

**Science Engagement Projects:  
Talent Development Programme  
Post-School Destinations of the 2017 and  
2018 Cohorts**

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## Table of Contents

ABBREVIATIONS AND ACRONYMS .....	ii
LIST OF FIGURES.....	ii
LIST OF TABLES.....	ii
MONITORING THE TALENT DEVELOPMENT PROGRAMME 2017 AND 2018 POST-SCHOOL COHORTS .	1
What is the Talent Development Programme? .....	1
Monitoring the TDP participants .....	2
Methodology.....	2
Who are the respondents? .....	3
The report .....	4
PART A: 2017 AND 2018 COHORT ATTENDING UNIVERSITY .....	5
PART B: 2017 AND 2018 COHORT NOT ATTENDING UNIVERSITY .....	9
PART C: KEY FINDINGS .....	11
TDP respondents studying in 2019 .....	11
TDP respondents working in 2019 .....	11
TDP respondents neither working nor studying in 2019 .....	11
Conclusion.....	12

## ABBREVIATIONS AND ACRONYMS

DSI	-	Department of Science and Innovation
DST	-	Department of Science and Technology
HSRC	-	Human Sciences Research Council
SET	-	Science, Engineering and Technology
STEM	-	Science, Technology, Engineering and Mathematics
STEMI	-	Science, Technology, Engineering, Mathematics and Innovation
SUNCEP	-	Stellenbosch University Centre for Pedagogy
TDP	-	Talent Development Programme

## LIST OF FIGURES

Figure 1: TDP Phase 3.....	1
Figure 2: Characteristics of respondents compared to the characteristics of the full cohorts .....	3
Figure 3: Respondents per province .....	4

## LIST OF TABLES

Table 1: Responses received for each cohort .....	3
Table 2: Provincial distribution of TDP participants in each cohort .....	3

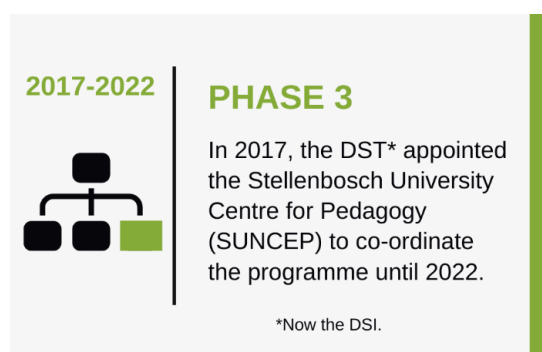
# MONITORING THE TALENT DEVELOPMENT PROGRAMME 2017 AND 2018 POST-SCHOOL COHORTS

## What is the Talent Development Programme?

The Talent Development Programme (TDP) was established in 2005, and forms part of the Department of Science and Innovations' set of Science Engagement Projects. The programme aims to enhance youth's access to Science, Technology, Engineering and Mathematics (STEM) through identifying and nurturing school-going learners with talent and potential. The programme focuses on improving learners' mathematics and science grades, encouraging them to participate in extra-curricular mathematics and science activities, and pursue STEM-based education studies and ultimately STEM-based careers. The TDP also aims to produce a cohort of school leavers who will be prepared for life in higher education and provides guidance on STEM related careers.

The TDP has completed two implementation phases (2005 to 2009, and 2011 to 2016). It is currently in its 3<sup>rd</sup> Phase, which began in 2017 and ends in 2022 (Figure 1).

**Figure 1: TDP Phase 3**



Since 2017, the TDP has targeted learners in grades 11 and 12 from selected public schools across all nine provinces. The recruitment process was implemented by the Stellenbosch University Centre for Pedagogy (SUNCEP) and seeks to benefit 3 440 learners; so on average 580 new entrants per year over six academic years (2017- 2022). SUNCEP has adopted a decentralised model with a centre in each province, using school hostels to house the learners for contact sessions during the year. They are including high performing beneficiaries from working class backgrounds and families where tertiary education has not been attainable in the past<sup>1</sup>.

The 3<sup>rd</sup> Phase programme has three focus areas:

- Enhancing participants' chance to access higher education;
- Preparing participants for higher education life;
- Enhancing well-informed career decision-making by participants.

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<sup>1</sup> More information on the TDP's selection criteria can be found in Hannan, S., Arends, F. and Reddy, V. (*Draft 2021*). Science Promotion Projects: Talent Development Programme 2020 Cohort.

## Monitoring the TDP participants

The Human Science Research Council (HSRC) is responsible for evaluating the implementation of the TDP. This has been done through conducting monitoring studies of the TDP participants<sup>2</sup> in Phase 1, 2 and 3. The role of the HSRC is to monitor the impact of the TDP on participants in terms of their experience, knowledge and skill gains, as well as their post-school activities.

The HSRC administers surveys to the TDP participants for the two years that they attend the programme, to collect demographic and experiential information. After they have left the programme, the HSRC administers surveys to the participants for a further two years in order to collect information related to participants' post-school destinations and activities.

The post-school survey asked participants about what they were doing in 2019: whether they were studying at a University/University of Technology, studying at a TVET College, working, or neither working nor studying. Based on their response, participants were then asked a series of questions related to their 2019 activity, and their plans for the following year (2020). The surveys for the [2017 cohort](#) and [2018 cohort](#) are available in Google Drive.

## Methodology

The key research questions, which framed this study, are:

- Where were the 2017 TDP Grade 12 cohort in 2019 (2 years after exiting the programme)?
- Where were the 2018 TDP Grade 12 cohort in 2019 (1 year after exiting the programme)?
- What were their plans for 2020?

For the first time, the 2020 surveys were administered to the participants via Google forms. The post-school surveys were previously administered telephonically. The methodology was changed for several reasons:

- Difficulty in reaching participants telephonically, despite numerous attempts.
- The high cost of conducting telephonic interviews.
- Participants may be more willing to respond if they can do so in their own time via an online platform.
- Creating a link with SUNCEP: sending the participants reminders. The participants have an established relationship with SUNCEP and may therefore be more likely to respond.

We sent survey links to the 2017 cohort (366) and 2018 cohort (358). Reminder e-mails were sent to all those who had valid e-mail addresses and had not responded to the surveys. Following this, the HSRC liaised with SUNCEP who sent out reminders to the remaining participants. Table 1 provides an overview of the responses that were received for each cohort. We received a 53% response rate from the 2017 cohort, and a 60% response rate from the 2018 cohort.

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<sup>2</sup> In this report, “participants” refers to all those who participated in the TDP in 2017 and 2018; while “respondents” refers to only those that completed our post-school surveys.

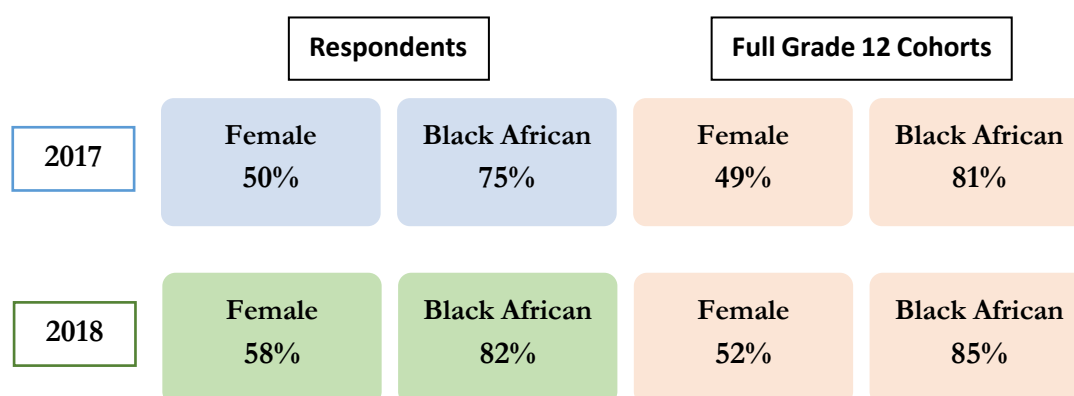
**Table 1: Responses received for each cohort**

	Records (Grade 12)	Valid e-mail addresses <sup>3</sup>	Responses	Response rate
<b>2017 cohort</b>	366	274	145	53%
<b>2018 cohort</b>	358	275	166	60%

### Who are the respondents?

At least half of the respondents from each cohort were female, and the majority from both cohorts were Black African. The respondent samples were therefore similar to the full Grade 12 cohort for each year in terms of demographic characteristics, as shown in Figure 2.

**Figure 2: Characteristics of respondents compared to the characteristics of the full cohorts**



The provincial analysis (Table 1) shows an equal distribution of Grade 12 TDP participants across provinces in 2017 and 2018. On average, slightly more participants from the Western Cape (47) and fewer from North West (31) were included in the 2017 Cohort.

**Table 2: Provincial distribution of TDP participants in each cohort**

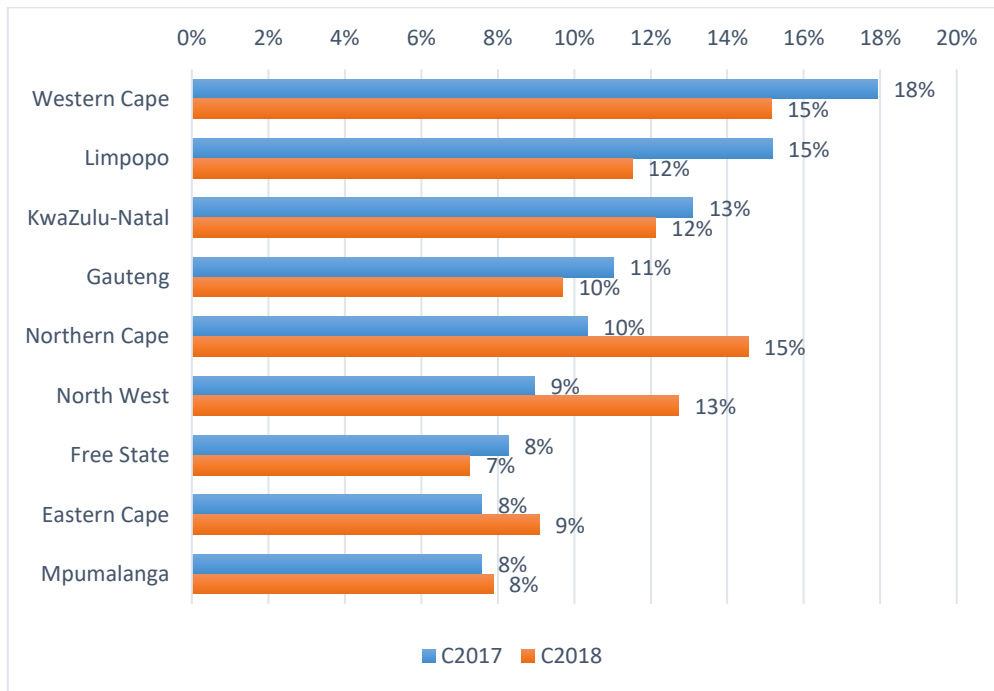
Province	2017 Cohort		2018 Cohort	
	Number	Percent	Number	Percent
<b>Eastern Cape</b>	40	11%	40	11%
<b>Free State</b>	40	11%	41	11%
<b>Gauteng</b>	41	11%	40	11%
<b>KwaZulu-Natal</b>	40	11%	40	11%
<b>Limpopo</b>	39	11%	40	11%
<b>Mpumalanga</b>	41	11%	41	11%
<b>Northern Cape</b>	42	12%	38	11%
<b>North West</b>	31	9%	40	11%
<b>Western Cape</b>	47	13%	39	11%
<b>Total</b>	<b>361</b>	<b>100%</b>	<b>359</b>	<b>100%</b>

Figure 3 shows that some of the provinces had representative samples of respondents to the survey, on average around 11% of responses, while other provinces had a higher or lower response rate. Most of the

<sup>3</sup> Some e-mail addresses were incorrect, while some e-mails were unable to be delivered.

responses from the 2017 Cohort were submitted by participants in the Western Cape (18%) and Limpopo (15%), and the fewest by participants in the Eastern Cape, Free State and Mpumalanga, a share of 8% each. Regarding the 2018 Cohort, most responses to the survey were received from TDP participants in the Northern Cape (15%) and Western Cape (15%) and the least from Free State (7%) and Mpumalanga (8%).

**Figure 3: Respondents per province**



## The report

This report presents findings from the monitoring of the first two TDP cohorts in Phase 3; presenting information that was collected from the 2017 and 2018 Grade 12 cohorts about their post-school destinations and educational activities in 2019.

In Part A we report on the 2017 and 2018 cohort respondents that were attending a University or University of Technology in 2019, which constitutes approximately 95% of the respondents in each cohort. We highlight the tertiary institutions at which they were studying, their field of study and specific qualifications. We ask about their plans for the following year (2020) and their educational aspirations. We also look at the extent to which they felt the TDP prepared them for higher education.

In part B, we focus on the 2017 and 2018 respondents that were either working, or neither studying nor working (unemployed), in 2019. We highlight their activities in 2019, providing occupation related details for those respondents who were working. For those who were unemployed, we report on their sources of support, problems they encountered finding employment, as well as the ways in which they looked for employment. For both groups we report on their plans for 2020.

Part C presents some key findings from the two cohorts.

## PART A: 2017 AND 2018 COHORT ATTENDING UNIVERSITY

### 2017 Cohort: Enrolled at a University

The majority (96%) of the 2017 cohort were enrolled at a University or University of Technology in 2019.

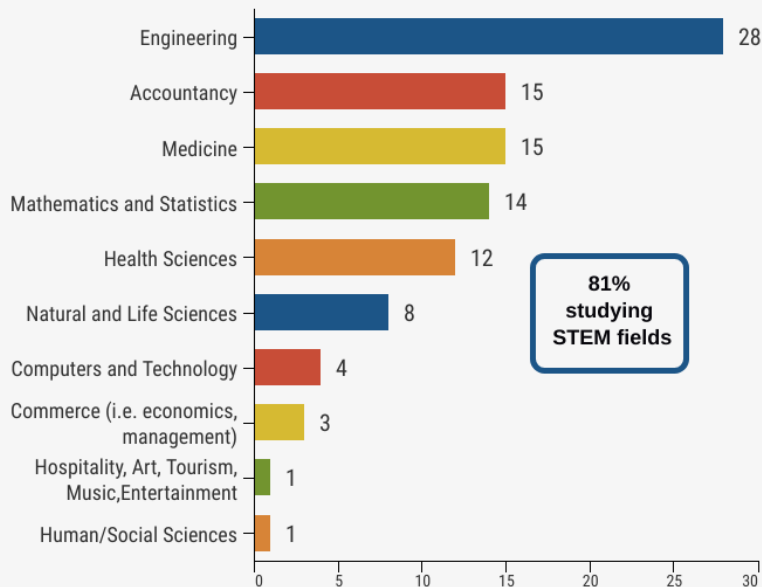
#### Institutions attended



The universities attended by the highest number of respondents were the University of Cape Town, the University of Pretoria, Stellenbosch University and the University of the Witwatersrand - four out of the top five universities in the country.

These students would have achieved high matriculation results to be accepted into these universities.

#### Field of study (%)



Eighty-one percent of respondents were studying STEM fields, with Engineering, Medicine, and Mathematics and Statistics, and Health Sciences being in the top five fields of study.

This highlights that TDP participants are registering for STEM fields, which is one of the goals of the programme.

They are also achieving high marks in Mathematics and Science in Grade 12 in order to be able to pursue these fields.

#### Qualifications studying towards



Engineering was the most common field pursued - respondents were pursuing specializations in mechanical, civil, chemical, and electrical and electronic engineering among others.

Respondents were studying various other STEM degrees, including Medicine, Pharmacy, and Life Science, as well as specializations in degrees such as Analytical Chemistry, Mechatronics, and Aeronautical Engineering.

The TDP participants are likely to enter high profile STEM professions and occupations.



## Plans for 2020

94%

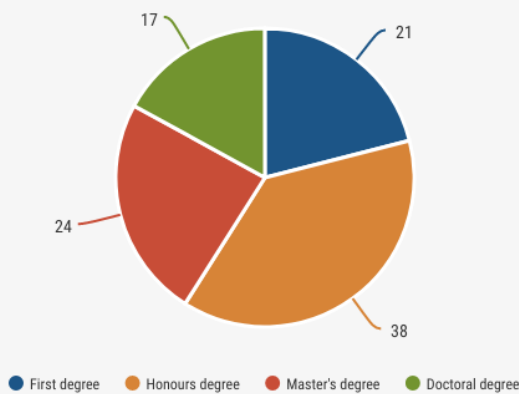
of the cohort were continuing in the same field of study in 2020



Seven students planned to change their field of study - reasons included being more interested in another degree, enrolling for a degree that provided more employability, and not enjoying their degree.

One student planned to leave the institution/dropout, and one planned to start working.

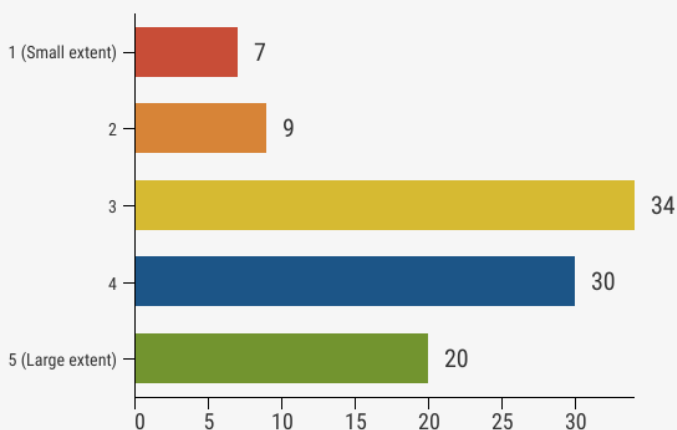
## Highest level of education expect to complete (%)



The majority of respondents intended to complete at least an Honours Degree (79%), while four in ten planned to progress further, obtaining a Master's or Doctoral qualification.

This shows the high educational aspirations and motivation to succeed of the TDP participants.

## To what extent do you feel that the TDP prepared you for university life? (%)



Half of the 2017 cohort respondents felt that they were well prepared for university life by the TDP, while the other half felt they were less well prepared.

This highlights the need to re-examine the ways in which the TDP prepares school learners for their tertiary education.

# 2018 Cohort: Enrolled at a University

The majority (94%) of the 2018 cohort were enrolled at a University of University of Technology in 2019.

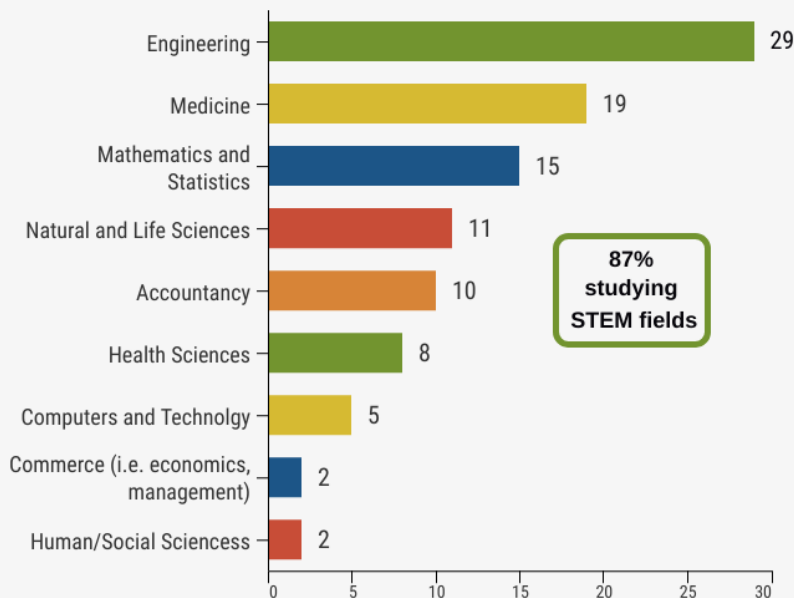
## Institutions attended



The most popular universities amongst respondents were again four of the top five universities in South Africa: University of Cape Town, the University of Pretoria, Stellenbosch University and the University of the Witwatersrand (Wits).

These students would have achieved high matriculation results to be accepted into these universities.

## Field of study (%)



Most respondents (87%) were again studying STEM fields, with Engineering, Medicine, Natural and Life Sciences, and Mathematics and Statistics being the top four fields of study.

TDP participants are registering for STEM fields, which is one of the goals of the programme.

They are also achieving high marks in Mathematics and Science in Grade 12 in order to be accepted into these areas.

## Qualification studying towards



Engineering was again the most popular field of study, with respondents pursuing specializations in various types of engineering.

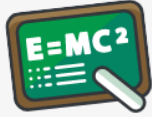
There were a few respondents studying STEM degrees such as Astronomy and Astrophysics, Biomedical Science, and Forensic Science. A small percentage were studying towards social science degrees such as law, and education.

With these qualifications, the TDP participants are likely to enter high profile STEM occupations.

## Plans for 2020

92%

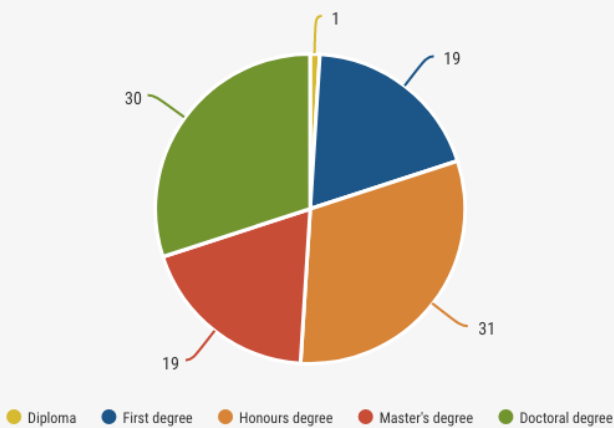
of the respondents planned to continue in the same field of study in 2020



Eight respondents planned to change their field of study -reasons included being more interested in another degree, feeling another degree would earn more money, and not meeting the minimum requirements to proceed.

One respondent planned to leave the institution/dropout.

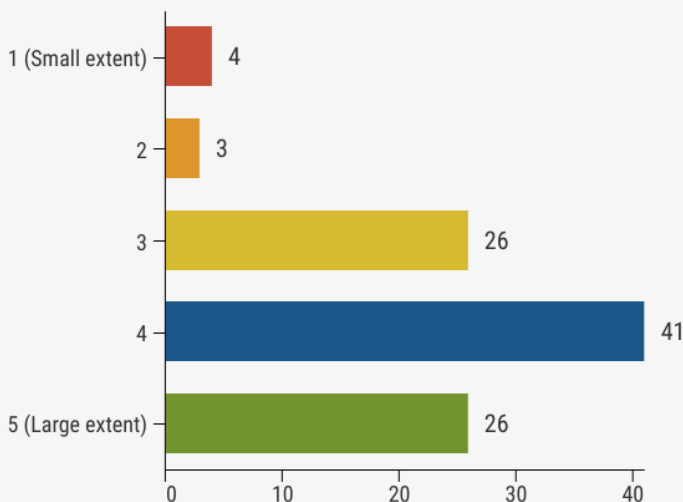
## Highest level of education expect to complete (%)



Around a third of the respondents intended to complete an Honours degree, while further half (49%) were aiming to complete a Masters or Doctoral degree.

This again shows the high educational aspirations and motivation to succeed of the TDP participants.

## To what extent do you feel that the TDP prepared you for university life? (%)



Two thirds of the 2018 cohort respondents felt that the TDP prepared them for university life to a high extent.

This is positive, however, the remaining third did not feel as well prepared. This may require some consideration in relation to how best prepare learners for university life through the TDP.

## PART B: 2017 AND 2018 COHORT NOT ATTENDING UNIVERSITY

### 2017 and 2018 Cohort: Working

Five\* respondents (2 from the 2017 cohort and 3 from the 2018 cohort) were working in 2019. Here we provide profiles for these workers.

\*One of the respondents indicated that they were working in the field of Health Science (Dentistry, nursing, pharmacy, physiotherapy and occupational therapy, radiology), but did not answer the remaining questions.

#### Worker 1:

Working as a **Trainee Auditor/Accountant** in the **private sector**

On **contract**, earning between R3001 and R6000 per month

Working at least **40 hours** per week

It took them "**up to 1 month**" to find this job

Attended **short courses** during 2019, sponsored by their employer

Were **studying** towards a certificate, diploma or degree during 2019

Planned to **continue working** in 2020



#### Worker 2:

Working as a **Bartender** in the **private sector**

**Permanently** employed, and earning between R1000 and 3000 per month



Working at least **40 hours** per week

It took them "**between 1 and 3 months**" to find this job

Attended **short courses** during 2019, sponsored by their employer

Were **studying** towards a certificate, diploma or degree during 2019

Planned to go to **University** in 2020

#### Worker 3:

Working as a **Teacher** in a school

They were **permanently** employed

Working at least **40 hours** per week

It took them "**up to 1 month**" to find this job

Planned to **continue working** in 2020



#### Worker 4:

Working in the Retail field as a "**problem solver**" in the **private sector**

On **contract**, earning between R6001 and R9000 per month

Working at least **40 hours** per week



It took them "**up to 1 month**" to find this job

Attended **short courses** during 2019, sponsored by their employer

Planned to go to **University** in 2020

#### Overall:

Three of the four were working in the private sector.

They were all working in different fields: Accounting (1); Hospitality, Tourism, Music, Art, Entertainment (2); Human/Social Sciences (3); and Retail (4).

Two were permanently employed, while the other two were employed on a contract or temporary basis.

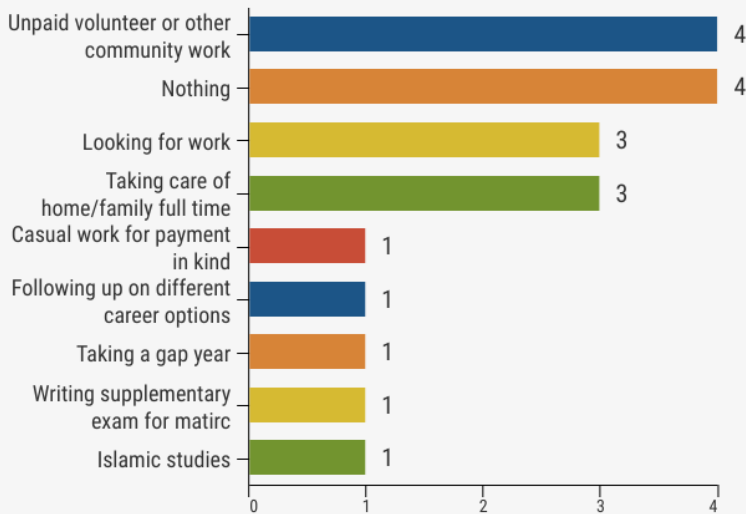
They were all working at least 40 hours per week.

Two of the respondents who were working planned to go to a University in 2020, while the other two planned to continue working.

# 2017 and 2018 Cohort: Not studying or working

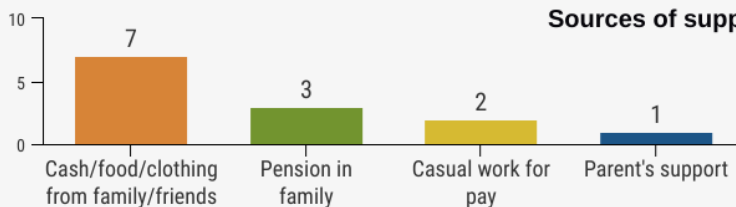
Nine respondents from the 2017 (three) and 2018 (six) cohorts were unemployed in 2019. We asked them about their activities during 2019. For each question, they could choose more than one response.

## Activities during 2019



These respondents indicated being involved in a range of activities in 2019, including unpaid volunteer/community work, casual work for payment in kind, looking for work, following up on different career options, and taking care of home/family full time.

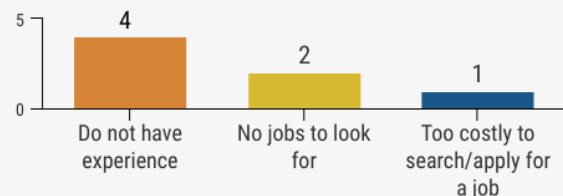
## Sources of support



During this period, they were being supported in various ways: doing casual work for pay, being supported by their parents, having access to a pension in the family, and receiving cash/food/clothing from family/friends.

## Problems finding a job since completing matric

The problems they noted in terms of finding a job since completing matric included: not having experience, it being too costly to search/apply for a job, and there being a lack of available jobs.



## Activities undertaken to try and get a job

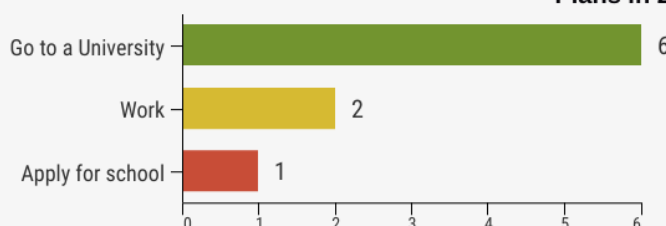
They had undertaken a variety of activities to try and find a job, including:

- Answered job advertisements on the internet (6)
- Made enquiries at workplaces (4)
- Answered job advertisements in newspapers (5)
- Inquired about jobs or registered with a private recruitment company (2)
- Contacted friends or relatives about a job (6)
- Written or phoned an employer about a job (3)
- Checked workplace noticeboards (3)
- Inquired about jobs or registered at a Labour Centre/ DoL employment office (2)
- Asked training institution or another organisation for advice (3)
- Advertised for work on the internet (1)

All of the respondents who were unemployed had tried different methods of looking for employment, however they were unsuccessful.

This may be a reflection of the South African job market, where opportunities are limited.

## Plans in 2020



The majority of those who were unemployed in 2019 planned to attend a University in 2020.

This is a positive transition into tertiary education for these TDP participants.

## PART C: KEY FINDINGS

This section presents key findings from the 2017 and 2018 cohorts, related to where they were in 2019, as well as their plans for 2020<sup>4</sup>.

### TDP respondents studying in 2019

- Most respondents from both cohorts were studying at a University, with the highest attendance at four of the top five South African universities. This shows that TDP participants are obtaining high marks that enable them to be accepted at these universities.
- A high percentage intended to complete an Honours Degree, while many intended to progress further, obtaining a Master's or Doctoral qualification. These individuals have high aspirations in relation to their tertiary education.
- More than 80% of the respondents in each cohort were studying STEM fields, with degrees in Engineering, Medicine, and Mathematics and Statistics being in the top four for both cohorts. There were a small number that were studying degrees in Commerce, or Human/Social Sciences, as well as between 10 and 15% in each cohort studying Accountancy. The field choices of the TDP participants will lead to them being employed in high profile STEM professions, and thus contributing to the goal of developing STEM human capital in the country.
- When asked to what extent they felt that the TDP had prepared them for university life, half (50%) of the 2017 cohort and two thirds (67%) of the 2018 cohort rated the extent as a 4 or 5, on a 1 (small extent) to 5 (large extent) scale. This is an area which requires some examination in relation to the way the TDP prepares participants for university life.

### TDP respondents working in 2019

- A very small number of respondents were working in 2019, in different fields. This highlights that directly entering the labour market after matric is not the first choice for TDP participants.
- While two of the four respondents were in occupations where they were permanently employed and planned to continue in these positions; the other two were employed on a short-term basis and planned to attend university in 2020.

### TDP respondents neither working nor studying in 2019

- The respondents who were not working or studying in 2019 were involved in a range of activities, including unpaid volunteer/community work, casual work for payment in kind, looking for work, following up on different career options, and taking care of home/family full time.
- They encountered various challenges in their job searches including not having experience, it being too costly to search/apply for a job, and there being a lack of available jobs.
- Many of them had employed various methods to find a job, such as answering job advertisements (in newspapers or online), contacting friends or relatives about a job, and following up on opportunities with employers. Their inability to find a job may reflect the South African job market, where unemployment levels are high.
- The majority were planning to attend a University in 2020.

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<sup>4</sup> It is important to bear in mind that those working, or not working or studying, may have been less likely to respond to the survey.

## Conclusion

The report has provided information on the educational trajectories of the 2017 and 2018 Grade 12 TDP cohorts post-school to highlight the trends and their implication for the key objectives of the Talent Development Programme. With regards to the TDP objectives, these findings have shown that TDP participants are highly likely to continue into higher education, with 96% and 94% of the 2017 and 2018 cohort respectively being enrolled at a University/University of Technology in 2019. On average, 84% of respondents had chosen to pursue STEM fields of study, with Engineering, Medicine, and Mathematics and Statistics being in the four most popular fields for both cohorts. Health Sciences was also a popular choice. The majority in both cohorts were enrolled in degrees through which they would progress into Science, Engineering and Technology careers, with a smaller portion enrolled in degrees that would enhance Mathematics related careers.

The enhancement of youth's access to SET will only be achieved if it is driven by the promotion of STEM literacy among the youth and identifying and nurturing learners with talent and potential for STEM careers. Given that the TDP participants come from largely working-class families and a high percentage attend no-fee schools, it is encouraging that these learners are being supported in gaining access to tertiary education and pursuing STEM careers. Greater levels of participation of secondary and tertiary students in STEM will develop a critical public that actively engages and participates in the national discourse on science and technology to the benefit of society as envisioned in the DSI's [Science Engagement Strategy](#).

The TDP aims to expose learners to strategies to manage university life. However, between a half and two thirds of respondents indicated that the TDP prepared them well for university life. This highlights the need for some reflection on ways in which the TDP may better prepare learners for life after school, including conducting a needs analysis of what strategies and support would be most effective for learners.