have graduated in a particular year, irrespective of the year of study, divided by the total number of students enrolled at public universities in that particular year (DHET, 2017c). Thus, unlike the gross graduation ratio, which expresses the number of graduates in a year relative to a population segment, graduation rates express these number of graduates relative to the number of students enrolled.

Figure 16 **Graduation rate in public universities by gender, 2010–2016**



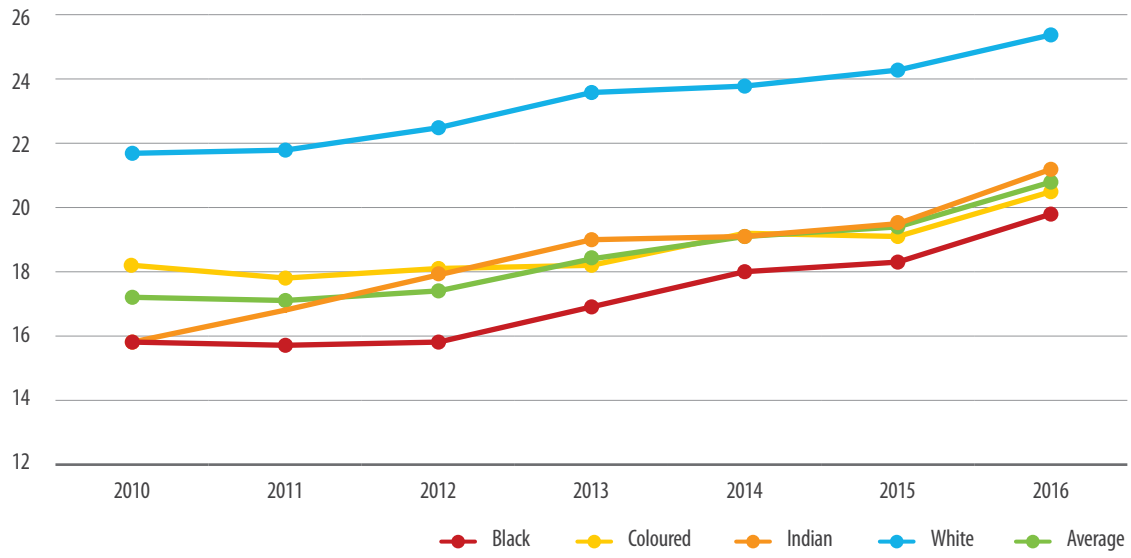
	2010	2011	2012	2013	2014	2015	2016
Female	18.2%	17.9%	17.5%	19.2%	19.9%	20.3%	21.9%
Male	15.9%	16.1%	16.0%	17.3%	18.0%	18.3%	19.3%
Average	17.2%	17.1%	16.8%	18.4%	19.1%	19.4%	20.8%

Source: CHE (2016, 2018); Values for 2010–2015 from CHET (2018) and for 2016 from DHET (2018a) Table 2.13

After an initial decline from to 16.8% in 2012, overall graduation rates in public universities improved substantially to reach 20.8% in 2016. This implies that the number of graduates in that year constituted just more than one–fifth of the number of students enrolled. Graduation rates improved for both females and males. Figure 16 shows that female graduation rates were consistently above that of males, the difference ranging from 1.5 percentage points in 2012 to 2.6 percentage points in 2016, a clear widening of the gender gap in favour of females.

Figure 17 and Table 17 show graduation rates by race group[11]. Graduation rates among white students were consistently far higher than those of other groups for the period 2009–2016. Graduation rates improved for all race groups, with Indian students reflecting the largest improvement over the period, from 15.8% in 2010 to 21.2% in 2016. The graduation rates of black students improved by more than four percentage points over this period and remained slightly lower than that of coloured students in 2016. Table 17 shows that graduation rates for females have been consistently higher than for males.

Figure 17 Graduation rate in public universities by race, 2010–2016



Source: CHE (2016, 2018); Values for 2010–2015 from CHET (2018) and for 2016 from DHET (2018a) Table 2.13

Table 17 Graduation rate in public universities by gender and by race, 2009–2016

Year	Female	Male	Black	Coloured	Indian	White	Total
2009	18.4%	15.8%	15.9%	18.0%	15.9%	21.9%	17.3%
2010	18.2%	15.9%	15.8%	18.2%	15.8%	21.7%	17.2%
2011	17.9%	16.1%	15.7%	17.8%	16.8%	21.8%	17.1%
2012	17.5%	16.0%	15.8%	18.1%	17.9%	22.5%	17.4%
2013	19.2%	17.3%	16.9%	18.2%	19.0%	23.6%	18.4%
2014	19.9%	18.0%	18.0%	19.2%	19.1%	23.8%	19.1%
2015	20.3%	18.3%	18.3%	19.1%	19.5%	24.3%	19.4%
2016	21.9%	19.3%	19.8%	20.5%	21.2%	25.4%	20.8%

Sources: CHE (2016, 2018); Values for 2010–2015 CHET (2018) and values for 2016 from DHET (2018a) Table 2.13

11 The full table with underlying data is also available in the Appendix.

Considering the type of qualifications, growth in the number of four–year bachelor's degrees was quite rapid at 9% on average over the 2009–2016 period (Table 18). For three–year degrees, the average annual increase in graduates was 5.7%. Overall, the number of graduates in undergraduate programmes grew at an annual average rate of 4.6%, though the large decrease in graduates from one–or two–year diplomas limited this growth somewhat. Growth in graduation of postgraduate students increased more strongly, at an overall rate of 6.0%, with doctoral graduates growing especially rapidly, at 10.6% annually. The number of students graduating with master's degrees grew at 6.8% per year. Should these trends persist, the NDP target of producing 5 000 doctoral graduates per year will be achieved by 2022. It is notable that there was a sharp decline in the number of postgraduate degrees over this period, from 821 in 2009 to 256 in 2016. The number of B Tech degrees declined over this period due to them being phased out (they are not in the new Higher Education Qualification sub–framework). They are being replaced by advanced diplomas.

Table 18 Number of graduates (undergraduate and postgraduate) in public universities by qualification type, 2009–2016*

Year	2009	2010	2011	2012	2013	2014	2015	2016	Growth rate p.a.
UG Dipl/Cert (1 or 2 yrs)	24 369	22 422	21 064	15 817	14 967	14 420	14 843	14 789	–6.9%
UG Dipl/Cert (3yrs)	27 213	29 462	31 948	33 837	35 947	36 095	37 575	40 069	5.7%
1st B Degree (3yrs)	29 785	31 451	32 655	35 615	39 927	40 644	41 756	43 848	5.7%
1st B Degree (4yrs or more)	27 404	29 848	31 892	35 127	39 209	42 212	45 961	50 067	9.0%
Total Under–graduate	108 771	113 183	117 559	120 396	130 050	133 371	140 135	148 773	4.6%
PG Dipl/Cert	7 780	8 681	9 890	11 880	12 555	12 744	12 165	11 629	5.9%
PG B Degree	821	679	532	530	534	587	427	256	–15.3%
Honours	17 990	20 728	21 378	20 975	24 824	24 786	24 331	26 759	5.8%
Masters	8 112	8 633	9 690	10 334	10 809	11 627	11 936	12 862	6.8%
Doctorate	1 380	1 421	1 576	1 878	2 051	2 258	2 530	2 797	10.6%
Total Post–graduate	36 083	40 142	43 066	45 597	50 773	52 002	51 389	54 303	6.0%
Total	144 854	153 325	160 625	165 993	180 823	185 373	191 524	203 076	4.9%

Source: Values for 2010–2015 from CHET (2018) and values for 2016 from DHET (2018b) Table 2.13
Note: Some of the values presented in this table different from data in DHET (2018b). The reason for these differences is not clear. CHET (2018) has a more granular breakdown of the number of students by different types of qualifications and data from this source is therefore presented.

SET fields contributed the highest number of graduates over the period shown in Table 19, accounting for 29.1% of all graduates in 2016. Business and management had the highest growth in graduations over this period. Graduation rates increased across all major fields of study and growth was lowest in education, at 2.5% average annual growth.

Table 19 Graduates by major field of study in public universities, 2010–2016

Year	Science, Engineering and Technology	Business and Management	Education	Humanities	Unknown	Total
2010	42 760	41 657	37 892	31 016	0	153 325
2011	46 099	44 155	37 879	32 484	9	160 625
2012	48 848	46 044	35 478	35 617	7	165 993
2013	53 176	49 051	38 212	40 384	0	180 823
2014	55 574	50 380	37 076	42 343	0	185 373
2015	58 090	53 863	36 654	42 917	0	191 524
2016	59 125	56 364	42 107	45 480	0	203 076
Average annual growth rate						
2010–2016	5.5%	5.2%	1.8%	6.6%		4.8%

Source: CHET (2018)

Note: There are marginal differences in some of these numbers between the data of CHET (2018) and DHET (2018b). An unknown column has been added to account for these differences.

The proportion of black graduates (as a share of all graduates) at all levels and across all fields rose from 60.0% in 2009 to 68.3% in 2016, with strong rises in their share in all major fields of study (CESM categories) other than education (Table 20). It is encouraging that growth in black representation was quite strong in fields in which this share has historically been low. However, it has to be kept in mind that the graduates described here are at all levels, including undergraduate certificate and diploma programmes.

Table 20 Black students' share of graduates by major field of study in public universities, 2009–2016

Year	Science, Engineering and Technology	Business and Management	Education	Humanities	Total
2009	52.7%	57.7%	77.8%	52.4%	60.0%
2010	56.0%	57.1%	78.4%	50.5%	60.6%
2011	56.9%	59.8%	77.5%	56.2%	62.4%
2012	58.9%	62.2%	74.7%	59.0%	63.2%
2013	60.2%	63.5%	75.5%	61.6%	64.6%
2014	62.0%	64.9%	75.0%	64.2%	65.9%
2015	62.1%	66.2%	74.6%	65.7%	66.4%
2016	63.0%	67.8%	76.6%	68.0%	68.3%

Source: CHET (2018)

Table 21 shows the number of graduates by public university type, distinguishing between traditional universities, comprehensive universities, universities of technology, and Unisa, the distance university. Due to its rapid growth of 9.7% p.a. in graduates over this period, Unisa's share of all graduates rose substantially, from 15.7% in 2009 to 21.3% in 2016. The largest category, traditional universities, experienced slower growth of only 3.5% p.a., with the result that their share of total graduates dwindled from 47.3% to 42.9% over the period. Universities of technology grew even more slowly.

Table 21 Graduates in public universities per university type, 2009–2016

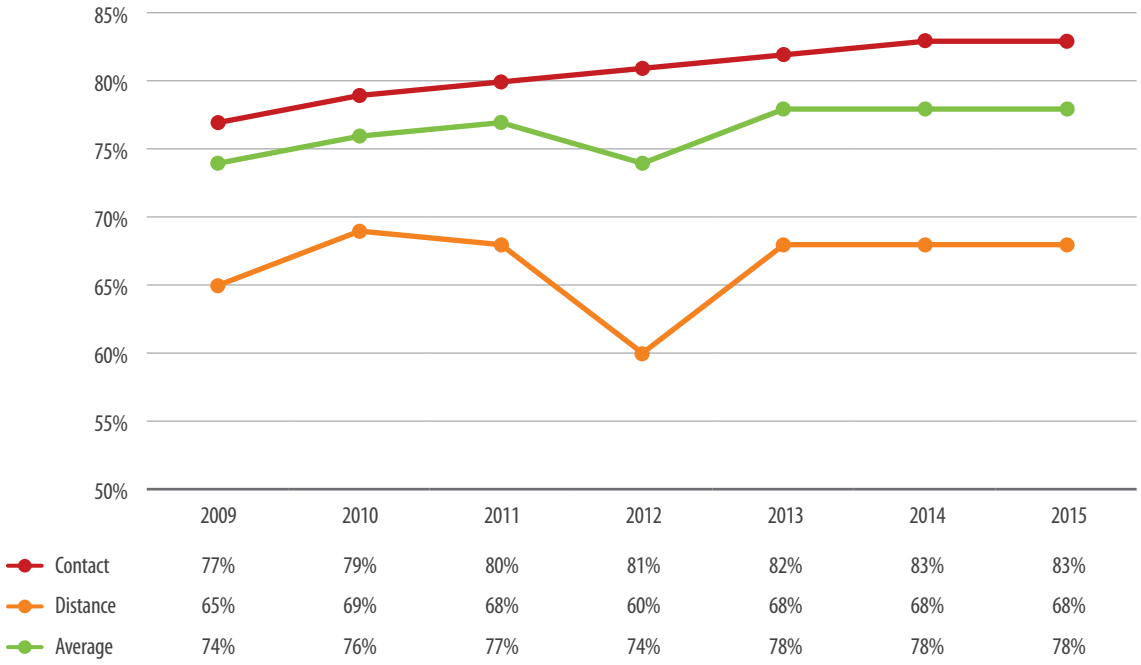
Year	Traditional universities	Comprehensive universities	Universities of Technology	Unisa	Total
Number					
2009	68 504	23 076	30 597	22 675	144 852
2010	73 087	26 073	30 204	24 377	153 741
2011	75 735	25 837	32 244	26 808	160 624
2012	78 149	28 043	33 591	26 210	165 993
2013	82 240	28 421	35 228	34 934	180 823
2014	81 659	29 587	36 231	37 896	185 373
2015	83 360	30 677	37 441	40 046	191 524
2016	87 111	33 977	38 701	43 287	203 076
Growth rate p.a.	3.5%	5.7%	3.4%	9.7%	4.9%
Percentage					
2009	47.3%	15.9%	21.1%	15.7%	100%
2010	47.5%	17.0%	19.6%	15.9%	100%
2011	47.2%	16.1%	20.1%	16.7%	100%
2012	47.1%	16.9%	20.2%	15.8%	100%
2013	45.5%	15.7%	19.5%	19.3%	100%
2014	44.1%	16.0%	19.5%	20.4%	100%
2015	43.5%	16.0%	19.5%	20.9%	100%
2016	42.9%	16.7%	19.1%	21.3%	100%

Source: CHE (2016, 2018)

3.3.2. Success rates

The success rate expresses what proportion of the undergraduate credits students complete in a particular year as a proportion of those they enrol for in that year. Rising success rates as in Figure 18 for all undergraduate contact and distance students is thus an indication that students are passing an increasing proportion of their modules, where modules are weighted according to the credits they bear. The success rate of 83% among contact students in 2016 was much higher than that of distance students (67.6%). For contact students this represents a 5.6 percentage point increase compared to 2010, but for distance students the improvement was only 2.2 percentage points. The 2013 data for distance students seem inconsistent with that for other years.

Figure 18 **Undergraduate success rate in public universities by mode of attendance[12], 2010–2016***



Source: Values for contact and distance education from DHET (2018b). Average values from DHET 2017(b).
Note: Value for 2016 calculated by using the same weights between Contact and Distance as was the case in 2015.

There are still significant racial differences in success rates for both contact and distance students (Table 22). Though gaps are narrowing, they are still large: In contact institutions the success rate of white students is 89.7%, whilst it is only 81.3% for black students. Figure 19 shows this pattern of racial differentiation in success rates remains quite consistent, though it is encouraging that the success rate itself is improving strongly for all race groups. Though rates are lower, similar racial patterns in success rates still apply for distance education, as the table shows. Though rates are not available by gender for the full period, available evidence points to a 5 percentage point higher success rate for women than for men across contact and distance education combined, an advantage that seems to remain quite stable over time.

Table 23 and Figure 20 show both contact and distance success rates combined, in this case by major field of study. Again, it has to be emphasised that the data refer to all undergraduate studies, at certificate, diploma or degree level. Nevertheless, some highlights can be extracted from these data. Firstly, it is evident that success rates are strongly rising across all fields of study. Success rates are very high in education and quite low in business and management studies. The effect of the 2013 outlier data in Unisa's success rates is evident in both the table and the figure.

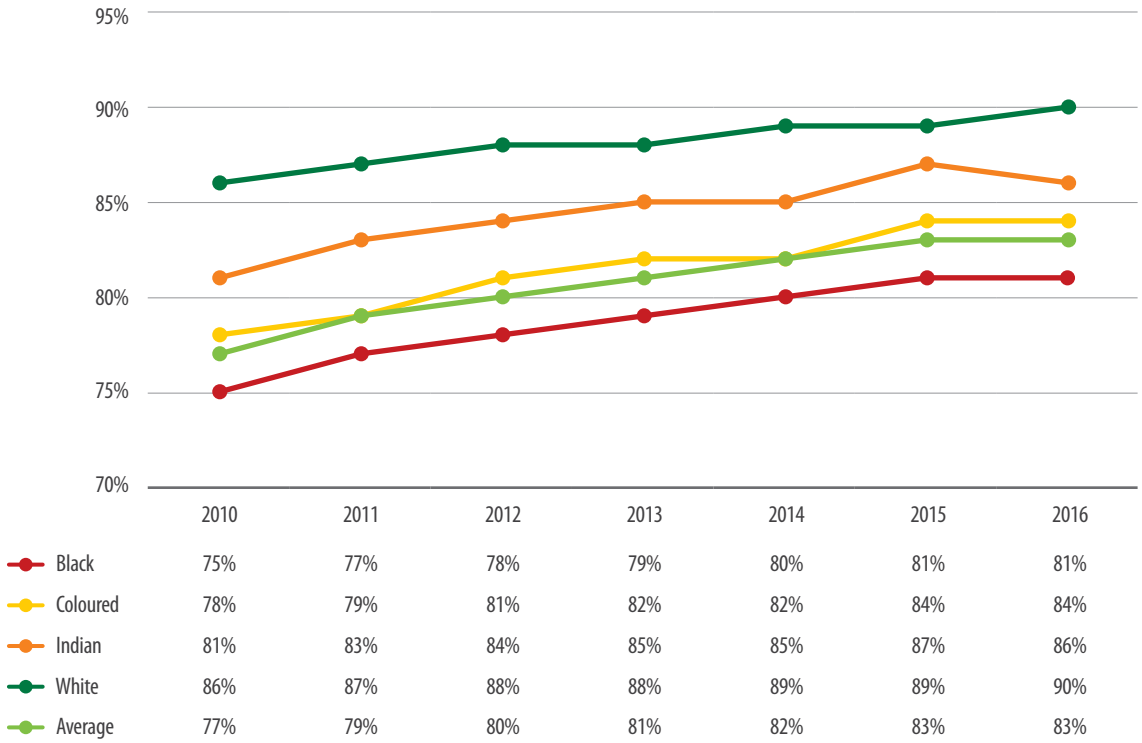
12 A calculation is made of full–time equivalent (FTE) students enrolled for each category of courses. A further FTE calculation, using the same credit values, is made for each category of courses for those students who passed the courses. The success rate is determined by dividing the FTE courses passed by the FTE courses enrolled. The success rates are weighted averages for contact and distance courses.

Table 22 Undergraduate success rates of contact and distance students in public universities by race (%), 2009–2016

Year	Black	Coloured	Indian	White	Average
Contact students					
2009	73.9	78.1	80.0	85.4	77.1
2010	74.5	78.4	80.6	85.7	77.4
2011	76.6	79.4	82.5	86.5	79.1
2012	77.9	80.8	84.0	87.6	80.3
2013	78.9	81.8	84.8	88.2	81.2
2014	80.3	82.4	85.4	88.7	82.2
2015	81.2	83.9	87.0	89.4	83.1
2016	81.3	83.8	86.1	89.7	83.0
Distance students					
2009	60.8	63.0	62.6	70.1	62.9
2010	63.5	65.6	65.5	72.2	65.4
2011	67.4	68.3	69.0	75.1	68.9
2012	65.9	68.3	69.9	75.9	68.0
2013	57.8	60.2	61.8	68.0	59.8
2014	66.6	68.0	69.6	74.4	68.1
2015	66.1	68.3	69.9	74.2	67.7
2016	65.7	68.0	70.4	75.1	67.6

Source: DHET (2018b)

Figure 19 Undergraduate success rate in public universities for contact education by race (%), 2010–2016



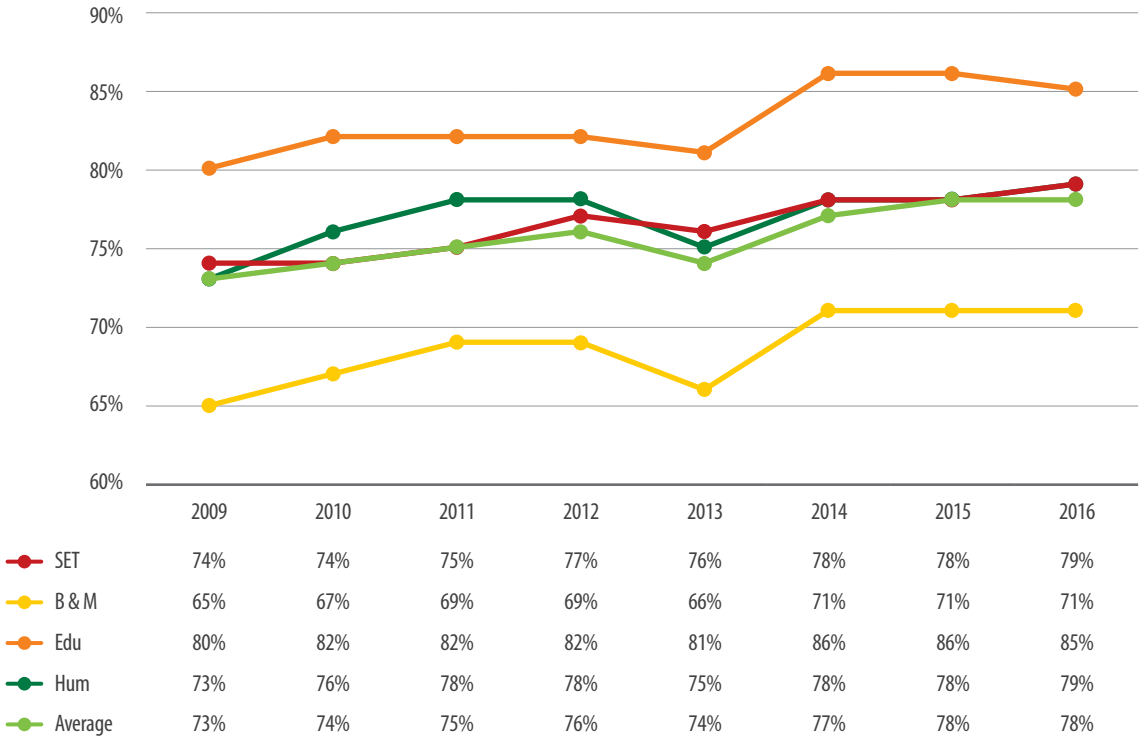
Source: DHET (2018b)

Table 23 Undergraduate success rates by major field of study (CESM) (%) (contact and distance public universities combined), 2009–2016

Year	Science, Engineering and Technology	Business and Management	Education	Humanities	Average
2009	74.1%	65.5%	80.3%	73.5%	72.7%
2010	73.8%	66.5%	81.8%	76.1%	73.6%
2011	75.3%	68.9%	82.1%	77.6%	75.3%
2012	76.9%	69.4%	82.1%	77.8%	76.0%
2013	75.6%	66.0%	80.9%	74.7%	73.7%
2014	77.8%	70.6%	86.0%	78.2%	77.4%
2015	78.3%	71.3%	85.7%	78.3%	77.7%
2016	78.6%	70.9%	85.1%	79.0%	77.8%

Source: CHE (2016, 2018)

Figure 20 Undergraduate success rates by major field of study (CESM category) (%) (contact and distance public universities combined), 2010–2016



Source: CHE (2016, 2018)

3.3.3. Research output

Research is a key output of universities and serves as a measure of knowledge production. Compositional changes in research output were modest over the 2011–2016 period, as shown in Table 24. SET programmes were responsible for the major share of research output between 2011 and 2016, but their share has declined by 3.1 percentage points over this period. Contributing to the decline is research in agriculture and related sciences, life sciences, physical sciences and mathematics and statistics. Research in business and management increased as a share of total research output, as did humanities research.

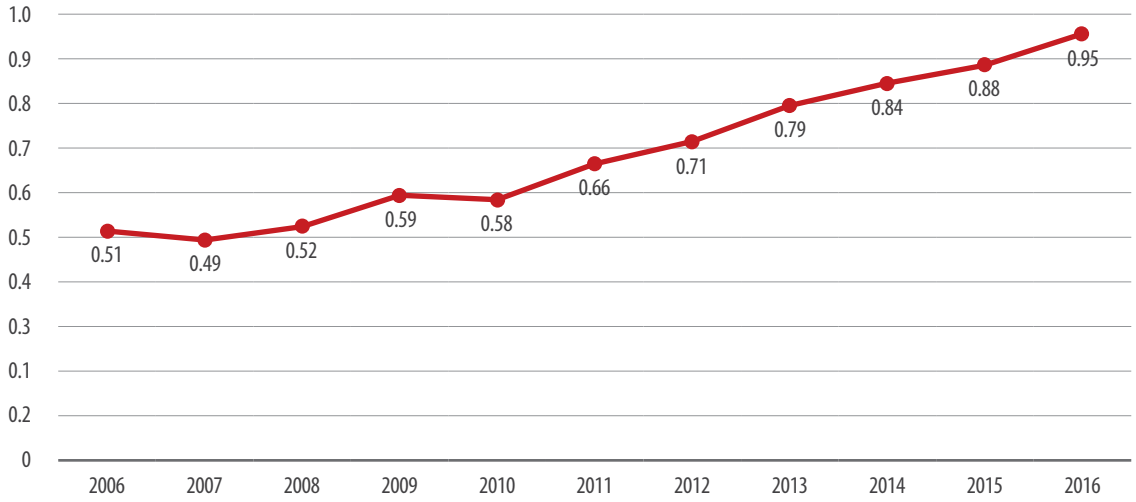
Figure 21, which depicts publication output per permanently employed lecturing or research staff member, shows very encouraging growth over the ten–year period from 2006 to 2016, with most of the growth occurring since 2010. Research output is approaching one journal article or equivalent per member of academic staff, a strong improvement over this period and an indication that research productivity in public universities is rising. An equally encouraging trend is observed in Figure 22, which shows weighted research outputs per academic staff member. This is an index comprising journal articles and other publications such as books or chapters in books as well as research master's and PhD degrees attained. Again the growth since 2010 is particularly impressive.

Table 24 Compositional changes in research output, 2011–2016

	2011	2012	2013	2014	2015	2016
Sciences, Engineering & Technology	**57.4%**	**54.0%**	**54.4%**	**53.8%**	**53.3%**	**54.8%**
01: Agriculture, Agriculture Operations and Related Sciences	6.3%	7.5%	6.3%	4.8%	4.6%	4.7%
02: Architecture and the Built Environment	0.8%	1.1%	1.0%	1.3%	1.1%	1.1%
06: Computer and Information Sciences	2.6%	2.2%	2.7%	2.6%	2.6%	2.6%
08: Engineering	7.9%	7.1%	8.2%	8.1%	8.3%	9.3%
09: Health Professions and Related Clinical Sciences	15.3%	15.6%	15.5%	15.8%	16.4%	15.3%
10: Family Ecology and Consumer Sciences	0.1%	0.0%	0.2%	0.2%	0.3%	0.2%
13: Life Sciences	9.9%	8.9%	9.4%	8.9%	8.4%	8.7%
14: Physical Sciences	10.3%	8.1%	7.6%	8.3%	8.5%	9.4%
15: Mathematics and Statistics	3.8%	3.3%	3.4%	3.5%	2.8%	3.3%
16: Military Sciences	0.4%	0.2%	0.1%	0.3%	0.3%	0.3%
Business & Management	**7.3%**	**8.0%**	**8.0%**	**8.7%**	**9.5%**	**8.7%**
04: Business, Economics and Management Sciences	7.3%	8.0%	8.0%	8.7%	9.5%	8.7%
Education	**5.9%**	**6.6%**	**6.0%**	**6.7%**	**7.0%**	**5.9%**
07: Education	5.9%	6.6%	6.0%	6.7%	7.0%	5.9%
Humanities	**29.5%**	**29.8%**	**31.6%**	**30.9%**	**30.3%**	**30.5%**
03: Visual and Performing Arts	1.4%	1.3%	1.4%	1.3%	1.2%	1.0%
05: Communication, Journalism and Related Studies	0.9%	0.8%	0.8%	0.8%	0.9%	0.8%
11: Languages, Linguistics and Literature	4.0%	4.4%	4.4%	4.2%	3.8%	4.2%
12: Law	5.8%	5.8%	5.5%	5.0%	5.3%	4.9%
17: Philosophy, Religion and Theology	5.8%	5.9%	6.6%	6.0%	5.8%	6.3%
18: Psychology	2.0%	2.0%	2.1%	2.1%	2.4%	2.1%
19: Public Management and Services	1.1%	1.3%	1.6%	1.5%	1.6%	1.2%
20: Social Sciences	8.5%	8.3%	9.2%	10.0%	9.3%	10.0%

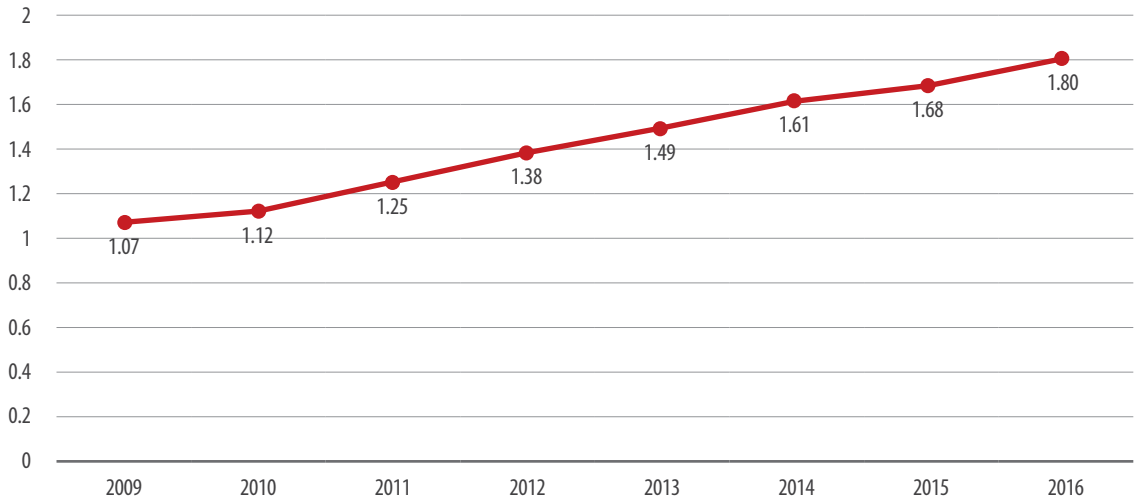
Source: DHET (2014, 2015b, 2016a, 2017)

Figure 21 Publication output per permanently employed lecturing or research staff, 2006–2016



Source: CHET (2018); DHET (2014, 2015b, 2016a, 2017)

Figure 22 Weighted research output* per permanently employed lecturing or research staff, 2009–2016*



Source: Values for 2009–2011 taken from CHET (2018) Table 19 and 2012–2016 from DHET(2018a); DHET (2014, 2015b, 2016a, 2017)

Note: Weighted research output is computed by a complex formula that transforms different outputs such as journal articles, book chapters, full books, PhD and master's theses etc. into a final unit value divided by the number of permanently employed academics. Doctorate degrees have three times the weight of master's degrees. Journal article constitutes one unit but if they were written by authors from different universities, this has to be divided between the number of universities. Annual changes are made in the weights of different research outputs and this influences the total over time. During 2016 the number of units awarded for a full book was increased to ten and this has had a large impact on the number of units awarded to research in scholarly books for 2016 (DHET, 2018a).*

3.4 Equity and transformation

3.4.1. Equity

Table 25 shows the GPI by race group. Across all race groups, the female GER exceeds the male GER, as the GPI values of more than one show. In 2016, the GPI was highest among coloureds at 1.6 and lowest among white students at 1.3. There has been very little change in the GPI over the six–year period, but the disparity in favour of females is likely to grow, albeit slowly.

Table 25 GPI in public universities by race, 2010–2016

Year	Black	Coloured	Indian	White	Total
2010	1.4	1.5	1.5	1.2	1.3
2011	1.4	1.5	1.5	1.2	1.4
2012	1.4	1.6	1.5	1.2	1.4
2013	1.4	1.6	1.6	1.2	1.4
2014	1.4	1.6	1.6	1.3	1.4
2015	1.4	1.6	1.6	1.3	1.4
2016	1.4	1.6	1.6	1.3	1.4

Source: CHET (2018) Table 2.7 Unduplicated headcount of enrolled students according to race, gender, home language and qualification type; CHE (2016, 2018) and Statistics South Africa (2010, 2011, 2012, 2013, 2014, 2015, 2016)

The proportion of enrolled students that are female in various major fields of study for 2010–2016 is given in Table 26. The female share of total headcount increased in three of the four fields, whilst it declined for business and management. Females were a majority proportion in all major study fields throughout the period except for SET, where they made up 46.2% of total enrolment in 2016. It appears that the gender gap in SET enrolment is narrowing. Notably, females accounted for 74.3% of enrolment in education and 63% in humanities.

Table 26 Share of students in public universities that is female by major field of study, 2010–2016

Year	SET	B & M	Edu	Hum
2010	44.9%	56.2%	73.8%	62.5%
2011	44.8%	56.4%	74.2%	63.4%
2012	45.2%	56.5%	74.8%	63.6%
2013	45.5%	56.1%	75.0%	63.9%
2014	45.8%	56.0%	75.0%	64.1%
2015	46.2%	55.8%	75.1%	64.0%
2016	46.2%	55.8%	74.3%	63.4%

Source: CHE (2012, 2014, 2015, 2016, 2017, 2018)
Note: While a breakdown of field of study by both race and gender would have added to this analysis, data on this is currently not publicly accessible.

A clear trend in the gender distribution across major field of study is that males disproportionately select into SET programmes and out of education whereas females have a more uniform spread across the study fields. This pattern is evident in Table 27, which shows that a major share (38.9%) of males enrolled in SET programmes in 2016, an increase of 2.5 percentage points from 36.4% in 2010. The within–gender proportions of both males and females enrolled in business and management declined over the six–year period.

Table 27 Students in public universities by major field (within–gender proportion), 2010–2016

Year	SET		B & M		Education		Humanities		Total
	Male	Female	Male	Female	Male	Female	Male	Female	
2010	36.4%	22.0%	32.1%	30.5%	10.0%	20.9%	21.4%	26.5%	100.0%
2011	37.0%	21.8%	31.8%	30.0%	10.8%	22.5%	20.4%	25.7%	100.0%
2012	37.6%	22.3%	30.8%	28.8%	10.7%	22.7%	20.9%	26.3%	100.0%
2013	37.7%	22.5%	30.0%	27.4%	10.6%	22.6%	21.7%	27.5%	100.0%
2014	38.5%	23.3%	29.7%	27.0%	10.3%	22.1%	21.6%	27.6%	100.0%
2015	38.6%	23.7%	29.5%	26.6%	10.3%	22.3%	21.5%	27.4%	100.0%
2016	38.9%	24.1%	28.6%	26.1%	11.1%	23.2%	21.4%	26.6%	100.0%

Source: CHE (2012, 2014, 2015, 2016, 2017, 2018)

The GER for public universities increased from 16.6% in 2010 to 19.1% in 2016. The NDP proposed that the participation rate in public universities increase by 70% by 2030 over the 2010 figure. This would translate into a targeted participation rate of around 27% by 2030 which, given the trend displayed in Table 28, will require a marked increase in enrolment rates over the next 12 years.

On average, participation rates increased for males and females over the six–year period. However, disaggregating by race and gender shows that participation rates declined slightly for white males (by one percentage point) as well as for Indian males (2.8 percentage points). Across race groups, Indian and white students saw a decline in their university participation rates in 2016. The largest improvement was among black females, whose GER increased by 3.6 percentage points between 2010 and 2016.

Data on students with disabilities are not presented here as this was not available at the time of writing this report.

Table 28 GER in public universities by race and gender, 2010–2016 (%)

	Black			Coloured			Indian			White			Grand Total		
Year	Female	Male	Total	Female	Male	Total	Female	Male	Total	Female	Male	Total	Female	Male	Total
2010	15.2	11.2	13.2	16.1	10.6	13.3	58.0	39.3	48.4	59.3	49.8	54.5	18.7	14.1	16.6
2011	16.4	11.9	14.2	16.3	10.7	13.5	59.1	39.5	48.8	61.1	50.6	55.8	19.8	14.7	17.4
2012	17.1	12.2	14.7	16.2	10.4	13.3	57.3	37.2	46.9	61.6	49.7	55.9	20.4	14.8	17.8
2013	18.0	12.9	15.4	17.1	10.7	13.9	59.8	37.9	48.5	63.6	51.2	57.4	21.3	15.4	18.5
2014	17.9	12.9	15.4	17.1	10.6	13.8	60.3	37.9	48.7	63.6	50.5	57.1	21.2	15.4	18.5
2015	18.5	13.4	16.0	17.7	10.8	14.3	61.0	37.9	49.0	64.2	50.2	57.1	21.8	15.7	19.0
2016	18.8	13.7	16.3	17.8	10.8	14.3	58.0	36.5	46.9	62.5	48.8	55.6	21.9	15.9	19.1

Source: CHET (2018) Table 2.7 Unduplicated headcount of enrolled students according to race, gender, home language and qualification type; CHE (2016, 2018); Statistics South Africa (2010, 2011, 2012, 2013, 2014, 2015, 2016)

3.4.2. Transformation

The WP notes that expansion of university enrolment was not accompanied by a concomitant rise in academic staff. It emphasises the need to attract and support young academics and improve the qualifications of existing academic staff. Broadening the pipeline of new academics entering the system has received separate attention by DHET, for instance through implementation of the New Generation Academics Programme. Increasing the number of entrants into academia requires higher numbers of students graduating from post–graduate programmes, which itself depends on resource availability – most fundamentally, the availability of mentors.

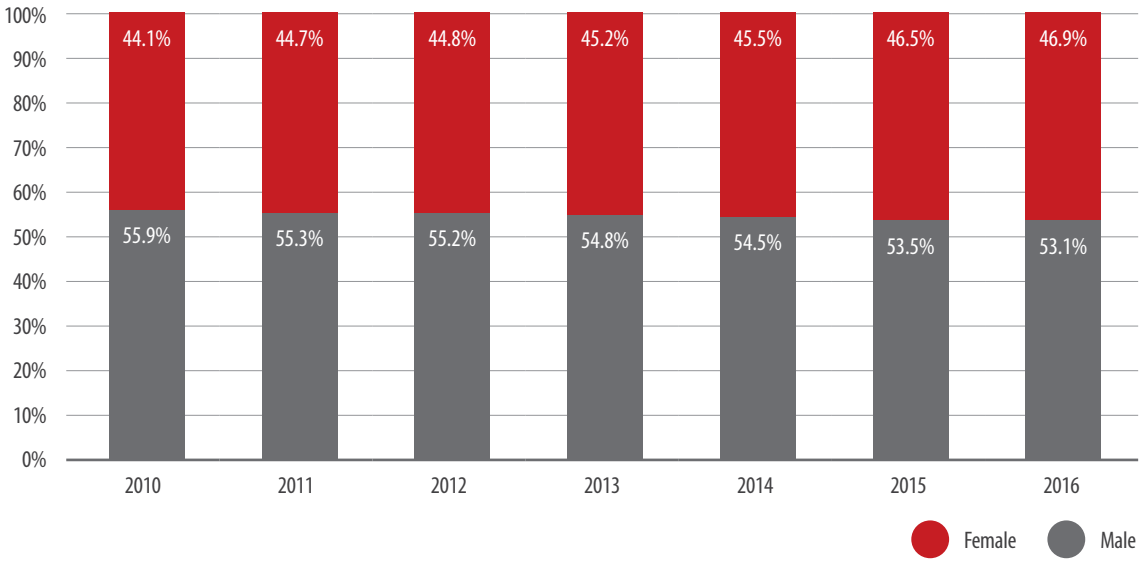
Academic (instructional and research) staff in public universities increased by 2 530 over the period 2010 to 2016. Table 29 shows that female staff grew at a significantly higher rate than males. This translated into a 2.8 percentage point increase in the female share of total academic staff over the 2010 to 2016 period (Figure 23). In 2016 females accounted for 46.9% of total academic staff. If the recent trend continues, gender parity in academic staff numbers will soon be reached.

Table 29 Permanent instructional/research personnel in public universities according to gender, 2010–2016

Year	Male	Female	Total
2010	9 331	7 353	16 684
2011	9 372	7 563	16 935
2012	9 631	7 820	17 451
2013	9 782	8 056	17 838
2014	10 011	8 370	18 381
2015	9 941	8 626	18 567
2016	10 203	9 011	19 214
Average annual growth rate			
2010–2016	1.5%	3.4%	2.4%

Sources: CHET (2018)

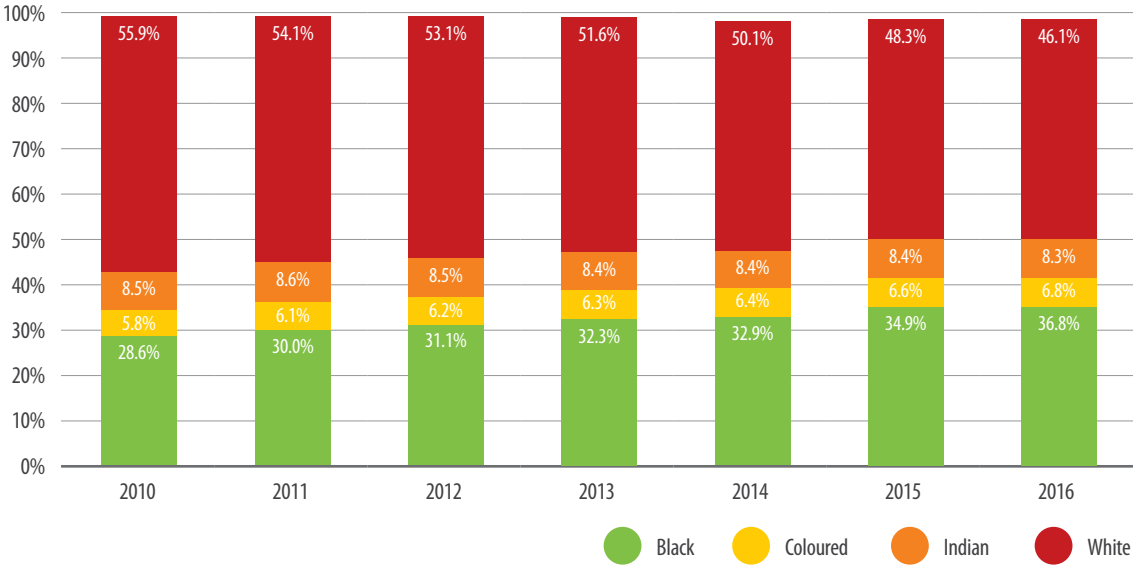
Figure 23 Proportion of permanent instructional/research personnel in public universities by gender (2010–2016)



Sources: Values for 2010–2015 from CHET (2018) and for 2016 from CHE (2018).

The breakdown of academic staff by race is given in Figure 24. While white academic staff are still the largest group, their numbers have been declining at an average rate of 0.8% per year over the period 2010–16, whilst staff numbers for the other race groups have been growing. The strongest growth was among black academic staff which increased by 2 300 (or 53.7%) over the six–year period, followed by coloured staff. In 2010 black individuals comprised 28.6% of all academic staff and by 2016 this proportion had increased to 36.8%, while the white share declined from 55.9% to 46.1%.

Figure 24 Proportion of permanent instructional/research staff in public universities by race, 2010–2016



Sources: Values for 2009–2015 from CHET (2018) and for 2016 from DHET(2018a) Table 3.3

Most staff are at the level of lecturer or below (see Table 30). In 2016 staff at this level numbered 9 733 or 50.7% of total academic staff. This represents a 27.5% increase in lecturer numbers over the seven years shown, or 3.7% growth per annum. Senior lectures comprised 25.5% of total academic staff and associate professors and professors in combination accounted for 22.6% of total academic staff.

Table 30 Academic staff according to rank in public universities, 2010–2016

Year	Lecturer & below	Senior lecturer	Professor, Associate Professor	Director, Assistant Director	Other	Total
2010	7 849	4 304	3 861	188	482	16 684
2011	8 074	4 340	3 857	181	482	16 934
2012	8 386	4 521	4 034	179	331	17 451
2013	8 701	4 579	4 073	179	306	17 838
2014	9 016	4 660	4 200	185	131	18 192
2015	9 331	4 837	4 132	99	168	18 567
2016	9 733	4 890	4 349	94	147	19 213
Average annual growth rate						
2010–2016	3.7%	2.2%	2.0%	10.9%	–18.0%	2.4%

Sources: Values for 2009–2015 from CHET (2018) and for 2016 from DHET (2018a).

At lower levels, gender gaps are closing, but they remain more persistent at more senior levels (Table 31). Women account for the majority of lecturers, junior lectures, and staff with rank below that of a junior lecturer, but men are still dominant at the rank of senior lecturer (10 percentage point gap), associate professor (20 percentage point gap) and professor (45 percentage point gap).

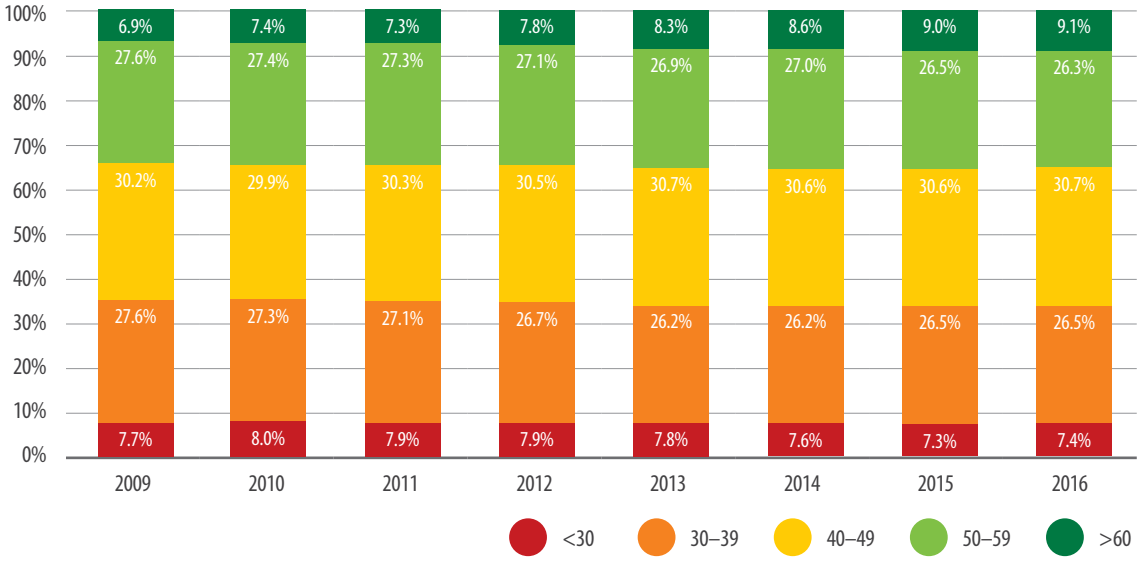
Table 31 Public universities: Female share of permanent academic staff in public universities by rank, 2010–2016

Rank	2010	2011	2012	2013	2014	2015	2016
Below junior lecturer	61.2%	65.7%	81.3%	68.5%	69.8%	58.9%	67.5%
Junior lecturer	56.8%	55.3%	56.4%	55.0%	54.9%	55.7%	58.5%
Lecturer	51.6%	51.7%	53.8%	51.9%	52.6%	53.4%	53.3%
Senior lecturer	43.4%	43.8%	44.8%	44.2%	44.1%	44.8%	45.1%
Associate Professor	33.4%	34.4%	37.0%	36.2%	37.5%	37.9%	39.6%
Professor	23.1%	24.4%	25.4%	25.4%	26.3%	27.8%	27.5%
Assistant director	21.4%	25.7%	30.2%	29.7%	26.3%	27.6%	29.1%
Director	8.5%	8.8%	14.3%	14.8%	17.9%	25.0%	25.0%
Other instruction or research professionals	57.7%	58.3%	52.0%	56.2%	47.3%	43.5%	53.1%

Source: DHET (2018a) Table 3.5

The age distribution of permanent academic staff remained fairly stable over the period 2010–16 (Figure 25). The share of academic staff aged 60 years or above increased by 1.7 percentage points while the share of academics aged younger than 40 years decreased marginally over the period. The 40–49 years age category made up the largest proportion of the total in 2016 at 30.7%. Academics younger than 30 made up 7.4% of the total in 2016. These figures strengthen the concern expressed in the WP regarding the ageing academic staff and the need for efforts to overcome this.

Figure 25 Public universities: Permanent academic staff members by age grouping, 2010–2016



Source: CHE (2016, 2018)

One of the steps undertaken to transform the university landscape was the provision of greater funding to historically disadvantaged public universities or institutions (HDIs). This was intended to occur largely through the block grant subsidy to universities. Despite various changes to expedite this, the share of block grant subsidies going to historically disadvantaged universities did not change significantly over the period under consideration.

In 2008/09 HDIs received 46.9% of total infrastructure grant allocations. By 2016/17, after earlier decreases in their share, HDIs were receiving 40.5% of total infrastructure grant allocations, compared to an average of 35.8% over the period.

3.5 Quality

The composition of academic staff by qualification type shows substantial changes over the 2010–16 period (Table 32). In 2010 black individuals made up 19.4% of staff with a PhD, a figure that increased to 27.9% by 2016. The white share, on the other hand, declined from 67.4% to 55.1% over the same period. Black individuals make up the majority of academic staff at all qualification levels below PhD.

Table 32 Public universities: Percentage permanent academic staff by race and qualification type, 2010–2016

	Qualification type	2010	2011	2012	2013	2014	2015	2016
Black	UG Dipl/Cert	27.7%	32.2%	35.4%	46.4%	51.5%	51.7%	55.4%
	UG Degrees	35.7%	38.5%	40.8%	44.1%	44.3%	47.6%	46.9%
	PG up to Masters	31.0%	32.9%	37.4%	40.2%	43.8%	44.0%	47.8%
	Masters	31.6%	32.6%	33.9%	35.8%	43.5%	39.0%	42.2%
	Doctorate	19.4%	20.6%	22.0%	23.5%	23.6%	25.5%	27.9%
	Other	49.6%	55.6%	51.6%	41.5%	35.8%	46.9%	42.1%
Coloured	UG Dipl/Cert	15.0%	15.9%	14.4%	12.0%	11.3%	12.1%	11.8%
	UG Degrees	7.5%	8.0%	9.0%	8.3%	8.7%	8.5%	9.8%
	PG up to Masters	5.9%	5.9%	5.0%	5.3%	4.8%	5.4%	5.8%
	Masters	6.8%	7.2%	7.2%	7.1%	8.8%	8.6%	7.6%
	Doctorate	4.2%	4.6%	4.9%	5.3%	5.5%	7.6%	5.8%
	Other	4.2%	4.3%	4.7%	5.9%	3.5%	6.6%	8.7%
Indian	UG Dipl/Cert	7.1%	5.4%	4.5%	3.6%	5.2%	6.3%	5.4%
	UG Degrees	11.5%	11.8%	12.4%	12.0%	12.6%	12.1%	11.8%
	PG up to Masters	8.9%	8.6%	8.4%	8.2%	8.3%	8.2%	7.8%
	Masters	9.2%	9.2%	8.7%	8.8%	10.4%	8.6%	8.7%
	Doctorate	6.7%	7.2%	7.4%	7.6%	7.6%	7.6%	7.8%
	Other	10.4%	9.3%	10.0%	8.5%	4.4%	6.6%	5.3%
White	UG Dipl/Cert	50.2%	46.4%	45.7%	38.0%	32.0%	29.9%	26.9%
	UG Degrees	45.0%	41.3%	37.7%	35.2%	34.0%	31.3%	31.0%
	PG up to Masters	54.0%	52.4%	49.1%	46.2%	42.9%	42.1%	38.3%
	Masters	51.5%	50.1%	49.4%	47.3%	35.6%	42.9%	40.5%
	Doctorate	67.4%	65.4%	63.5%	61.2%	59.4%	56.2%	55.1%
	Other	34.8%	29.1%	33.1%	42.5%	22.0%	38.3%	43.7%

Source: CHE (2014, 2015, 2016 and 2017)

Table 33 shows the ratio of FTE students to full–time equivalent staff (see Box C for an explanation of this term). Thus a student enrolled for only half the required credits of a full academic year will be counted as half an FTE student. The total number of FTE staff includes non–permanent staff and is therefore a larger number than the staff figures reported elsewhere. The table shows that the expansion of universities' academic staff outpaced FTE student enrolment, leading to a declining student to staff ratio.

Headcount enrolment by major field of study or Classification of Educational Subject Matter (CESM) category is shown in Table 34 and Figure 26 (see Box D for a description of this classification). Enrolment in SET surpassed that of business and management in 2014 to become the most popular field of study at public universities, with its share standing at 30.2% in 2016 compared to 27.1% of business and management. Business and management experienced a decline in headcount enrolment over the six–year period. Education had strong average growth of 3.3% per annum, thereby increasing its share by two percentage points, while the headcount in the humanities increased only marginally over the period.

Table 33 Public universities: FTE Students per FTE Staff, 2010–2016

Year	FTE Students	FTE Staff	Student/Staff ratio
2010	600 002	21 968	27.3
2011	628 410	23 274	27.0
2012	634 549	24 089	26.3
2013	665 857	24 282	27.4
2014	666 946	24 806	26.9
2015	678 842	25 814	26.3
2016	685 297	26 894	25.5

Source: CHET (2018)

BOX C: FULL–TIME EQUIVALENT (FTE) STUDENTS AND HEADCOUNT ENROLMENT; ALSO FTE AND FTEN

It is sometimes useful to distinguish between full–time equivalent (FTE) students and headcount enrolments. The headcount enrolment is the total number of students enrolled, without considering whether they are full–time or part–time and whether they are doing the full credits prescribed for a year or less. For instance, a student may repeat half the credits from a particular year and not enrol for any additional credits. Such a student is counted as only half a full time equivalent student. Two such students would thus together only be counted as one full–time equivalent student, even though their headcount is two.

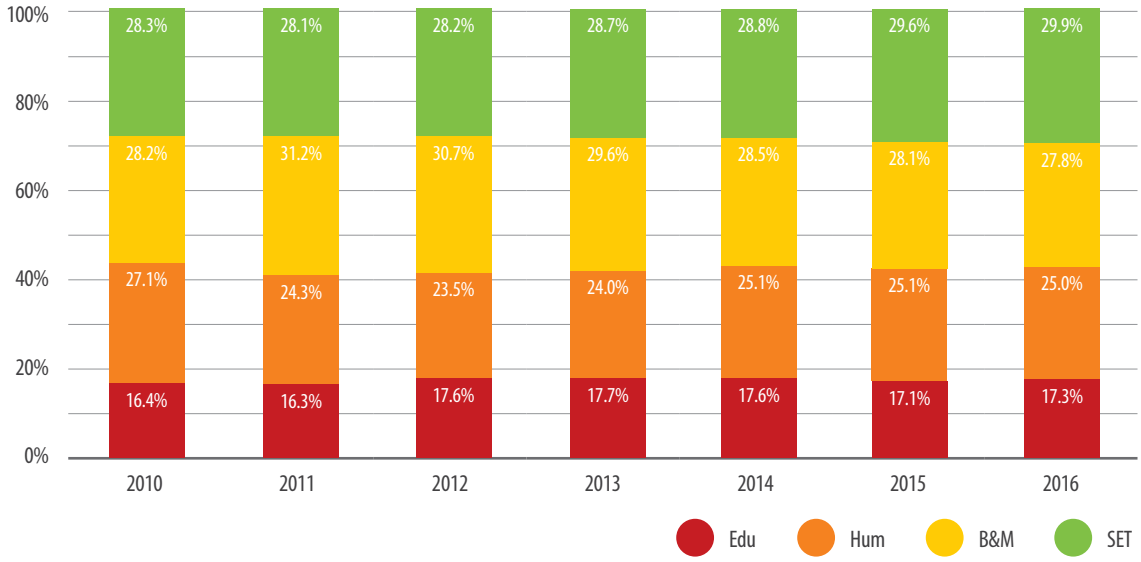
Note that FTE students are full–time equivalent students; FTEN students are first–time entering students, students who enrol at a university for the first time.

Table 34 Public universities: Headcounts by major field of study (all students), 2010–2016

Field of Study					
Year	SET	B & M	Edu	Hum	Total
2009	237 058	236 256	137 467	226 854	837 743
2010	251 334	278 843	145 413	217 336	892 939
2011	264 447	288 487	164 939	220 326	938 199
2012	273 282	282 299	168 608	229 184	953 373
2013	283 622	279 954	172 991	247 131	983 698
2014	287 221	272 409	166 099	243 426	969 154
2015	294 935	273 828	170 550	245 899	985 212
2016	295 383	264 934	176 986	238 535	975 838
Average annual growth rate					
2010–16	2.7%	–0.8%	3.3%	1.6%	1.5%

Source: DHET (2018b)

Figure 26 Public universities: Percentage enrolment by major field of study, 2010–2016



Source: CHE (2012, 2014, 2015, 2016, 2017, 2018)

BOX D: CLASSIFICATION OF EDUCATIONAL SUBJECT MATTER (CESM) OR FIELD OF STUDY

The Classification of Educational Subject Matter (CESM) is a classification system developed by the Department of Education to categorise subject matter of courses offered across South African higher education institutions. The purpose of this system is to facilitate the recording, reporting and comparing of subject matter across institutions and to inform funding determinations.

The system comprises a hierarchy of three classification levels with lower levels providing greater detail. Level one has 20 broad categories ('first–order' categories), each of these having a set of second–order categories which themselves each have a more detailed set of third–order categories.

For example, Education is a first–order CESM or major field of study. A second–order CESM within Education is 'Education management and leadership' (there are 12 other CESMs within Education at this level). Going down to the third–order categories within 'Education management and leadership', there are a total of nine sub–categories, one of which is 'Management of special education'.

For the purpose of this report, first–order CESM categories were aggregated to form four broader categories or major fields of study: Science, engineering and technology (SET); Business and Management (B & M); Education, and; Other Humanities and Social Sciences (Humanities). The first order categories of these four broad aggregations are given below.

Science, Engineering and Technology

01: Agriculture, Agriculture Operations and Related Sciences
02: Architecture and the Built Environment
06: Computer and Information Sciences
08: Engineering
09: Health Professions and Related Clinical Sciences
10: Family Ecology and Consumer Sciences
13: Life Sciences
14: Physical Sciences
15: Mathematics and Statistics
16: Military Sciences

Business and Management

04: Business, Economics and Management Sciences

Education

07: Education

Other Humanities and Social Sciences

03: Visual and Performing Arts
05: Communication, Journalism and Related Studies
11: Languages, Linguistics and Literature
12: Law
17: Philosophy, Religion and Theology
18: Psychology
19: Public Management and Services

3.6 Efficiency

Throughput rates provide one good indicator of university efficiency. These were defined for one specific purpose as "the number of first–time entry undergraduate students of a specific cohort of a specific year who have graduated either within the minimum time, or up to two years beyond the minimum time, to the number of students in the baseline enrolments of that cohort" (CHE, 2017). Throughput rates can also be provided for different time periods. They are a more specific (or purer) definition of the graduation rate in that they control for all the factors specific to a certain cohort.

Table 35 shows the throughput rates over time for successive cohorts in three–year undergraduate degree programmes in public contact universities. Focusing on the cohort that enrolled at contact universities for the first time in 2007, by the seventh year after initial enrolment 70% of entrants had graduated. With respect to distance students, shown in Figure 27, only 19% of the 2007 cohort had graduated by the seventh year following first enrolment. The table also shows that graduation rates have been improving in general, although they remain relatively low.

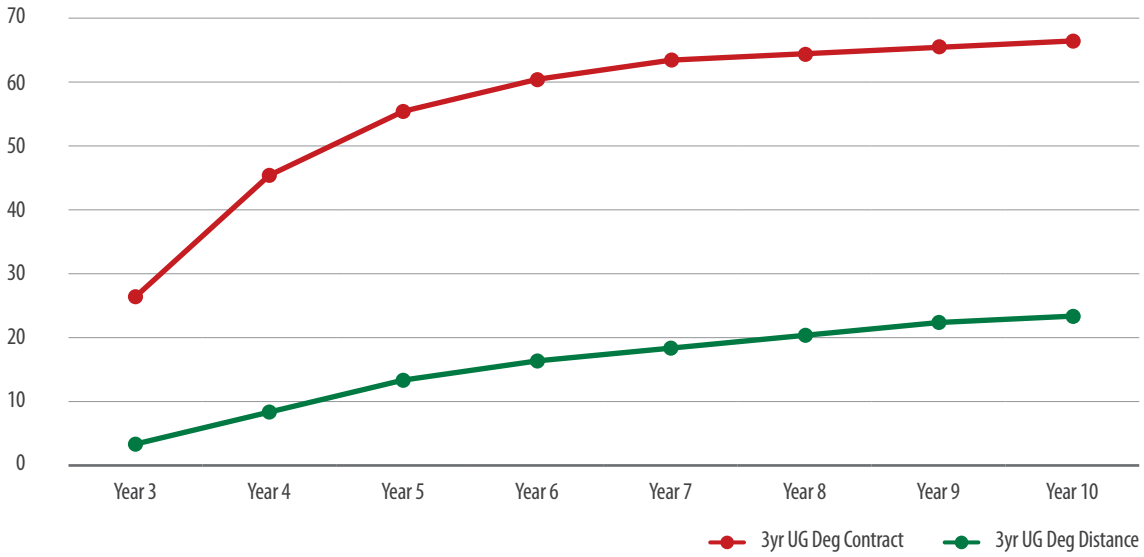
Not all countries report throughput rates, limiting the possibility for comparison. In Norway, 49% of new entrants into bachelor programmes in 2012 were awarded the qualification after three years of study, while 18% completed the qualification two years later, i.e. 67% had successfully completed a three year degree in five years (Statistics Norway, 2018). In Australia, 66% of new entrants into four–year bachelor degree programmes in 2010 had successfully completed the degree after six years of study (Australian Government Department of Education, 2017). These statistics can be compared to South Africa's throughput rate for three–year degrees: The throughput rate for the 2012 cohort was only 29.1% in three years and 63.1% in five years.

Table 35 Throughput rates by intake year of first time entering students in 3 year undergraduate degree programmes (contact education only), 2000–2014 intake years

Intake year	Graduates (%)							
Year 1	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
2000	25.7	44.6	55.2	60.1	62.9	64.3	65.2	66.1
2001	26.2	43.3	53.2	58.0	60.3	61.9	62.9	63.5
2002	26.4	44.2	54.7	59.4	61.9	63.2	64.2	65.0
2003	25.4	43.7	53.6	58.5	60.9	62.4	63.4	64.3
2004	26.6	44.8	55.6	60.3	62.9	64.4	65.6	66.4
2005	29.4	49.0	59.8	64.8	67.5	69.0	70.1	71.0
2006	29.6	49.7	61.4	66.7	69.5	71.4	72.6	73.7
2007	28.1	48.2	60.8	66.6	69.8	71.1	73.0	73.9
2008	29.1	49.9	62.6	68.8	71.8	73.6	74.9	
2009	25.0	45.6	58.4	64.7	68.2	70.3		
2010	27.9	49.4	62.4	68.4	71.6			
2011	28.6	50.2	63.3	68.9				
2012	29.1	50.4	63.1	Data not available				
2013	30.4	51.7						
2014	31.1							

Source: DHET (2018c)

Figure 27 Throughput rates for the 2007 first time entering cohort in three–year degree programmes through contact and through distance education



Source: DHET (2018c)

An alternative way of evaluating efficiency of public universities is through analysis of dropout rates. Table 36 shows dropout rates for three–year degree programmes offered through contact institutions. It is apparent that dropout rates are high, even in the first year, though there has been some improvement over time. By the fourth year of study, 17.9% of the 2013 cohort had already dropped out. Though high, this is nevertheless a considerable improvement on the 23.8% of the 2000 cohort, and the slightly and the slightly lower dropout rates in years succeeding that. It is also considerably better than the 52.0% dropout rate after four years experienced by the 2013 intake of distance education students for three–year degree programmes.

Comparing six–year throughput rates for three–year degrees, amongst the 2011 intake of new students, 49.7% of black students, 49.1% of coloured students, 54.8% of Indian and 67.1% of white students graduated within six years. There are thus still quite large racial differentials in throughput, in addition to differential access by race. Gender also plays a role: On average the six–year throughput rate is about eight percentage points in favour of female students.

Table 36 Dropout rates by intake year of first time entering students in 3 year undergraduate degree programmes (contact education only) (in %), 2000–2015 intake years

Year 1 (intake year)	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
2000	19.7	20.2	23.8	26.7	27.8	28.8	29.3	29.3	29.6
2001	16.4	21.6	25.7	28.5	30.3	31.6	31.9	31.6	31.5
2002	16.2	21.7	24.8	27.8	29.8	30.4	30.6	30.0	29.8
2003	17.5	21.7	25.1	28.5	30.2	30.6	30.2	29.9	30.0
2004	16.2	21.0	24.5	27.1	28.1	28.1	28.0	28.0	27.4
2005	14.8	18.8	21.1	22.7	23.3	23.8	23.9	23.4	23.9
2006	14.7	17.7	19.4	20.4	21.1	21.5	21.2	21.5	21.4
2007	14.0	17.2	18.0	19.8	20.7	20.8	21.4	21.3	21.5
2008	13.1	16.2	17.4	18.3	18.9	19.5	19.6	19.7	
2009	16.5	19.2	20.5	20.8	22.1	22.4	22.4		
2010	14.1	17.5	18.2	19.6	20.0	20.2			
2011	13.8	16.3	18.3	19.3	19.8				
2012	13.1	17.6	18.8	19.3					
2013	15.3	18.5	17.9						
2014	15.3	16.9							
2015	11.8								

Data not available

Source: DHET (2018c): First Time Entering Undergraduate Cohort Studies for Public Higher Institutions (2000 to 2015)

3.7 Funding

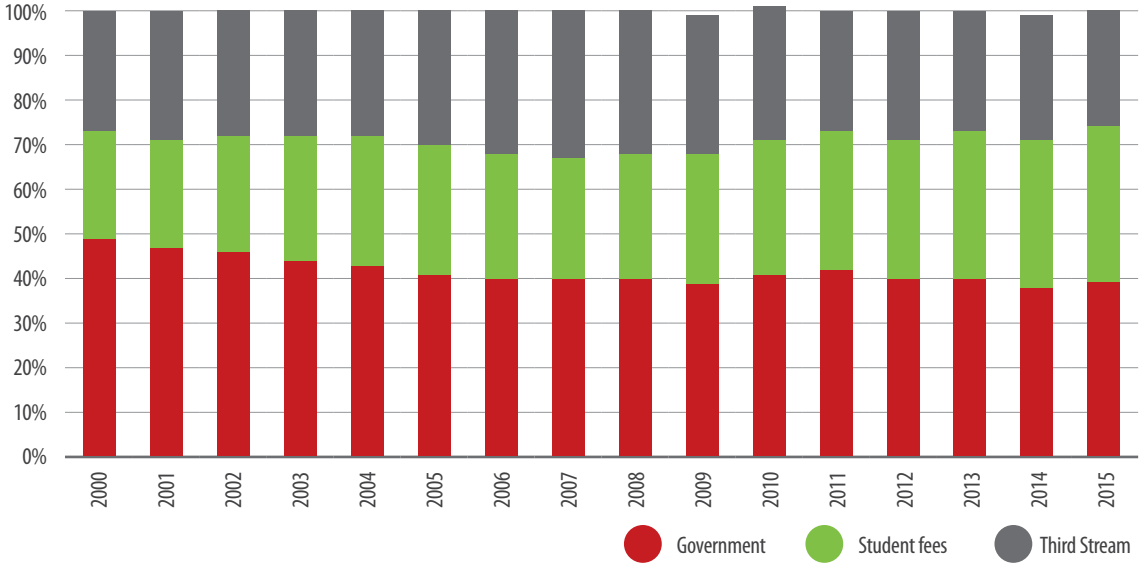
Expansion of enrolment in public universities is constrained by funding. The combination of financial pressures elicited by the Fees Must Fall movement and the present challenged fiscal environment may temper long–term expectations for university expansion. Universities derive income from three primary sources: government allocations through DHET, tuition fees and third stream income (largely income generated through research activity, donations and endowments). Table 37 shows that real income grew by an average rate of 5.7% per year between 2000 and 2015 but that growth has been slower in the more recent five–year period, at an average of 3.9% between 2010 and 2015. While expenditure was lower than income throughout the period, in the past decade expenditure growth has exceeded growth of revenue, implying reduced savings. It is evident from Figure 28 that student fees have become an increasingly important source of income for public universities, whereas the share of university income from government declined from 49% in 2000 to 39% in 2015. Yet it must be remembered that some student fees are financed through National Student Financial Aid Scheme (NSFAS) bursaries, thus a proportion of student fees originates from government expenditure. Third stream income increased as a share of total income between 2000 and 2007, making up one–third of total income at its peak, before declining to 26% of total income by 2015.

Table 37 Income and expenditure of public universities (R million), 2000–2015

Year	Nominal		Real (2015 = 100)	
	Income	Expenditure	Income	Expenditure
2000	12 603	11 745	27 409	25 543
2001	13 914	12 934	28 628	26 612
2002	15 357	14 872	28 857	27 946
2003	17 878	17 738	31 789	31 540
2004	18 650	17 131	33 393	30 673
2005	23 207	20 919	40 712	36 698
2006	26 328	22 903	44 736	38 916
2007	29 695	25 334	47 521	40 542
2008	32 429	28 992	47 155	42 157
2009	36 722	33 283	49 781	45 119
2010	40 879	37 175	53 252	48 427
2011	44 434	40 181	55 118	49 842
2012	49 905	45 818	58 553	53 757
2013	52 563	49 170	58 304	54 541
2014	58 999	54 205	61 660	56 649
2015	63 192	58 710	63 192	58 710
Average annual growth (%)				
2000–2005	13.0%	12.2%	8.2%	7.5%
2005–2010	12.0%	12.2%	5.5%	5.7%
2010–2015	9.1%	9.6%	3.5%	3.9%
2000–2015	11.3%	11.3%	5.7%	5.7%

Source: CHET (2018). Notes: Nominal income and expenditure expressed in R million. Real income and expenditure expressed in 2015 R million. Income and expenditure data for the following institutions missing for certain years: WSU (2001, 2002, 2004, 2005), DUT (2000), UZ (2001), UCT (2004), UL (2004).

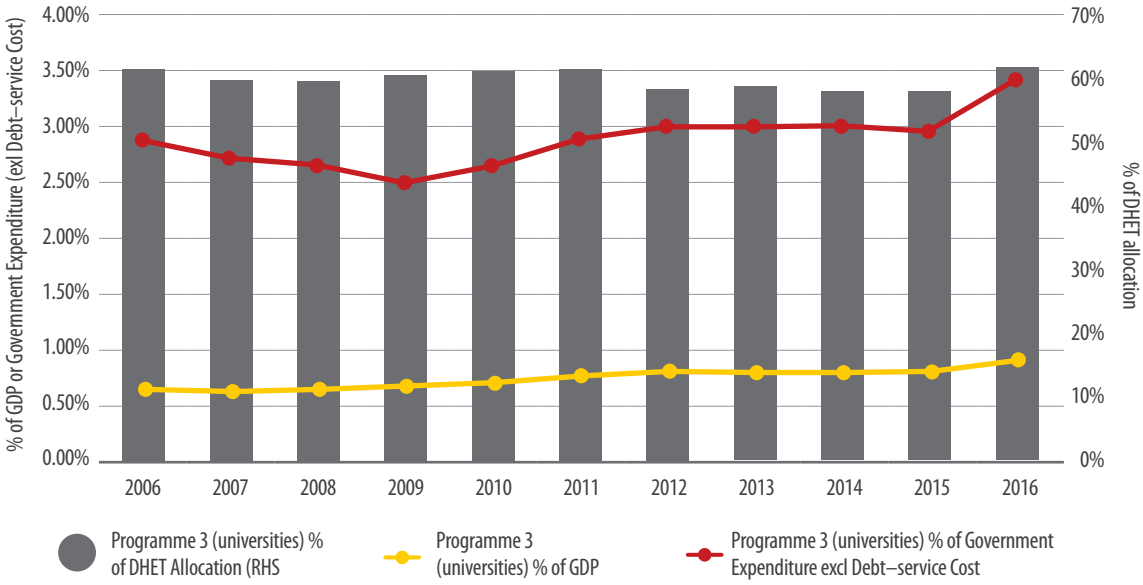
Figure 28 Share of main source of income of public universities, 2000–2015



Source: CHET (2018). Notes: Income source information for SPU, UMP and SMHSU only available for 2015.

As a share of GDP, public expenditure on universities increased from 0.7% in 2006 to 0.9% in 2016, whilst it also rose as a share of non–interest government expenditure from 2.8% to 3.4% (Figure 29). The share of DHET's total budget allocation going to universities remained largely unchanged (at 60%) over the 10–year period.

Figure 29 Public university allocation from government as a share of various aggregates, 2006–2016



Source: National Treasury (2010, 2014, 2016, 2018)

04 TECHNICAL AND VOCATIONAL EDUCATION AND TRAINING (TVET) COLLEGES

4.1 Introduction

Formerly known as Further Education and Training (FET) colleges, TVET colleges have some overlap with both the basic education and higher education systems. Certifications attainable at TVET colleges range from NQF level 2 (equivalent to grade 10) up to NQF level 6 (equivalent to a national diploma), while they also offer some higher diplomas in collaboration with universities. The TVET sector is a key component of the NDP's vision for expanding South Africa's skills base over the long term by producing artisans and technically trained workers. The DHET WP of 2013 recognised the importance of TVET colleges for skills development and marked the expansion of TVET as its 'highest priority'. Presently, there are fifty registered public TVET colleges which operate on 264 campuses across the country. Given their objective of producing job–linked programmes and graduates that are immediately employable, expanding the TVET sector should aid in counteracting the pervasive high youth unemployment rate in South Africa by improving the skills and productivity of young people. This, in turn, should strengthen economic growth.

The WP envisaged a headcount enrolment target of 2.5 million in TVET institutions by 2030, double the target proposed by the NDP, although it appears that this target is no longer seen as achievable. This requires a substantial reprioritisation within the PSET system with the aim to raise the relative status of TVET colleges in relation to universities. The announcement in the 2018/19 budget of additional funding for TVET colleges was intended to primarily correct the underfunding in the system and to support poorer students with access to this system.

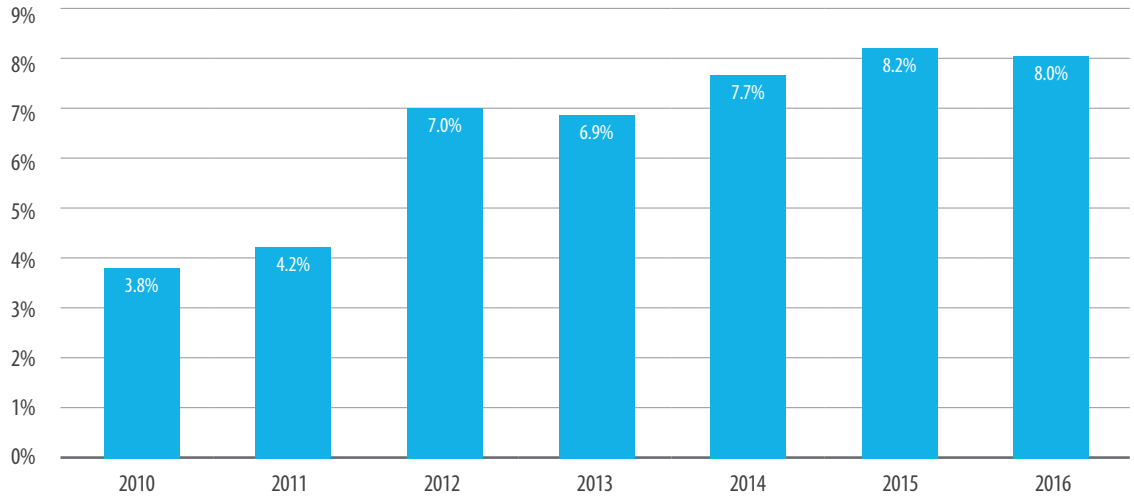
This section discusses recent trends relating to TVET colleges. It is shown below that enrolment has increased significantly over the period 2010–2015, but at a slower pace than envisaged by the WP, and growth now appears to be moderating. The enrolment increase is ascribed mainly to increased intake of black students, particularly female students. Another key trend is that TVET financing has not kept pace with the expansion in enrolment, thus the budget announcement to rectify this situation. The discussion of trends considers access, success, equity and transformation, quality, efficiency and funding

Private colleges are a smaller component of the education and training landscape complementary to the TVET sector. The lack of a central data repository for private colleges precludes a comprehensive analysis of such colleges. Trends in this subsector are discussed in section 6 using available data

4.2 Access

The GER is calculated for TVET colleges as the total headcount enrolment (regardless of age) expressed relative to the size of the national population aged 16–24 years. The age group 16–24 is used here because those entering TVET institutions are distributed across a fairly broad age range, particularly because entry into some TVET courses does not require completion of matric, as will be seen in Figure 31. Figure 30 shows that the GER in TVET colleges increased markedly in recent years, more than doubling between 2010 and 2016. Growth in the nominal number of students enrolled, shown in Table 38, is equally significant, with total TVET enrolment increasing from 358 393 in the year 2010 to 705 397 by 2016. However, it is notable that enrolment peaked in 2015 at a level significantly lower than the target of one million proposed in the WP. The slight decline in enrolment in 2016 suggests the sector may be experiencing a slowdown in expansion, which is likely to continue given the current emphasis on first improving quality. Growth in the GER was driven by an extraordinary once–off enrolment increase in 2012 coupled with a decline in the population aged 16–24 years. Achieving either the NDP target of a 25% GER or the WP target of 2.5 million TVET students by 2030 will require sustained enrolment growth of almost 10% over the period 2017–2030. These ambitious targets are no longer considered realistic.

Figure 30 Enrolment in TVET colleges as a percentage of 16–24 year–olds in the population, 2010–2016



Sources: TVET–MIS data obtained from DHET, extracted in May 2018 (Own Calculations); Statistics South Africa (2010, 2011, 2012, 2013, 2014, 2015, 2016).
Note: Sprague multipliers applied on the mid–year estimates to obtain single years.

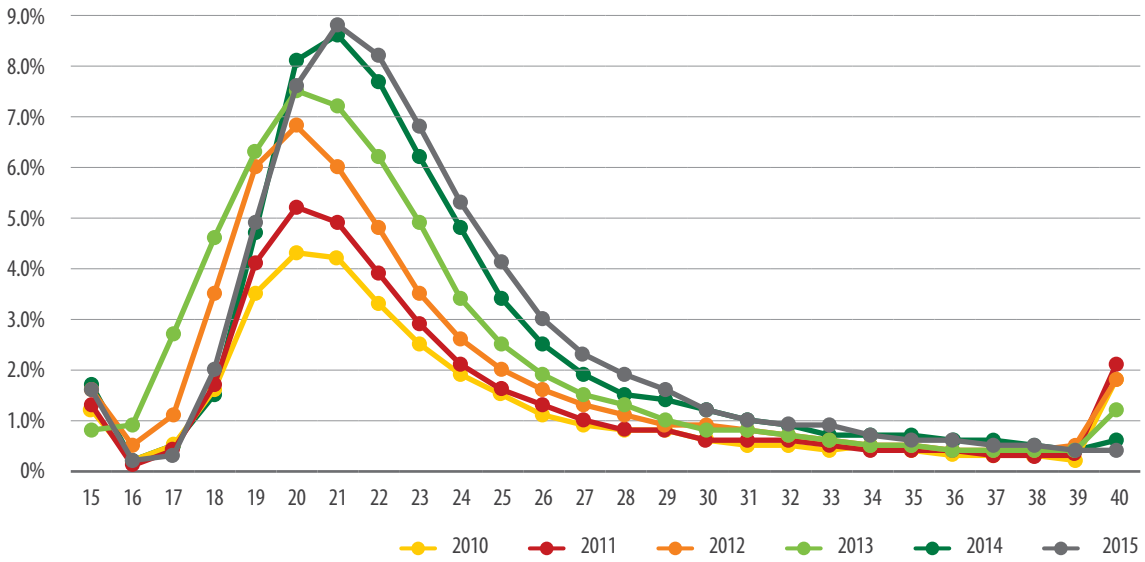
Figure 31 shows the age–specific distribution of TVET students over the six–year period. Each point plots the percentage of students of a given age that are enrolled in TVET colleges in a particular year. The average age of TVET students has increased over the 2010 to 2015 period, as illustrated by the broadening of the distribution as well as the rightward shift over the six years. The trend also indicates an initial surge in enrolment of students younger than 20 years between 2010 to 2013 followed by a moderation in enrolment of this age group between 2013 and 2015. The proportion of TVET students who are 40 years or older has declined throughout the period.

Table 38 GER in TVET Colleges, 2010–2016

Year	Total enrolment	Total Population (age 16–24)	GER
2010	358 393	9 537 173	3.8%
2011	400 273	9 477 533	4.2%
2012	657 690	9 369 254	7.0%
2013	639 618	9 227 085	6.9%
2014	702 383	9 080 449	7.7%
2015	737 880	8 950 968	8.2%
2016	705 397	8 816 322	8.0%

Source: TVET–MIS data obtained from DHET, extracted in May 2018 (Own Calculations). Statistics South Africa (2010, 2011, 2012, 2013, 2014, 2015, 2016.
Note: Sprague multipliers applied on the mid–year estimates to obtain single years.

Figure 31 Age–specific enrolment ratios in TVET colleges, 2010–2015*



Source: TVET–MIS data obtained from DHET, extracted in May 2018 (Own Calculation); Statistics South Africa (2010, 2011, 2012, 2013, 2014, 2015).
**Note: Sprague multipliers applied on the mid–year estimates to obtain single years. For some age groups data were not available broken down by single age. Data on 2016 not available in single ages and this year therefore not represented in figure.*

Access by race and gender is discussed in more detail in the subsection on equity below.

4.3 Success

TVET colleges aim to provide the theoretical base for artisans and technical workers to be equipped with employable vocational skills (more details are available on the qualification structure in TVET colleges in Box E). As tracking students over time was not possible for the period under review (the TVET Management Information System or TVET–MIS was not yet fully operational), the best indicators available about success in TVET studies are certification rates. These express the number of students who successfully complete a qualification in an academic year as a percentage of the number of candidates who were eligible to complete a qualification and wrote the examinations in that year.

BOX E: THE QUALIFICATIONS STRUCTURE IN TVET COLLEGES

The necessary theoretical and practical skills base for at least two post–school qualifications mentioned in this section are taught at TVET colleges:

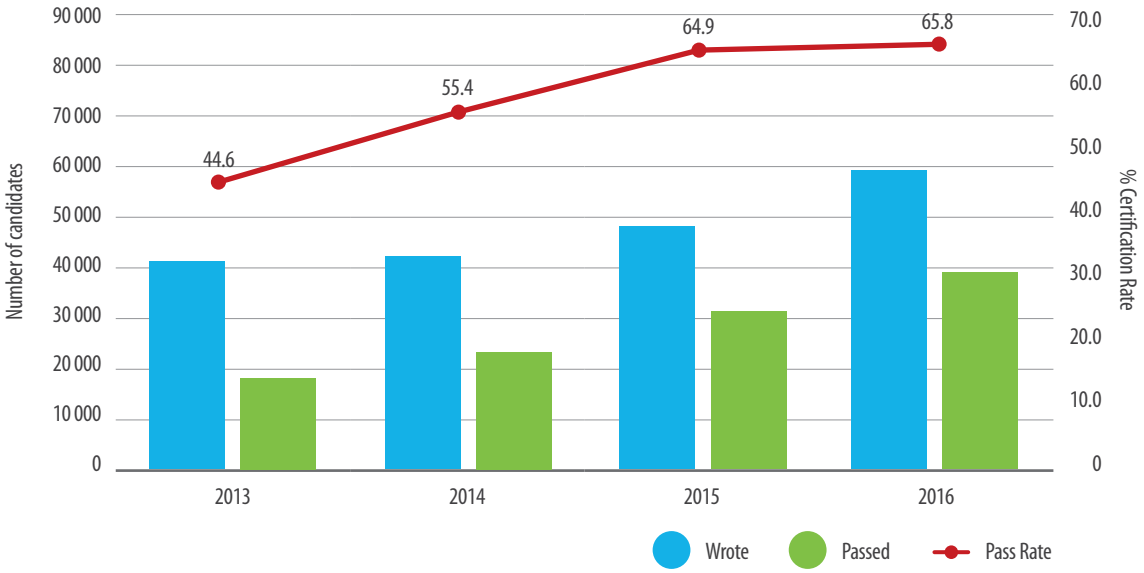
National Certificate (Vocational): NC(V) programmes are delivered under the auspices of the Department of Higher Education and Training and quality assured by Umalusi. The programmes integrate theory and practice and provide students with a broad range of knowledge and practical skills within specific industry fields. These programmes are typically offered over three years (one year per level). These programmes can result in Full Certificates on NQF Levels 2, 3 and 4 (NC(V) Level 4 Certificate is equivalent to a National Senior Certificate (matric).

NATED/Report 191: NATED / Report 191 programmes are delivered under the auspices of DHET and quality assured by Umalusi. The programmes consist of 18 months theoretical studies at colleges and 18 months relevant practical application in work places. Engineering studies range from N1–N6 while Business and Utility Studies range from N4–N6. The total duration varies based on the study direction (Engineer or Business and Utility Studies). At the end an N6 Diploma is awarded.

Source: TVET Colleges, 2019

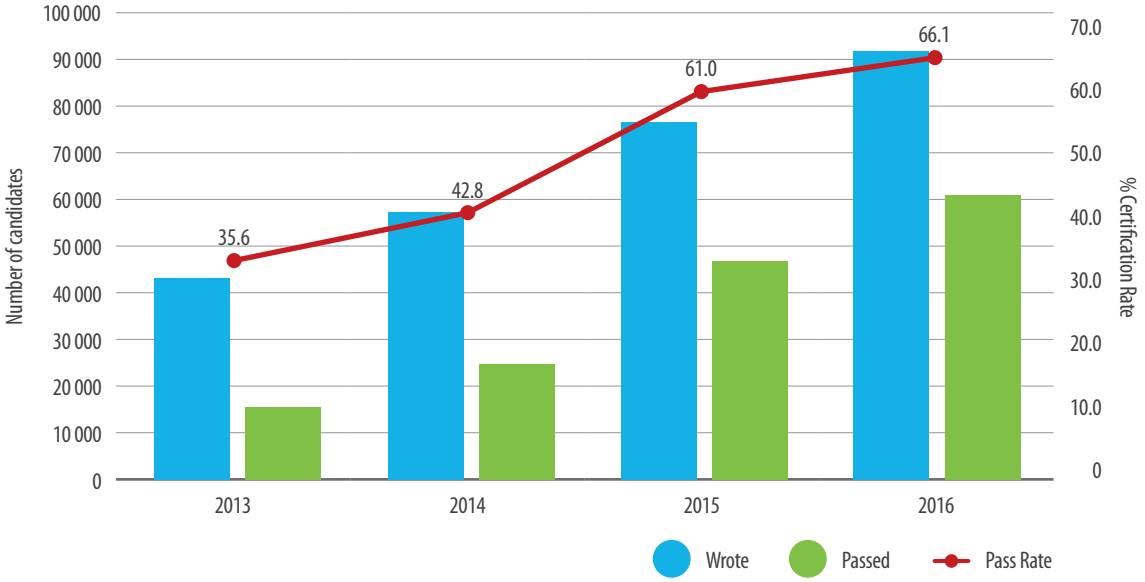
Figure 32 shows the certification rate for the TVET Report 191 level N3 programmes students between 2013 and 2016. The number of students writing exit exams increased from 41 201 in 2013 to 59 409 in 2016. The certification rate improved from 44.6% in 2013 to 65.8% in 2016. For the Report 191 level N6 programme, the number of candidates writing certification exams increased from 42 841 in 2013 to 91 772 in 2016 while the certification rate increased from 36% to 66% (Figure 33). The number of successful candidates increased four–fold over the period.

Figure 32 Examination candidates, passes and certification rates Report191 N3 programme in TVET colleges, 2013–2016



Source: DHET (2015c, 2016d, 2017c, 2018b)

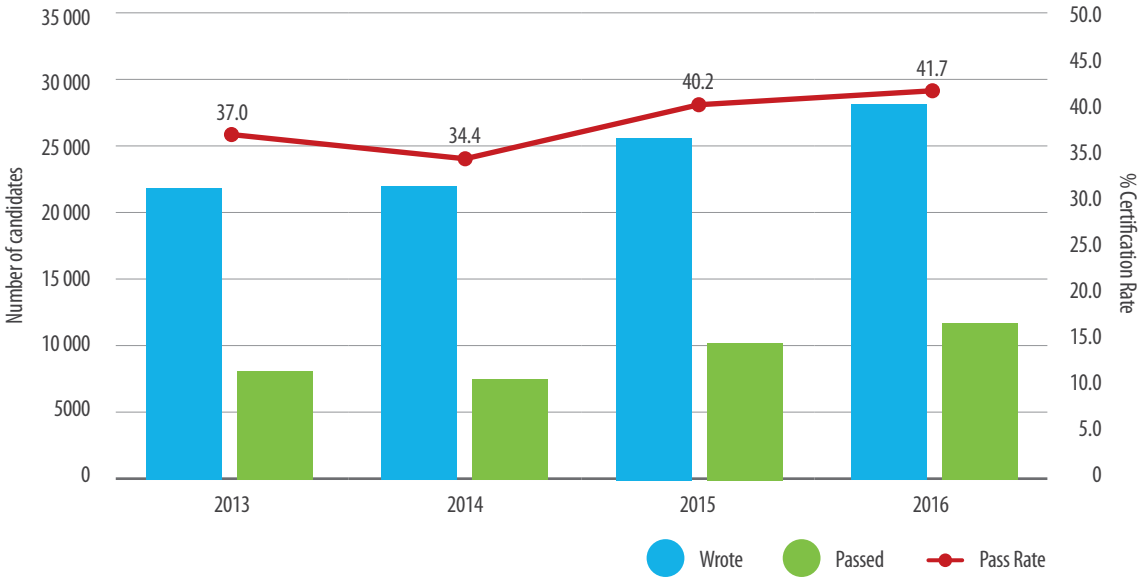
Figure 33 Examination candidates, passes and certification rates for Report191 N6 programme in TVET colleges, 2013–2016



Sources: DHET (2015c, 2016d, 2017c, 2018b); DHET (2016c).

The certification rates for NC(V) 4 programmes, shown in Figure 34, increased by five percentage points from 2013 to 2016, with some fluctuation, but is still much lower than for the Report 191 programmes show above.

Figure 34 Certification Rate of NC(V) 4 programme in TVET Colleges, 2013–2016



Sources: DHET (2015c, 2016d, 2017c, 2018b); DHET (2016c)

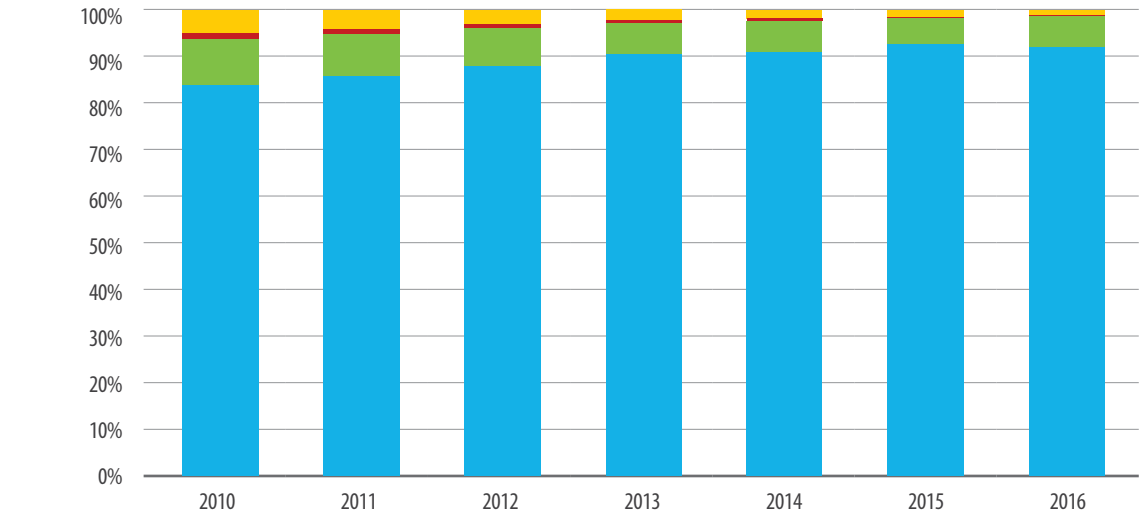
4.4 Equity and transformation

Whereas equity in the TVET college sector is largely perceived in terms of access, and specifically overcoming the skew racial and gender access to PSET from the pre–transition period, transformation is particularly perceived in terms of the staffing of such colleges. These are not the only issues in terms of either equity or transformation, but the fact that these can be expressed in terms of measurable indicators means that public debates often emphasise these aspects.

4.4.1. Equity

Equity in access to PSET programmes is important in South Africa, particularly because pre–transition enrolment was so strongly racially determined. It is therefore encouraging that TVET college enrolment grew fastest amongst black individuals, increasing from 83.9% in 2010 to 92.1% in 2016 (Figure 35). White individuals exhibit the most rapid decline in relative share of the total, having contracted from 4.9% in 2010 to 1.1% in 2016. However, racial and gender shares are not fully clear, because the race or gender of a large and fluctuating proportion of students in TVET colleges was not classified.

Figure 35 Racial share in TVET college enrolment, 2010–2016



	2010	2011	2012	2013	2014	2015	2016
Black	83.9%	85.7%	87.9%	90.4%	90.9%	92.6%	92.1%
Coloured	9.9%	9.1%	8.2%	6.8%	6.8%	5.6%	6.5%
Indian	1.3%	1.1%	1.0%	0.7%	0.5%	0.4%	0.3%
White	4.9%	4.0%	3.0%	2.2%	1.8%	1.4%	1.1%

Source: TVET–MIS data obtained from DHET, extracted in May 2018 (Own Calculations)

Females have been enrolling in TVET colleges at higher rates than males since 2010 and surpassed male enrolment from 2012 onwards (shown in the last column of Table 39). In 2016, 53.3% of all TVET enrolment were black female students. Figure 36 shows the percentage of total TVET students who are female. In 2010 females made up 47.7% of the total number of TVET students and by 2016 this proportion had increased by nine percentage points to 56.8%.

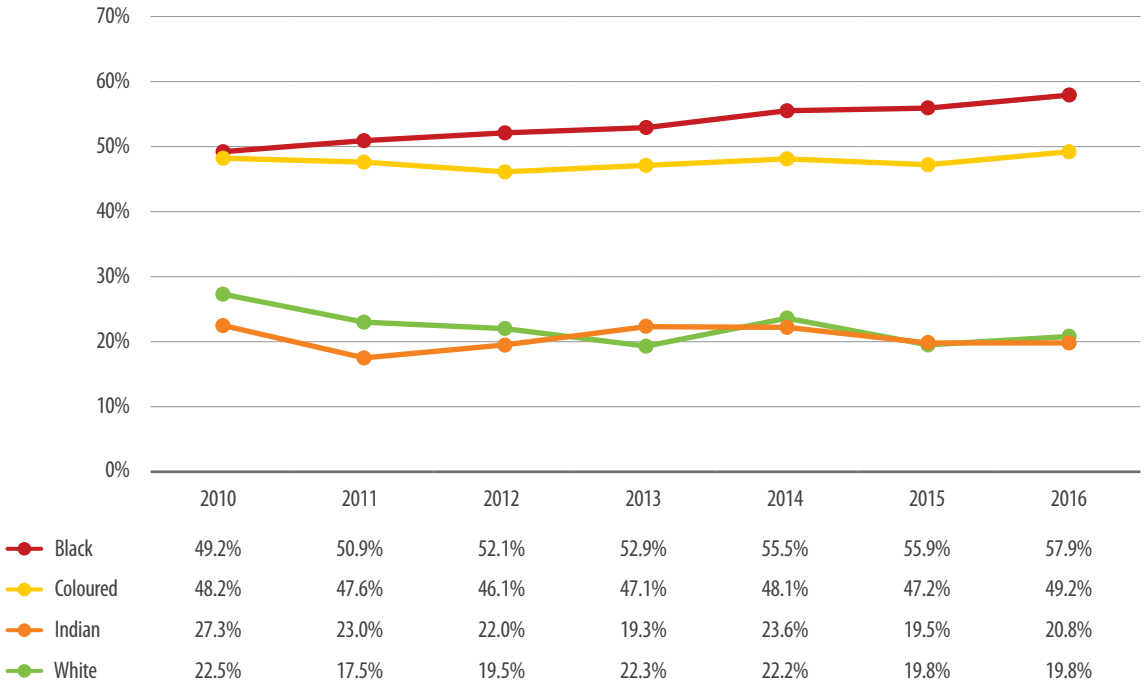
With the exception of black individuals, the intra–race female share of TVET students has not improved significantly over the period under review. Among coloured students, the percentage of female TVET students remained close to 50% throughout the six–year period. White and Indian female enrolment diverged markedly from that of blacks and coloureds and has declined over the six years.

Table 39 Share of females of each race group as proportion of overall TVET college enrolment, 2010–2016

Year	Black	Coloured	White	Indian	Total
2010	41.3%	4.8%	1.3%	0.3%	47.7%
2011	43.6%	4.4%	0.9%	0.2%	49.1%
2012	45.8%	3.8%	0.7%	0.2%	50.5%
2013	47.8%	3.2%	0.4%	0.1%	51.5%
2014	50.5%	3.3%	0.4%	0.1%	54.3%
2015	51.7%	2.7%	0.3%	0.1%	54.8%
2016	53.3%	3.2%	0.2%	0.1%	56.8%

Source: TVET–MIS data obtained from DHET, extracted in May 2018 (Own Calculations)

Figure 36 Proportion of students of each race group in TVET colleges that are female, 2010–2016



Source: TVET–MIS data obtained from DHET, extracted in May 2018 (Own Calculations)

A significant yet fluctuating proportion of students were not classified by race or gender, as can be seen in the second last column of Table 40. For those that are classified, however, there is a general decline in white individuals enrolling in TVET colleges. Enrolment of white males decreased from 11 418 in 2010 to 5 980 in 2016, a decrease of 48%, while the decline for white females was even larger, from 4 284 to 1 567, a 61% decrease. A similar trend is also observed within the much smaller Indian population. TVET enrolment grew fastest among black females at an annual average rate of 19.2%. Black male enrolment grew, on average, at 12.4%. These very high enrolment rates were made possible by earlier large scale capacity investment in TVET colleges and such rapid growth is not sustainable over a long period.

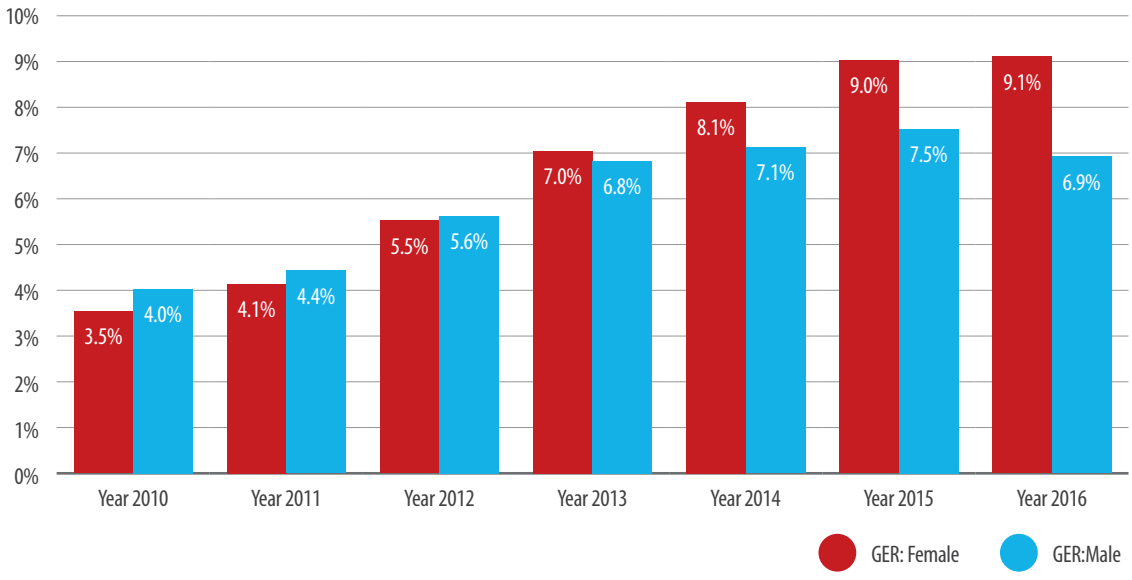
Table 40 Enrolment in TVET colleges by race and gender, 2010–2016

Year	Black			Coloured			Indian			White			Unspecified	Total
	Female	Male	Total	Female	Male	Total	Female	Male	Total	Female	Male	Total	Total	
2010	131 255	135 365	266 620	15 204	16 341	31 545	900	3 104	4 004	4 284	11 418	15 702	40 522	358 393
2011	158 282	152 708	310 990	15 813	17 384	33 197	698	3 295	3 993	3 368	11 262	14 630	37 463	400 273
2012	224 008	205 585	429 593	18 464	21 602	40 066	938	3 878	4 816	3 192	11 311	14 503	168 712	657 690
2013	292 679	260 569	553 248	19 563	21 994	41 557	890	3 095	3 985	2 574	10 796	13 370	27 458	639 618
2014	326 308	261 751	588 059	21 074	22 747	43 821	715	2 510	3 225	2 751	8 928	11 679	55 599	702 383
2015	363 508	286 911	650 419	18 685	20 936	39 621	517	2 100	2 617	1 954	8 042	9 996	35 227	737 880
2016	376 179	273 498	649 677	22 626	23 405	46 031	382	1 550	1 932	1 567	5 980	7 547	210	705 397
Average annual growth rate														
	19.2%	12.4%	16.0%	6.9%	6.2%	6.5%	–13.3%	–10.9%	–11.4%	–15.4%	–10.2%	–11.5%	–58.4%	11.9%

Source: TVET–MIS data obtained from DHET, extracted in May 2018 (Own Calculation); Statistics South Africa (2010, 2011, 2012, 2013, 2014, 2015, 2016).

Figure 37 shows the GER for TVET colleges disaggregated by gender. In 2010 male GER (4.0%) exceeded that of females (3.5%). By 2016 this pattern had reversed with male GER having increased to 6.9% while female GER increased to 9.1%. By 2016, the male GER was in decline while the female GER maintained positive growth.

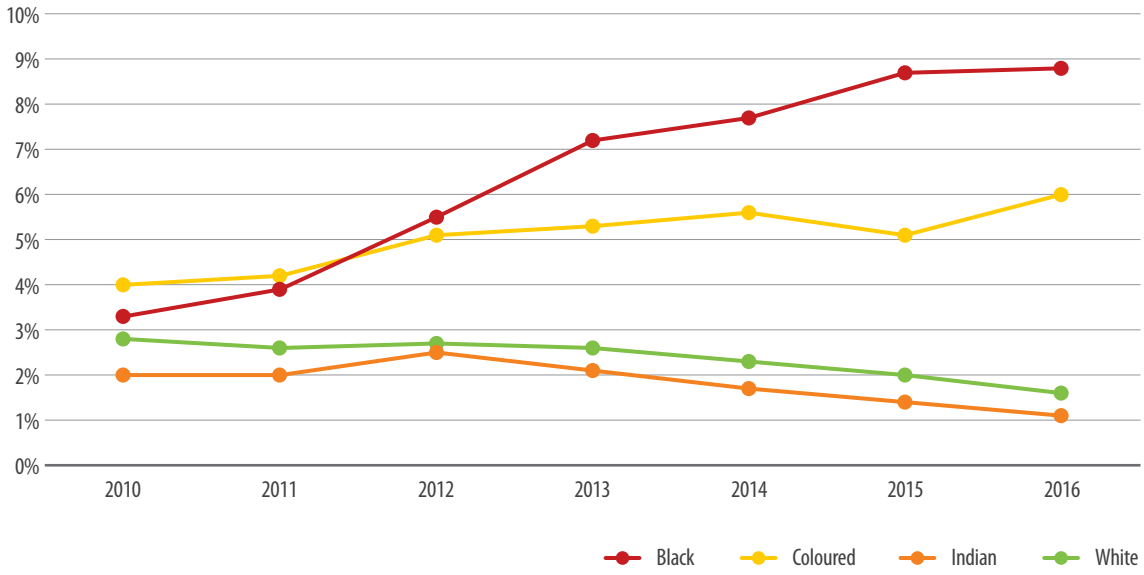
Figure 37 Enrolment in TVET colleges as a percentage of the 16–24 year–olds in the population by gender, 2010–2016



Source: TVET–MIS data obtained from DHET, extracted in May 2018 (Own Calculations); Statistics South Africa (2010, 2011, 2012, 2013, 2014, 2015).
Note: Sprague multipliers applied on the mid–year estimates to obtain single years.

Participation trends in TVET differ significantly across race groups (though here again, it should be noted that the race and gender of all students had not been recorded, thus these figures may not be fully accurate). Figure 38 shows that black participation in TVET colleges as measured by the GER for different race groups grew from 3.3% in 2010 to 8.8% in 2016, surpassing coloured participation in 2012. Participation by black students increased most rapidly between 2010 and 2013 and appears to be slightly levelling off. Coloured students exhibited more moderate growth in participation over the six–year period, growing from an initial 4% to 6% by 2016. Participation among both white and Indian students declined over the entire period. In 2016 1.6% of white individuals aged between 16 and 24 years were enrolled in TVET colleges. For Indian students, this figure is 1.1%.

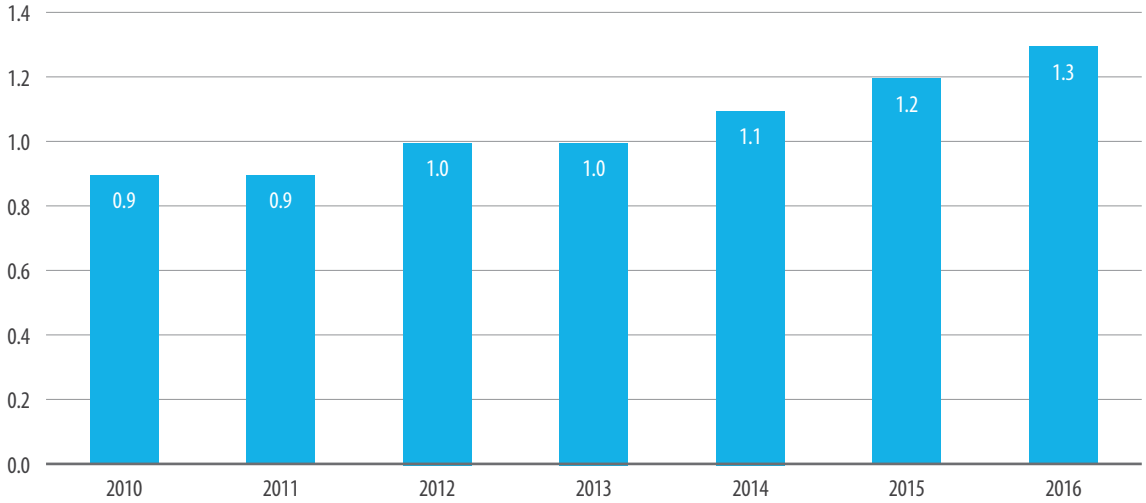
Figure 38 GER in TVET colleges by race, 2010–2016



Source: TVET–MIS data obtained from DHET, extracted in May 2018 (Own Calculations); Statistics South Africa (2010, 2011, 2012, 2013, 2014, 2015).
Note: Sprague multipliers applied on the mid–year estimates to obtain single years.

Enrolment of female students grew more rapidly than that of males. Gender parity was attained in 2013 and the continuing rise in the GPI marks a significant change in the gender of the TVET student body (Figure 39). Figure 40 shows that the substantial change in GPI over the period was primarily driven by changes in GPI among black students, which increased from below 0.9 in 2010 to 1.4 in 2016. For coloured students there is a relatively stable and equal balance between male and female TVET students with a fairly consistent GPI of 1.0 over the period 2010–2016. Indian and white students show fairly low GPIs, reflecting a large disparity favouring males.

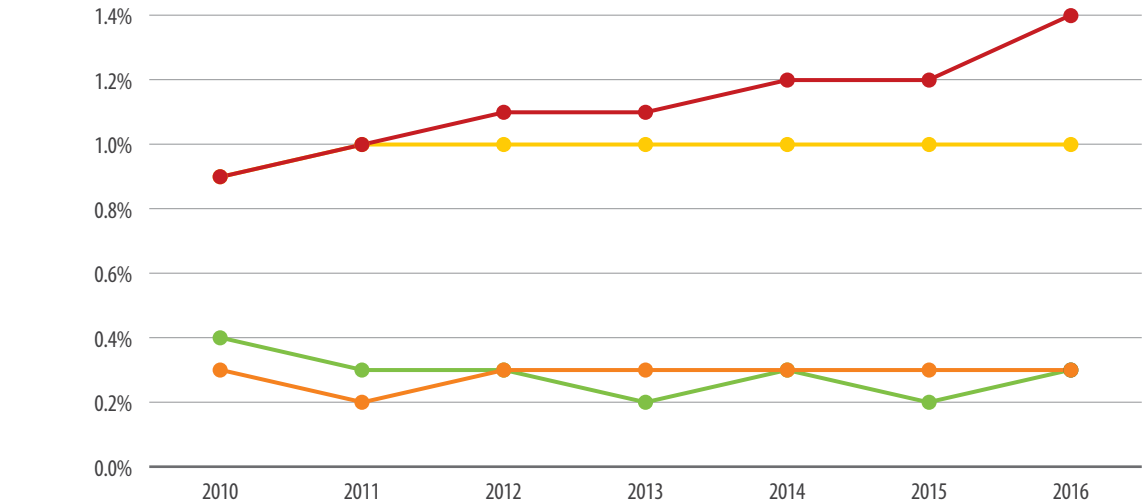
Figure 39 Gender parity index in TVET colleges, 2010–2016



Source: TVET–MIS data obtained from DHET, extracted in May 2018 (Own Calculations); Statistics South Africa (2010, 2011, 2012, 2013, 2014, 2015).

Fewer than 0.5% of students enrolled at TVET colleges had a disability in 2016 (Table 41). This low prevalence of students with disabilities in TVET colleges held throughout the 2010–2016 period. Given the low enrolment numbers of students with disabilities, small changes in enrolment translate into seemingly large proportional changes, as can be seen in the last column of Table 41. For example, in 2010 females made up 42.9% of students with disabilities and by 2016 their share had increased to 63.0%. The major disability category in 2016 was sight, followed by physical disability and intellectual/learning disability (Table 42).

Figure 40 GPI in TVET colleges by race, 2010–2016



	2010	2011	2012	2013	2014	2015	2016
Black	0.9	1.0	1.1	1.1	1.2	1.2	1.4
Coloured	0.9	1.0	1.0	1.0	1.0	1.0	1.0
Indian	0.3	0.2	0.3	0.3	0.3	0.3	0.3
White	0.4	0.3	0.3	0.2	0.3	0.2	0.3

Source: TVET–MIS data obtained from DHET, extracted in May 2018 (Own Calculations); Statistics South Africa (2010, 2011, 2012, 2013, 2014, 2015).
Note: Sprague multipliers applied on the mid–year estimates to obtain single years.

Table 41 Enrolment of students with a disability in TVET colleges, 2010–2016

Year	Total enrolment[1]	Enrolment of students with a disability[2]	Proportion of students with a disability	Female share of students with disabilities
2010	358 393	834	0.2%	42.9%
2011	400 273	1 480	0.4%	41.8%
2012	657 690	Not available	Not available	n/a
2013	639 618	2 266	0.4%	46.3%
2014	702 383	2 884	0.4%	51.6%
2015	737 880	3 049	0.4%	52.8%
2016	705 397	2 639	0.4%	63.0%

Sources: DHET (2018b); Unpublished Disability Fact Sheet, DHET, 2018. Gender ratio for 2010–2015: DHET (2017b), for 2016 TVET–MIS data obtained from DHET, extracted in May 2018.

Table 43 shows the breakdown of TVET enrolment by programme for 2015. NC(V) programmes offer certification at three levels, equivalent, respectively, to grades 10, 11 and 12. Report 191 programmes are offered at six levels and confer certifications upon completion of levels N3 (equivalent to a matric certificate) and N6 (equivalent to a national diploma). A majority of students (73.5%) were enrolled in Report 191 programmes, most of these enrolled in the N4 level or above. Enrolment in Report 550–NSC and Occupational Qualifications programmes are comparatively low at 0.1% and 2.9% respectively. Report 191 N1–N3 programmes were dominated by males in 2015 (Figure 41), while the gender distribution for Occupational Qualifications was quite balanced. The gender disparity appears to increase in favour of females at higher levels within a particular programme. In Report 191 programmes, females account for 60% of enrolment at level N4 and 63% at level N6. Males are a majority only in the three lowest Report 191 programmes.

Table 42 Enrolment in TVET colleges by disability category, 2016

Category	Total
Communication(talk/listen)	4
Disabled but unspecified	18
Emotional (behav/psych)	172
Hearing (even with h. aid)	225
Intellectual (learn etc)	254
Multiple	177
None now –was Sight	1
Physical (move/stand etc)	426
Sight (even with glasses)	1 362
None	702 758
Total	705 397

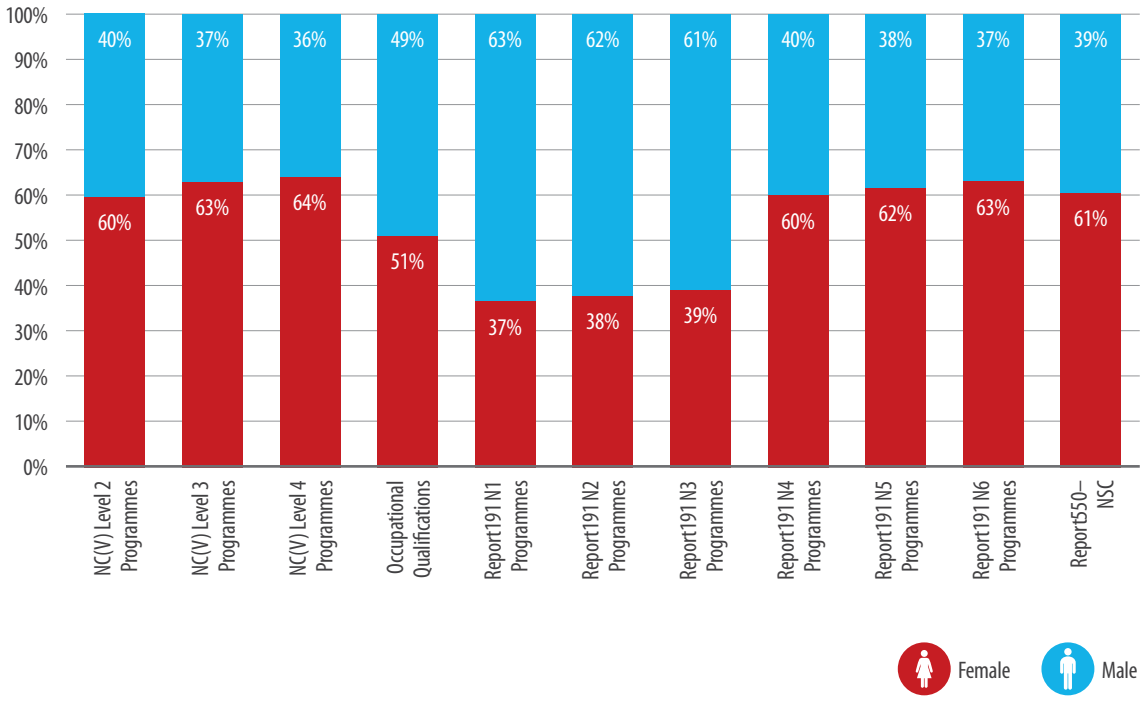
Source: For 2016: TVET–MIS data obtained from DHET, extracted in May 2018 (Own Calculations). For 2010–2015: DHET (2017b).

Table 43 Number of students in TVET colleges by gender in each programme, 2015*

Programme	Female	Male	Total	Percentage share
NC(V) Level 2 Programmes	50 601	34 205	84 806	12.0%
NC(V) Level 3 Programmes	30 642	18 111	48 753	6.9%
NC(V) Level 4 Programmes	20 431	11 469	31 900	4.5%
Occupational Qualifications	10 489	10 044	20 533	2.9%
Report191 N1 Programmes	20 488	35 521	56 009	7.9%
Report191 N2 Programmes	27 818	45 508	73 326	10.4%
Report191 N3 Programmes	22 645	35 087	57 732	8.2%
Report191 N4 Programmes	85 519	56 905	142 424	20.2%
Report191 N5 Programmes	65 586	40 753	106 339	15.1%
Report191 N6 Programmes	52 780	30 854	83 634	11.8%
Report550–NSC	603	393	996	0.1%
Total	387 602	318 850	706 452	100.0%

Source: TVET–MIS data obtained from DHET, extracted in May 2018 (Own Calculations)
**Note: Data for 2016 not yet available by programme. Discrepancy between total number of students as presented in DHET (2017c) and here is due to data on gender and programme not being available for all students.*

Figure 41 Percentage of students in TVET colleges by gender in each programme, 2015

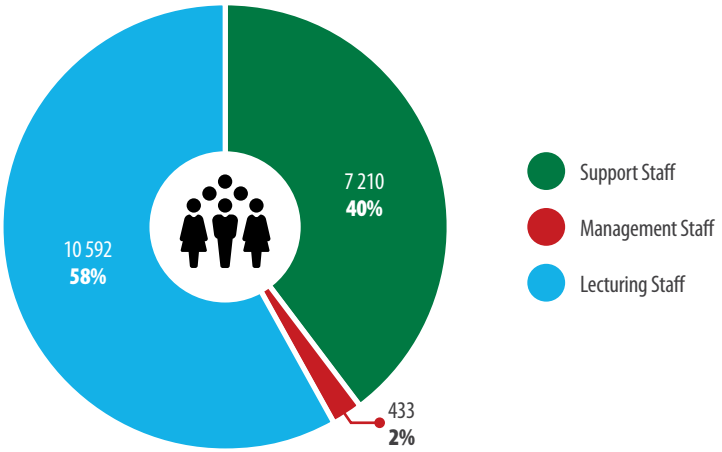


Source: TVET–MIS data obtained from DHET, extracted in May 2018 (Own Calculations)

4.4.2. Transformation

Among its findings, the Heher Fees Commission (sometimes referred to as the Heher Commission) recognised the shortage of lecturing staff in TVET colleges as a challenge to the sector's growth. Figure 42 shows the breakdown of staff into lecturing staff, management, and support staff for the year 2015. Staff across TVET colleges totalled 18 235. A majority of total staff (58%) were lecturing staff. Management made up 2% of the total and support staff comprised 40%. With around 260 campuses in operation across the sector, there are less than two management staff members for each TVET campus.

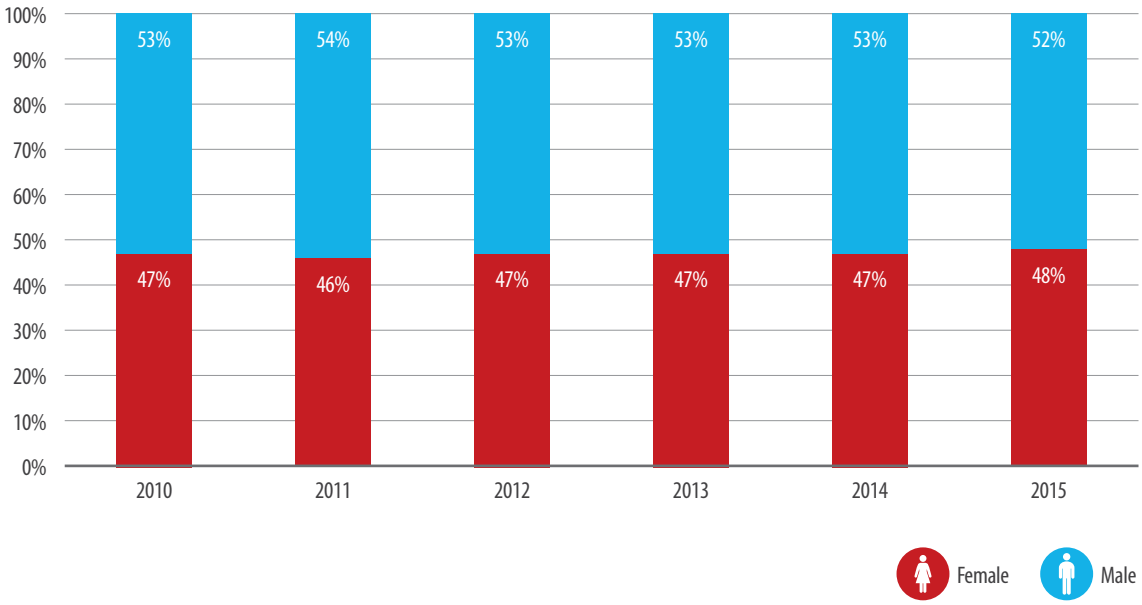
Figure 42 Number and percentage of staff in TVET colleges per category, 2015



Source: TVET–MIS data obtained from DHET, extracted in May 2018 (Own Calculations)

Figure 43 shows the gender distribution of lecturing staff in TVET colleges over the period 2010 to 2015. The male to male female ratio of TVET lecturing staff remained relatively stable over this period.

Figure 43 Percentage of lecturers in TVET colleges by gender, 2010–2016



Source: TVET–MIS data obtained from DHET, extracted in May 2018 (Own Calculations)

4.5 Quality

Table 44 shows that the students per member of the lecturing staff has risen sharply, from just over 40 in 2010 to more than 60 three years later, before stabilising. Some of this is due to economies of scale being reaped after the large expansion of TVET capacity in the previous decade. However, in part it may also reflect downward pressure on the quality of the education offered, something that the 2018/19 budget acknowledged by providing additional funding to TVET colleges to improve quality.

An OECD report (Field et al., 2014: 27) refers to a turnaround strategy that was developed to tackle quality challenges in TVET. The authors conclude that "[s]trong points include measures to improve throughput rates, enhance lecturer qualifications and industry–linked experience, and improve financial management systems. So significant quality challenges have been met with strong action" (Field et al., 2014: 27).

Table 44 Students (headcount) per member of lecturing staff in TVET colleges, 2010–2015

Year	Total staff	Total students	Student/staff ratio
2010	8 126	326 889	40.2
2011	8 686	369 339	42.5
2012	9 199	490 105	53.3
2013	10 106	612 621	60.6
2014	10 842	661 437	61.0
2015	10 592	706 452	66.7

Source: TVET–MIS data obtained from DHET, extracted in May 2018 (Own Calculations)

At universities, a system of enrolment planning has long been in place to ensure that the growth of universities takes place at the pace that is commensurate with the state's ability and willingness to fund it. At TVET colleges, expansion has been very rapid, following recapitalisation in 2005 to expand infrastructure and capacity (Sheppard 2016: 30). There has been a real concern on the part of many observers that quality is suffering as a result (see e.g. Sheppard 2016: 31). The Ministerial Committee that investigated funding of TVET colleges expressed this concern:

> *"…in recent years TVET college quality has been compromised because of the pressure to increase enrolments without compensatory increases in staff and other resources. Provision must therefore be made to ensure qualitative improvements to meet labour market needs, even if it has to be at the expense of further increasing quantitative growth in enrolment. Indeed, as the reviewed literature indicates, current certification rates are abysmal. Currently learners in the TVET system graduate at an exorbitant per capita cost which is unsustainable. Moreover, the absorption rate of TVET graduates in the economy is also a cause of serious concern" (DHET 2017b Ministerial Committee: 188–9).*

In the light of these concerns, DHET has now decided that enrolment at each college is to remain unchanged, whilst increasing resources through provision of additional funding in the 2018/19 budget. This is in line with the key improvements advocated by the WP (2013: xii), including "…improving their (TVET colleges') management and governance, developing the quality of teaching and learning, increasing their responsiveness to local labour markets, improving student support services, and developing their infrastructure" (White Paper 2013: xii).

4.6 Efficiency

It is only possible to do a pseudo–cohort analysis in terms of examinations rates for NC(V) programmes in TVET colleges[13]. The NC(V) levels build on each other and have to be completed consecutively. While 72 033 students wrote exams for NC(V) Level 2 in 2013, 40 404 wrote the NC(V) Level 3 exam in 2014 and only 25 645 wrote the NC(V) Level 4 exam in 2015 (Table 45). In other words, at most only 36% of those who wrote NC(V) Level 2 examinations in 2013 wrote the Level 4 examinations two years later. For the cohort starting in 2014, 41% wrote the NC(V) Level 4 two years later, reflecting some improvement over time, though these figures point to considerable dropout. The numbers writing NC(V) Level 3 in 2016 are encouraging when compared with those writing Level 2 the previous year: It appears as if flows are improving. For Report 191 programmes, pseudo–cohort analysis cannot be done, as first–year students can enter TVET at different levels

Table 45 Number of Students who wrote examinations in TVET Colleges by programme, 2013–2016

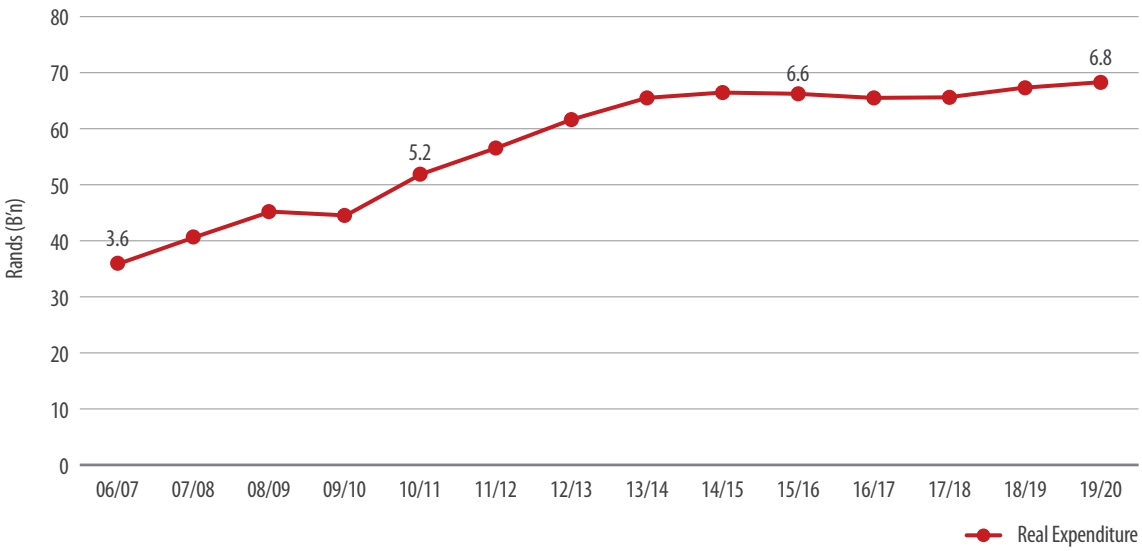
Year	NC(V) Level 2	NC(V) Level 3	NC(V) Level 4	Report191 N3	Report191 N6	Total
2013	72 033	39 501	21 930	41 201	42 841	217 506
2014	68 058	40 404	22 176	42 244	57 014	229 896
2015	64 399	41 386	25 645	47 811	76 378	255 619
2016	67 232	45 721	28 104	59 409	91 772	292 238

Sources: DHET (2015c, 2016a, 2017c, 2018b)

As highlighted in the Heher report (2017), the TVET sector has come under severe financial strain. The funding challenges were detailed in an earlier DHET report on investment trends in the PSET system.

Figure 44 shows that over the period 2015/16 to 2019/20, TVET allocations are expected to grow at an average real rate of 0.8% per year from R6.6 billion to R6.8 billion. This is in sharp contrast to the expenditure growth experienced between 2006/7 and 2015/16, during which allocations increased from R3.6 billion to R6.6 billion.

Figure 44 Real (2015/16 R billion) programme allocations for TVET colleges

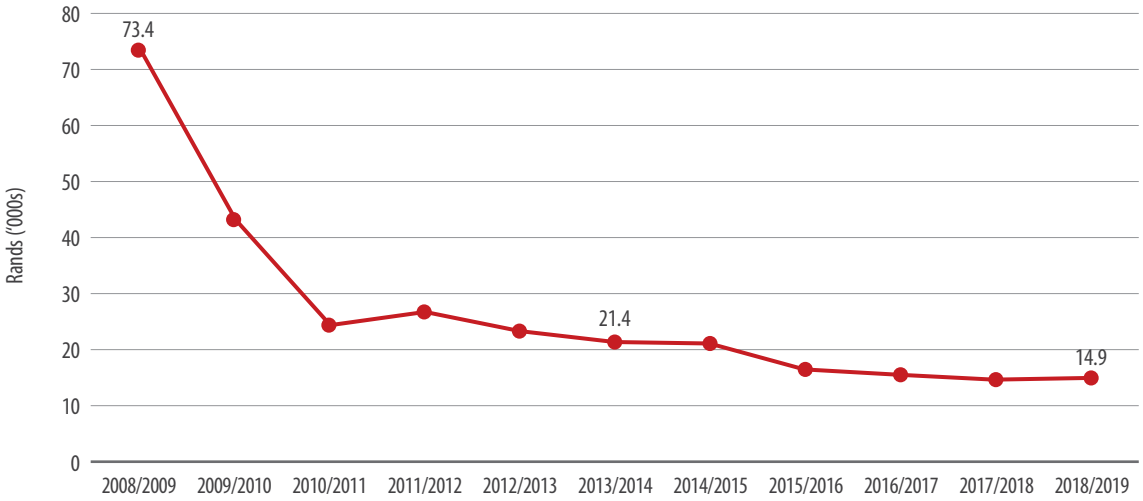


Source: ENE (2017: 277), ENE (2016: 250), ENE (2014: 375), ENE (2013: 387), ENE (2012: 368), ENE (2011: 355), ENE (2010:320) as presented in DHET 2018(e).
Notes: Nominal amounts expressed in R billion. Real amounts expressed in 2015/16 R billion.

13 It is a pseudo–cohort and not true cohort analysis because individual level data was not used in the analysis. A true cohort analysis would find lower progression rates, as some of the students at higher levels are repeating those levels.

When considering TVET expenditure on an FTE basis, Figure 45 shows a large decrease between the 2008/9 and 2010/11 fiscal years. The drop from R73 400 per FTE student to around R24 000 was largely driven by the rapid increase in enrolment over this period but also by some economies of scale. The latter allowed colleges to expand enrolment after initial large spending on infrastructure. Expenditure per FTE student continued to decrease thereafter and is projected to reach R14 900 by fiscal year 2018/19.

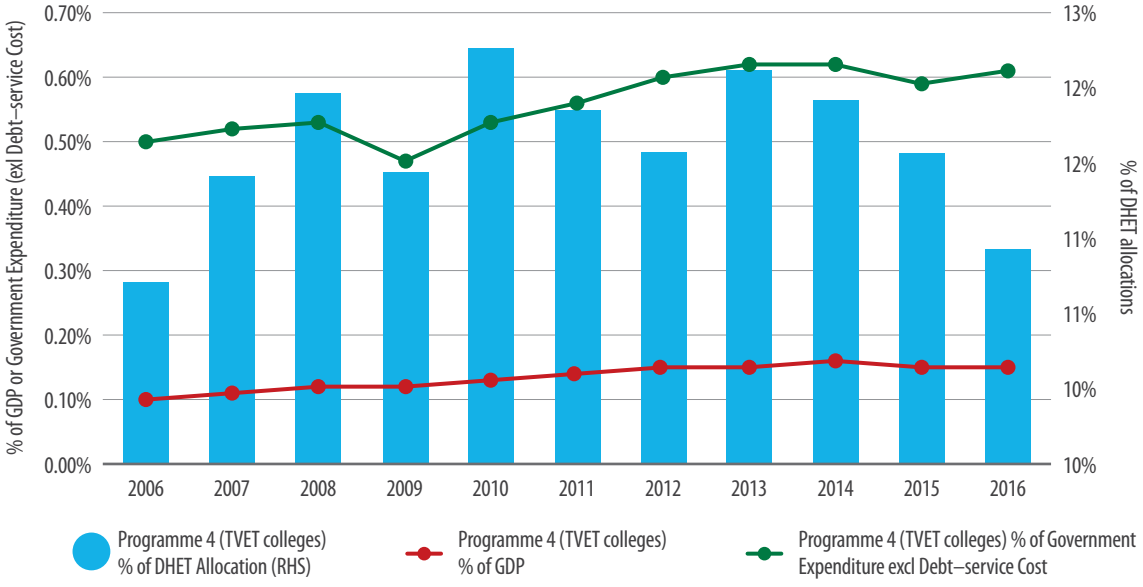
Figure 45 Real (2015 R thousands) expenditure per FTE student at TVET colleges



Source: National Treasury (2016b: 238, 250), National Treasury (2015b: 242), National Treasury (2014b: 363, 375), National Treasury (2013b: 375, 387), National Treasury (2012b: 355, 368) as presented in DHET (2018e). Notes: Nominal amounts expressed in R billion. Real amounts expressed in 2015/16 R billion.

Expenditure on TVET colleges as a share of GDP increased from 0.10% in 2006 to 0.15% in 2016 (Figure 46). TVET allocations also show an increase as a share of total government expenditure from 0.5% to 0.61% over the period. The proportion of DHET's budget apportioned to TVET colleges increased from 10.7% in 2006 to 12.3% in 2010 before decreasing to 10.9% in 2016.

Figure 46 TVET expenditure as a percentage of various aggregates, 2006–2016



Source: National Treasury (2018), National Treasury (2016), National Treasury (2014), National Treasury (2011), National Treasury (2010).

05 COMMUNITY EDUCATION AND TRAINING (CET) COLLEGES

5.1 Introduction

A large segment of South Africa's youth and adult population have education levels below matric. Many such individuals are unemployed, lack the skills demanded in the formal economy, or do not meet the requirements for admission to TVET colleges or universities. The Community Education and Training (CET) sector was recently established as a separate subsector of PSET, after it had long been operating as public Adult Education Centres (AECs). CET colleges serve as an alternative entry point into PSET for these individuals. A key feature of the CET subsector is its diverse educational offerings, which could range from vocational skills programmes that promote employability, to 'non–formal' programmes that are community oriented and aim merely to promote social cohesion. Importantly, CET creates a pathway for adults who have not completed their basic education to matriculate and advance into other PSET institutions. They were also a key instrument in the drive to reduce adult illiteracy. CET further supports other PSET subsectors by relieving the pressure on them to expand in ways that may impact on quality.

The current CET structure emanates from the former public adult learning centres that were established by the Adult Basic Education and Training Act (Act No. 52 of 2000), which was later repealed and replaced by the Continuing Education and Training Act (Act No. 16 of 2006). These centres also contributed to the Department of Basic Education's KhaRiGude adult literacy initiative. These learning centres were amalgamated and established as CET colleges at provincial level in 2015, though under national rather than provincial control. There are thus nine CET colleges (one for each province), each overseeing multiple community learning centres.

The NDP noted that the adult education sector at the time was 'underdeveloped', suffering from low participation, had limited curricula, and with few entrants attaining the General Education Certificate. The PSET WP similarly noted the insufficient and poor quality offering in this subsector. Given its relatively small budget, the CET learning centres generally lack their own facilities, relying on that of other institutions, mainly schools and other community centres. Most instructional staff are employed part–time.

Although enrolment in the CET subsector has generally been lower than enrolment numbers at universities or TVET colleges, the potential demand for this service is high. UNESCO estimates that in 2015 there were 2.2 million illiterate youth and adult South Africans (older than 15 years) (UNESCO, 2018). NEETs with education below matric level – a particular target group for CET programmes – in 2017 numbered close to 9.3 million, half of these aged 15–34.[15]

This section explores the CET subsector in terms of three areas: access and equity; success, quality and efficiency; and, lastly, funding and staffing.

5.2 Access and equity

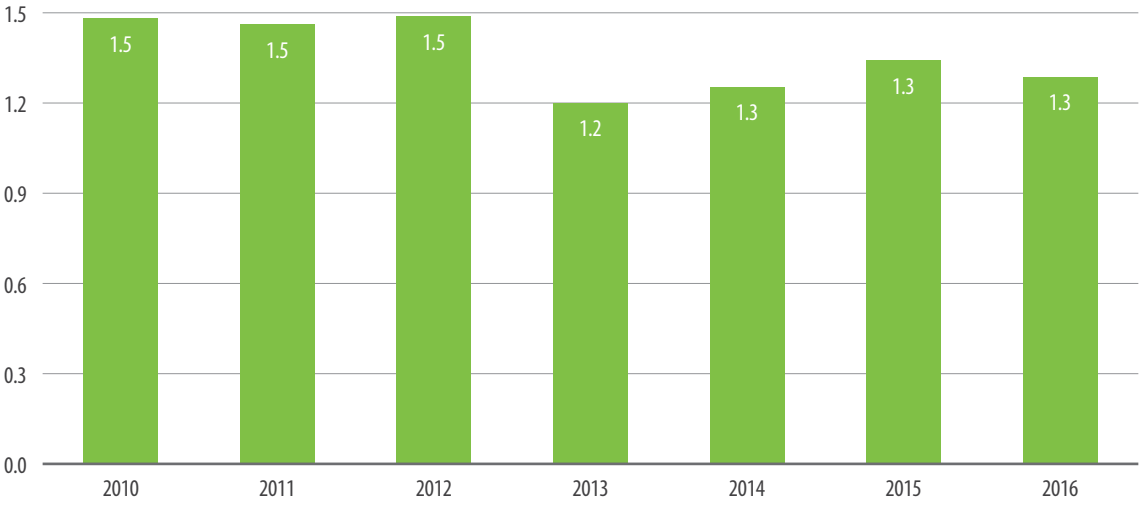
The existence of CET colleges in itself represents an emphasis on equity: These colleges constitute an effort to support those with lower levels of education and to add to their skills, both in terms of the labour market and broader functioning in society. These are so–called second–chance institutions, offering education and training opportunities to those youths and adults who did not, for whatever reason, have access to sufficient education and training earlier in their life.

15 Based on calculations from Quarterly Labour Force Survey data for the fourth quarter of 2017 published by Statistics South Africa.

In 2016 there were 273 431 persons enrolled in CET colleges, lower than the 2010 enrolment of 297 491 in adult basic education. 45% of these were enrolled in ABET level 3 (equivalent to NQF level 1 or Grade 9) programmes and 31% were enrolled in grade 12. These learners were accommodated in 2 795 public adult learning centres staffed by a total of 14 259 lecturers (DHET, 2016). The WP envisaged enrolment of one million in CET colleges by 2030.

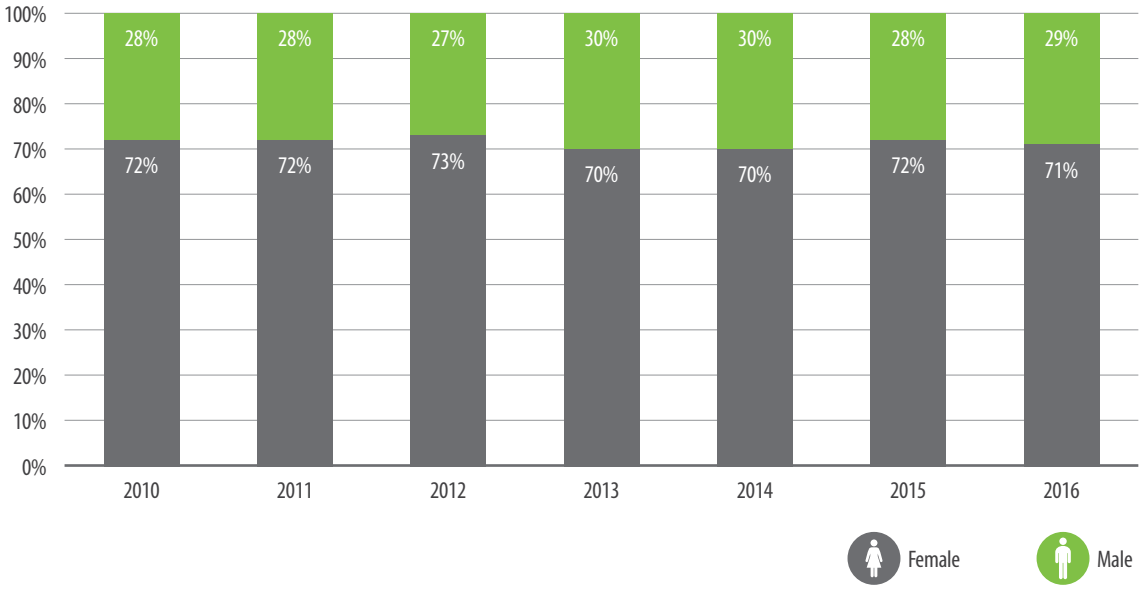
Figure 47 shows the GER for CET colleges from 2010 to 2016. In this instance, GER is measured as the ratio of the headcount enrolment over the population aged 15 to 35 years, since CET colleges primarily target an older demographic. There has been a slight decline in GER from 1.5 to 1.3 over this period.

Figure 47 Gross enrolment ratio in Community Education and Training colleges (students enrolled as percentage of 15–35–year–olds), 2010–2016



Sources: DHET (2018e) (Own Calculations); Statistics South Africa (2010, 2011, 2012, 2013, 2014, 2015, 2016). Note: Sprague multipliers applied on the mid–year estimates to obtain single years.

Figure 48 Enrolment in Community Education and Training colleges by gender, 2010–2016

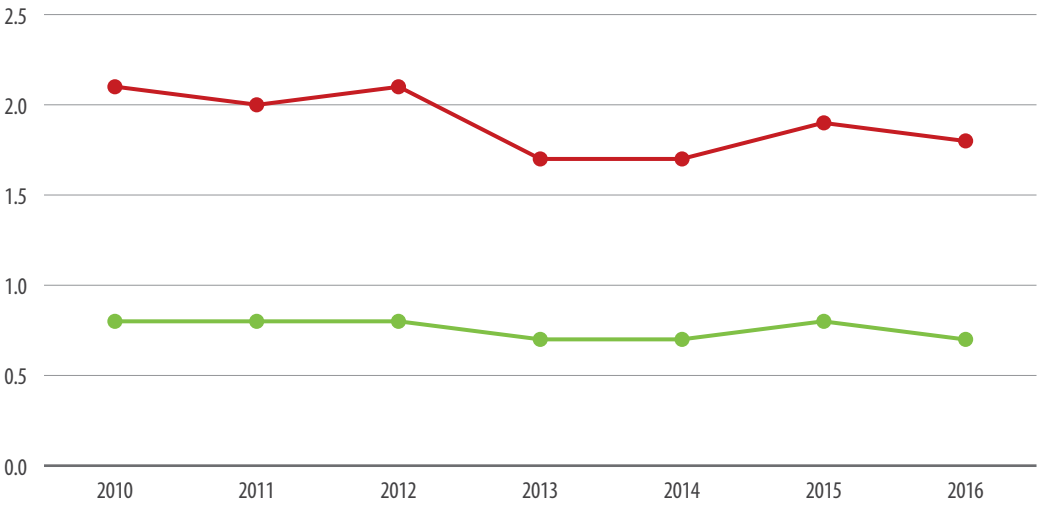


Sources: DHET (2018e) (Own Calculations)

Females have consistently outnumbered males in CET colleges and maintained a proportion of 70% or higher throughout the 2010 to 2016 period (Figure 48). This reflects the pattern exhibited in other subsectors of the PSET system considered above and indicates reduced participation by males in higher education generally.

The gender breakdown of GER, shown in Figure 49, again reflects the different participation rates between males and female in CET colleges. In 2016 female GER was 1.8 while male GER was 0.7. The reduction in overall participation over the 2010–2016 period is mainly explained by reduced female participation.

Figure 49 Enrolment in Community Education and Training colleges as a percentage of 15–35–year–olds by gender, 2010–2016



	2010	2011	2012	2013	2014	2015	2016
GER:Female	2.1	2.0	2.1	1.7	1.7	1.9	1.8
GER:Male	0.8	0.8	0.8	0.7	0.7	0.8	0.7

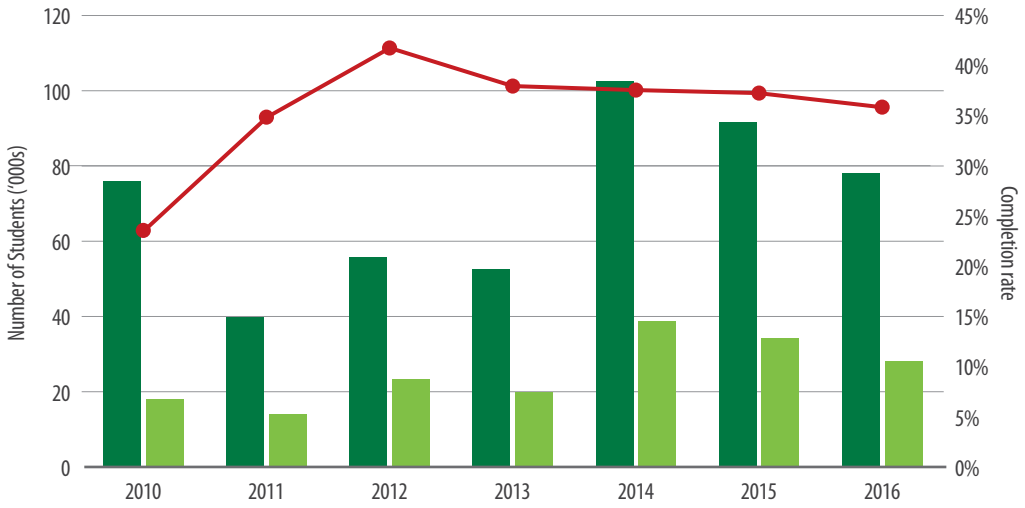
Sources: DHET (2018e) (Own Calculations); Statistics South Africa (2010, 2011, 2012, 2013, 2014, 2015, 2016). Note: Sprague multipliers applied on the mid–year estimates to obtain single years. On 01 April 2015, nine CETCs were formed, one per province, to serve as administrative hubs for the erstwhile Public Adult Learning Centres (PALCs) which are located under each CETC.

5.3 Success, Quality and Efficiency

The General Education and Training Certificate: Adult Basic Education and Training Level 4 (GETC: ABET) qualification is the lowest qualification level within the CET subsector that has a registered NQF rating (NQF level 1, which is equivalent to Grade 9). It is also the qualification level which has thus far attracted the highest enrolment within the CET system, accounting for 45% of total enrolment in 2016 (DHET, 2018). The repositioning of the CET sector will probably lead to enrolment in this qualification becoming relatively smaller, though there is still a clear need for it, as the discussion of literacy in the introductory sections indicated. The almost 80 000 individuals who completed this qualification in 2016, though below the peak of more than 100 000 in 2014, is further illustration of the need for such second–chance education.

Completion rates are measured by taking the ratio of the number of students who passed the exit assessment, to the number of students who wrote the assessment. The GETC: ABET completion rates were below 50% for the period 2010–2016 (Figure 50). The completion rate peaked in 2012 at 41.8% and by 2016 had dropped to 35.9%. Completion rates are generally higher among females relative to males. Figure 51 shows that in 2016 the completion rate was 36.9% for females and 31.9% for males.

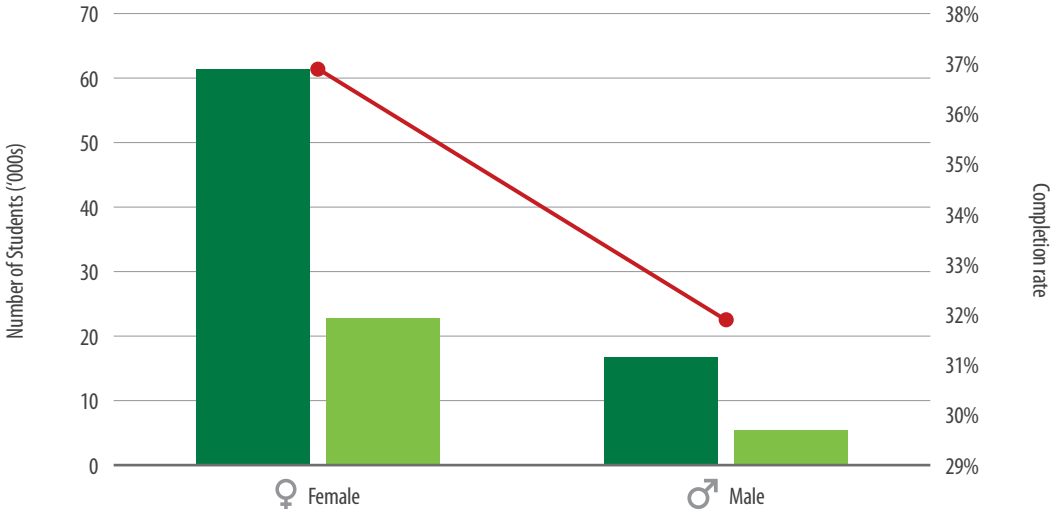
Figure 50 Number of students in CET colleges who wrote and completed the GETC: ABET level 4 qualification, 2010–2016



	2010	2011	2012	2013	2014	2015	2016
Number Wrote	75 832	39 856	55 735	52 501	102 534	91 603	78 105
Number Completed	17 888	13 924	23 325	19 945	38 592	34 125	28 024
Completion rate	23.6%	34.9%	41.8%	38.0%	37.6%	37.3%	35.9%

Source: DHET (2013a and 2018b)

Figure 51 Completion rate for GETC: ABET by gender, 2016



	Female	Male
Number Wrote	61 460	16 645
Number Completed	22 706	5 318
Completion rate	36.9%	31.9%

Source: DHET (2018b)

One of the simplest aggregate measures of quality in the CET subsector is the ratio of students to lecturers. This ratio fluctuated between 18 and 21 over the seven year period 2010–2016 (Table 46). There is large variation across colleges for this indicator. Colleges with a larger urban population, such as those in Gauteng and the Western Cape, have relatively high student/lecturer ratios compared to colleges in provinces with a smaller urban population.

Table 46 Student to lecturer ratio for CET colleges, 2010–2016

Year	Lecturers	Students	Students per lecturer
2010	14 286	297 491	21
2011	15 965	297 634	19
2012	16 445	315 068	19
2013	11 922	257 823	22
2014	15 447	275 268	18
2015	16 003	283 602	18
2016	14 259	273 431	19

Source: DHET(2013a, 2013c, 2015c, 2016a, 2017c, 2018b). Student data all from DHET (2018b).

5.4 Funding and staffing

Table 47 shows that there has been a slow and steady increase in the amounts allocated to the CET sector since 2015, reaching R2.4 billion in 2018/19.

Table 47 Funds allocated to Community Education and Training (CET) (nominal) (R millions)

Year	Amount (R million)
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.

06 PRIVATE COLLEGES

6.1 Introduction

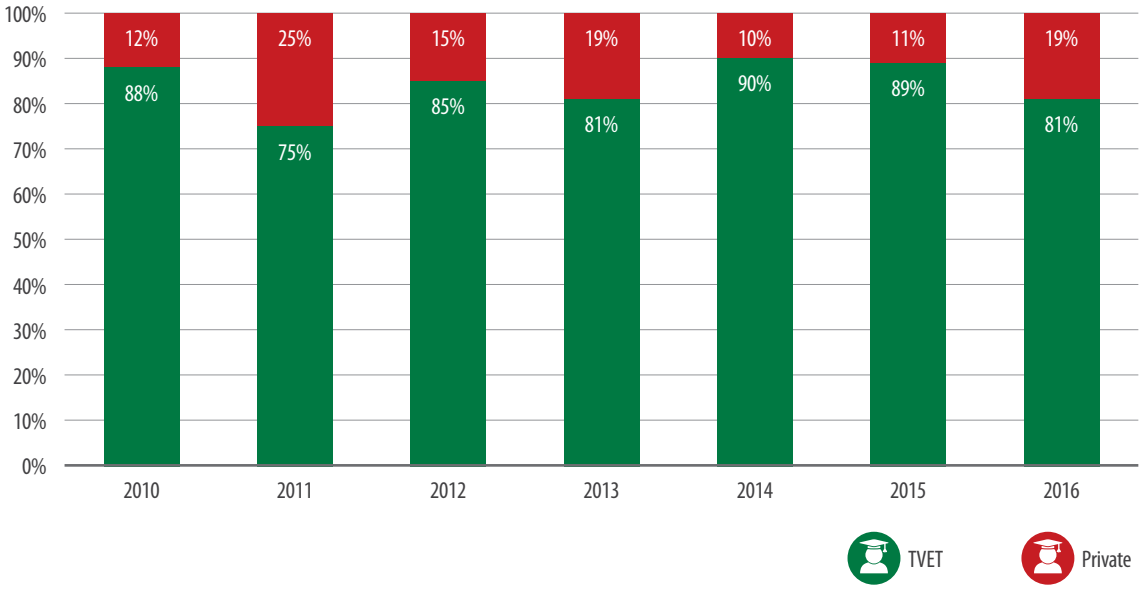
Private colleges form an important subsector within the PSET system. In 2018, DHET (2018f) reported that 307 private colleges had registered with the department, implying that there are more private colleges than there are TVET campuses. As there is no central repository with information on private colleges, information on these colleges is limited. This section presents an overview based on available information. The overview comprises of four subsections: access; success; equity and transformation; and funding and staffing.

6.2 Access

As shown in Figure 52, private colleges account for a relatively small proportion of total college enrolment. Expansion of private college services was advocated for in the NDP, where it was proposed that NSFAS funding be extended to students enrolled in private colleges, though this proposal was never implemented. Private colleges have the advantage of being somewhat more flexible than their public counterparts in respect of their course offerings and were recognised in the WP as an important service provider for 'niche' areas that are often lacking in TVET colleges. Quality among private colleges is mixed and they often do not meet advertised accreditation standards. Private colleges could serve as a useful complementary subsector within the constellation of post–school non–university institutions should accountability concerns that beset some parts of the subsector be overcome.

As many of the course offerings of private colleges are similar to those of TVET colleges, it is useful to compare these two categories of colleges (not including CET colleges) to observe the relative size of these subsectors. Figure 52 shows the proportion of college enrolled students in private colleges and TVET colleges. The proportions show significant fluctuation over the 2010 to 2016 period, though TVET enrolment remains above 75% of the total throughout the period. In 2016 enrolment in private colleges comprised 18% of college participation (once again, excluding CET colleges).

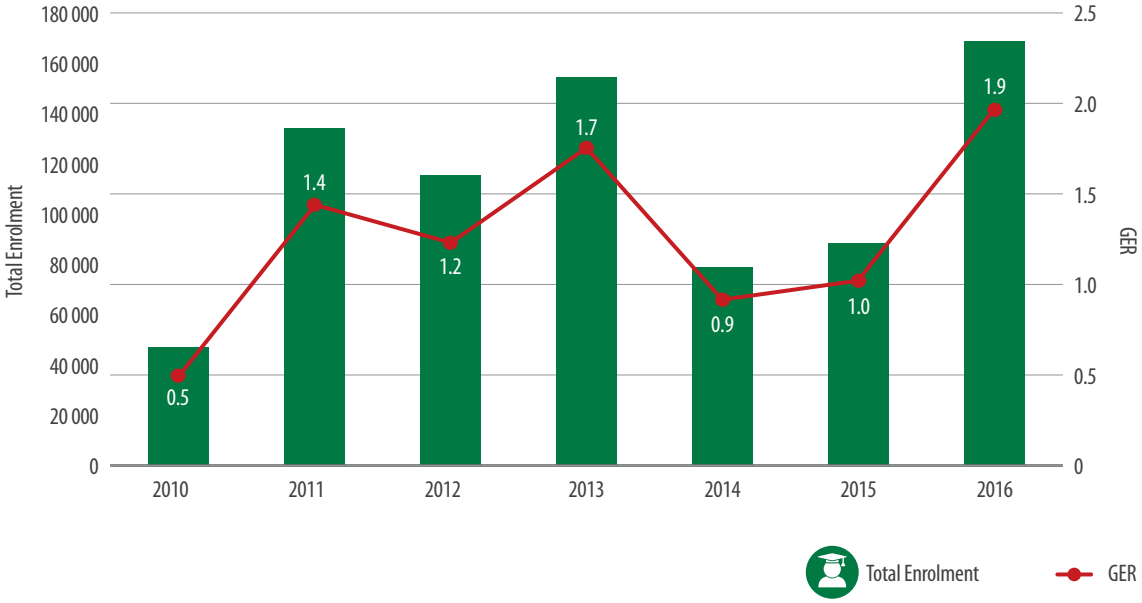
Figure 52 Percentage of students enrolled in TVET and private colleges, 2010–2016



Source: TVET–MIS data obtained from DHET, extracted in May 2018 (Own Calculations)
Note: The reason why this figure may not be in complete agreement with that shown in some tables is that some figures on race are absent: Figures for Other, Unspecified and Deviation not included in the race categories

The GER in private colleges increased from 0.5 to 1.9 between 2010 and 2016 as shown in Figure 53. The figure also illustrates an erratic trend in GER, which is explained by the volatility in enrolment numbers over the six–year period. Some of this may be due to erratic reporting by private colleges and indicates a clear need for data improvement.

Figure 53 **Total enrolment and gross enrolment ratio in private colleges (GER calculated as percentage of 16–24 year–olds), 2010–2016**

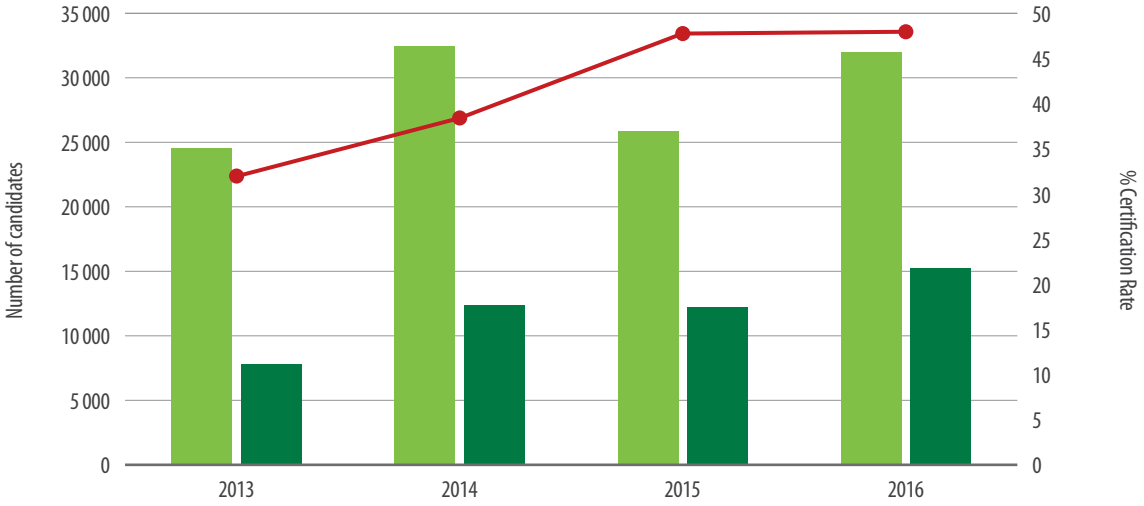


Source: DHET (2018d) (Own Calculations); Statistics South Africa (2010, 2011, 2012, 2013, 2014, 2015, 2016).
Note: Sprague multipliers applied on the mid–year estimates to obtain single years.

6.3 Success

The private college certification rate for the Report 191 N3 programme was 47.6% in 2016, constituting an increase of 16 percentage points over the 2013 rate of 31.7% (Figure 54). There was a moderate increase in the number of students writing exit exams for N3 programmes in private colleges over the three years with 24 587 sitting for N3 exams in 2013 and 31 988 in 2016. Improvements in N6 certification rates were sharper and more consistent (Figure 55). In 2013 the private college certification rate was 36% and by 2016 the rate increased to 57%. The number of students writing N6 exams increased from 9 211 in 2013 to 15 155 in 2016.

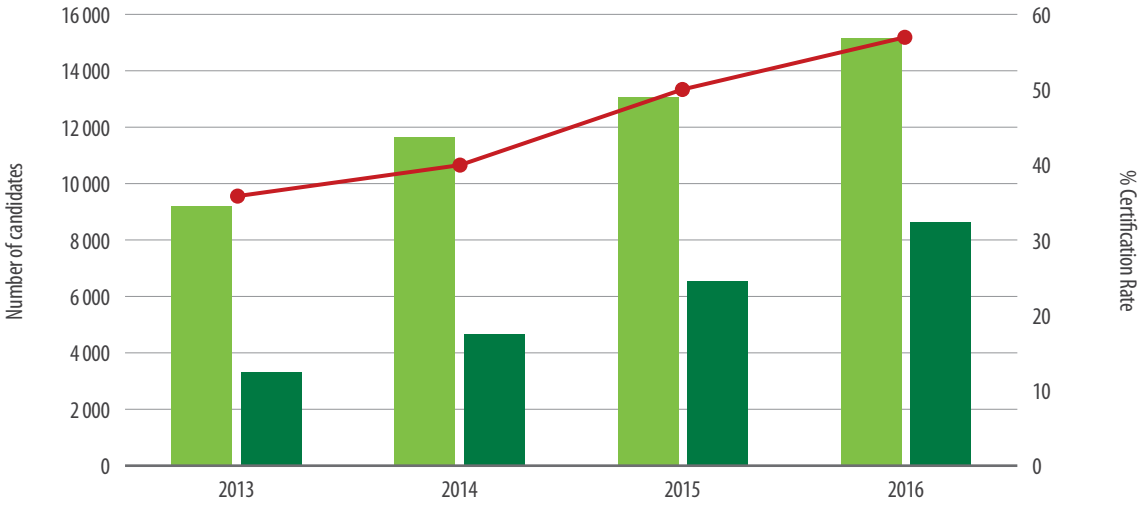
Figure 54 Examination candidates, passes and certification rates for Report191 N3 in private colleges, 2013–2016



	2013	2014	2015	2016
Wrote	24 587	32 466	25 839	31 988
Passed	7 803	12 371	12 236	15 212
Pass Rate	31.7	38.1	47.4	47.6

Sources: DHET (205c, 2016d, 2017c, 2018b); DHET (2016c)

Figure 55 Examination candidates, passes and certification rates for Report191 N6 in private colleges, 2013–2016

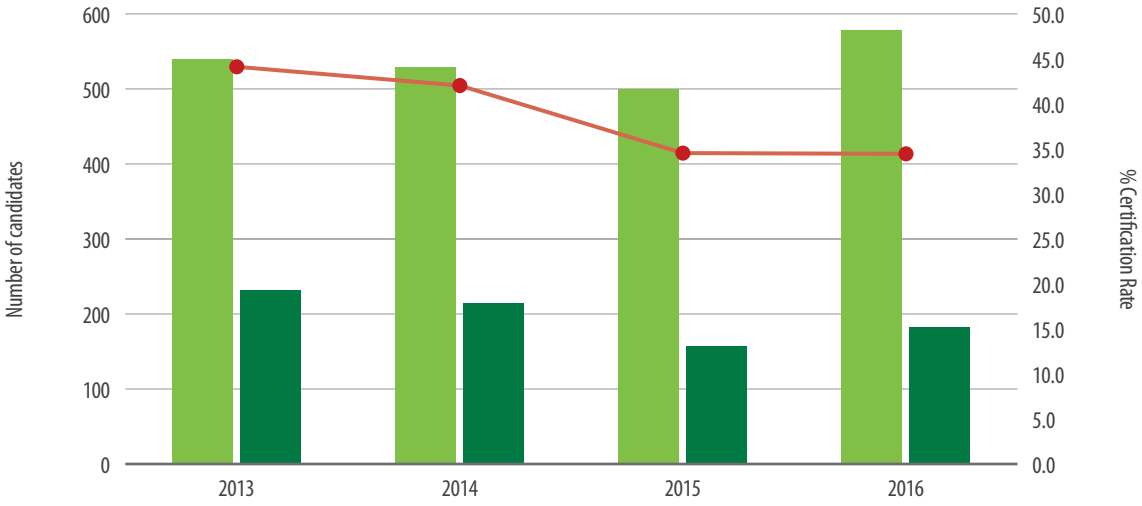


	2013	2014	2015	2016
Wrote	9 211	11 664	13 076	15 155
Passed	3 316	4 675	6 556	8 638
Pass Rate	36.0	40.1	50.1	57.0

Sources: DHET (205c, 2016d, 2017c, 2018b); DHET (2016c)

In contrast to the trend in Report 191 programmes, pass rates for NC(V) level 4 programmes declined from 43.0% in 2013 to 31.4% in 2016 (Figure 56). Relative to Report 191 programmes, very few students (579 in 2016) wrote exams for NC(V) level 4 programmes in private colleges over the period shown in Figure 57. The divergence in pass rates between NC(V) and Report 191 programmes mirrors that of the TVET colleges. However, across all programmes, TVET colleges reflect higher certification rates than private colleges. There is a particularly large gap (18 percentage points) in certification rates for N3 programmes between the public and private college subsectors.

Figure 56 Examination candidates, passes and certification rates for NC (V) Level 4 in private colleges, 2013–2016



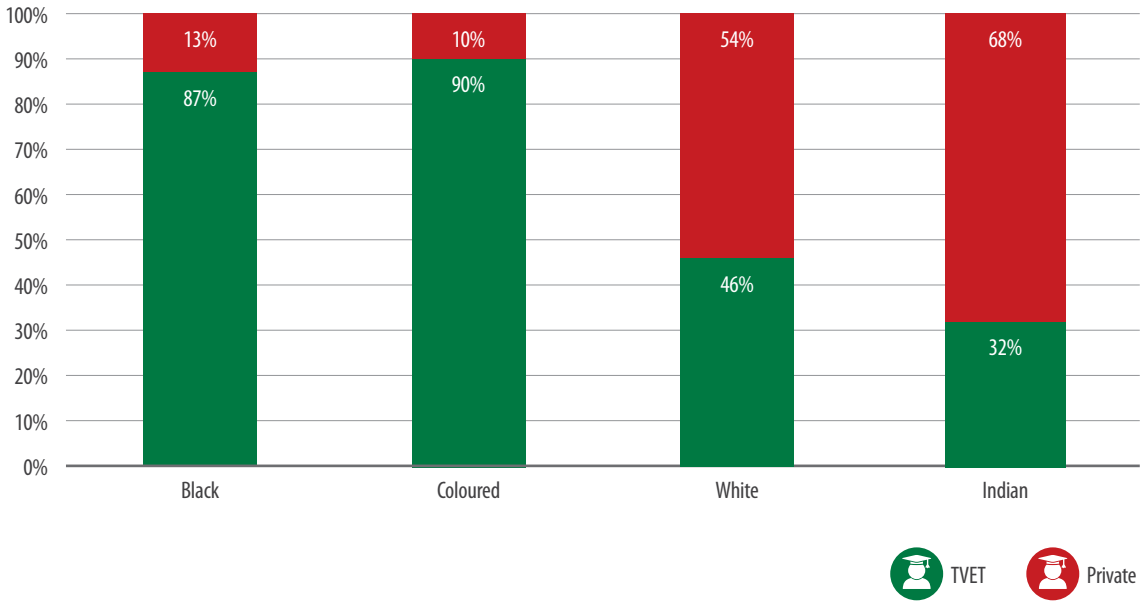
	2013	2014	2015	2016
Wrote	540	529	499	579
Passed	232	214	157	182
Pass Rate	43.0	40.5	31.5	31.4

Sources: DHET (205c, 2016d, 2017c, 2018b); DHET (2016c)

6.4 Equity

Figure 57 shows the breakdown of TVET and private college enrolment within each race group. For all race groups the GER in private colleges is low, ranging from 0.7% to 2.3% in 2016. The overwhelming majority of college–attending black and coloured individuals are in TVET colleges (as opposed to private colleges). In contrast, it appears that among those white and Indian individuals choosing a vocational higher education, there is a preference to enrol in private colleges.

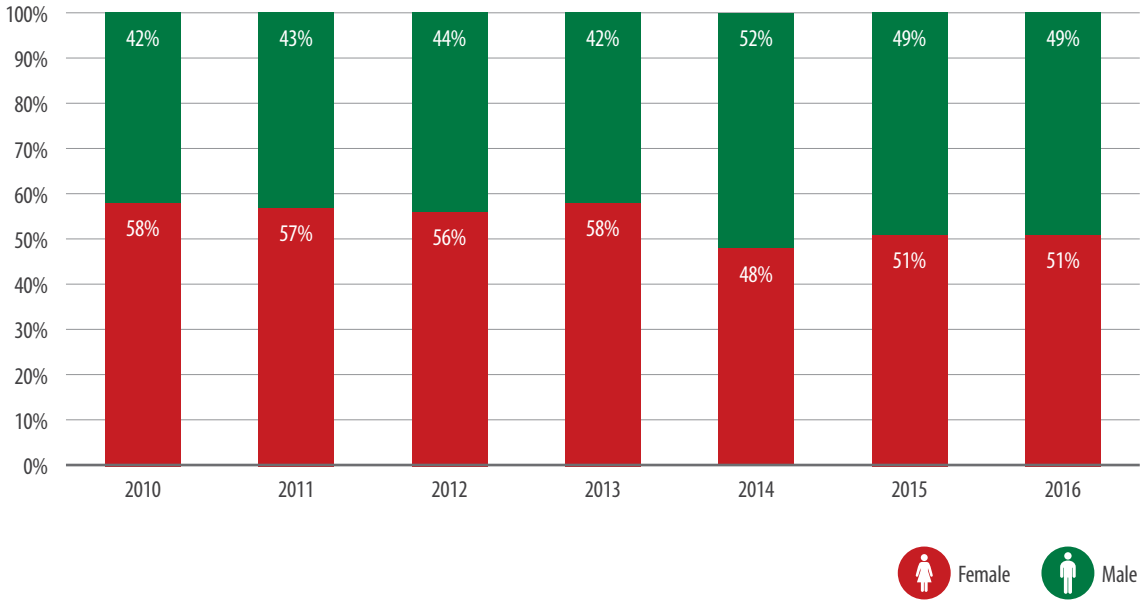
Figure 57 Percentage of students enrolled in TVET and private colleges by race, 2016



Source: TVET–MIS data obtained from DHET, extracted in May 2018 (Own Calculations)
Note: The reason why this figure may not be in complete agreement with that shown in some tables is that some figures on race are absent: Figures for Other, Unspecified and Deviation not included in the race categories.

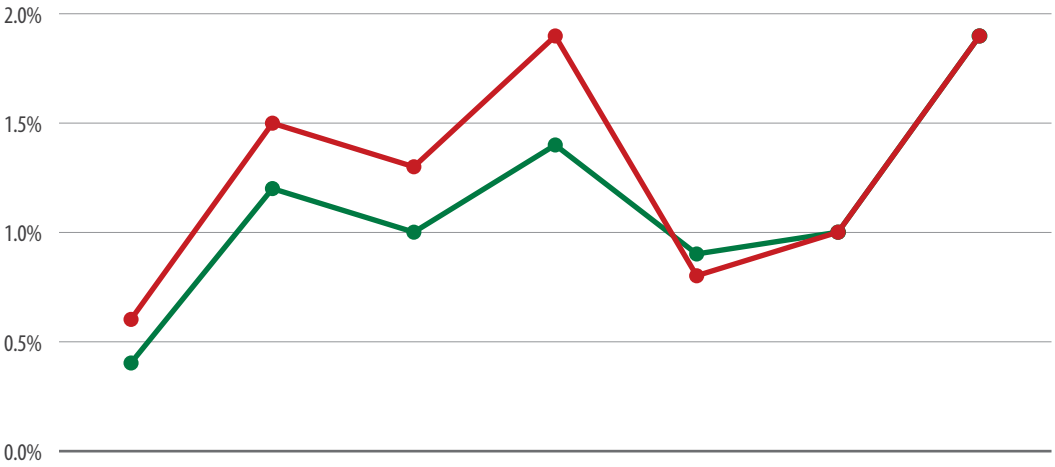
The gender distribution of students in private colleges is more balanced than is the case in TVET colleges. Figure 58 shows that in 2016 females constituted 51% of total students enrolled in private colleges, seven percentage points lower than the proportion of 58% in 2010. While the female proportion in TVET colleges rose over the period 2010–2016, this proportion declined in private colleges. As shown in Figure 59, male and female GERs differed significantly during the period 2010 to 2013 but converged in subsequent years. In 2016 female GER was marginally greater than male GER. There was significant variation in the GER by race over the period 2010-2016, with the GER for black students reaching 1.3 in 2016 (Figure 60).

Figure 58 Percentage of students in private colleges by gender, 2010–2016



Source: DHET (2018d) (Own Calculations)

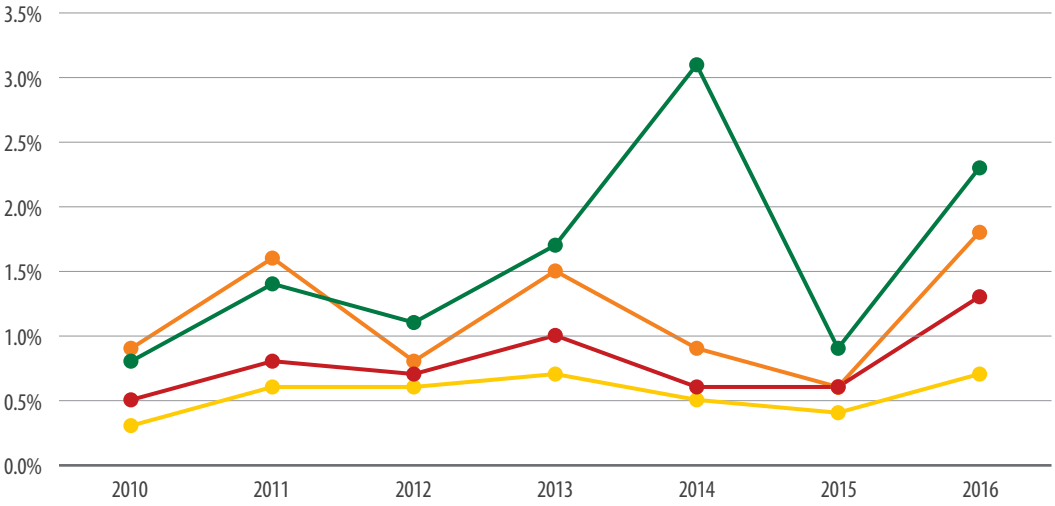
Figure 59 Gross enrolment ratio in private colleges by gender: Enrolment as percentage of 16–24 year–olds, 2010–2016



	2010	2011	2012	2013	2014	2015	2016
GER:Female	0.6	1.5	1.3	1.9	0.8	1.0	1.9
GER:Male	0.4	1.2	1.0	1.4	0.9	1.0	1.9

Source: DHET (2018d) (Own Calculations); Statistics South Africa (2010, 2011, 2012, 2013, 2014, 2015, 2016). Note: Sprague multipliers applied on the mid–year estimates to obtain single years.

Figure 60 Gross enrolment ratio in private colleges by race: Enrolment as percentage of 16–24 year–olds, 2010–2016



	2010	2011	2012	2013	2014	2015	2016
Black	0.5	0.8	0.7	1.0	0.6	0.6	1.3
Coloured	0.3	0.6	0.6	0.7	0.5	0.4	0.7
Indian	0.8	1.4	1.1	1.7	3.1	0.9	2.3
White	0.9	1.6	0.8	1.5	0.9	0.6	1.8

Source: DHET (2018d) (Own Calculations); Statistics South Africa (2010, 2011, 2012, 2013, 2014, 2015, 2016). Note: Sprague multipliers applied on the mid–year estimates to obtain single years.

Table 48 shows that the proportion of private college students who are foreign increased from 1.8% in 2013 to 2.4% in 2016.

Table 48 Percentage of private college students by citizenship, 2013–2016

Nationality	2013	2014	2015	2016
Foreign	1.8%	1.9%	2.9%	2.4%
RSA	98.2%	98.1%	97.1%	97.6%

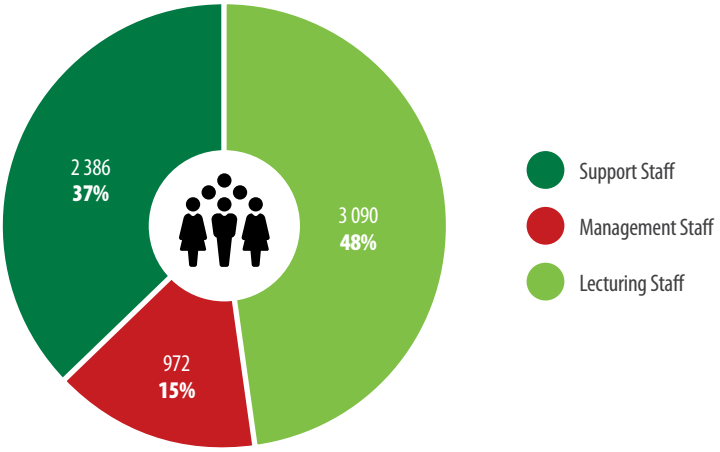
Source: DHET (2018d) (Own Calculations)

6.5 Funding, Staffing and transformation

Data on total revenue of private colleges is not available. This data will be collected and reported on as an indicator in future.

The staff composition in private colleges diverges significantly from that of TVET colleges. Figure 61 shows that in 2016, lecturing staff accounted for 37% of total staff in public colleges while management staff constituted 15% of the total. As shown in subsection 5.1, lecturing staff comprises 58% of total staff in TVET colleges and management account for 2% of the total. The ratio of students enrolled to lecturing staff in private colleges gives a ratio of close to 60, which is very similar to TVET colleges. However, in both the TVET and the private colleges, many staff and students are part–time, so these ratios are not too accurate a reflection of quality.

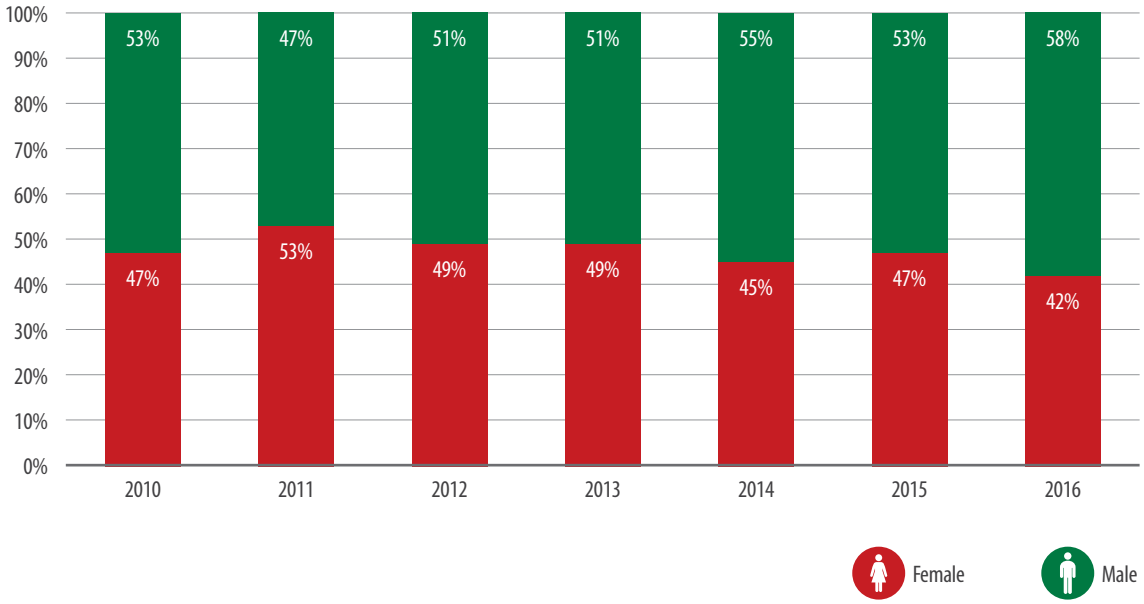
Figure 61 Staff in private colleges per category, 2016



Source: DHET (2018d) (Own Calculations)

Lecturing staff in private colleges are predominantly male, as shown in Figure 62. In 2010 males were 53% of total lecturing staff and in 2016 this proportion increased to 58%. Figure 62 does show that there is considerable fluctuation within this indicator on an annual basis with movements of up to six percentage points evident during the six–year period.

Figure 62 Percentage of lecturers in private colleges by gender, 2010–2016



Source: DHET (2018d) (Own Calculations)

07 SKILLS LEVY INSTITUTIONS

7.1 Introduction

Government has developed various policies regarding workplace training to deal with emerging and growing skills shortages. This section only considers the skills sector and associated policies in terms of how they assist in the achievement of PSET goals, which is the focus of this report.

The main focus of government's skills development initiatives has been Sector Education and Training Authorities (SETAs). Until recently, there were 23 SETAs delivering skills development services and training to 23 sectors. This was recently reduced to 21 SETAs.

SETA funding is different from the funding of other PSET subsectors, as it mainly comes from a skills levy (see the subsection on Funding below). Given the critical importance of skills and skills development for economic growth and development, discussions are currently underway to determine whether and how skills development can be more closely integrated with the core functions of DHET. A draft National Skills Development Plan was gazetted in December 2017 after the expiry of the previous National Skills Development Strategy in 2016 (DHET, 2017d). This Plan mentions the following concerns with regards to SETAS: "the lack of achievement of targets; governance challenges; complicated, expensive and wasteful administrative systems; complicated application processes for the public; and uneven capacity across SETAs" (DHET, 2017d: 4).

Given the challenges faced by SETAs and the importance of skills development in South Africa, it is imperative to have a good understanding of how many individuals are served by SETAs and what they produce in terms of qualifications achieved. An overview of data relating to main access and output measures of SETAs is provided below.

7.2 Access to workplace based learning programmes

The total number of individuals registered for SETA–supported learning programmes (learnerships, internships and skills programmes) was 249 680 in 2016 (Table 49). The total number of individuals registered for SETA–supported learning programmes grew at an average rate of 13.6% since 2010, with internships achieving the highest average annual growth rate of 33.8% per year from 2010 to a total of 17 216 in 2016.

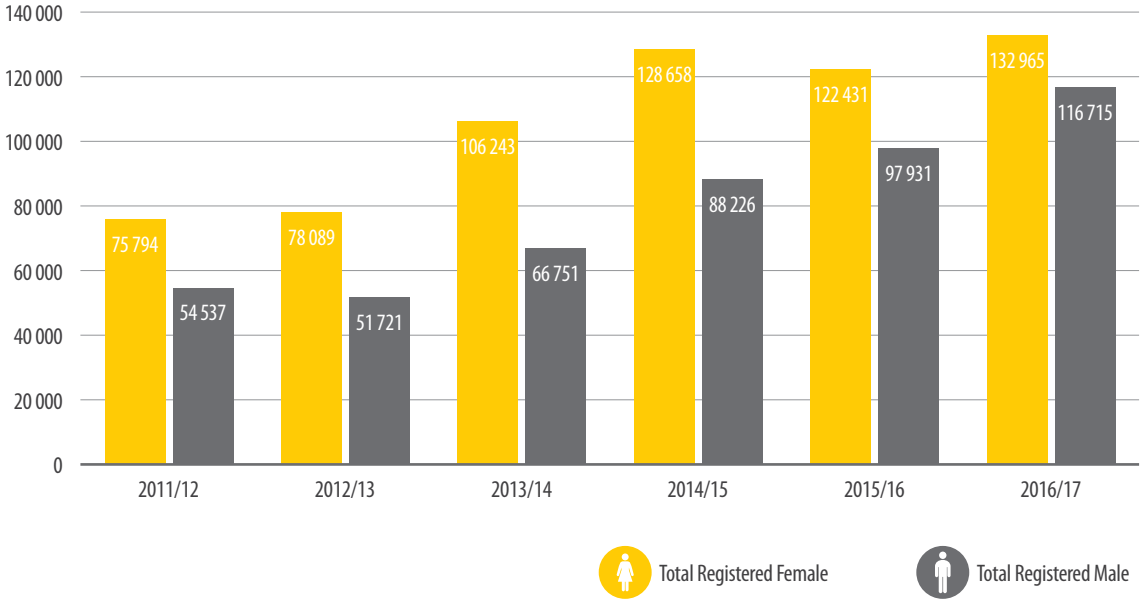
Table 49 Number of workers and unemployed persons registered and certificated in SETA–supported learning programmes, by programme type, 2011/12–2016/17

	Registered				Certificated			
Year	Learnerships	Internships	Skills Programmes	Total registered	Learnerships	Internships	Skills Programmes	Total certificated
2010/11	49 309	3 005	63 659	115 973	32 979	1 269	78 285	112 533
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
Average annual growth 2011/12–2016/17	12.8%	33.8%	12.8%	13.6%	9.9%	32.2%	6.8%	8.2%

Source: DHET (2013, 2014b, 2015c, 2016d, 2017c, 2018b); ETDP SETA (2016)

Since 2011, the number of women registered for SETA–supported learning programmes has constantly exceeded the number of men registered, although the female share has declined from a high of 61.4% in 2013 to 53.3% in 2016 (Figure 63). There were 132 975 women registered in SETA–supported learning programmes in 2016 compared to 116 715 men. The SETA–supported learning programme with the highest share of women in 2016 was internships, with a 57.5% female share.

Figure 63 Total number of workers and unemployed persons registered by gender in SETA–supported learning programmes, 2011/12*–2016/17



Source: DHET (2013, 2014b, 2015c, 2016d, 2017c, 2018b); ETDP SETA (2016)
Note: Data for 2010/2011 not available by gender.*

In 2016, 30 817 individuals registered for artisanal programmes offered by SETAs (Table 50). Over the 2011–2016 period, there was an average annual growth rate of 4.8% in registrations for artisanal programmes.

Table 50 Number of learners entering and completing artisanal learning programmes , 2011/12*–2016/17

	Registered	Completed
2011/12	24 415	14 023
2012/13	21 849	15 277
2013/14	27 670	18 110
2014/15	28 302	14 389
2015/16	28 640	16 114
2016/17	30 817	21 198
Average annual growth 2011/12–2016/17	4.8%	8.6%

Source: DHET (2013, 2014b, 2015c, 2016d, 2017c, 2018b); ETDP SETA (2016)
Note: Data for 2010/2011 not available by gender.*

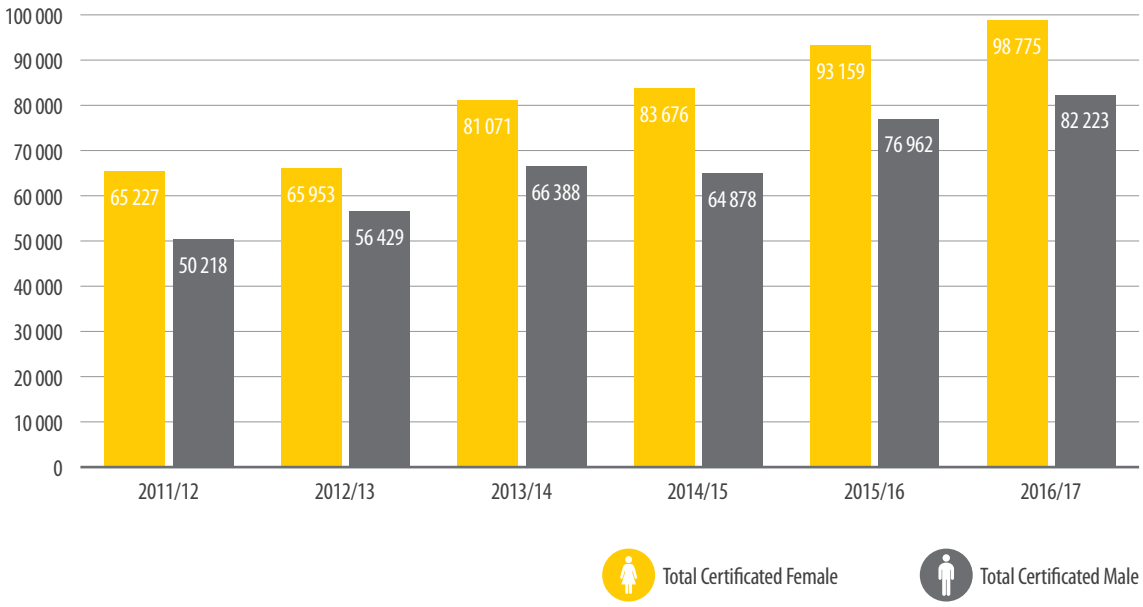
Data by gender for registration and certification in artisanal programmes are not available.

The number of individuals certificated, i.e. those who successfully completed any of the three SETA–supported learning programmes, grew by 8.2% per year since 2010 to a total of 180 998 in 2016 (Table 49).

It is not easy to directly relate the number of individuals registered to those who certificated, as individuals may have been registered for more than one learning programme or for more than one period. In fact some learning programmes may require individuals to be registered for more than one period. It is worth mentioning that the growth rate of certifications did not keep pace with the total number registered.

Similar to the gender pattern for SETA–supported learning programme registration, certification in SETA programmes was also female–dominated over the period 2011–2017 (Figure 64). Women exceeded the number of men registered in all three learning programmes (learnerships, internships and skills programmes). In 2016, a total of 98 775 women receive certificates compared to 82 223 men. Women thus comprised 54.6% of all individuals who certificated in SETA–supported learning programmes during 2016.

Figure 64 Number of workers and unemployed persons certificated by gender in SETA–supported learning programmes, 2011/12–2016/17



Source: DHET (2013, 2014b, 2015c, 2016d, 2017c, 2018b); ETDP SETA (2016)

Tables containing numbers of registrations by gender for three SETA skills development and training programmes categories (learnerships, internships and skills programmes) can be found in Appendix B. These numbers are presented visually by gender for the total number certificated for SETA–supported learning programmes in Figure 64.

It is not clear what drove the female–dominated gender pattern in terms of both registration and certification in SETA–supported learning programmes. It is possible that eligibility criteria, i.e. who qualifies for entry into SETA–supported learning programmes, may have played a role.

7.3 Funding

The 1999 Skills Development Act requires all employers with a monthly salary bill of R500 000 or more to pay 1% of total salaries as a skills levy to the South African Revenue Service (SARS) (OECD, 2017d). The funds are transferred from SARS to the National Revenue Fund from where 20% is distributed to the National Skills Fund and 80% is allocated to the SETAs (OECD, 2017d). The SETAs then return part of the levy amount to employers for training provided to staff, part is provided as funding for the Quality Council for Trades and Occupations, while 10% is kept to cover administrative expenses. The levy is used to fund training as identified in the SETA Sector Skills Plan (SSP) of each SETA. Important changes in the SETA grant regulations were introduced in 2012, including a levy to the Quality Council for Trade and Occupations to strengthen quality assurance of training programmes.

Information on expenditure categories of the Skills Development Levy is provided in Table 51 below, in 2015/16 Rand values so as to enable comparison over time after excluding the effect of inflation. Total disbursement of the Skills Development Levy was R15.2 billion In 2015/16. Of the R15.2 billion, 80% was transferred to SETAs and the remainder to the National Skills Fund.

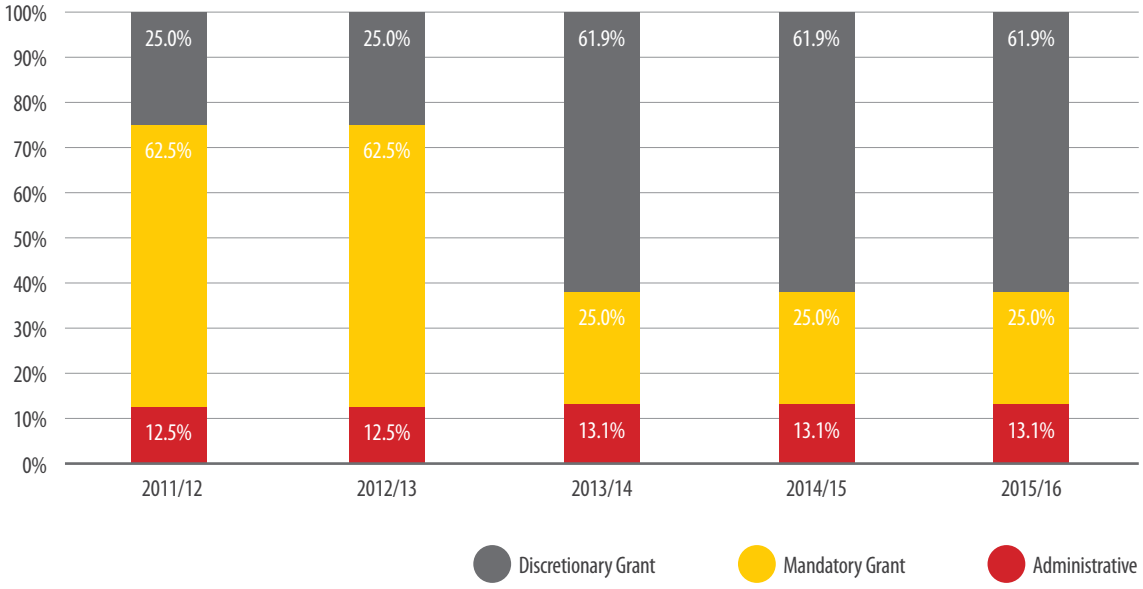
Table 51 Real (2015 R million) distribution of the Skills Development Levy, 2011/12–2015/16

Year	Total amount disbursed by the Skills Development Levy	Distribution of Levy Funds					SETA Admin costs transferred to QCTO
		Amount transferred to the National Skills Fund	Amount disbursed to SETAS	SETAs			
				Administrative 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: DHET (2018e).
Notes: All value expressed in real 2015 R million. Average annual growth rates estimated via log–linear ordinary least squares.

Figure 65 shows the composition of SETA expenditure for the last five years between mandatory grants, discretionary grants and administration. There was a clear compositional shift in the 2013/14 fiscal year following the implementation of the new SETA regulations, away from mandatory grants to discretionary grants.

Figure 65 Share of real (2015 R million) SETA expenditure breakdown by category, 2011/12–2015/16



Source: DHET (2018e)

7.4 Equity

Equity in access is not the goal in the skills levy institutions. The very existence of these institutions constitutes a big step toward equity. The introduction of the national skills levy was aimed at improving the training and productivity of workers, many of them unemployed or lowly skilled. Furthermore, the very large role that the labour unions play in the SETAs and their deep involvement in setting up training programmes is aimed at increasing equity in the labour market. To this extent, the steady growth of training in the period under consideration can be seen as a measure of the expansion of equity though training.

7.5 Efficiency

An evaluation of the National Skills Development Strategy (NSDS III) recommended that throughput rates (cohort analysis) be adopted as a measure of efficiency (National Skills Authority, 2018). Such data are currently not collected and available on an individual level. However, a unique cohort analysis on learnerships for those entering these programmes between 2011 and 2014 found that only 33.8% of learners completed these programmes within three years (National Skills Authority, 2018). There are thus signs of very low efficiency in this subsector. A concern was also expressed that there is inadequate attention paid to unit costs of training:

> *"Nowhere in the skills system is there a focus on unit costs. Nor is there any consistency in terms of the amount of a stipend or allowance for the various programme types. There is no analysis done within SETAs or by DHET to establish the relative cost of a single learner in different programmes and sectors" (National Skills Authority, 2018: 97).*

08 KEY ISSUES AND CONCLUSIONS

The data presented and the analysis undertaken in this report show that the PSET system is continuing its growth, a feature of the post–transition period. Yet the data and analysis also show that there are valid concerns about the efficiency of parts of the system and about the quality of its output. Where growth after 1994 was initially strongly focused on the university sector, TVET has experienced very rapid growth in the past decade or more, to the extent that concerns have developed that such growth needs to be constrained, until more attention has been devoted to quality and efficiency. The very high enrolment rates at TVET colleges were made possible by earlier large scale capacity investment and these are unlikely to be sustainable over a long period.

In terms of equity, much has been achieved. This can be seen particularly in the shifts in the racial composition of enrolment and outputs of universities, TVET colleges and private colleges. Especially at TVET colleges, there has been a dramatic expansion in both male and female black enrolment. The intention to increase growth of CET colleges, which can be seen as second–chance education and training opportunities, is by its very nature a step toward greater equity of the PSET system as a whole. Similarly the skills fund institutions cater mainly for unemployed and lower skilled workers, and thereby contribute to equity. But for these institutions, too, concerns have been raised about inefficiency of spending, often signalled by high unit costs for providing training.

Equity with respect to gender has been a success story, at least with regard to female access to and outputs of the PSET system. The GPIs experienced in PSET are some of the highest achieved in the world, indicating that there need not be a concern about low access and throughput for females, as is the case in some parts of the world. Considering that South Africa's enrolment in tertiary education and PSET generally is low compared to the country's peers, the even lower enrolment rates of males should rather be a cause for concern and its origins traced back and addressed in the basic education system. Despite this female advantage in enrolment and even more in graduation rates, higher female than male unemployment rates are found throughout the labour market, though such gender differences are diminished amongst workers with higher levels of education.

Enrolment growth in higher education as well as in colleges has been more rapid in private PSET institutions than in public ones. In the light of the new student funding regime introduced in 2018, it will be interesting to see to what extent this trend will continue.

Some of the high level outputs of the university system – advanced degrees and journal articles – are indicative of important system dynamics. This is occurring despite the fact that universities have had to deal with an important new challenge of a major shift in the demographic profile of their students, enrolling more students from poorer backgrounds than in the past. It is also encouraging to note the increasing importance of and enrolment in the SET fields and the quite significant improvement in throughput rates.

Lowering the cost of PSET education and training is important in a situation of enrolment rates that are still too low, and fiscal constraints that prevent even more rapid rises in enrolment in PSET. Reducing the average costs of PSET can take place mainly through two mechanisms: Through relative growth of cheaper programmes, such as CET colleges rather than TVET, or TVET compared to university enrolment, and through a relative shift from contact to distance education. However, TVET colleges will require significant support in this process, as evidenced by, for example, the currently very low ratio of management to other staff. Currently CET colleges are still in their infancy and do not yet offer a viable option for training for large numbers of people. Their expansion in the years ahead will be important. In terms of distance education, the relatively rapid growth of Unisa compared to the growth of contact universities does lower cost per headcount student, but the very low throughput rates in distance education are a major cause for concern.

The increased funding of universities and TVET institutions as well as for student grants that have been announced in the medium term budget will have important consequences for further growth of the PSET system, both in terms of its magnitude and in terms of the growth of different subsectors. Strong demands for such funding in certain areas limit the capacity of the state to also implement the desired expansion of other parts of the system. This is a particularly pertinent issue in the case of TVET colleges. Despite a doubling of enrolment at TVET colleges between 2010 and 2016, this growth is still far below the WP target and also targets identified in the NDP. Given recent tertiary education financing developments, the only realistic option may be to reconsider the policy targets set for TVET colleges. Moreover, the recent World Bank report on the new funding proposals has again highlighted the fiscal constraints that operate, even concluding that this scheme would not be fiscally sustainable and may reduce the budgetary resources critically needed to improve the quality of education, particularly in TVET colleges (World Bank, 2019).

The production of this report was made possible by using many data sources about PSET. Data on universities are particularly good, but it is clear that planning and measurement of progress in some PSET subsectors are being held back by inadequate data, or lack of data in a format needed for analysis of trends and cross–section differentials, e.g. by gender or race. The development of TVET–MIS is in this regard an important step forward. However, much more needs to be done to ensure that CET colleges, private colleges and SETAs also produce accurate data that cover the main areas needed for planning. This is still a major task ahead to make data a tool for improved planning and development of PSET.

REFERENCES

Australian Government Department of Education and Training. 2017. Key Findings from the 'Completion Rates of Higher Education Students–Cohort Analysis, 2005–2015' Report. [Online]. Available at: https://docs.education.gov.au/system/files/doc/other/key_findings_from_the_completion_rates_of_higher_education_students_-_cohort_analysis_2005-2015_report_0.pdf (Accessed November 2018)

Cloete, N. 2016. For sustainable funding and fees, the undergraduate system in South Africa must be restructured. *South African Journal of Science.* 112(3/4): 1–5.

Council on Higher Education (CHE). 2013. VitalStats Public Higher Education 2011. [Online]. Available: http://www.che.ac.za/sites/default/files/publications/VitalStats (Accessed September 2018)

Council on Higher Education (CHE). 2014. VitalStats Public Higher Education 2012. [Online]. Available: http://www.che.ac.za/sites/default/files/publications/VitalStats (Accessed September 2018)

Council on Higher Education (CHE). 2015. VitalStats Public Higher Education 2013. [Online]. Available: http://www.che.ac.za/sites/default/files/publications/VitalStats (Accessed September 2018)

Council on Higher Education (CHE). 2016. VitalStats Public Higher Education 2014. [Online]. Available: http://www.che.ac.za/sites/default/files/publications/VitalStats (Accessed September 2018)

Council on Higher Education (CHE). 2017. VitalStats Public Higher Education 2015. [Online]. Available: http://www.che.ac.za/sites/default/files/publications/VitalStats (Accessed September 2018)

Council of Higher Education (CHE). 2018. VitalStats Public Higher Education 2016. [Online]. Available: http://www.che.ac.za/sites/default/files/publications/VitalStats (Accessed September 2018)

Council of Higher Education Trust (CHET). 2018. South African Higher Education Open Data. [Online]. Available: https://www.chet.org.za/data/sahe-open-data (Accessed July 2018)

DHET. 2013a. Statistics on Post–School Education and Training in South Africa: 2010. [Online]. Available: http://www.dhet.gov.za/DHET%20Statistics%20Publication/Statistics%20on%20post-school%20education%20and%20training%20in%20South%20Africa%20%202010.pdf (Accessed September 2018)

DHET. 2013b. *White Paper for Post–School Education and Training.* Pretoria.

DHET. 2013c. Statistics on Post–School Education and Training in South Africa: 2011. [Online]. Available: http://www.dhet.gov.za/DHET%20Statistics%20Publication/Statistics%20on%20post-school%20education%20and%20training%20in%20South%20Africa%20%202011.pdf (Accessed September 2018)

DHET. 2014a. Report on the evaluation of the 2012 universities' research publication outputs. [Online]. Available: http://www.dhet.gov.za/Policy%20and%20Development%20Support/2012%20Research%20outputs%20report.pdf (Accessed September 2018)

DHET. 2014b. Statistics on Post–School Education and Training in South Africa: 2012. [Online]. Available: http://www.dhet.gov.za/DHET%20Statistics%20Publication/Statistics%20on%20Post-School%20Education%20and%20Training%20in%20South%20Africa%202012.pdf (Accessed September 2018)

DHET. 2015a. *Annual Report* 2014/2015. [Online]. Available: http://www.dhet.gov.za/Commissions%20Reports/DHET%20Annual%20Report%202014-2015.pdf (Accessed September 2018)

DHET. 2015b. Report on the evaluation of the 2013 universities' research publication outputs. [Online]. Available: http://www.justice.gov.za/commissions/FeesHET/docs/2015-Report-Evaluation2013Universities.pdf. (Accessed November 2018)

DHET. 2015c. Statistics on Post–School Education and Training in South Africa: 2013. [Online]. Available: http://www.dhet.gov.za/DHET%20Statistics%20Publication/Statistics%20on%20Post-School%20Education%20and%20Training%20in%20South%20Africa%202013.pdf (Accessed September 2018)

DHET. 2015d. Annexure 3: Are we making progress with systemic structural transformation of resourcing, access, success, staffing and researching in higher education: What do the data say? *Paper for the second national Higher Education Transformation Summit*. Pretoria.

DHET. 2015e. National policy on Community Education and Training colleges. [Online]. Available: http://www.dhet.gov.za/Community/national%20policy%20on%20community%20colleges.pdf (Accessed November 2018)

DHET. 2016a. Report on the evaluation of the 2014 universities' research publication outputs. [Online]. Available: http://www.dhet.gov.za/Policy%20and%20Development%20Support/Report%20on%20the%20outcomes%20of%20the%202014%20universities%20research%20outputs.pdf (Accessed September 2018)

DHET. 2016b. Report of the commission of enquiry into higher education and training to the president of the Republic of South Africa. [Online]. Available: http://www.thepresidency.gov.za/download/file/fid/1075 (Accessed 28 March 2019).

DHET. 2016c. Annual Report 2015/16. [Online]. Available: http://www.dhet.gov.za/Commissions%20Reports/DHET%20Annual%20Report%202015-2016.pdf (Accessed September 2018)

DHET. 2016d. Statistics on Post–School Education and Training in South Africa: 2014. [Online]. Available: http://www.dhet.gov.za/DHET%20Statistics%20Publication/Statistics%20on%20Post-School%20Education%20and%20Training%20in%20South%20Africa%202014.pdf (Accessed September 2018)

DHET. 2017a. Report on the evaluation of the 2015 universities' research publication outputs. [Online]. Available: http://www.dhet.gov.za/Policy%20and%20Development%20Support/Report-2015-Research-Outputs-final-version.pdf (Accessed September 2018)

DHET. 2017b. *Macro Indicators Report: Monitoring the performance of the post–school education and training system.* Unpublished report. Pretoria.

DHET. 2017c. Statistics on Post–School Education and Training in South Africa: 2015. [Online]. Available: http://www.dhet.gov.za/DHET%20Statistics%20Publication/Statistics%20on%20Post-School%20Education%20and%20Training%20in%20South%20Africa%202015.pdf (Accessed September 2018)

DHET. 2017d. National Skills Development Implementation Report: 2011-2016. [Online]. Available: https://www.google.co.za/search?q=National+Skills+Development+Implementation+Report%3A+2011-2016.&oq=National+Skills+Development+Implementation+Report%3A+2011-2016.&aqs=chrome..69i57.710j0j4&sourceid=chrome&ie=UTF-8 (Accessed September 2018)

DHET. 2018a. *Universities*. [Online]. Available: http://www.dhet.gov.za/SitePages/UniversityEducation.aspx (Accessed July 2018)

DHET. 2018b. Statistics on Post–School Education and Training in South Africa: 2016. [Online]. Available: http://www.dhet.gov.za/DHET%20Statistics%20Publication/Statistics%20on%20Post-School%20Education%20and%20Training%20in%20South%20Africa%202016.pdf (Accessed September 2018)

DHET. 2018c. 2000 to 2015 First Time Entering Undergraduate Cohort Studies for Public Higher Education Institutions. Available at http://www.dhet.gov.za/SitePages/UniversityEducation.aspx (Accessed July 2018)

DHET. 2018d. 2016 Private College Annual Survey. [Online]. Available: https://webapps.dhet.gov.za/Download (Extracted May 2018)

DHET. 2018e. 2016 CLC Annual Survey. [Online]. Available: https://webapps.dhet.gov.za/Download (Extracted May 2018)

DHET. 2018f. The List of Registered Private Colleges. Updated 18 May 2018. Pretoria.

DHET 2018e. Investment Trends in Post–school Education and Training in South Africa. 31 March 2018. Available at: http://www.dhet.gov.za/Planning%20Monitoring%20and%20Evaluation%20Coordination/Investment%20Trends%20on%20Post-School%20Education%20and%20Training%20in%20South%20Africa%20-%202018.pdf (Accessed February 2019)

ETDP SETA. 2016. ETDP SETA Annual Report 2015/2016. [Online]. Available: http://www.etdpseta.org.za/education/sites/default/files/2017-06/2015-16%20annual%20report.pdf (Accessed September 2018)

Field, Simon, Pauline Musset & and José–Luis Álvarez–Galván. 2014. *A Skills beyond School Review of South Africa*. OECD Reviews of Vocational Education and Training. OECD: Paris.

Gustafsson, M. 2018. Understanding the sharp primary level enrolment increases beginning in 2011. Stellenbosch Economic Working Papers: WP08/2018. Stellenbosch University Department of Economics: Stellenbosch

National Skills Authority. 2018. Evaluation of the National Skills Development Strategy (NSDS III) 2011–2016. Unpublished draft.

National Treasury. 2010. Estimates of National Expenditure 2010. [Online]. Available: http://www.treasury.gov.za/documents/national%20budget/2010/default.aspx (Accessed September 2018)

National Treasury. 2013. Estimates of National Expenditure 2013. [Online]. Available: http://www.treasury.gov.za/documents/national%20budget/2013/default.aspx (Accessed September 2018)

National Treasury. 2014. Estimates of National Expenditure 2014. [Online]. Available: http://www.treasury.gov.za/documents/national%20budget/2014/default.aspx (Accessed September 2018)

National Treasury. 2016. Estimates of National Expenditure 2016. [Online]. Available: http://www.treasury.gov.za/documents/national%20budget/2016/default.aspx (Accessed September 2018)

National Treasury. 2018. Estimates of National Expenditure 2018. [Online]. Available: http://www.treasury.gov.za/documents/national%20budget/2018/default.aspx (Accessed September 2018)

NEWS24. 2017. Zuma announces free higher education for poor and working class students. News24, 16 December 2017. Available from: https://www.news24. com/SouthAfrica/News/zuma-announces-free-highereducation-for-poor-and-working-class-students-20171216. Accessed 21 January 2018.

OECD. 2017. Enrolment rate (indicator). [Online]. Available: doi: 10.1787/1d7e7216-en (Accessed October 2017)

OECD. 2017x. *Getting Skills Right: South Africa*. OECD Publishing: Paris [Online]. Available: doi.org/10.1787/9789264278745-en. (Accessed November 2018)

Statistics Norway. 2018. Completion rates of students in higher education [Online]. Available at: https://www.ssb.no/en/hugjen (Accessed November 2018)

Statistics South Africa. 2018. Mid–year population estimates 2018. [Online]. Available: http://www.statssa.gov.za/publications/P0302/P03022018.pdf (Accessed September 2018)

Statistics South Africa. 2018. Quarterly Labour Force Survey Trends: 2008–2018. [Online]. Available: http://www.statssa.gov.za/publications/P0211/QLFS_Trends_2008-2018_Q3.xlsx (Accessed September 2018)

TVET Colleges. 2019. What is TVET? Website. Available at: http://www.tvetcolleges.co.za/ (Accessed February 2019)

UMALUSI Council for Quality Assurance in General and Further Education and Training. 2014. Standards and quality assurance for General and Further Education and Training, UMALUSI Policy. Available: https://www.umalusi.org.za/docs/subframeworks/2014/SQA_Policy.pdf (Accessed February 2019)

UNESCO. 2017. Public spending on education (indicator). [Online]. Available: http://data.uis.unesco.org/?queryid=181# (Accessed October 2017)

UNESCO. 2018. *Glossary*. [Online]. Available: http://uis.unesco.org/en/glossary (Accessed November 2018)

Vossensteyn, J. J., Kottmann, A., Jongbloed, B. W. A., Kaiser, F., Cremonini, L., Stensaker, B., ... Wollscheid, S. 2015. Dropout and completion in higher education in Europe: main report. European Union. DOI: 10.2766/826962. Available at: https://publications.europa.eu/en/publication-detail/-/publication/4deeefb5-0dcd-11e6-ba9a-01aa75ed71a1/language-en (Accessed November 2018)

World Bank. 2018. World Development Report 2018: Learning to Realize Education's Promise. Washington, DC: World Bank. doi:10.1596/978-1-4648-1096-1. License: Creative Commons Attribution CC BY 3.0 IGO

World BanK. 2017. World Development Indicators (WDI) database. [Online]. Available: https://data.worldbank.org/indicator/ (Accessed August 2018)

World Bank. 2019. South Africa Economic Update: Tertiary Education enrolments must rise. World Bank: Washington, D.C.

APPENDICES

APPENDIX A: DEFINITIONS AND GLOSSARY

To ensure consistency between this report and others that can be found in the South African and international literature, some of the definitions provided below have been taken verbatim from existing sources. Superscripts based on the following key–value pairs are used to indicate where this is the case:

a. DHET (2017d: 71–78)
b. CHE (2017: ii–vi)

Bursary [a]

That part of the loan granted to a person by the NSFAS, that the person is not required to pay back on compliance with the criteria and conditions set in the written agreement. South Africa (1999) National Student Financial Aid Scheme Act, No. 56 of 1999. Pretoria.

Certification [a]

Formal Recognition of a qualification or part qualification awarded to a successful learner. SAQA (2013) Standard Glossary of Terms: Terms related to the South African National Qualifications Framework. Pretoria.

First–time entering (FTEN) undergraduate student

Any student who enrols in a formal undergraduate programme at a higher education institution for the first time, having never before enrolled in any other formal undergraduate programme at any other higher education institution. Note: Where the HEMIS (2016) database is used as the source for data presented in this report, first–time entering undergraduate students refer to all students who are (a) classified as being "first–time entering" according to the ENTRCAT classification field and (b) are enrolled in formal undergraduate academic programmes. This means that first–time entering students would exclude any occasional students, will, for example, include students who are entering formal 1 or 2 year undergraduate diploma or certificate programmes.

Full–time equivalent (FTE) student[a]

A student in the post–school sector who is enrolled for an academic programme for a full academic year and who is registered for all the courses included in the curriculum of that programme. If a student is following, for example, only half of the courses required for a full–year academic programme, then he/she would be counted as 0.5 FTE students. If a student is taking 20% more than the courses required in a standard full–year curriculum, then he/she would be counted as 1.2 FTE students. Adapted from Department of Education (1982, 1995) Manual: South African Post–Secondary Education (SAPSE), Pretoria.

Graduate[a]

A student who has satisfied all the requirements of the degree, diploma or certificate for which he/she was registered. South African Post–Secondary Education (SAPSE)–020: Student Statistics Manual. Pretoria.

Graduation rate[a]

A calculation based on the number of students who have graduated in a particular year, irrespective of the year of study, divided by the total number of students enrolled at the universities, in that particular year.

Headcount student[a]

Total unduplicated number of students enrolled in a post–secondary education institution at a given census date, regardless of their course load. Department of Education (1995) South African Post–Secondary Education (SAPSE)–005: Student Statistics Manual. Pretoria.

Higher Education Institution (HEI)[a]

Any institution that provides higher education on a full–time, part–time or distance basis and which is:

a. merged, established, or deemed to be established, as a public higher education institution under the Higher Education Act, 1997(Act No. 101 of 1997);

b. declared as a public higher education institution under the Higher Education Act, 1997 (Act No. 101 of 1997); or

c. registered or provisionally registered as a private higher education institution under the Higher Education Act, 1997 (Act No. 101 of 1997).

South Africa (1997) Higher Education Act, No. 101 of 1997 (as amended). Pretoria.

Internships

The category "Internships" refers to the structured work experience component of an occupational qualification registered by the Quality Council for Trades and Occupations (QCTO).

Learnerships

The category "learnerships" refers to a learning programme that leads to an occupational qualification or part qualification, and includes an apprenticeship and cadetship.

National Skills Fund[a]

The National Skills Fund was established in 1999 in terms of section 27 of the Skills Development Act, 1998 (Act No. 97 of 1998). The money in the fund may be used for the primary objectives as defined by the prescripts of the Skills Development Act, namely:

1. To fund projects identified in the national skills development strategy as national priorities (section 28(1) of the Skills Development Act);

2. To fund projects related to the achievement of the purposes of the Skills Development Act as the Director–General determines (section 28(1) of the Skills Development Act);

3. To administer the Fund within the prescribed limit (section 28(3) of the Skills Development Act). Regulations to prescribe the limit for the administration of the Fund at 10% of revenue has been approved and published in Notice No. R.1030, Government Gazette No. 33740 dated 8 November 2010; and

4. To fund any activity undertaken by the Minister to achieve a national standard of good practice in skills development (section 30B. of the Skills Development Act). National Skills Fund Annual Report, 2014/2016.

National Student Financial Aid Scheme (NSFAS)[a]

The National Student Financial Aid Scheme was established in terms of the National Student Financial Aid Scheme (Act 56 of 1999). It is responsible for providing loans and bursaries to eligible students at all public universities, technical and vocational education and training (TVET) colleges (formerly known as Further Education and Training [FET] colleges) throughout the country. Further mandates for the entity include the recovery of student loans and raising funds for student loans and bursaries, and to recover the loans from students once they are employed.

Occasional student[b]

This is a person who satisfies the statutory requirements for entry into a formally approved qualification offered by the institution and who is effectively registered for an approved course, but who is not registered for an approved qualification. It includes persons enrolled for non–degree purposes.

Postgraduate[b]

Postgraduate qualifications include Postgraduate Diplomas and Honours, Masters and Doctoral degrees.

Third stream income [b]

This refers to all university income derived from sources other than state subsidy or student tuition fees. It is also sometimes called private income. Sources of third steam income are diverse and can include donations or endowments; money earned through contract research or entrepreneurial activity; and income from investments.

Throughput rates[b]

The throughput rate calculates the number of first–time entry undergraduate students of a specific cohort of a specific year who have graduated either within the minimum time, or up to 2 years beyond the minimum time, to the number of students in the baseline enrolments of that cohort. Throughput rates are reflected in the section on cohort studies.

Undergraduate[b]

A student engaged in an undergraduate qualification at a university, namely a first or entry qualification, including certain certificate programmes, diplomas and Bachelor degrees.

University participation rate or Gross Enrolment Ratios (GER)[b]

This is total headcount enrolment over the national population of 20–24 years old, calculated as a percentage. The term used by the Department of Higher Education and Training is participation rate. The National Plan for Higher Education (Department of Education: 2001) explains: "The participation rate is calculated using the UNESCO standard, as the percentage of 20–24 year–olds of the general population enrolled in higher education".

International definitions (for international comparability purpose, especially for country comparison data in this report):

Tertiary education (ISCED levels 5 to 8)

Tertiary education builds on secondary education, providing learning activities in specialised fields of education. It aims at learning at a high level of complexity and specialisation. Tertiary education includes what is commonly understood as academic education but also includes advanced vocational or professional education.

Source definition: ISCED 2011

Post–secondary non–tertiary education (ISCED 4)

Post–secondary non–tertiary education provides learning and educational activities building on secondary education preparing for both labour market entry as well as tertiary education. It typically targets students who have completed upper secondary (ISCED level 3) but who want to increase their opportunities either to enter the labour market or to progress to tertiary education. Programmes are often not significantly more advanced than those at upper secondary as they typically serve to broaden rather than deepen knowledge, skills and competencies. It therefore aims at learning below the high level of complexity characteristic of tertiary education.

Source definition: ISCED 2011

ISCED 5: Short–cycle tertiary education

Programmes at ISCED level 5, or short–cycle tertiary education, are often designed to provide participants with professional knowledge, skills and competencies. Typically, they are practically based, occupationally–specific and prepare students to enter the labour market. However, these programmes may also provide a pathway to other tertiary education programmes. Academic tertiary education programmes below the level of a Bachelor's programme or equivalent are also classified as ISCED level 5.

Source definition: ISCED 2011

ISCED 6: Bachelor's or equivalent level

Programmes at ISCED level 6, or Bachelor's or equivalent level, are often designed to provide participants with intermediate academic and/or professional knowledge, skills and competencies, leading to a first degree or equivalent qualification. Programmes at this level are typically theoretically–based but may include practical components and are informed by state of the art research and/or best professional practice. They are traditionally offered by universities and equivalent tertiary educational institutions.

Source definition: ISCED 2011

ISCED 7: Master's or equivalent level

Programmes at ISCED level 7, or Master's or equivalent level, are often designed to provide participants with advanced academic and/or professional knowledge, skills and competencies, leading to a second degree or equivalent qualification. Programmes at this level may have a substantial research component but do not yet lead to the award of a doctoral qualification. Typically, programmes at this level are theoretically–based but may include practical components and are informed by state of the art research and/or best professional practice. They are traditionally offered by universities and other tertiary educational institutions.

Source definition: ISCED 2011

SCED 8: Doctoral or equivalent level

Programmes at ISCED level 8, or doctoral or equivalent level, are designed primarily to lead to an advanced research qualification. Programmes at this ISCED level are devoted to advanced study and original research and are typically offered only by research–oriented tertiary educational institutions such as universities. Doctoral programmes exist in both academic and professional fields.

Source definition: ISCED 2011

APPENDIX B: ADDITIONAL TABLES

Table 52 Graduation rate in public universities by race

Year	Average	Black	Coloured	Indian	White	Unknown
2009	17.3%	15.9%	18.0%	15.9%	21.9%	15.1%
2010	17.2%	15.8%	18.2%	15.8%	21.7%	27.8%
2011	17.1%	15.7%	17.8%	16.8%	21.8%	29.8%
2012	17.4%	15.8%	18.1%	17.9%	22.5%	29.1%
2013	18.4%	16.9%	18.2%	19.0%	23.6%	27.9%
2014	19.1%	18.0%	19.2%	19.1%	23.8%	20.4%
2015	19.4%	18.3%	19.1%	19.5%	24.3%	22.9%
2016	20.8%	19.8%	20.5%	21.2%	25.4%	24.0%

Table 53 Number of workers and unemployed persons registered by gender in SETA–supported learning programmes, by programme type and gender (2011/12–2016/17)

	Learnerships			Internships			Skills Programmes			Total Registered		
	Female	Male	Female	Female	Male	Female	Female	Male	Female	Female	Male	Female
2011/12	26 323	13 438	66.2%	2 002	1 250	61.6%	47 469	39 849	54.4%	75 794	54 537	58.2%
2012/13	27 986	22 389	55.6%	3 860	1 867	67.4%	46 243	27 465	62.7%	78 089	51 721	60.2%
2013/14	47 742	25 327	65.3%	5 772	1 645	77.8%	52 729	39 779	57.0%	106 243	66 751	61.4%
2014/15	40 524	32 802	55.3%	8 164	3 534	69.8%	79 970	51 890	60.6%	128 658	88 226	59.3%
2015/16	49 993	38 287	56.6%	5 698	5 391	51.4%	66 740	54 253	55.2%	122 431	97 931	55.6%
2016/17	50 665	50 782	49.9%	9 897	7 319	57.5%	72 403	58 614	55.3%	132 965	116 715	53.3%
Average annual growth 2011/12 –2016/17	18.5%	55.6%		78.9%	97.1%		10.5%	9.4%		15.1%	22.8%	

Sources: DHET (2015c); ETDP SETA (2017)

Table 54 Number of workers and unemployed persons certificated by gender in SETA–supported learning programmes, by programme type and gender (2011/12–2016/17)

	Learnerships			Internships			Skills Programmes			Total Certificated		
	Female	Male	Female	Female	Male	Female	Female	Male	Female	Female	Male	Female
2011/12	15 766	12 835	55.1%	446	396	53.0%	49 015	36 987	57.0%	65 227	50 218	56.5%
2012/13	18 950	16 907	52.8%	1 163	948	55.1%	45 840	38 574	54.3%	65 953	56 429	53.9%
2013/14	20 561	16 366	55.7%	1 355	1 035	56.7%	59 155	48 987	54.7%	81 071	66 388	55.0%
2014/15	22 081	18 408	54.5%	1 978	1 596	55.3%	59 617	44 874	57.1%	83 676	64 878	56.3%
2015/16	23 827	19 208	55.4%	1 776	1 365	56.5%	67 556	56 389	54.5%	93 159	76 962	54.8%
2016/17	30 075	28 005	51.8%	3 788	2 989	55.9%	64 912	51 229	55.9%	98 775	82 223	54.6%
Average annual growth 2011/12–2016/17	18.2%	23.6%		149.9%	131.0%		6.5%	7.7%		10.3%	12.7%	

Sources: DHET (2015c); ETDP SETA (2016)

higher education
& training

Department:
Higher Education and Training
REPUBLIC OF SOUTH AFRICA