International Labour Organization

Flanders
State of the Art

Apprenticeships Development for Universal Lifelong Learning and Training (ADULT)

Good practices in Apprenticeships in South-Africa: Challenges and Opportunities

First published 2022

ISBN: PRINT 9789220381854 / PDF 9789220381861

Printed in Switzerland

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Foreword

New technologies, demographic shifts, climate change, globalization and more recently, crises, such as the global coronavirus disease (COVID-19) pandemic, are causing major disruptions to the world of work. Against this backdrop, it becomes even more important to build an agile workforce capable of navigating fast-changing labour markets through appropriate and timely skilling, reskilling and upskilling. The use of apprenticeship models or dual training systems can be an effective solution in the context of the future of work as it bridges the gap between education and training system and the world of work.

Although apprenticeship is a centuries-old system which enables young persons to acquire skills related to specific occupations, questions are increasingly being raised about its relevance for skilling, reskilling and upskilling in the context of the future of work and lifelong learning.

The ILO has therefore launched a research project – *Apprenticeship Development for Universal Lifelong Learning and Training (ADULT)* – which aims to generate new ideas and policy options to modernize apprenticeship systems. The project is funded by the Government of Flanders. The research aims to explore how apprenticeship systems are being modernized and transformed to promote and enable lifelong learning and decent work for youth, adults, and older workers (both employed and unemployed) and provide recommendations for modernizing the apprenticeships in the country. The research also covers other forms of work-based learning options for students in VET institutes.

The *"Good practices in Apprenticeships in South-Africa: Challenges and Opportunities"* country level report has been produced by the ILO as part of the ADULT project. It provides an overview of the South African apprenticeship system and captures contextual factors at the country level with a view to modernizing apprenticeships. The report also highlights the specific challenges of the system, including social stigma, levels of development of the apprenticeship system, gender inequalities as well as examples of good practice and initiatives taken to improve apprenticeship training in South Africa.

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▶ Acknowledgments

The Country level research report *'Good practices in Apprenticeships in South-Africa: Challenges and Opportunities'* has been produced by the International Labour Organization (ILO) as part of the Apprenticeships Development for Universal Lifelong Learning and Training (ADULT) project funded by the Government of Flanders.

Ashwani Aggarwal (ILO) managed the ADULT project and led the design of the country research components. Anita Sharma (ILO) coordinated with consultants and reviewers, and also reviewed and provided comments on the paper.

Much appreciations for Florus Prinsloo and Gerda Magnus who authored the paper and made revisions to it based on the feedback from reviewers. Significant contributions were made in terms of technical inputs and support to country-level dialogues by David Mabusela (DHET, South Africa), Sabelo Buthelezi (DHET, South Africa), Mustak Ally (Minerals Council, South Africa), Tokollo Mokoena (South African Artisans Movement, South Africa), Fumane Mboweni (DHET, South Africa) and Alice Vozza (ILO DWT CO-Pretoria), while Florus Prinsloo and Gerda Magnus compiled the report.

This project was supported by a global advisory committee and stakeholders comprising experts from government, employers' and workers' organizations, the private sector, academia, and the ILO and other development agencies. Thanks are due to the following experts who reviewed various drafts of this paper and provided extremely useful feedback, including Jörg Markowitsch (3s Research Laboratory, Austria), Andrew McCoshan (Consultant, United Kingdom), Lisa Rustico (CEDEFOP, Europe and Central Asia), Stefan Thomas (European Training Foundation, Europe and Central Asia), Andrew Hall (British Council, United Kingdom), Indhira Vanessa Santos (World Bank, United States), Hendrina Chalwe Doroba (African Development Bank, Africa), Nazrene Mannie (GAN, Global), Anita Shrama (ILO-New Delhi, India).

Majda Grine (ILO), Jenni Jostock (ILO) Nidhi Gautam (ILO consultant), and Axelle de Miller(ILO) coordinated the editing, design and layout of the publication. Jeff Bridgford, Cheryl Cheuk Yu Chan and Alice Vozza provided support in technical review of the report. Special thanks are due to David Maenaut and Eva Haeverans for their excellent support and coordination on behalf of the Government of Flanders, in providing technical advice for the preparation, review and finalization of this paper.

Sangheon Lee, Director, Employment Policy Department (ILO) and Srinivas B. Reddy, Chief, Skills and Employability Branch (ILO) provided guidance and advice in the production of this publication.

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ADULT	Apprenticeships Development for Universal Lifelong Learning and Training
APP	Annual Performance Plan
COIDA	Compensation for Occupational Injuries and Diseases
CoS	Centre of Specialisation
CPD	Continuous Professional Development
DBE	Department of Basic Education
DEL	Department of Employment and Labour
DHET	Department of Higher Education and Training
DWCP	Decent Work Country Programme
ERRP	Economic Reconstruction and Recovery Plan
ESDA	Employment Services Development Agency
GTPP	Generic Trade Preparation Programme
HRDC	Human Resource Development Council of South Africa
ILO	International Labour Organisation
INDLELA	A Zulu language word used to denote the Chief Directorate National Artisan Development
JIPSA	Joint Initiative for Priority Skills Acquisition
NADAB	National Artisan Advisory Body
NAMB	National Artisan Moderation Body
NATED	National Technical Education
NC(V)	National Certificate Vocational
NDP	National Development Plan
NEET	Not in Education, Employment or Training
NOCC	National Occupational Curriculum Content
NOLS	National Open Learning System
NPO	Non-Profit Organisation
NSA	National Skills Authority
NSF	National Skills Fund
NSDP	National Skills Development Plan
OQSF	Occupational Qualifications Sub Framework.
OT	Occupational Team
OTC	Occupational Team Convenor
PLP	Prevocational Learning Programme
PPP	Public Private Partnerships
PSET	Post School Education and Training
QCTO	Quality Council for Trades and Occupations
SDA	Skills Development Act
SETA	Sector Education and Training Authority
SMMEs	Small, Medium, Micro Enterprises
TVET	Technical Vocational Education and Training

Executive Summary

South Africa has a long history of apprenticeship development. Although the system is intended to be applicable to all occupations, over the years, it has been mainly focused on artisanal occupations, to the extent that the two terms have been used interchangeably.

In 2013, the White Paper for Post-School Education and Training, a report published by the South African Department of Higher Education and Training, acknowledged that the system had been "allowed to deteriorate since the mid-1980s, resulting in a shortage of mid-level skills in the engineering and construction fields". [i]

The white paper contextually defined the re-establishment of a good artisan training system as an urgent priority and set a target of training 30,000 artisans per year to be reached by 2030.[ii]

In the white paper, the Minister of Higher Education and Training, Dr B.E. Nzimande, emphasized the importance of a workplace learning for learners that exit Universities and TVET Colleges[iii] Since then, under the leadership of the Department of Higher Education and Training (DHET), a range of initiatives at the national, sub-national and sectoral levels, have resulted in two significant outputs that will guide any further development of the national apprenticeship system:

- The draft National Apprenticeship and Artisan Development Strategy 2030,[iv] and
- The Centre of Specialisation (CoS) Programme Midterm Evaluation Report.[v]

Against this background, in 2020, South Africa was included in a global review, led by the International Labour Organization (ILO) and funded by the Government of Flanders, known as the Apprenticeships Development for Universal Lifelong Learning and Training (ADULT) project. Subsequently, in 2021, the DHET and the ILO partnered to produce a country-level research report, which provides a reflection on the current state of the apprenticeship system in South Africa and suggests ways to develop it further, while building on the existing work at the national level, as detailed in the strategic documents previously mentioned.

The ADULT research in South Africa looked into the following five themes that were prioritized through a stakeholders' consultation process:

- **Theme 1**: Adapting apprenticeship models to meet the skills needs of the digital and knowledge economy.
- **Theme 2:** Using modern technology to strengthen the effectiveness and efficiency of managing or implementing apprenticeships.
- **Theme 3:** Strengthening the teaching, learning and workplace training elements of the apprenticeship system.
- **Theme 4:** Developing work-based learning programmes at technical vocational education and training (TVET) colleges as a mechanism to grow the labour market relevance of these colleges.
- **Theme 5:** Increasing access to workplaces, in particular to enable the participation of small, micro and medium-sized enterprises (SMMEs) in the apprenticeship system.

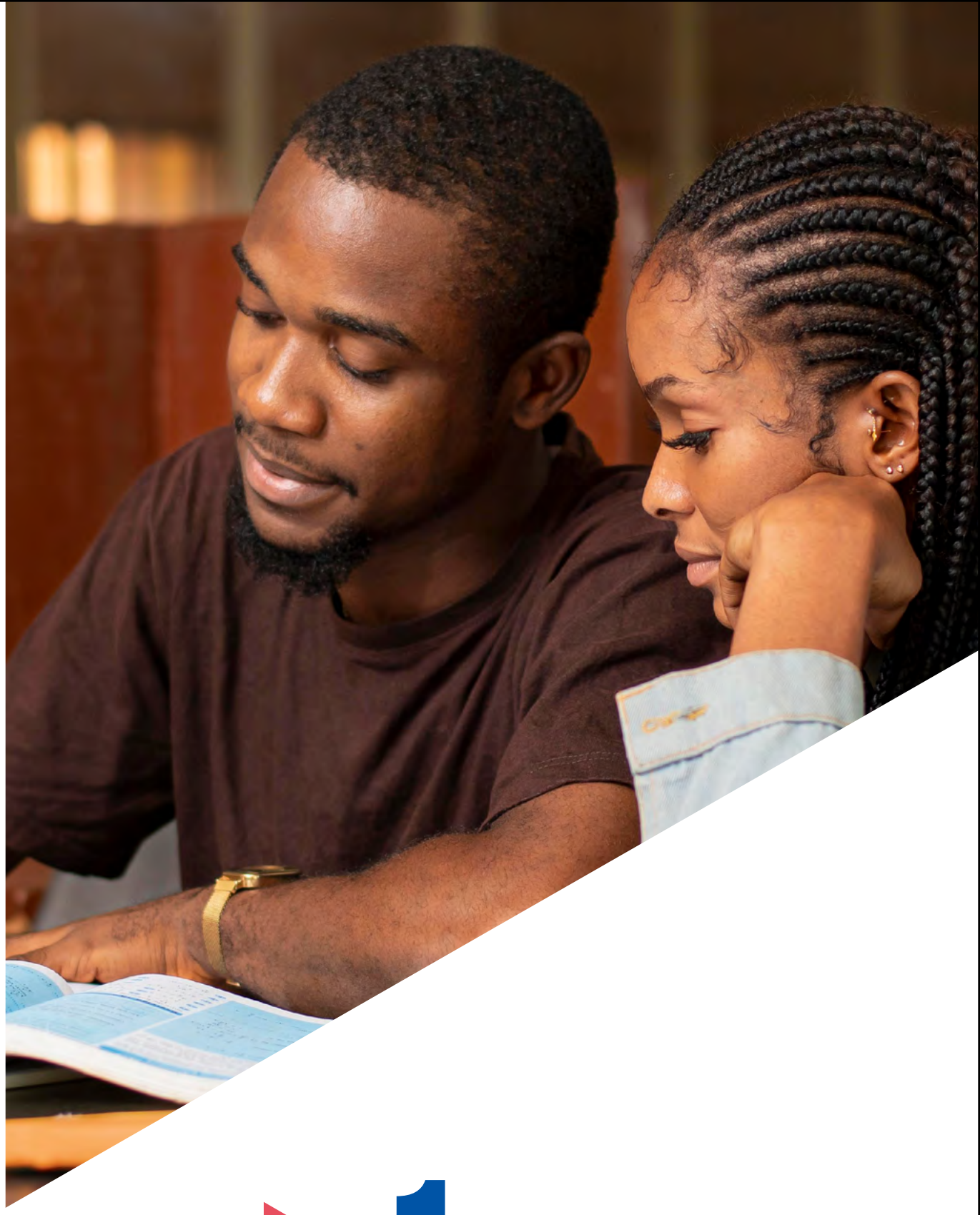
The research process had several steps including: prioritization of thematic areas through a survey-based consultation with tripartite constituents and key players in the apprenticeship system; undertaking a literature review and case study analyses, consolidated into a background report for stakeholders consultation; participation in national dialogues to share preliminary findings and emerging recommendations; elaboration of the final ADULT country research report to include feedbacks received; final multi-stakeholder Colloquium and Innovation Bootcamp to validate the final set of conclusions and recommendations, among which were:

- More regular updates, possibly quarterly, should be received from employers and sector education and training authorities (SETAs) on digital skills needs, as the critical skills lists produced every two years do not reflect the rapidly changing industry needs in the digital space.
- A specific programme should be implemented to develop core skills, possibly using the ILO global framework on core skills for life and work in the 21st century.[1]
- The National Open Learning System (NOLS) should be used to support online learning as a digital skills accelerator and reinforced with specialist expertise.
- The continuing professional development of lecturers should be strengthened in order to incorporate inputs from professional associations.
- The Pre-Vocational Learning Programme (PLP) should be expanded and customized to allow for a broader range of subjects to be taught including core skills.
- All occupational qualifications should include a customized work readiness module that includes relevant career path suitability assessment as part of the learning.
- TVET college management and councils should be assisted in building capacity, by developing management understanding of implementing occupational qualifications as well as ensuring the participation of industry in TVET college councils.
- A clear and specific strategy should be developed and implemented to strengthen and expand the role of intermediaries that are also involved in the roll-out of skills programmes as a precursor to apprenticeship programmes.
- There should be less onerous requirements for workplaces to make it more conducive for SMMEs to participate as host employers. While there should be minimum criteria, including the need for a qualified artisan, there should be less burdensome requirements for a SMME to qualify as an eligible workplace.

Besides the specific recommendations that resulted from the thematic research process, the country report provides a series of recommendations aimed at strengthening the national apprenticeship system development framework, as illustrated in Annexure B. It does so by referring to the draft National Apprenticeship and Artisan Development Strategy 2030 as a baseline and to the Centre of Specialisation (CoS) Programme Midterm Evaluation report as evidence of latest practice, and by suggesting specific interventions needed at five subsystem levels:

- Institutional governance, coordination and integration
- Qualification, curriculum, programme and assessment content development
- Funding
- Delivery systems, resources and processes
- Employers' and intermediaries' processes.

1 The ILO Global framework on core skills for life and work in the 21st century can be downloaded here.



1 Introduction

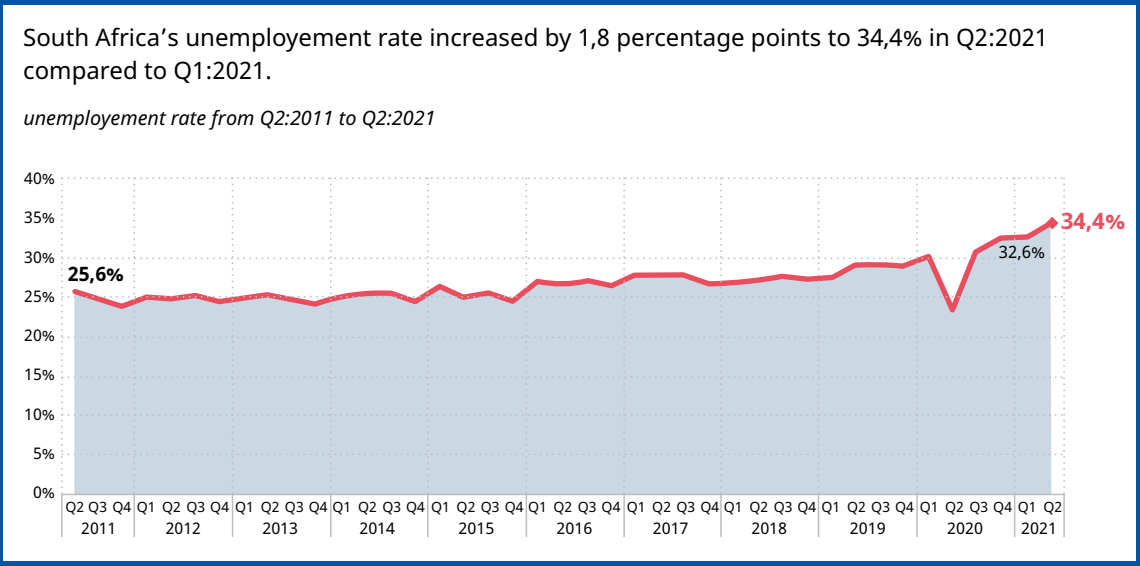
Introduction

As a country, South Africa continues to struggle to fight the triple scourges of poverty, unemployment and inequality. A major contributor to the inability to overcome these hurdles has been a lack of significant economic growth. The country has struggled to increase its gross domestic product (GDP) significantly above 3 per cent per year over the last decade and employment of persons of all ages has suffered as a direct consequence.

While apprenticeships have historically been a youth-oriented intervention, the high rates of unemployment across all age groups have led countries across the globe to consider opening them up to older people too. An example of apprenticeships for older people is well documented in the International Labour Organization's (ILO) Apprenticeships Development for Universal Lifelong Learning and Training (ADULT) project's report on Finland.[vi] South African unemployment statistics are therefore considered across all age groups, so as to obtain a complete picture, not just for young people.

Within the context of skills development and apprenticeships in particular, the lack of job-rich growth limits the availability of work-based learning opportunities, which in turn could enhance future employability. As shown in Figure 1, South Africa's unemployment rate increased by 1.8 percentage points to 34.4 per cent in Q2 2021 as compared to Q1 2021. Compared to the previous year, the total employment decreased by 1.4 million.[vii]

Figure 1. Unemployment rate from Q2 2011 to Q2 2021.



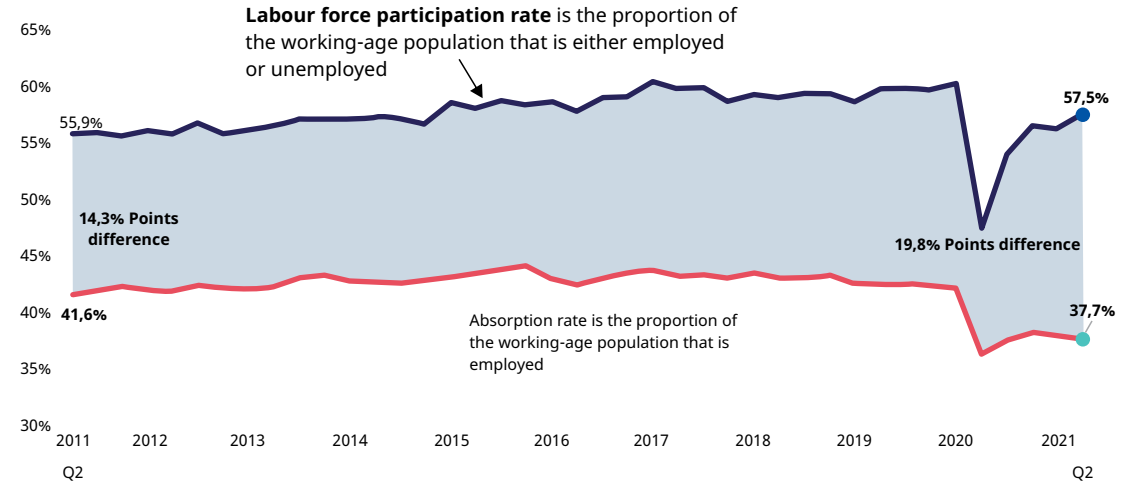
Source: Statistics South Africa (2021).

According to Statistics South Africa (Stats SA), the results of the Quarterly Labour Force Survey (QLFS) for the second quarter of 2021 show that the number of employed persons decreased by 54,000 in the second quarter of 2021 to 14.9 million. The number of unemployed persons increased by 584,000 to 7.8 million compared to the first quarter of 2021. The number of discouraged work-seekers increased by 186,000 (5.9 per cent) and the number of people who were not economically active for reasons other than discouragement decreased by 571,000 (4.5 per cent) between the two quarters, resulting in a net decrease of 386,000 in the not economically active population.[viii]

Figure 2. Labour force participation and absorption rates Q2 2011 to Q2 2021

The Labour force participation rate increased by 1,1 percentage points from 56,4% in Q1:2021 to 57,5% in Q2:2011

Labour force participation and absorption rates Q2:2011-Q2:2021



Source: Statistics South Africa (2021)

The labour force participation rate increased by 1.1 percent to 57.5 per cent in Q2 2021, after experiencing a drastic decline in 2020 due to the coronavirus disease (COVID-19) pandemic, as shown in figure 2. The absorption rate decreased by 0.3 of a percentage point to 37.7 per cent in Q2 2021, as compared to Q1 2021. These trends show that between Q1 and Q2 2021, a large number of persons moved from employed status and not economically active to unemployed categories, thus increasing the unemployment rate to 34.4 per cent. The unemployment rate according to the expanded definition of unemployment increased by 1.2 percentage points to 44.4 per cent in Q2 2021 as compared to Q1 2021.

The situation further deteriorated in 2021 as the unemployment rate reached a record high of 35.3 per cent in Q4 2021, with 7.9 million people looking for work, the highest it has been since the start of the QLFS in 2008.

Further, the highest unemployment rates for the youth cohort aged 15–24 years and 25–34 years of 66.5 per cent and 43.5 per cent respectively were recorded in Q4 2021. About 3.4 million (32.85 per cent) out of 10.2 million young people aged 15–24 years were not in employment, education or training (NEET).

It is important to note that in South Africa, an apprenticeship is defined as being directly related to an artisan trade occupation. In 2000, a new type of work-based learning programme called a learnership was introduced, which is effectively an apprenticeship for non-artisan trade occupations. The two learning programmes are considered closely linked as the Skills Development Act 37 of 2008, which amends the Skills Development Act 97 of 1998, indicates that a learnership includes an apprenticeship.[ix]

The similarities between a learnership and an apprenticeship are noticeable in that both types of learning programmes are structured with a qualification that has learning outcomes, are governed by a tripartite agreement and include final formal assessment. Perhaps the most significant difference is that apprenticeships tend to be three to four years in duration, while learnerships tend to be closer to a year.

The numbers of learners that have been enrolled in both apprenticeships and learnerships are reflected in tables 1 and 2, which together give a sense of the extent of the learnership and apprenticeship system in South Africa.

Table 1. Number of persons registered by sector education and training authorities (SETAs) in work-based learning programmes excluding artisan trade programmes (apprenticeships) (2011–2020)

Year	Registered				Certificated			
	Learnerships	Internships	Skills Programmes	Total Registered	Learnerships	Internships	Skills Programmes	Total Registered
2011/12	43,871	3,452	87,906	1,35,229	29,197	878	87,527	1,17,602
2012/13	50,885	6,127	74,587	1,31,599	37,158	2,195	86,491	1,25,844
2013/14	75,782	8,017	92,508	1,76,307	38,796	2,510	1,09,547	1,50,853
2014/15	77,931	12,006	1,37,880	2,27,817	40,891	3,663	1,06,459	1,51,013
2015/16	94,369	13,135	1,23,593	2,31,097	43,322	3,352	1,27,144	1,73,818
2016/17	1,01,447	17,216	1,31,017	2,49,680	58,080	6,777	1,16,141	1,80,998
2017/18	1,11,681	12,935	1,44,531	2,69,147	48,002	6,496	1,22,979	1,77,477
2018/19	1,05,548	15,482	1,50,674	2,71,704	61,841	6,123	1,44,460	2,12,424
2019/20	81,988	11,784	1,28,438	2,22,210	57,888	7,711	1,14,032	1,79,631

Source: DHET – Statistics on Post School Education and Training in South Africa 2019 (released in March 2021).

Table 2. Number of persons registered by SETAs in artisan trade programmes (apprenticeships) (2011–2020)

SETA	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20
AGRISETA	96	70	116	244	347	227	193	303	396
CATHSSETA	563	662	312	840	514	683	639	699	1,112
CETA	1,849	579	1,342	2,104	1,737	2,024	8,731	8,913	1,812
CHIETA	2,541	1,989	1,694	2,164	3,372	4,263	3,172	2,144	2,543
EWSETA	1,046	1,316	390	507	1,378	1,287	1,789	1,165	672
FOODBEV	15	-	267	70	45	178	167	218	141
FP&M SETA	351	584	426	958	459	419	290	257	270
HWSETA	-	-	-	109	119	87	74	170	237
INDLELA	5,227	5,795	7,865	7,122	5,734	7,311	5,508	4,065	3,056
LGSETA	413	528	294	754	1,020	888	646	191	44
MERSETA	6,254	4,951	10,394	7,606	8,130	8,038	6,755	7,353	1,524
MQA	2,525	2,365	2,468	2,621	1,848	1,978	1,872	1,459	1,847
PSETA	78	53	2	48	33	34	20	76	60
SASSETA	-	516	385	539	467	401	77	117	165
SERVICES	2,104	984	968	761	1,127	1,416	1,416	1,515	1,031
TETA	1,019	711	538	1,579	1,778	1,314	981	897	682
W&RSETA	334	746	209	276	532	269	-	440	626
Total	24,415	21,849	27,670	28,302	28,640	30,817	32,330	29,982	16,218

Source: DHET – Statistics on Post School Education and Training in South Africa 2019 (released in March 2021). Note: A detailed description of the different types of SETA listed on Table 2 can be found in the Government Gazette No. 42589 of 22 July 2019.

A combination of learnerships and apprenticeships from figures 4 and 5 thus results in the following data (table 3).

Table 3. Number of persons registered by SETAs in learnerships and apprenticeships

Year	Learnerships	Apprenticeships	Totals
2011/12	43 871	24 415	68 286
2012/13	50 885	21 849	72 734
2013/14	75 782	27 670	103 452
2014/15	77 931	28 302	106 233
2015/16	94 369	28 640	123 009
2016/17	101 447	30 817	132 264
2017/18	111 681	32 330	144 011
2018/19	105 548	29 982	135 530
2019/20	81 988	16 218	98 206

Source: Authors' analysis.

However, the delivery modality of both types of learning programmes is not as integrated as it should be in a dual system methodology. Both apprenticeships and learnerships are typically front-loaded with theory and some practical learning delivered by an academic institution, such as a TVET college. Thereafter, on-the-job learning occurs as an add-on of the learning process, and not integrated as it should be in a dual system.

The relationship between the state of the South African economy and the numbers of learners entering and completing learnerships and apprenticeships is often the basis for developing national strategies and skills development plans, which make increasing reference to the potential and strategic role apprenticeship development can play in addressing the broad unemployment challenge in the country.

Foremost of the national policies and strategies that have direct influence on apprenticeship development is the National Development Plan 2030 (NDP 2030), which foregrounds all of South Africa's future

development plans. One of the enablers of this desired economic growth rate is described in the executive summary of the NDP 2030 as an expanded skills base through better education and vocational training. This is a direct link to the contribution that an expanding, modernized apprenticeship system could offer. This skills base enabler is further explained within the objectives and actions of Chapter 9 of the NDP 2030, which makes explicit and implicit references to the apprenticeship system:

- Objectives
  - Expand the TVET college system with a focus on improving quality. Better quality will build confidence in the college sector and attract more learners. The recommended participation rate of 25 per cent of colleges would accommodate about 1.25 million registrations.
  - Provide 1 million learning opportunities through community education and training colleges.
  - Improve throughput at TVET Colleges to 80 per cent by 2030.
  - Produce 30,000 artisans per year across all sectors.
- Actions
  - Support the development of specialized programmes in universities focused on training college lecturers and provide funding to universities to conduct research on the vocational education sector.
  - Build the capacity of the further education and training institutions (changed to TVET in 2013 through an Amendment to the Continuing Education and Training Act[xi]) to become the preferred institutions for vocational education and training. Learners should be able to choose a vocational pathway before completing their final year of school at Grade 12. For this it will be necessary to expand the geographical distribution of FET (TVET) institutions.
  - Build a strong relationship between the college sector and industry. Sector education and training authorities (SETAs) have a crucial role in building relationships between education institutions and employers.

Perhaps second in importance to the NDP 2030 in relation to skills development and, in particular, to the apprenticeship system, is the White Paper for Post-School Education and Training - Building on Expanded, Effective and Integrated Post-School Education that was approved by the national government in November 2013,[xii] and its accompanying proposed National Plan for Post-School Education and Training 2020–2030. All the objectives and actions of the NDP 2030 relevant to apprenticeship development previously listed have been taken up and expanded on in the post-school education and training (PSET) documents.

The most significant and explicit refence to apprenticeships that directly links the PSET White Paper to the NDP 2030 is to be found in the executive summary of the white paper which states: "In areas of work such as the artisan trades, apprenticeships have traditionally been the pathway to qualifications; however, the apprenticeship system has been allowed to deteriorate since the mid-1980s, resulting in a shortage of mid-level skills in the engineering and construction fields. Re-establishing a good artisan training system is an urgent priority; the current target is for the country to produce 30 000 artisans a year by 2030. It is also important to expand other forms of on-the-job training, including learnerships and internships in non-artisan fields. The SETAs have a crucial role to play in facilitating such workplace learning partnerships between employers and educational institutions."[xiii]

In support of this white paper, the National Skills Development Plan 2030[xiv] (NSDP 2030) is now the de facto guide for skills development for the period April 2020 to March 2030. It replaces the previous national skills development strategies that were issued every five years since 2000 by the Minister of Higher Education

and Training as advised by the National Skills Authority (NSA), in line with Section 5(1)(a)(ii) of the Skills Development Act 97 of 1998.

The outcomes of the NSDP 2030 make various explicit references to the development of the apprenticeship system that, at present, is the basis for artisan development in South Africa, the most noteworthy being:

- **Outcome 1:** Identify and increase the production of occupations in high demand. One of its performance indicators consists of the percentage of levy resources to be directed at developing intermediate level skills (including the target of 30,000 artisans produced per annum by 2030).
- **Outcome 4:** Increase access to occupationally directed programmes. One of its performance indicators consists of the number of artisans produced towards meeting the target of the NDP (30,000 per annum).
- **Outcome 5:** Support the growth of the public college system. One of its performance indicators is measured in terms of the support for, and prioritization of CoS as well as support for TVET colleges in implementing occupationally directed programmes.

This high-level overview clearly shows that while South Africa continues to struggle with limited economic growth and high levels of unemployment, the country is well on its way to continuing and strengthening its national apprenticeship system. Though the delivery modality is not fully integrated yet, it is inspired by global best practices, in particular by the principles of the dual system, as one of many interventions to develop a robust economy and create sustainable employment for many people.

Therefore, it is an opportune time to explore further ways of enhancing and developing the emerging apprenticeship system as is expounded in the quote below in italics contained in a recent letter from the Director General of the DHET to the Director of the ILO in South Africa responding to the invitation to be part of the ADULT project, as follows:

"In the last seven years, the South African artisan training system has coalesced various and disparate artisan training methodologies which, at some point in time, collided and compromised the strategic establishment of a single and integrated artisan training system.

Since then, some of the key elements emerging from the transformed and integrated system include:

a. An artisan system with a Management Information System (MIS) capacity.

b. An artisan system capable of measuring artisan employability.

c. A structured system able to incorporate quality assurance mechanisms.

Furthermore, future feasible modernisation could be deduced from this integrated system which include the exploration and redefinition of formal apprenticeships to include Small, Medium and Micro Enterprises as training spaces and the development of artisan-geared entrepreneurship.

Your invitation to the DHET to participate in the Apprenticeship Development for Lifelong Learning and Training (ADULT) research project comes at the right time in the life cycle of the South African artisan training system and, considering the solid stature of the ILO in international artisan development, I am confident that the DHET participation will add value and mutually benefit both organisations."

Although numbers of learners in the formal apprenticeship system in South Africa are very small at present, considering that only 1 per cent of the total number of young people are enrolled in PSET,[xv] the interest in the artisan and apprenticeship system has gained momentum and it is currently supported by an increasing number of stakeholders. The system has also been significantly energized by national policies and processes that have emerged over the last 12 months in direct response to the COVID- 19

pandemic, such as the South African Economic Reconstruction and Recovery Plan[xvi] (ERRP) launched by the President in October 2020.

The ERRP includes skills development as one of the key enablers of the plan and indicates that structural reforms will be implemented, inter alia, for boosting education and skills development. Section 4.6 of the ERRP, entirely devoted to skills development, focuses on the following elements that have specifically informed the ADULT research process:

- The production of artisans will be upscaled, especially in relation to the delivery and maintenance of infrastructure.
- Skills strategies should be more demand-led and responsive to the changing nature of work.
- The need to boost the roll-out of programmes that bring youth into work-based learning across the various sectors of the economy.

This introduction stresses the importance of the development of the quality apprenticeship system is in South Africa. This was further underlined by the Minister of Higher Education, Science and Innovation, Dr Blade Nzimande, as per the quote below in italics from his keynote speech at the Hybrid 5th National Skills Conference: "One of the biggest weaknesses in our TVET system is the lack of partnership between our colleges and industry. It is my intention and plan as the Minister to build and refashion our technical and vocational education system to be apprenticeship based. Ideally every TVET college learner should be apprenticed in industry or in a workplace, rather than the current system of a theoretically biased TVET system."[xvii]

2 Methodology

Methodology

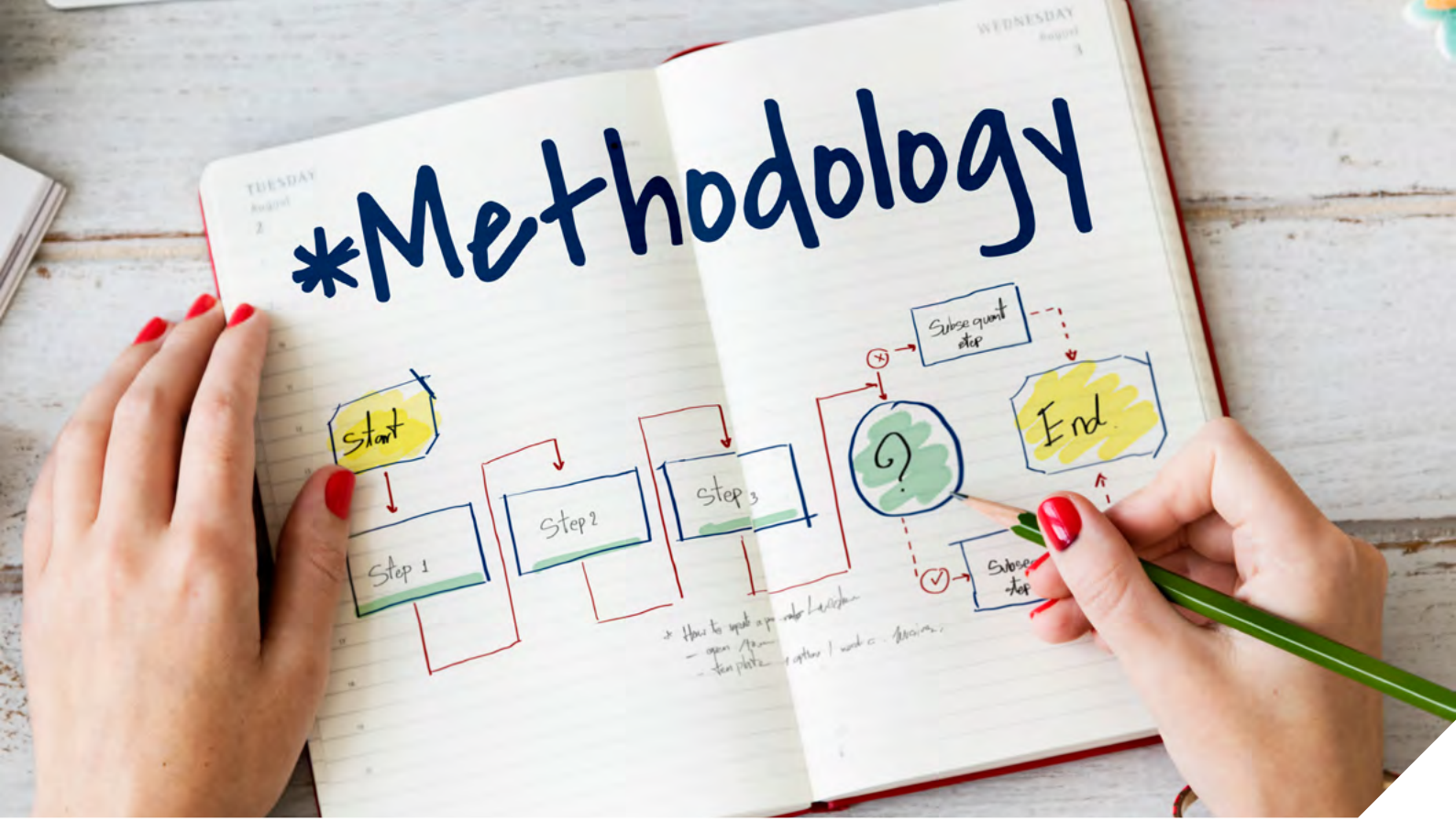
To inform the research process and facilitate stakeholders' engagement, a background report was compiled on the apprenticeship system in South Africa. The background report considered the existing work in progress in apprenticeship development in the country and included significant desk research on what stakeholders considered the most critical areas for research if the objective is to modernize and expand apprenticeship development in South Africa. A few case studies were analysed, and they are available in Annexure A.

To determine these critical focus areas (research themes), a process was initiated to consider the recent work completed on emerging issues related to apprenticeship development. Four primary sources were referenced to identify possible areas of research:

- A Problem Tree analysis completed in April 2019 by the British Council I-WORK Apprenticeship Advisory Group
- The terms of reference issued by the ILO's ADULT project in July 2020.
- The forum discussion themes of the ILO's massive open online course (MOOC) on quality apprenticeships run from May to July 2020.
- The assessment themes of the ILO's quality apprenticeship MOOC completed in July 2020.

As a result of this, 14 possible broad research themes were proposed for the consideration of national stakeholders:

1. Increasing access to workplaces for apprenticeships, in particular to enable the participation of SMMEs in the apprenticeship system
2. Removing poor socio-economic stigmas from the apprenticeship system
3. Improving articulation between the university system and the apprenticeship system
4. Adapting apprenticeships for the reskilling and upskilling of adults and older workers
5. Adapting apprenticeship models to meet the skills needs of the digital and knowledge economy
6. Developing the work-based learning programmes at TVET colleges as a mechanism to increase their labour market relevance
7. Increasing the participation of the informal sector in the apprenticeship system.
8. Improving the governance, coordination, demarcation and integration of stakeholder roles and responsibilities in the apprenticeship system
9. Improving the monitoring and evaluation of the apprenticeship system though a single integrated information management system that allows for real-time data collection, collation and analysis
10. Strengthening the teaching, learning and workplace training elements of the apprenticeship system
11. Using modern technology to strengthen the effectiveness and efficiency of managing or implementing apprenticeships



12. Increasing the inclusion of women, persons with disabilities and migrant workers in the apprenticeship system
13. Addressing the impact of global crises, such as the COVID-19 pandemic, on apprenticeships.
14. Suggesting financing models appropriate for countries with diverse socio-economic contexts, non-aligned funding steams and which are at varying levels of apprenticeship system development

To allow for a more focused approach, a survey-based prioritization process was implemented. The survey was developed and issued to a broad range of apprenticeship system development stakeholders in South Africa, including the National Artisan Development Advisory Body (NADAB),[2] the ILO Decent Work Country Programme (DWCP) grouping in South Africa through the National Economic Development and Labour Council (NEDLAC), as well as the 26 CoS in South Africa.

As a result of the survey, the following five themes were prioritized:

Theme 1: Adapting apprenticeship models to meet the skills needs of the digital and knowledge economy

Theme 2: Using modern technology to strengthen the effectiveness and efficiency of managing or implementing apprenticeships

Theme 3: Strengthening the teaching, learning and workplace training elements of the apprenticeship system

Theme 4: Developing the work-based learning programmes at TVET colleges as a mechanism to increase their labour market relevance

Theme 5: Increasing access to workplaces, in particular, enabling the participation of SMMEs in the apprenticeship system.

[2] "NADAB is a statutory advisory forum between government, organised business and organised labour that deliberates on national artisan development legislation, policy, advocacy programmes, curricula, research and knowledge management amongst other." Source: MerSETA.

Box 1. The CoS programme

The government, through the DHET, has designed and implemented the CoS programme in the TVET college sector. The programme entails the establishment of a dedicated department – known as a Centre of Specialisation – within a host TVET college which serves as an anchor, working closely with employers, to deliver a dual-system based apprenticeship programme.

The initiative is designed to meet two objectives simultaneously: firstly, to address the demand for priority trades needed for the implementation of government's National Development Plan in general and its National Infrastructure Plan more particularly; and secondly, to contribute towards the building of the capacity of its public TVET college system to deliver trade qualifications with employer partners.

For more information, see Centres of Specialisation In the TVET College Sector on the DHET website.

Desk research was then carried out across these five main themes to cover the following:

- A description of the theme and why it matters in modernizing and transforming apprenticeships
- An overview of the major constraints and challenges related to the theme, including those caused by the COVID-19 pandemic
- A critical analysis of past and ongoing policy initiatives and practices to overcome the challenges.
- An overview of different measures adopted, lessons learned, highlighting innovative, good practice case studies to address the constraints associated with the theme
- Innovative policy options and recommendations for the theme
- An analysis of the inclusion of the theme, if at all, within the National Apprenticeship and Artisan Development Strategy 2030
- An analysis of the midterm review of the CoS programme (further explained in the case study nr. 2 – see Annexure A) to determine relevance to the theme, if any
- Any interesting areas for future research and analysis on the theme

The themes-based research was supported by two DHET national coordinators, who were assigned to ensure the department's involvement and contribution throughout the process. The main sources used included:

- Relevant South African government line departments' strategies and annual reports
- Private sector documentation that exists on a public platform, or that a private company agrees to share, relevant to the theme
- Social partner documentation that that was shared by members of the DWCP and NADAB
- Development partners' strategies and reports, including those available to the public and those that each interviewed agency was willing to share

- Information relevant to the theme from the ILO Apprenticeship System Review Questionnaires (A, B or C) that were completed to determine the current state of apprenticeship systems, as follows:
  - **Questionnaire A:** National coordinators who lead government processes for apprenticeship development in South Africa
  - **Questionnaire B:** Organized business and organized labour representatives from the ILO's constituency and from the NADAB, currently the main body which advises the national government on apprenticeship development
  - **Questionnaire C:** Research data and inputs from the South African Artisans Movement, an independent non-profit organization that supports unemployed artisans. They established themselves in collaboration with the DHET to improve the employment of persons who successfully complete artisan apprenticeships but are not immediately employed.

An important part of the research methodology was the identification of innovative policy options and recommendations for each theme, good practices and lessons learnt from case studies as detailed in the next chapter.

3 Thematic research analysis

Thematic research analysis

This chapter applies the methodology described in Chapter 2 to each of the five primary research themes. The findings emerge from a study of the relevant documents described in the previous chapter and are also informed by nine case studies that are attached to the report as Annexure A. Various boxes referred to in this section quote responses collected from stakeholders interviewed during the thematic research process. The questionnaires used are based on the ILO Apprenticeships Toolkit Questionnaires and are attached as Annexures C (Government), D (Social Partners) and E (Apprentices).

▸ 3.1 Theme 1: Adapting apprenticeship models to meet the skills needs of the digital and knowledge economy

3.1.1 Description of the theme and why it matters in modernizing and transforming apprenticeships

The DHET strategic plan sets out four main objectives. These include improved access, improved success and efficiency, improved quality and improved responsiveness.[xviii]

Undoubtedly, the need to include digital skills and the skills required by the knowledge economy is crucial to all four objectives. The need for responsiveness, efficiency and accessibility is likely to grow as the pace of digitization is increasing. The same urgency is reflected in the National Digital and Future Skills Strategy of South Africa led by the Department of Communication and Digital Technologies and implemented as a broad interdepartmental and multistakeholder effort.

Apprenticeships have, by their design, always included a workplace-based learning component. As workplaces change, apprentices will automatically be exposed to changing technology in the workplace. However, it remains critical to prepare apprentices for digital transformation so that they are equipped to play a productive role from the onset of the apprenticeship (work readiness), as well as to cope with the learning programme, and in so doing reduce potential dropouts. These digital skills are being integrated into occupational curricula and are learnt at both the institutional and workplace levels, although the pace of innovation on the skills supply side is not commensurate with the growing needs of industry.

3.1.2 An overview of the major constraints and challenges related to the theme, including those caused by the COVID-19 pandemic

A fundamental aspect of this discussion is the matter of competencies relevant to the digital and knowledge economies and how these competencies can be integrated into all future qualifications. The recent work undertaken by the German Federal Institute for Vocational Education and Training (BIBB, in German) has synthesised transversal skills required by all occupations into eight skills.[xix] This is an area of

work that South Africa has not specifically undertaken, although digital competencies are considered in the development of new qualifications.

The South African education system comprises a number of qualification sub-frameworks (for example, the Occupational Qualifications Sub-Framework) and a number of other qualification types.

Box 2. The National Qualifications Framework qualifications (sub-frameworks and quality councils)

The National Qualifications Framework (NQF) is a comprehensive system approved by the Minister of Higher Education and Training for the purpose of classifying, registering and publishing quality-assured national qualifications. It comprises three coordinated qualifications sub-frameworks, each of which is managed by a different quality council:

- The General and Further Education and Training Sub-Framework (GFETQSF), managed by Umalusi, the Council for Quality Assurance in General and Further Education and Training
- The Higher Education Qualifications Sub-Framework (HEQSF), managed by the Council on Higher Education (CHE)
- The Occupational Qualifications Sub-Framework (OQSF), managed by the Quality Council for Trades and Occupations (QCTO)

Source: Government Gazette No. 67 of 2008: National Qualifications Framework Act, 2008

A common feature across all these qualification types is the attempt to integrate digital skills into qualifications relating to particular trades or occupations. An example of this could be the inclusion of how to interact with diagnostic computers system on modern motor vehicles, a digital skill that motor mechanics did not historically need. It could also be the use of digital scanning devices by plumbers to find leaks in water pipes in walls, which is also a modern innovation that was not previously used.

Some of the major constraints in digital transformation of TVET are the relatively outdated curricula and qualifications in the TVET college space. Occupational qualifications, however, are seen to be a lot more

relevant and up to date, as they have been established by SETAs, and now by the QCTO in conjunction with industry.

While a number of National Accredited Technical Diploma (NATED) and National Certificate Vocational (NCV) qualifications have been continuously reviewed by DHET, there are no specific criteria confirming that digitalization has, in fact, been adequately addressed.

For digitalization to be effective and scalable, it must be incorporated into the formal qualification development process. In addition, a digital upskilling intervention would be required for employees who are already qualified

3.1.3 A critical analysis of past and ongoing policy initiatives and practices to overcome the challenges

Through the Labour Market Intelligence project (LMIP) undertaken by the DHET, work was specifically undertaken to understand how to make colleges more responsive to industry requirements.[xx] Suggestions from this project propose that public private partnerships (PPPs) should be considered between colleges and industry.

Specific recommendations for building college interactive capabilities include:

1) Positioning the college as a value-adding partner: it should integrate theoretical training with practical training in-house or through opportunities for workplace-based exposure.
2) To successfully implement workplace-based exposure for lecturers as a performance target at the colleges, the DHET would need to work with colleges to restructure teaching schedules to include such practical training or refresher opportunities for lecturers.
3) In its framework on PPPs for TVET, the DHET should include an indication of how private sector actors can be involved in the design of centrally developed curricula and programmes.
4) The DHET should continue to promote college engagement with SETAs through policy initiatives, such as the Lead-SETA initiative that was part of the CoS process,[xxi] and SETA forums, such as SETA sub-sector committees/chambers that exist in some SETAs.[xxii]

A further complication of changing qualifications is upskilling lecturers to deliver these qualifications. Significant work has been undertaken on this at the DHET, and it is also included as an annual performance plan (APP) target to place lecturers in workplaces. This is considered a first step toward the formal implementation of a continuing professional development process for lecturers.[xxiii] Unfortunately, the COVID-19 restrictions on the number of employees allowed in a workplace has hampered the roll-out of lecturer placement initiatives since 2020.

In the CoS project, occupational programmes are being introduced into colleges which should bring more relevant qualifications to the college.

3.1.4 An overview of different measures adopted, lessons learned, highlighting innovative, good practices to address the constraints associated with the theme

In the attached case studies in Annexure A, it can be seen that skills for the green economy were incorporated into TVET programmes. In the first example, a specific elective course was introduced to the NC(V) programmes on renewable energy. In the second example, a specific occupational programme was developed for solar geyser installers using solar water heating (SWH).

In both cases, work was undertaken by the German Agency for International Cooperation, known as GIZ, in German, and enterprises ensured that the new qualifications met their requirements. In the example of the solar geyser installer project, it is important to note that the skills demand was initiated by insurance companies which need to replace faulty home geysers.

These examples have been included to show how innovative content on new emerging topics may be included in TVET programmes. A similar approach could be adopted in the case of the digital economy.

3.1.5 Innovative policy options and recommendations for the theme

The policy environment in South Africa allows for industry participation in qualification development. Furthermore, it also aims to rationalize qualifications so that they may have a broad approach to the occupation.

However, industry may be fatigued by the numerous government processes in which they are required to participate. A more sustainable model for qualification development is required. Such a model might consider the possibility of having fewer experts involved in qualification design, perhaps only one or two, followed by much wider consultation once the qualification is completed. Qualification development is expensive and time-consuming.

The DHET is currently working on a policy position and mechanism for the continuing professional development of lecturers. The workplace learning component will be a key feature of this approach and has already been included as an APP target over the next five years.

3.1.6 Analysis of the inclusion of the theme, if at all, within the emerging South African Draft National Apprenticeship and Artisan Development Strategy

Qualification development is central to the success of any apprenticeship programme and, although the process is primarily led by the QCTO, ensuring relevant industry participation is critical. Further consideration should also be given to the expansion of apprenticeships to non-trade or non-artisan occupations, as stated under Key Priority 2 of the South African Draft National Apprenticeship and Artisan Development Strategy, which aims to “Establish and maintain an apprenticeship and artisan research and

development mechanism at INDLELA.[3] This research capacity should also help determine the digital needs of all occupations for which apprenticeships can be developed.

3.1.7 Analysis of the midterm review of the CoS programme to determine relevance to the theme, if any

The CoS programme made use of newly developed occupational qualifications. Although it did try to include modern technology, such as diagnostic equipment for motor mechanics, in some instances, stakeholders noted that most of the latest technology developments, particularly digital technology such as artificial intelligence (AI), augmented reality (AR) and the Internet of Things (IoT) – which are driving the Fourth Industrial Revolution – were not covered at all. An example of this was that the electrical qualification did not include issues of home automation.

While many such anecdotal comments were made, there is no formal process which allows these comments to be captured. The important lesson is to ensure that appropriate feedback mechanisms should be built into the qualification development and review processes.

Through the CoS programme, however, many workshops were upgraded to make sure that learners can and do have access to the latest technology within their respective trades.

In a survey undertaken with students in apprenticeships and those who have completed their studies they indicated the need for the inclusion of the latest technologies in their training as can be seen in the comment below.

Box 3. Recommendations from a survey undertaken among apprentices using the ILO Quality Apprenticeships Questionnaire template

1) Employers/ Skills Development Providers should provide quality training and build confidence on trainees throughout their training program. Government to consider a jobs guarantee policy for post apprenticeship experience.
2) Encourage innovation for business start-ups and foster a culture of entrepreneurship amongst emerging artisans.

3.1.8 Interesting areas for future research and analysis on the theme

While the German crosscutting occupational competencies ensure that the digitised world of work is addressed in every qualification more research is required about how digital skills are to be incorporated into the South African qualification.

Meeting the skills needs of the digital economy is highlighted by employers as they indicate that training institutions must remain abreast with new developments. See some comments below.

[3]The National Artisan Development (INDLELA) Chief Directorate is the primary functionary of the DHET responsible for artisan development in the country (source DHET)

Box 4. Employer response to challenges of the apprenticeship system in South Africa

- There is a mismatch in demand and supply with respect to apprentices. While there are frameworks that ascertain demand and supply, they need to be improved.
- There are challenges with respect to apprentice throughput. There is a substantive difference between public and private institution throughput. In South Africa, private training institutions enrol a larger number of apprentices than public TVET instituitions, which is one of the reasons why the CoS programme was introduced.
- Trainers at public institutions lack relevant experience and/or have not kept abreast of developments in the business world.
- There is a lack of meaningful and impactful engagement, partnering, collaboration and involvement from all stakeholders.
- Apprenticeship is not perceived by the target group as a “meaningful” and/or “successful” pathway.

Note: The responses were collected through a survey undertaken among social partners using the ILO Quality Apprenticeships Questionnaire template.

▶ 3.2 Theme 2: Using modern technology to strengthen the effectiveness and efficiency of managing or implementing apprenticeships

3.2.1 Description of the theme and why it matters in modernizing and transforming apprenticeships

The use of technology in teaching and learning should be considered for at least two reasons (1) to increase access and (2) to improve the quality of teaching and learning. The use of digital technology can dramatically increase training availability and effectiveness.

The quality of teaching and learning is the result of numerous factors, among them the competence of lecturers in the system. Other dimensions that affect a learner's overall experience include the quality of equipment and infrastructure, availability of consumables, flexibility of learning materials, etc.

This theme will consider the use of technology for enhanced access and successful delivery.

3.2.2 An overview of the major constraints and challenges related to the theme, including those caused by the COVID-19 pandemic

While COVID-19 had an adverse effect on almost all aspects of life, it offered an opportunity to take stock of the needs and potential of digital and online learning. While the digital and knowledge economies cannot be reduced to online learning, it is certainly one of the main aspects to consider in the field of education.

The South African TVET system is generally poorly prepared to deal with digital learning. A recent study (Papier, 2021) done by the University of Western Cape (UWC) revealed the true nature of these challenges.

Connectivity is perhaps taken for granted in other parts of the world but in South Africa, the need for college campus internet connectivity has been an ongoing challenge. A project is underway to connect all of more 350 campuses in the country. This, however, still does not ensure that learners in rural

communities have internet access. Often, the campus may still be many kilometres away from rural settlements where during periods of lockdown connectivity is simply not possible.

Furthermore, the high cost of internet connectivity, including of mobile data, in the South African context has made it impossible for many learners to access online learning. While the provision of zero-rated services on educational websites helped to place and access essential virtual learning materials, it is still not possible to access other supplementary online sources of information and educational materials.

The availability of learning devices and conducive learning environments are among the other challenges highlighted in the study by the UWC.

While all these challenges came to surface in the COVID-19 lockdown period, it must be acknowledged that they existed prior to COVID and will, most likely, remain a problem post-COVID if no meaningful intervention is undertaken at the infrastructural level.

3.2.3 A critical analysis of past and ongoing policy initiatives and practices to overcome the challenges.

Lecturers at vocational colleges are often not equipped to teach digital skills. It was only during the COVID-19 pandemic that a policy was developed to supply all TVET lecturers with a laptop, something which was still missing in many TVET colleges.

Further, lecturers were introduced to online learning programmes through a dedicated capacity development initiative undertaken by the German Agency for International Cooperation. Unfortunately, due to its eight-week duration period and the fact that it did not offer any credit, dropout rates were high.

A ministerial directive was issued in 2020, in the midst of the COVID pandemic, that all National Student Financial Aid Scheme (NSFAS) beneficiaries must be given a laptop. Unfortunately, this has taken some time to materialize, but in the future, it will undoubtedly provide disadvantaged learners with the opportunity to complete their studies, while improving digital/computer skills.

Through the German Ministry for Education Science and Research, a programme called TrainMe II is currently being launched specifically to consider teaching digital skills as conceptualized by the cross-occupational skills, referenced above. The intention is to involve a number of universities in this initiative so that scalability is possible once the programme is complete.

Through a number of other projects, various ideas are being considered for the inclusion of other technologies into teaching practice. These include virtual reality, simulated practicals, etc. These are mostly small-scale projects in particular focus areas, such as the automotive sector. For scalability and sustainability, it is important to record these studies as proof of concept studies so that the lessons learnt are not lost. Additional research may be required in this area.

3.2.4 An overview of different measures adopted, lessons learned, highlighting innovative, good practices to address the constraints associated with the theme

In a case study on the Automotive Repair and Maintenance project in Annexure A, the need to upskill lecturers in the automotive sector was identified. The DHET partnered with the Imperial Training Academy, a private sector institution owned by a large retail motor industry company called Imperial Holdings. Through this partnership digital content was developed by subject matter experts and made available to

lecturers to teach them about technological advances in the field. To ensure that all lecturers could benefit from the content, a dedicated online lecturer support system (LSS) was developed.

Through this portal, lecturers could share content and encourage the use of the platform as a community of practice among learners. To date, the DHET has populated the platform with several topics covering technical skills (such as mathematics) and core skills (such as life orientation).

What has also happened is that lecturers are not only using the platform content but are also showing it directly to their learners. In the future, this content could be used by lecturers who are not entirely confident with the various topics and in so doing ensure a consistent standard of teaching students.

The case study illustrates how technology is used to support both lecturers and learners.

3.2.5 Innovative policy options and recommendations for the theme

Another initiative undertaken by the DHET has been the creation of a National Open Learning System (NOLS). NOLS will be a learner management system which accommodates and manages learners who wish to study entirely online. Content is currently being placed on this platform, and its development is at an advanced stage.

While access to learning material on NOLS will need to be regulated,[4] the platform can contribute to expanding the roll-out of apprenticeship on a larger scale, as it will allow young people to study while they are working.

3.2.6 Analysis of the inclusion of the theme, if at all, within the emerging South African Draft National Apprenticeship and Artisan Development Strategy

What is not adequately considered in this theme is the use of technology for workplace-based learning. The use of, for example, simulated welding machines through virtual and augmented reality could be a significant contribution to workplace-based learning. The need to improve the link between theoretical learning and the world of work is highlighted under Key Priority 5 of the Draft National Apprenticeship and Artisan Development Strategy: Establish and support a national apprenticeship and artisan training system based on the simultaneous delivery of the three learning components (theory, practical and workplace learning) by means of a block release system between a Skills Development Provider and Industry.

What could be further emphasized is the potential that technology has to facilitate this development more quickly.

3.2.7 Analysis of the midterm review of the CoS programme to determine relevance to the theme, if any

In the CoS programme, it was a requirement at the outset to ensure that all learners had either tablets or laptops. Throughout the lockdown period, access to these devices allowed learning to continue uninterrupted. However, some difficulties were encountered with the capacity of devices. In the future, the specifications for devices will need to be more clearly outlined.

Below is a comment made by an employer on the importance of digital transformation in teaching and learning, which supports the overarching theme of using modern technology to strengthen apprenticeships.

4 A lecturer laptop policy has been developed by the DHET and awaits final approval.

Box 5. Employer comments collected through a survey undertaken among social partners, using the ILO Quality Apprenticeships Questionnaire template.

The COVID-19 pandemic has demonstrated that we need to be innovative and explore alternative ways of conducting training and development. Access to workplaces has also become a major challenge. These challenges highlighted the importance (for TVET institutions) to venture into training through simulators, artificial intelligence, digital platforms, virtual reality, etc.

3.2.8 Any interesting areas for future research and analysis on the theme

With the advent of online learning, and specifically the NOLS development, it is necessary to consider new and innovative models of assessment and quality assurance for digital learning.

3.3 Theme 3: Strengthening the teaching, learning and workplace training elements of the apprenticeship system

3.3.1 Description of the theme and why it matters in modernizing and transforming apprenticeships

As indicated in Chapter 2, the DHET Strategic Plan and annual performance plans focus on access to the PSET system and on the improved quality of teaching and learning in terms of labour market responsiveness. In the case of apprenticeships, this includes both the classroom and the workplace.

If the quality of teaching is improved, learner throughput will be improved, which will encourage greater willingness of employers to provide access to apprenticeships.

Box 6. Comments on the improvements in the apprenticeship system from a survey (based on the ILO Quality Apprenticeship Questionnaire template of government representatives)

- The DHET has launched a national strategy to deal with apprentice training and to develop artisans
- The NADAB was established to advise the Minister of Education and to deal with systematic blockages.
- CoS have been established to build the capacity of TVET colleges to work with industry to train apprentices.
- Establishing the QCTO and National Artisan Moderating Body (an assessment quality partner for trades of the QCTO) are some of the initiatives that the country has initiated.

3.3.2 An overview of the major constraints and challenges related to the theme, including those caused by the COVID-19 pandemic

There are numerous constraints within the apprenticeship system, and it is not possible to delve into all of them in this report. Instead, emphasis will be given to two elements which could significantly improve the quality of teaching and learning.

- Learner foundational skills and work readiness
- In-company mentor development and workplace readiness

In the engineering-related occupations, a key difficulty has been to find learners who have the requisite mathematical competence to enter TVET programmes. An HRDC report indicates that according to the South African Science, Technology and Innovation Indicators report (2014), only about 8.2% per cent of learners passed grade 12 mathematics with at least a 50 per cent pass mark in 2014.[xxiv]

The total of the grade 12 cohort writing exams is around 800,000 learners, and this means that less than 100,000 learners enter the PSET sector with core maths skills of above 50 per cent. In most cases, they are accepted into universities, and very few of them have the required mathematical competence access TVET colleges, learnerships and apprenticeships.

Vocational students often are not able to cope with the maths at college, and this delays course completion. A recent fact sheet issued by the DHET indicates that, for NC(V) learners, the throughput rate in the requisite time (three years) could be as low as 9 per cent.[xxv] This is mostly attributable to learners who are unable to complete the foundational mathematical skills course.

Keeping this in mind, industry has often argued that they are not work ready enough when entering apprenticeships and require socialization into the world of work. As a non-profit organization, Harambee is known for the work it has done in various projects to support the transition from learning to earning.

The case study on the Generic Trade Preparation Programme (GTPP) in Annexure A indicates how industry has worked with the DHET to develop a trade preparation programme. The aim was to deal with foundational skills. From this original programme, a fully-fledged Pre-Vocational Learning Programme (PLP) has now been introduced to learners wishing to follow a vocational track. This is offered as a departmentally funded one-year programme.

The second topic which deserves discussion is the readiness of the workplace to accept learners and direct their learning and exposure in line with the requirements of their qualification. As can be seen in the Clicks

case study in Annexure A, specific work was done to align learner logbooks to the requirements of the national diploma.

In a case study carried out by Imperial and MerSETA,[xxvi] the SETA for manufacturing and related engineering services, the importance of preparing the employer (workplace) to adequately manage learners is highlighted as critical in ensuring a collaboration between the workplace and the employer to ensure good implementation of the apprenticeship programme.

In summary, this case study lists the following conclusions:

- Work-integrated learning (WIL) is collaborative in nature.
- Relationships in the workplace between the learner, the production team (co-workers who are not apprentices) and the manager are important and as such, integration and socialization into the workplace play a pivotal role in WIL.
- Workplaces need to be capable of participating in WIL in order to find an appropriate way to support the learner's development in the workplace. This includes building the learner's confidence and self-esteem.
- Helping managers understand how to socialize and integrate the learners in the workplace is important.
- Adjusting to a learning mindset and finding appropriate feedback mechanisms that support the learner's development is also key.
- Employability remains subjective, which means it becomes more important to understand the specific context of the organization with whom the WIL programme is being deployed rather than focussing on a generic skills list.
- Learners respond to being given a chance more than any other factor in their background or education. Thus, finding ways of aiding the learner to build on background experience becomes more important than developing detailed selection criteria.

3.3.3 A critical analysis of past and ongoing policy initiatives and practices to overcome the challenges.

In order to improve the foundational skills of learners, the PLP has been introduced as a permanent feature in programme offerings at TVET colleges. This is funded, and sustainable progress has been made. However, it does increase the learner's training by a year with no formal recognition, as this is a course seeking to address foundational knowledge. Within the Department of Basic Education (Schooling), several programmes are also being undertaken to strengthen the science, technology, and mathematics programmes (STEM) in schools.

At the Department of Basic Education, technical maths and science programmes have been introduced at the school level as part of a vocational stream of subjects. While this is a shift in the right direction, it is too early to say if this programme will yield the desired results.

3.3.4 An overview of different measures adopted, lessons learned, highlighting innovative, good practices to address the constraints associated with the theme

In another study commissioned by MerSETA, learners were assessed for their readiness to transition to the world of work.[xxvii] The study found that learners from colleges are not ready, and Occupational competence levels measured indicated that qualifications do not guarantee the development of occupational competence amongst learners. The typical applied curriculum appears not to be sufficient in preparing TVET learners for the transition from College to Work.

3.3.5 Innovative policy options and recommendations for the theme

A study undertaken by MerSETA evaluated more than 200 companies in 20 different professions but these fell broadly in the chambers of automotive industry, metal industry and tyre industry. (MerSeta, 2014) The study showed how more productive work is beneficial to the learner and the amount of time spent on learning in productive work processes can be used as an indicator for the quality of training. Integrating learning tasks into the practical training is very beneficial for the development of a learner's competence[xxviii].

The expansion of WIL is therefore critical for the improved quality of learning.

3.3.6 Analysis of the inclusion of the theme, if at all, within the emerging South African Draft National Apprenticeship and Artisan Development Strategy

Quality teaching and learning is at the heart of a quality apprenticeship system and is the foundational element of Key Priority 5 of the South African Draft National Apprenticeship and Artisan Development Strategy: Establish and support a national apprenticeship and artisan training system based on the simultaneous delivery of the three learning components (theory, practical and workplace learning) based on a block release system between a skills development provider and industry.

3.3.7 Analysis of the midterm review of the CoS programme to determine relevance to the theme, if any

Rigorous selection and recruitment were distinct features of the Dual System Pilot Project (DSPP), a pilot programme carried out by the DHET and the German Agency for International Cooperation in 2015,

which provided the inspiration for the more ambitious CoS programme. The CoS programme stipulated that for learners to be enrolled they needed to have achieved a grade 12 equivalent standard. One of the key considerations in the future will be to determine how to prepare learners without the requisite foundational skills to access the programme. The PLP presently is seen as the vehicle to achieve this.

The CoS programme is premised on the apprenticeship model which provides access to real work experience. Furthermore, the curriculum has been developed on the basis of a competency-based methodology which attempts to integrate theory and practice throughout the learning experience.

Box 7. Employer comments collected through a survey undertaken among social partners, using the ILO Quality Apprenticeships Questionnaire template

We have implemented our CoS approach that mobilizes the TVET colleges to significantly ramp up and improve the quality of artisans that trained and developed there. We just need to ensure that this supply is demand driven.

3.3.8 Any interesting areas for future research and analysis on the theme

A key area for future research is to encourage TVET colleges to move from an academic focus to a workplace-based learning focus so as to drive apprenticeship development within the public TVET college system.

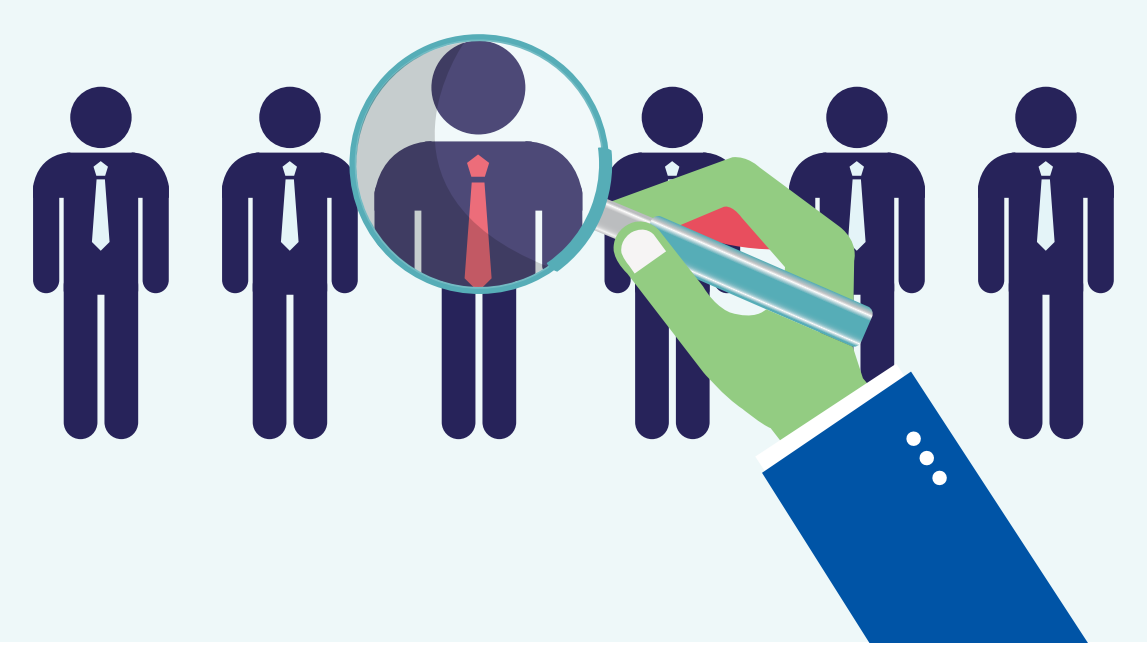
3.4 Theme 4: Developing the work-integrated learning programmes at TVET colleges as a mechanism to grow their labour market relevance

3.4.1 Description of the theme and why it matters in modernizing and transforming apprenticeships

There are numerous reasons why the growth of work-integrated learning is critical for South Africa. Considering the many challenges the country faces with youth unemployment, as has been elaborated earlier in this report, one of the key reasons why increased WIL and specifically artisan development should be emphasized is the relative high likelihood of apprentices finding employment.

A 2016 study undertaken by the Swiss South African Cooperation Initiative (SSACI)[xxix] in conjunction with the National Artisan Development Directorate of the DHET has shown that 79 per cent of qualifying artisans find employment.[xxx] When comparing this with tracer studies of for example NC(V) programmes, the figure is significantly higher.

Another major benefit of following an apprenticeship model is that it is demand led. In countries with advanced TVET systems, such as Germany, the matter of labour market supply and demand is largely self-regulated. This is primarily due to the fact that the market demand for specific occupations is reflected in



the apprenticeship opportunities and only the required number of people for a particular occupation are taken into the TVET system.

In South Africa, however, some TVET programmes, such as the NATED and NC(V) programmes discussed earlier in the report, generate an oversupply of some categories of learners who are unable to find employment after graduation - as shown in table 4 taken from a presentation made by the Rhodes University Labour Studies Unit.

Table 4. Perceived relevance of TVET[xxxi] qualification to current employment, by type of TVET qualification

	NCVL4 Business	N3 Engineering	N6 Business	N6 Engineering	Total
Work related to qualification (%)	47.06	28.97	51.34	49.35	45.44
Career expectations met (%)	23.53	10.34	18.56	17.53	16.59
Adequate preparation for work tasks (%)	70.59	51.72	79.10	57.14	67.48

Source: Neil Aggett Labour Studies Unit (NALSU)

As seen in table 4, NCV Level 4 Business is the third and final year of the National Certificate Vocational Qualification and is seen to be the most relevant qualification for future employment, while N3 and N6, which are only part qualifications included in the national technical education programmes more commonly known as NATED in South Africa, have a lower level of relevance.

There may be more reasons why an increase in WIL is beneficial but considering the joblessness crisis, the focus will be placed on (1) the students increased ability to find work and (2) the improved skill supply and demand ratio.

3.4.2 An overview of the major constraints and challenges related to the theme, including those caused by the COVID-19 pandemic

The South African economy has been experiencing stagnant growth, if not contraction, since the months leading up to the COVID-19 pandemic. This economic situation has worsened during the pandemic, with the annual forecasted growth for 2020 at -6.1 per cent and only 2.2 per cent for 2021, as reported by the IMF in table 5.

Table 5. IMF growth prospects for South Africa (2019–21)[xxxii]

Region/Country	Actual	Forecast		
	2010-2018	2019	2020[3]	2021[3]
World	3.8	2.9	-3.0	5.8
Developing Countries	5.2	3.7	-1.0	6.6
Sub-Saharan Africa	4.2	3.1	-1.6	4.1
South Africa (South African Reserve Bank)	1.8	0.2	-6.1	2.2
South Africa (Internation Monetary Fund)	1.8	0.2	-5.8	4.0

Source: IMF World Economic Outlook, April 2020, African Reserve Bank

With the reduction in economic activity, the availability of workplaces to accommodate apprentices is also reduced. Also, employers often resist taking on learners as this has the potential to be time consuming and difficult to manage. Finally, some employers wishing to take on learners cannot accommodate learners for the full learnership or apprenticeship as they cannot be approved for the full scope of the qualification.

Box 8. Comments collected from on a survey completed (using the ILO Quality Apprenticeships Questionnaire template) by government representatives

- The average number of apprentices registered per year over the last three years is 90.7 per cent (though this rate may be inaccurate due to the fact that admitted (registered) apprentices for year 2019/20 plummeted drastically from 29,982 the previous year (2018/19) to 9,600 in 2019/20 due to the spread of COVID-19 occurrence in March 2020).
- SETAs were hugely disabled during this time in accurately reporting apprenticeship outputs. If the year 2019/20 is removed, the average rate is 65 per cent.
- The average labour market employment rate for the last three years is, which has fluctuated from year to year, is 62 per cent, whereas the self-employment rate is 6.0 per cent.

3.4.3 A critical analysis of past and ongoing policy initiatives and practices to overcome challenges.

Traditionally, the programmes delivered at TVET colleges prior to democracy in South Africa were the NATED programmes. These were typically managed as apprenticeship programmes where learners rotated between the college and the workplace. This was, however, very exclusive and, at the time, reserved for white South Africans, and workplaces were mainly para-statal organizations such as Transnet, Eskom, the mines, etc.

With the advent of democracy, the aforementioned practices were also democratized. However, even at that point, access to workplaces was difficult and as a result, a policy shift enabled learners to access the theoretical component of an apprenticeship at a college without having a workplace in which to complete the apprenticeship.

Subsequently, a few significant policy shifts occurred. These included, among others, the introduction of the Skills Development Act 1998 as amended that introduced learnerships, and the NCV qualifications at TVET colleges in 2007.[xxxiv]

While there is much to be said about the advantages and unintended consequences of every shift, the reality today is that South Africa has a fractured TVET college system, specifically in its ability to link with the world of work.

It is widely acknowledged in the White Paper in Chapter 8 that linkages between the TVET colleges and the world of work are essential.[xxxv] A variety of reasons for this is given, from improved skills planning, through to improve teaching and learning and relevance of skills learnt.

3.4.4 An overview of different measures adopted, lessons learned, highlighting innovative, good practices to address the constraints associated with the theme

One of the most significant movements in apprenticeship in South Africa over the past 10 years has been the attempted introduction of the dual system of training. This was first undertaken through the Dual System Apprenticeship Programme (DSAP), then through the Dual System Pilot Programme (DSPP)[xxxvi] and now through the CoS programme.

The attempt is to formally introduce collaboration between employers and colleges on the basis of the dual system methodology.

3.4.5 Innovative policy options and recommendations for the theme.

Currently the NATED programmes 1– 3 are under consideration for being phased out. This was gazetted for public comment in late 2020. The intention is that colleges should phase out the NATED programmes in favour of occupational programmes, which have a compulsory workplace component in the qualification.

Significant comments have been received by the public. In August 2022 a circular was sent to all training providers indicating the DHET intention to move ahead with the phasing out of the N1 – N3 programmes and requesting providers to start decreasing enrolments. However, a formal end date and gazette has not yet been issued. This policy shift is overdue and will have a significant impact on the system as a whole.

Other initiatives that have been undertaken include the Clicks case study in Annexure A. The intention is to partner with corporate companies who can offer work placement to learners upon the completion of the theoretical part of their qualifications.

Another policy area receiving increasing attention is the professional development of TVET lecturers which should include a compulsory WIL component as part of their Continuing Professional Development. With

a better understanding of the current world of work, it is anticipated that lecturers will be able to provide more meaningful guidance in the classroom. It is also hoped that this will stimulate and grow networks between lecturers and industry.

3.4.6 Analysis of the inclusion of the theme, if at all, within the emerging South African Draft National Apprenticeship and Artisan Development Strategy

Work placement is a fundamental design of any apprenticeship. In South Africa, based on tracer studies (DHET, 2020) as discussed previously in this paper, there is little doubt about the importance of WIL. However, the roll-out of occupational qualifications (with a compulsory workplace component) through TVET College remains problematic.

The inclusion of workplaces for apprenticeship development is currently a fundamental pillar of the Draft Apprenticeship and Artisan Development Strategy 2030, as it is encapsulated in Key Priority 5: Establish and support a national apprenticeship and artisan training system based on the simultaneous delivery of the three learning components (theory, practical and workplace learning) based on a block release system between a Skills Development Provider and Industry.

3.4.7 Analysis of the forthcoming midterm review of the CoS programme to determine relevance to the theme, if any

The first cohort of CoS learners has not yet graduated. It will be critical to understand the absorption of learners once they are qualified. To date, there have been some comments by employers involved in the CoS programme on the potential shortcomings of the CoS qualifications. A critical matter which has not yet been addressed is the development of a formal review process of the qualifications and curriculum.

3.4.8 Any interesting areas for future research and analysis on the theme

Further research is required to understand gaps in learner readiness for the world of work. Much of this work has been done by organizations, such as Harambee,[xxxvii] however, these findings need to be integrated into the curriculum and qualification design.

3.5 Theme 5: Increasing access to workplaces, in particular participation of SMMEs in the apprenticeship system

3.5.1 Description of the theme and why it matters in modernizing and transforming apprenticeships

In South Africa, small businesses both formal and informal, are included in the term SMMEs[xxxviii], and many of these could be workplaces for apprenticeships.

In theme three, it is clear that one of the most binding constraints on the advancement of apprenticeships is the number of workplaces available for learners to access training. However, it is not always the case

that an employer is unwilling, but rather that the employer does not have the capacity or resources to take on learners.

As the HRC report of March 2016[xxxix] noted, there is a growing number of jobs in the informal economy and a relative reduction in formal jobs. That report indicates that informal labour currently represents 32.8 per cent of South Africa's potential workforce, for some 6.2 million people, informal work has become the second-largest part of the labour market. These numbers have grown in recent times [...] growth in economic activity in the informal sector is rising in South Africa while official employment is under pressure. The size of the informal job sector has peaked at almost half that of officially recorded employment in South Africa.

The question then is could one successful initiative utilise the informal sector for apprenticeship development. Through a recent MerSETA study, it was found that learners placed in SMME's could improve the quality of learning and could in fact be successfully utilised to support apprenticeship development.

Among all individual companies assessed, there have been several best-practise cases, which can serve as good examples for other companies that engage or wish to engage in the provision of training capacities in in the near future. The majority of such examples of best practise have been found in small or medium sized companies–a fact that is supported by the overall analysis of all companies, where, on average, better or more favourable results were not achieved by large enterprises who have the means to run separate training workshops, but in an environment where the learners are more likely to be exposed to real business processes and where training on the job also implies a higher degree of independent or autonomous learning. It is thus interesting to note, that micro, small or medium sized companies often not only achieved better results in the cost-benefit section, but also in the quality analysis.[xl]

3.5.2 An overview of the major constraints and challenges related to the theme, including those caused by the COVID-19 pandemic

The COVID-19 pandemic has been economically catastrophic for economies across the globe and in particular for South Africa. With businesses closed for long periods and restrictions on movement, economic activity has been greatly hampered. In particular, the prolonged lockdown has affected the

tourism, hospitality and travel industries, and it has not spared companies in the manufacturing sectors either.

In addition, companies were given a levy holiday for a period of three months reducing SETA levy collections by at least 25 per cent, but in real terms this was more as levies are collected as a portion of companies' payroll, where there have been large-scale retrenchments.

Now more than ever there is a real need for a collaborative effort between companies and the government to push towards economic recovery. One of the key proposals of the Economic Reconstruction and Recovery Plan (ERRP) is to target high-growth industries with short skilling programmes that can be delivered though more small- and medium-sized enterprises with quick turnaround times.[xIi] SME's have traditionally been excluded from apprenticeship development as they are often not able to deliver the entire scope of a qualification. With the introduction of short programmes, they are more likely to be able to participate. This proposal will focus on skill sets, which will boost recovery rather than long programmes (three-year apprenticeships) that will only support growth in the medium to long term.

One of the major difficulties experienced by SMMEs in skills development is that they are often unable to deliver the full scope of the qualification. Reducing the programmes into smaller units which can later lead to a full qualification could give SMMEs a better opportunity to participate. A further constraint that SMMEs face is that they do not have human resources to deal with the bureaucratic processes involved in dealing with learners/apprentices.

Box 9 - Employer recommendations to improve the apprenticeship system in South Africa, collected through a survey undertaken among social partners, using the ILO Quality Apprenticeships Questionnaire template.

- Advocate, lobby and communicate more broadly about the benefits of apprenticeships, the opportunities for young, etc.
- To gain greater support from SME's it is necessary to communicate the financial benefit of apprenticeships.
- Apprenticeships are generally not supported by SMMEs. It should be made more attractive for small businesses to take on apprentices, and this could possibly involve having a separate, more favourable "framework/model" for SMMEs.

3.5.3 A critical analysis of past and ongoing policy initiatives and practices to overcome the challenges.

Policies, in general, have not particularly encouraged the participation of SMMEs in skills development programmes. In 2010, when apprenticeship development was led by the Department of Employment and Labour, the Employment Services Development Agency (ESDA) was created, and organizations could apply to be a lead employer.[xIii] This initiative was well funded with the intention that SMMEs would be encouraged to participate. However, this initiative failed to achieve its intended results. In part, this was due to lead employers or middle men profiting at the expense of learner stipends. Although this may not be the only cause, the practice was stopped.

Another blow to the SMMEs was the amendment to the Skills Levy Act 1998 which excludes all companies below a certain threshold (which changed from time to time) from paying the skills levy. In itself, it is reasonable to exempt small companies from this requirement; however, the consequence was that while

these businesses are not paying the levy, they are also not able to claim funding from SETAs to support skills development.

3.5.4 An overview of different measures adopted, lessons learned, highlighting innovative, good practices to address the constraints associated with the theme

The idea of lead providers has emerged again recently and is proving very useful, as shown by the Installation, Repair And Maintenance project case study included in Annexure A. This is certainly not an isolated case for the use of lead employers; however, it has not been formalized in any policy document.

A report around the role of intermediaries in 2019 argues that there have been two strong cases where intermediaries have played a significant role in brokering training. In the first example, the Joint Initiative for Priority Skills Acquisition (JIPSA) is cited to show increased artisan development where the numbers graduating as registered artisans significantly improved from the low of 2 779 artisans graduating in 2003 to 12 129 in 2012 and 21 198 in 2017.[xiii]

The second example cited is that of the CoS programme. This extended quote from the same article explains the relationship:

A second example is the Centres of Specialisation (CoS) project, a DHET artisan-training initiative run under the leadership of its Special Projects Unit (SPU). The SPU plays the role of a public-sector intermediary. In its attempt to introduce a German-style model of dual apprenticeship training, … The project leader of the CoS at the time of the research described the work of the project as 'occupational intermediation'. … For the project leader, cross-sectoral intermediation entailed striking a deal between multiple employer groups, SETAs, colleges and curriculum experts in order to build a single occupational qualification for each of the 13 trades – a massive brokering task.[xiv]

The Installation, Repair And Maintenance project case study also explains how the National Business Initiative (NBI) played its role as intermediary, in much the same way as the Project Management Unit (PMU) in the CoS project.

3.5.5 Innovative policy options and recommendations for the theme.

What can be seen from the CoS and the Installation, Repair And Maintenance project case studies is that the role of the intermediary is critical (1) in brokering relationships between employers, colleges, qualification and curriculum development initiatives, and (2) in encouraging SMMEs to participate fully in skills development.

While there is no policy in place, some of the discussions within the DHET have suggested that perhaps industry associations or professional associations with a particular interest in a trade could be funded to fulfil the role of custodian for a trade as well as an intermediary. The counterargument would be to consider increased involvement from the SETAs.

3.5.6 Analysis of the inclusion of the theme, if at all, within the emerging South African Draft National Apprenticeship and Artisan Development Strategy

The inclusion of SMMEs is critical for the expansion of apprenticeships in South Africa. However, to ensure the success of these apprentices, attention needs to be given to the development of intermediaries who

can support the rotation of learners to various employers given the limited scope of the qualification which SMMEs are normally able to provide.

In particular, funding is a key consideration for SMMEs before they take on apprentices and that is the reason why the following is included in the strategy: Key Priority 4: Sustain a ring-fenced artisan apprenticeship learner (apprentice) grant and disbursement system and processes.

3.5.7 Analysis of the midterm review of the COS programme to determine relevance to the theme, if any

The role of the occupational teams (OT) is a key component of the CoS programme. An OT is made up of key stakeholders in an apprenticeship, namely employers, providers and the DHET. In the midterm review of the programme, this was seen as one of the key factors supporting the success of the programme, despite being seen as a key risk. Should the DHET not be able to secure the role of the OT as an intermediary, the programme is questionable.

3.5.8 Any interesting areas for future research and analysis on the theme

The entire field of SMME participation in apprenticeship development has not been adequately researched. Factors which prevent their participation, mechanisms to encourage their successful participation must be considered. In addition, the growth of the informal sector and its impact for the development of apprenticeships needs further research.

4

Thematic research: Conclusions and recommendations

Thematic research: Conclusions and recommendations

Based on detailed desk research and analysis across the five prioritized thematic areas, a set of conclusions and preliminary recommendations was elaborated and submitted for discussion in a final multi-stakeholder Colloquium and Innovation Bootcamp, which took place in Pretoria on 23–24 May 2022.

The main objective of the Colloquium and Innovation Bootcamp, jointly facilitated by the DHET and the ILO, was to bring together a team of global and national experts to consider the findings of global research on skills development and their relevance in the context of South Africa.

The two-day event provided an interactive opportunity to reflect on research outcomes, conclusions and recommendations and to identify areas for future action that can lead to the optimization of the apprenticeship system development process in South Africa. The proceedings of the Bootcamp, including the list of participants, sessions held and outcomes of the discussion, are contained in a separate report available at the DHET and the ILO.

This chapter consolidates the conclusions that emerged from the desk research on the five themes and case study analysis, as presented at the final event, as well as the set of agreed recommendations, which constitute the main contribution to the ADULT global research project and provide food for thought in terms of the modernization of apprenticeships in South Africa.

Under each theme, the section is structured as follows:

- **Research focus**, formulated at the beginning of the project, when the theme was prioritized through a stakeholder survey
- **Conclusions**, emerged from the desk research, thematic analysis and initial consultation process, particularly among tripartite constituents
- **Recommendations**, discussed and adopted at the final multi-stakeholder Colloquium and Innovation Bootcamp.

Theme 1: Adapting apprenticeship models to meet skills needs of the digital and knowledge economy

Research focus

This thematic analysis focused on the need to include digital skills and core skills required by the knowledge economy into all future qualifications and on the question of how to prepare apprentices for the digital transformation and changing technology in the workplace.

At the Colloquium and Innovation Bootcamp, the theme was labelled "TECH–ED" = Technical Education, or what is taught.

Conclusions

- South Africa produces a list of critical skills every two years, which contains some elements of digital skills needs. However, the methodology adopted does not capture the fast-changing needs that characterize digital transformations across the various sectors of the economy.
- A process must be in place to ensure that all new and revised occupational qualifications include such digital skills relevant to the context of the qualification.
- Digital skills and the knowledge economy are highly dependent on people having excellent foundational and core skills and a specific programme should be implemented to develop these skills, possible utilizing the ILO global framework on core skills for life and work in the twenty-first century[xiv]
- A very clear and specific strategy needs to be developed and implemented to prioritize the inclusion of core skills (which includes basic digital skills but also social and emotional skills, cognitive and metacognitive skills, and basic skills for green jobs) in all occupational qualifications.

Recommendations

- Digital skills needs should be categorized in basic (i.e. included in the core skills definition), intermediate and advanced levels, and specific assessment methods should be put in place to detect what is available and what is needed in the labour market.
- More regular updates, possibly on a quarterly basis, are needed from employers and SETAs on digital skills needs to fill the gaps of the currently scarce and critical skills list produced every two years.
- The existing opportunity with the phasing out of the NATED N1-N3 qualifications should be used to introduce occupational programmes that have the latest technological advances included.
- Online content should be adapted to the South African context.
- Assessment development procedures should be revised to be more dynamic and include the latest technology in the assessments.
- Short programmes should be considered as a solution to continue upskilling of the workforce.

▶ Theme 2: Using modern technology to strengthen the effectiveness and efficiency of managing or implementing apprenticeships

Research focus

This thematic analysis was focused on the need to develop digital skills and infrastructure capacity within the TVET system so as to improve the quality of teaching and learning while increasing access for learners and reducing the digital divide.

At the Colloquium and Innovation Bootcamp, the theme was labelled as "ED-TECH" = Education Technology, or how teaching is to be carried out.

Conclusions

- The use of digital technology by teaching staff is essential to bridge the gaps between the learning environment and the world of work.
- Staff are scared of using technology and possibly scared of being shown up by learners.
- There is a need for a common knowledge base, which could be an online system, accessible to everyone.
- Connectivity, the roll-out on digital infrastructure, tools of trade (for example, laptops) and access to data for learning and teaching remain a huge bottleneck in the system.
- A lot of content is available online, but it is costly and not always recognised by SETAs.
- The current portfolios of evidence are mostly paper-based.
- Online systems have a better audit trail.

Recommendations

- The existing work in progress on developing digital infrastructure capacity within the TVET system should be coordinated and accelerated as part of single cohesive process.
- The National Open Learning System (NOLS) should be used to support online learning as a digital skills accelerator or be reinforced with specialist expertise.
- TVET lecturers need to be trained on how to incorporate instructional design into their teaching processes.
- A process must be developed for recognizing content providers.
- The continuing professional development of lecturers should be strengthened to incorporate inputs from professional associations.
- The roles and responsibilities between national vs. college level interventions should be distinguished:
  - National: CPD, qualification development, trade test development
  - College level: lecturer development, workplace partnerships.

- Solutions should be piloted at the college level as proof of concept for implementation at the national level.
- There should be a gradual move towards simulated learning, for example, in welding, as it reduces the cost of consumables.

Theme 3: Strengthening the teaching, learning and workplace training elements of the apprenticeship system

Research focus

This theme was focused on the need to improve:

- The quality of teaching and learning to be more labour market responsive, and
- The readiness of the workplace to accept learners and to direct their learning to be in line with the requirements of their qualification

Conclusions

- A critical need exists for learners to be more prepared to enter workplaces through the implementation of PLPs which cover foundational skills (maths, language, science, digital) and core skills (social and emotional, cognitive and metacognitive in addition to basic digital and basic skills for green jobs) before an apprenticeship, but with consideration for a person's age and existing qualifications.
- A need exists for the inclusion of more relevant work readiness programmes that include an occupationally aligned learner suitability assessment process (for example, the Harambee model).
- The exposure of TVET college staff to workplaces must be integrated into the accreditation processes for TVET colleges as an integral part of a mentor development programme that also exposes industry to an andragogic approach to working with learners.

Recommendations

- PLPs should be expanded and customized to allow for a broader range of subjects, including core skills.
- All occupational qualifications should include a customized work readiness module that includes relevant career path suitability assessment as part of the learning.
- All TVET staff should have exposure to workplaces as a prerequisite for accreditation.
- Workplace approval for occupational qualifications must include evidence of a formal mentor development programme in the workplace.

▶ Theme 4: Developing the work-based learning programmes at TVET colleges as a mechanism to increase their labour market relevance

Research focus

This theme was focused on the need to improve WIL at TVET colleges to enhance the likelihood of apprentices finding employment and the need to ensure the better alignment of market demands for specific occupations with the availability of apprenticeship opportunities.

Conclusions

- The qualification development process is not yet sufficiently comprehensive and cost effective. Consideration must be given to the time required by employers to participate in these processes.
- The responsiveness of colleges and the quality of learning is dependent on the cooperation between industry and colleges. Bureaucracy causes non-responsiveness. Models for PPPs or other structural arrangements have not been sufficiently explored.

Recommendations

- An incentive mechanism should be developed to ensure participation by more employers in a comprehensive qualification development and implementation process that is also more efficient and cost effective.
- TVET College Program Mix must be differentiated on the basis of regional (district) labour market needs.
- The capacity of TVET college management and councils should be developed by developing the management's understanding of implementing occupational qualifications as well as ensuring the participation of industry in TVET college councils.
- The DHET should create a conducive environment for PPPs by analysing and learning from the impact of current policies on potential partnerships, especially where money is involved.
- Costing analysis of all TVET college offerings across the full spectrum of trades and non-trade occupations should be implemented.
- The TVET college funding grid should be aligned to local economic development.
- Employers' capacity building should be supported by creating awareness and sharing information on the available basket of incentives for apprenticeship training, and by providing clarity on Compensation for Occupational Injuries and Diseases (COIDA) responsibilities.
- Employer advocacy programmes on the implementation of apprenticeships should be implemented.

Theme 5: Increasing access to workplaces, in particular to enable the participation of SMMEs in the apprenticeship system

Research focus

This theme was focused on the need to encourage the participation of SMMEs in the delivery of apprenticeships programmes, to find innovative models for them to deliver against the full scope of the qualification (or units of it), and to comply with regulatory requirements.

Conclusions

The role of intermediaries in apprenticeship development seems critical. In all projects, success is often based on the dedication and coordination of the management entity.

- Short skills programmes will be critical for economic recovery. Consideration must be given to the qualification design and development processes that can support this, including through apprenticeships, and by mobilizing SMMEs.
- There is a tendency in the current system to "over quality assure" workplace learning, making it highly restrictive for SMMEs.
- There are elements of the current apprenticeships that make it difficult for SMMEs to participate in the system, such as:
- The workplace modules in the trade qualifications are too onerous for most of the workplaces to fulfil.
- The requirements for workplace approval cannot easily be met by SMMEs due to a lack of resources in many cases and because they are conceived based on the infrastructure capacities of medium to large enterprises.
- Workplaces can take different forms as long as there is some form of commercial product or service being provided.
- Workplaces need not cover every component of the qualification. Most of the qualification should be covered in the training institution. The QCTO guidelines should be adjusted to allow for this.
- Intermediaries can release some of the workload from SMMEs and make it easier for them to participate.
- The workplace learning requirements of the new qualifications also make it difficult for SMMEs to undergo an Artisan Recognition of Prior Learning process.

Recommendations

- A clear and specific strategy should be developed and implemented to strengthen and expand, including through funding, the role of intermediaries in the roll-out of skills programmes as a precursor to apprenticeship programmes.
- There should be less onerous requirements for workplaces to make it more conducive for SMMEs to participate as host employers. While there should be minimum criteria, including the need for a qualified artisan, there should be less cumbersome requirements for a SMME to qualify as an eligible workplace.

5 Alignment of ADULT thematic research recommendations to the prevailing apprenticeship system development processes in South Africa

Alignment of ADULT thematic research recommendations to the prevailing apprenticeship system development processes in South Africa

South Africa has significant existing strategic documents and processes that must be factored into any further development of the apprenticeship system of the country.

In the first instance, the draft National Apprenticeship and Artisan Development Strategy 2030 that has been submitted to the Minister for consideration includes six key priorities.

- **Key Priority 1**: Formally establish a National Apprenticeship and Artisan Advisory Body which, on an advisory basis to the DHET, will map the national apprenticeship and artisan development agenda.
- **Key Priority 2**: Establish and maintain an apprenticeship and artisan research and development mechanism at INDLELA.
- **Key Priority 3**: Establish and support a user-friendly apprenticeship and artisan training quality assurance system and processes in line with the National Artisan Moderation Body (NAMB) and QCTO policies.
- **Key Priority 4**: Sustain a ring-fenced artisan apprenticeship learner (apprentice) grant and disbursement system and processes.
- **Key Priority 5**: Establish and support a national apprenticeship and artisan training system based on the simultaneous delivery of the three learning components (theory, practical and workplace learning) based on a block release system between a skills development provider and industry.
- **Key Priority 6**: Promote a strong base of apprenticeship and artisan training in state-owned entities through negotiated artisan training quotas.

In the second instance, the Centre of Specialisation (CoS) Programme Midterm Evaluation Report[xlvi] has recently been completed with the following recommendations.

- Overarching recommendation
  - For all future trades or CoS introduced into the CoS programme (expansion into new trades or new sites), all aspects of the programme should be in place prior to the roll-out of the programme.

- Specific recommendations
  - **Institutional framework**: Improve engagement and collaboration between stakeholders involved in programme governance, management and oversight to ensure that the CoS programme is driven using the top-down approach initially to gain momentum, but with the medium- to long-term goal of becoming a more bottom-up-driven approach, as the relationships between local employers and college campuses grow.
  - **Funding**: Funding should not be fragmented between Seta's and Colleges. Efforts should be made to follow the TVET norms and the standards as a funding model. The true cost to employers must be factored into budgeting and planning (to understand the true cost of producing an artisan), and this should be clearly communicated to employers at the onset of the programme. The role of the coordinating SETA must be clarified to ensure cross sectoral funding is possible i.e. One Seta is able to fund students from organisations who are not levy paying to that Seta., The DHET and Department of Employment and Labour should investigate the use of exemption clauses by employers wishing to participate in CoS which include bargaining councils to avoid paying bargaining council wages which are too highly pegged for apprenticeships.

National Occupational Curriculum Content: Given the importance of the National Occupational Curriculum Content (NOCC) (as it satisfies the integrated delivery requirement for accreditation from the QCTO in a standardized manner across all TVET Colleges), the NOCC documents should be finalized and put in place before the roll-out of new trades introduced into the programme.

Learning materials: A common set of learning materials for all trades must be finalized and in place before training is expanded or future cohorts.

Project management: The TVET CoS project manager and administrator roles must be strengthened. If the intention is for these project managers to take over the roles and responsibilities of the Occupational Team Conveners (OTCs), the transition needs to be planned and implemented with sufficient time to ensure programme continuity.

Workshops: The procurement challenges experienced with regard to the infrastructure, equipment and tools of the CoS must be addressed by the National Skills Fund (NSF). Guidance should be given to the

chief financial officers of TVET colleges to clarify the importance of following the specifications set out for each occupational qualification.

Facilitator training: Facilitator training should be prioritized (including the identification of who will deliver and carry the cost of such training). This training must be based on occupational qualifications and not academic university qualifications so that facilitators have credibility in the system. They should be occupationally qualified trainers delivering occupational qualifications, not lecturers delivering occupational qualifications.

Employer recruitment: The CoS programme must clarify who is responsible for the sourcing and mobilization of employers, particularly when more than one SETA is participating in a CoS. Given the challenges experienced in the recruitment of employers (due to bargaining council wage rates and high administrative burdens), the lead employer-host employer is probably the most suitable solution.

Mentorship: The employer's understanding of mentorship must be improved (mentorship versus supervision). In addition, mentorship training should be prioritized in the implementation of the programme (including the identification of who will deliver and carry the cost of such training).

Process efficiencies: The lack of streamlined processes (for registration, grant approval and disbursement between SETAs) has created significant confusion and may contribute to a higher administrative burden on employers. This is compounded when a single CoS or employer is engaging with multiple SETAs. The role of the DHET Sector Liaison Managers that do the monitoring and evaluation of each SETA in the streamlining of these processes should be investigated.

Trade Tests: The success with which these conflicting messages and practices are appropriately addressed is dependent on an improvement in the alignment and the working relationship between the QCTO and INDLELA. Attention should be given to this working relationship to ensure that the existing challenges around the trade tests are resolved in a timely and coordinated manner.

COVID-19: The economic impact of COVID-19 should be factored into future planning for the CoS programme as many employers have reduced their workforce. Some employers may elect to exit or

reduce their participation in apprenticeship training. Additional support should be sought where possible to mitigate this risk.

The recommendations of the ADULT research process should build on these quality apprenticeship system development processes to further enhance the system. With this in mind, the recommended way forward is to utilize the National Apprenticeship and Artisan Development Strategy 2030 as a baseline mechanism and then map the recommendations from the Centre of Specialisation (CoS) Programme Midterm Evaluation Report against it. This analytical mapping process was completed and is available in Annexure B.

This mapping exercise appears to indicate that an apprenticeship development system has five subsystems that work together in an integrated manner. These are:

- Institutional governance, coordination and integration
- Qualification, curriculum, programme and assessment content development and quality assurance
- Funding
- Employers' and intermediaries' processes
- Delivery systems, resources and processes

Figure 3. The proposed holistic, integrated subsystems of the South African apprenticeship development system

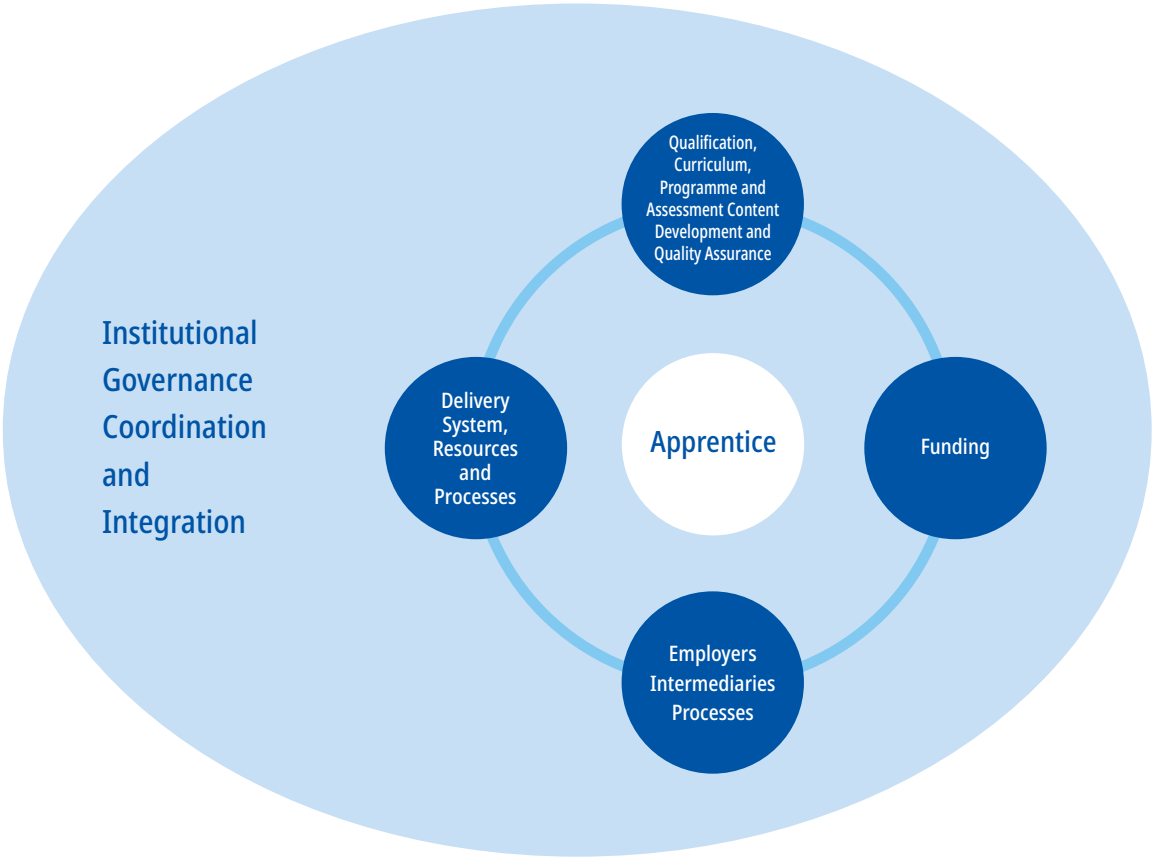


Figure 5 was also discussed at that Colloquium and Innovation Bootcamp, resulting in significant support for the subsystem model as a possible innovative way forward for the development of the apprenticeship development system in South Africa.

As further enhancement of these five subsystems and the development of the overall system, the final recommendations from the ADULT study were then aligned to each of the subsystems in Annexure B as possible further focus areas that may be considered by local stakeholders. In this way, the ADULT research process adds value to the prevailing developing apprentice system in the country and is not research that is unconnected and in isolation to other relevant processes.

6 Implications for further research and development

Implications for further research and development

Apprenticeships are not well researched in South Africa. Therefore, good practice examples are often not documented or at best, they exist as presentations for dissemination at conferences.

For the first time, in 2020, a formal TVET academic journal has been brought into existence. This journal, JOVCET, is published under the Institute for Post-School Studies, University of the Western Cape.

Based on the consultations and interactions held with key players, but also in consideration of the research gaps identified through the literature review, the following themes should be considered for further research:

- Identifying basic digital skills that must be included in all qualification development processes, as they are considered part of the core work skills.
- With the growth of e-learning and the NOLS, research is required in the management of assessments.
- Further research is required to understand gaps in learner readiness for the world of work, and these findings need to be integrated into the preparation of curricula and qualifications.
- The entire field of SMME participation in apprenticeship development has not been adequately researched. Factors which prevent participation and mechanisms to encourage and ensure the successful participation of SMMEs in South Africa must be considered.
- Research that deals with the "outcomes" of the case studies in Annexure A, specifically, by measuring the employment (effects) of the case studies is required.

Questions on how to expand and develop the current TVET college system in South Africa must be considered, for it to be more aligned to the operating conditions of the labour market.

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7 Annexure

▶ Annexure A: Cases studies

As part of a thorough review of the implementation of projects and programmes that directly and indirectly relate to apprenticeships, learnerships or other work-based learning processes in South Africa, nine different case studies have been analysed to identify possible lessons for the development of the overall apprenticeship system.

These cases studies, the review of National Apprenticeship and Artisan Development Strategy 2030 and the recommendations from the Centre of Specialization (CoS) Programme Midterm Evaluation report inform the research findings analysis section of the report.

Two overarching case studies that inform all five research themes are considered directly relevant to the development of a quality apprenticeship system in South Africa. These case studies illustrate not only innovative transformation efforts, but also the latest thinking in the development of the apprenticeship system, albeit one aligned to artisan trade occupations only at this stage but which may apply to all occupations in the future.

They also illustrate the development and the improved integration of public technical vocational education and training (TVET) colleges and industry programmes based on the principles of the German-Swiss dual system, but with considerable customization to respond to the South African context.

The two case studies are described below.

Dual System Pilot project (DSPP) **Relevant to all themes: Cutting across the apprenticeship transformation project in South Africa**	
Country/Region	South Africa: Eastern Cape and Gauteng provinces
Reasons for proposing this case study	The TVET transformation project is a key development in South Africa and will be referenced throughout the paper. This project precedes the establishment of the CoS project.
Key aspects the case illustrates	• Transformation efforts in South Africa to improve integration of public TVET colleges and industry apprenticeships through the dual system methodology • Use of occupational qualifications for the delivery of apprenticeships • Use of modern competency-based curricula • Student rotation between employers and TVET colleges • Reduced the duration of teaching and learning process • Artisans qualify earlier and can enter the workforce • High success rate (pass results)

Project description

The Department of Higher Education and Training (DHET), with the support of the German government, embarked on a pilot programme for the dual model of apprenticeship development. Although this was not the first attempt to use the dual system methodology, it was the first attempt to use the Quality Council for Trade and Occupation (QCTO) occupational qualifications. These qualifications have three components: (1) theoretical, (2) practical, and (3) work-place components.

The project started in 2017 with 100 learners in the electrical trade enrolled in four TVET college. A year later, in 2018, 50 learners in the plumbing trade started courses in two of the four colleges.

The long-term outcome is to achieve a high level of employment for dual system graduates through the development of occupational competences which respond to the requirements of industry.

The intermediate outcome is to increase the delivery capacity of TVET colleges to train occupationally competent artisans in the two identified trades as per a South African industry-driven dual system approach.

This outcome will be achieved through pilot TVET colleges using industry-aligned syllabi (NOCC-A21) and training facilities, adequate industry partnerships to support teaching and learning, and the hiring of lecturers who are qualified to provide industry-relevant training for the identified trades.

Apprentices within the dual system are employees of a company. They normally rotate between the formal training institution and the workplace to gain as much practical and actual work experience as possible. This serves not only to strengthen the employability of the apprentices, but it is considered to be beneficial in socializing young people through cooperation with others.

In 2019, the first cohort of electrical learners took their trade tests. The first set of results were not very successful, and a full evaluation was conducted to identify the possible causes. One main reason observed was that the trade test was new, and both the learners and lecturers were not sure what to expect. Further, learners were not prepared for the time pressures and quality requirements of the test.

After some remedial work and on completion of the second and third attempts, the current success rate has been 86 per cent, with only 13 of the cohort of 100 dropping out during the programme.

The second electrical cohort and the first plumbing cohort were scheduled to undertake their trade tests (final assessment) in June 2021. There was a short delay in assessment due to the coronavirus disease (COVID-19) pandemic.

The programme was successfully implemented with numerous lessons learnt. These are documented in various fact sheets (GIZ – Skills Development for a Green Economy I, fact sheets http://nadsc.dhet.gov.za/site/Research) that have informed the expanding work of a quality apprenticeship system in South Africa.

Centres of Specialisation project **Relevant to all themes: Cutting across the apprenticeship transformation project in South Africa**	
Country/Region	South Africa, National project across all provinces
Reasons for proposing this case study	TVET Innovative Transformation project is a key key development in South Africa and will be referenced throughout the Paper
Key aspects the case illustrates	Transformation efforts in South Africa to reintegrate public TVET college and industry apprenticeships through the dual system methodology. The three high-level outcomes of the project include: i. The long-term outcome is to increase the number of intermediate skills required for economic growth. ii. The intermediate outcome is to increase the delivery of skills in 13 identified trade areas. This will be achieved through the number of artisans produced in the 13 identified trade areas by the Centres of Specialisation Project . iii. The immediate outcome is to increase the capacity of TVET colleges to produce intermediate skills in 13 identified trade areas. This will be achieved through the use of improved curricula and training facilities in a number of TVET colleges, the establishment of adequate industry partnerships to support teaching/learning and the identification of lecturers that are qualified to provide teaching for the identified 13 trades in a number of TVET colleges.

Project description

The Centres of Specialisation Programme is a DHET initiative designed to meet two objectives simultaneously: firstly, to supply artisan sin the priority trades needed for the implementation of the government's National Development Plan in general, and its National Infrastructure Plan more particularly; and secondly, to contribute towards the building of capacity in the public TVET college system to deliver trade qualifications with employer partners.

The programme aims to do this by focusing on the development of 13 priority trades that have been identified as being in strong demand for infrastructure programmes.

The development of skills for the 13 priority trades will be achieved through the implementation of the new Quality Council for Trades and Occupation's (QCTO) trade qualifications. It is envisaged that this will be a quantum step up from the past, insofar as they are national qualifications – no longer sector-specific – and will be delivered using the dual system approach whereby learners will move between a college and a workplace over the duration of their period of study and prior to taking their trade test.

The programme will involve a wide range of stakeholders, ranging from a selected number of TVET colleges chosen to be Centres of Specialisation for one or more of the 13 priority trades to employer associations and 'occupational teams' with special expertise in one or more of the priority trades.

The programme is in its third year of implementation and the first cohort of students were scheduled to do their final assessments/trade tests at the end of 2021.

While learner performance is not yet known, all stakeholders view the programme as a big step forward for artisan development in South Africa. The inclusion of multiple stakeholders at macro, meso and micro levels of implementation has secured a responsive curriculum and teaching and learning environment.

Many areas require improvement in processes and overall design, as can be seen in the midterm evaluation conducted. A midterm review was completed with the results to be shared formally at the National Skills Conference on 28–29 September 2021.

Two case studies that inform Theme 1: Adapting apprenticeship models to meet skills needs of the digital and knowledge economy.

Solar Water Geyser Installation project	
Country/Region	South Africa, Gauteng and the Western Cape
Reasons for proposing this case study	This case study Indicates how new qualifications were developed to teach new skills required by the labour market. In addition, the case study also illustrates how the insurance industry, typically not considered as an employer of technical skills, assisted with and benefited from the intervention.
Key aspects the case illustrates	• The training programme, including learning material for theory, practical and workplace experience was developed and formally registered. • Operational mechanisms were established for financing and project implementation. • A trainer programme was implemented to ensure both public and private providers were able to deliver the new programme. The new programme developed competent solar water heating installers. • Host employer workshops were held for short-term insurance (STI) plumbing companies, many of them owned by black South Africans, focussing on technical and business skills development relevant to SWH installations. • STIs gained relevant insight in relevant claims processes, focussing on the transition from electric geysers to SWH systems.

Project description

The national STI industry, including large insurers such as ABSA, Discovery, Mutual & Federal, Santam and Nedbank, were identified as key players in residential electric geyser installations and for advocating and marketing alternative hot water technologies, such as solar thermal systems. With regard to residential geyser replacements, this project is aiming to improve the uptake and the installation quality of new and retrofit SWH systems.

In this way the ELP project responds to a market-driven need for practice-centred training in the STI plumbing supply chain. The ELP project objectives are to retain, upgrade and create new jobs in the SWH industry; mitigate greenhouse gas emissions; and reduce peak load demand and costs for residential energy bills.

The ELP project was carried out in Gauteng and the Western Cape and was designed as an innovative multi-stake-holder intervention with the following implementation partners (apart from the STIs): 15 plumbing companies, Insurance Education an dTrainign Authority, the Energy and Water Sector Education Training Authority Northlink TVET College, Insittute of Plumbers, AITF and PIRB The intervention started in January 2016 and lasted until July 2017. All stakeholders should ultimately be in a position to duplicate this approach in their future skills development interven-tions.

Renewable Energy Technologies (RET) Course Implementation project	
Country/Region	National project: Ten TVET colleges across the country
Reasons for proposing this case study	The Case Study Indicates how new qualifications were developed and introduced to the TVET college curriculum to address new renewable energy technology.
Key aspects the case illustrates	• New technology (renewable energy) introduced to an existing TVET qualification • Development of an elective subject within the electrical infrastructure programme.

Project description

South Africa enjoys some of the best annual radiation values in the world and has substantial wind energy resources. Yet, with a foreseen increase in renewable energy technology applications, such as SWH and photovoltaic (PV) systems, South Africa needs to significantly extend its skills development for Renewable Energy Technologies (RET). Against this background, the DHET and Skills for Greening Initiative (S4GI by GIZ developed a new subject to be taught in TVET colleges – RET, which is part of the National Certificate Vocational (NCV) programme in electrical infrastructure and construction as an elective subject.

The new course adds important and crucial cross-cutting contents and practical experiences to the NCV programme. The learners who opted to take RET are introduced to the basic concepts and fundamental principles of renewable energy technologies including PV, SWH, wind power, fuel cells and electro-mobility. The following objectives were also achieved.

1. The curriculum and syllabus of the newly developed RET course was updated.

2. RET textbooks for the National Curriculum Vocational (NC(V)) levels 2, 3 and qualifications were developed, reviewed and published.

3. The development and provision of didactical equipment for all three levels was supported.

4. The development of practical and theory assessments was supported.

5. RET lecturers were continually trained, and a pool of co-trainers was established.

6. The appointment of RET lecturers as examiners and moderators was successfully supported.

Two cases studies that inform Theme 2: Using modern technology to strengthen the effectiveness and efficiency of managing or implementing apprenticeships

Establishment of a national artisan development support centre to collect data and report on work based learning including apprenticeships for artisans	
Country/Region	National project based at Indlela, Olifantsfontein, Gauteng
Reasons for proposing this case study	Innovation illustrates the need for a central shared service system that allows for artisan data to be collected from all sectors and analysed for better planning, monitoring and reporting.
Key aspects the case illustrates	• The centre was set up with the recruitment of 20 interns and three call centre and data analysis experts. • The capacity of the interns was built up over a seven-year period since 2013. • Now, it is a well-established, well-resourced centre with capacity to track, trace and report on work-based learning for artisans. • Data is verified annually and serves as a basis for formal reporting on employment levels of learners. • It serves as a working model for the centralization of all skills data processing and analysis, a critical need in South Africa.

Project description

In 2012, the DHET, through the Chief Directorate, National Artisan Development, located at INDLLEA Olifantsfontein, partnered with a TVET college to convert an unused call centre facility into an artisan data collection facility.

A group of TVET college learners from the local community were employed to collect the data, and over the last seven years, their skills have developed to become well-capacitated data analysts.

The Centre was relocated in 2015–16 to INDLELA, the centre of artisan development in South Africa, and its services were expanded to include tracer studies of learners that started on apprenticeships or learnerships or skills programmes in artisan occupations. These data tracer studies now form the basis of annual employment tracking statistics for the country.

Formal dashboard-based reports on artisan development have therefore formed a standard agenda item at the social-partner-based National Artisan Advisory Body (NADAB) that allows all artisan development stakeholders to be aware of artisan development trends in the country.

The centralized data collecting model that uses call centre technology and data analysis technology has become a working model for a shared service system for all skills data for all occupations across the country.

Automotive Repair and Maintenance project (in conjunction with the Imperial Training Academy)	
Country/Region	National project: Automotive repair programme in TVET colleges
Reasons for proposing this case study	The programme illustrates the skills deficit that lecturers in TVET colleges have and how industry has supported their skills development. The project has also led to the development of an Electronic Lecturer Support System to improve teaching and learning.
Key aspects the case illustrates	• Industry supported the evaluation of lecturers and identification of skills gaps. • Industry supported TVET lecturers to remediate their gaps in knowledge and skills. • A formalized lecturer support system for on-going lecturer development was established. • An online system developed for lecturer development was facilitated. • Communities of practice to support teaching and learning were developed.

Project description

In 2017, with the support of a Dutch-funded programme, work was undertaken to develop communities of practice to support the ongoing development of lecturers in the TVET sector. The initial difficulties experienced proved that the model envisaged for establishing communities of practice was not viable. However, through this work, it became apparent that specific work was required in the automotive skills area.

The Imperial Academy was approached to do a baseline assessment of the facilitators to establish potential skill deficits, including changes to technology. The baseline assessment indicated a significant deficit in particular areas, such as double and single reduction drives. Diagnostics and troubleshooting, for example, showed less than 10 per cent competence in the sampled group.

Training was done with a group of lecturers and a series of videos/online lessons were developed. With funding support from the Dutch government, an electronic platform was developed where this video content was placed for all lecturers to access.

Implementing lecturer development through facilitated video sessions was also considered. To this end, an entire structure of Lecturer Support System (LSS) facilitators was established under the guidance of academic managers in TVET colleges.

This platform is now used to upskill lecturers in a variety of areas. Programmes in mathematics, for example, are a critical area, and this platform has been used to enhance the skills of lecturers.

What has also proven interesting is that lecturers have used the material to support their practical lessons in class (showing students the videos) where they were unable to demonstrate practical tasks.

A single case study that informs Theme 3: Strengthening the teaching, learning and workplace training elements of the apprenticeship system

Generic Trade Preparation Programme (GTTP) and Pre-Vocational Learning Programme (PLP)	
Country/Region	South Africa: National project
Reasons for proposing this case study	The GTTP and the PLP are examples of measures taken to better prepare students for trade programmes and readiness for the world of work.
Key aspects the case illustrates	• An industry-led learner preparation programme was developed in conjunction with the DHET. • The project was rolled out to TVET colleges across the country. • It was later formalized as the PLP. • The programme supports students without foundational learning skills (maths, science, English and work readiness). • Initial GTTP results showed learner / learning gaps. Need for systemic intervention highlighted.

Project description

The automotive retail sector approached the Minister of Higher Education and Training in 2013 and expressed a need for more skilled personnel to work in their motor service and repair facilities. Thus, a project was launched by the DHET and various industry associations.

One of the key areas which was raised was the poor foundational skills which students wishing to enter the industry have. A programme called the Generic Trade Preparation programme was put together, and it focused on foundational skills such as English and mathematics as well as some introductory trade competencies.

With these foundational skills in place, employers could accept students into learnerships or apprenticeships. Without strengthening their foundational skills, a learner's ability to complete the learnership or apprenticeship is reduced.

The PLP was later introduced into formal DHET funding allocation to support students without the requisite qualification or skills to enter into a NCV programme or apprenticeship.

A single case study is found to inform Theme 4: Grow the work-based learning programmes at TVET colleges as a mechanism to grow labour market relevance of TVET colleges

Clicks Pvt Ltd and DHET TVET Placement project	
Country/Region	National: All TVET colleges
Reasons for proposing this case study	This case study provides a description of how a single employer has made a significant impact to the labour absorption of learners by providing fit-for-purpose workplace-based learning programmes.
Key aspects the case illustrates	• This project indicates collaboration between the DHET, TVET colleges and industry. • A customized on-the-job learning programme was developed to support student placement and the completion of diploma requirements. • Students' long-term employment prospects were illustrated.

Project description

Learners enrolled on National Accredited Technical Diploma (NATED) level 6 programmes at TVET colleges need 18–24 months of practical work experience to achieve a diploma in their specific field of study. These programmes were delivered in a typical apprenticeship format with rotation between the TVET college and the world of work. Over time, this has changed, and learners have been able to complete the 18 months of theory studies without an employer. However, if they wish to achieve their diploma, 18 months in the workplace, where learning must be structured, is required. As a result, learners who are unable to secure work placements are unable to complete their qualifications.

The project began in 2019 to create a mutually beneficial partnership between the Clicks Group and DHET TVET colleges. Learners can complete their 18 months' work experience while gaining skills and competencies in the world of work. Clicks entered into an understanding whereby they customized a programme for students to ensure that they would meet the workplace element of their qualifications.

To date, 921 students have enrolled in the programme, and around 50 per cent have already completed their diploma requirements, but what is the most encouraging is that 457,205 students have been offered full time employment within the Clicks Group.

Together, the partners will continue the programme with around 500 new recruits each year for the foreseeable future.

A single case study that informs Theme 5: Increasing access to workplaces, in particular the participation of SMMEs in the apprenticeship system

Installation, Repair And Maintenance project	
Country/Region	Pilot project limited to selected TVET colleges across the country
Reasons for proposing this case study	The case study provides a real case where Small and Medium Sized Enterprises were effectively used to deliver part qualifications. SME's are able to participate more meaningfully in the delivery of part qualifications. The case also demonstrates the use of an alternative model to involve SME's through a lead employer.
Key aspects the case illustrates	• Learning pathways for students building towards a full qualification/trade were established. • SMEs were used to deliver training in the workplace for smaller programmes within the qualification. • Role of a lead employer when working with SME's • Importance of part qualifications for employers

Project description

Between January 2019 and October 2020, the National Business Initiative (NBI) implemented a programme to expand opportunities for young TVET college learners. This occurred together with a range of partners. The programme sought to intervene at the interface between the supply and demand for skills. This approach has unlocked opportunities for dual training (integrated institutional and workplace training) and employment in the industrial economy, while addressing the disconnect between TVET provisions and skills demands in the workplace. The programme was part of the broader Installation, Repair and Maintenance (IRM) Initiative. The key objectives were to:

- Unlock the demand for entry-level plumbing skills across plumbing enterprises (in the form of "technical operator practitioners")
- Develop an appropriate and industry-recognized learning programme for TVET college students that aligns to in-demand technical operator skills, including a specialised focus on SWH;
- Equip TVET colleges to deliver this demand-led, dual learning programme, and prepare candidates for entry into workplaces to be further trained on the job; and
- Create meaningful employment and self-employment opportunities for TVET college graduates, which can also provide a pathway towards plumbing trade qualifications.

As there was no existing learning pathway for the technical operator practitioner qualification, the plumbing industry embarked on a process to develop new entry-level skills programmes that were aligned to the full plumbing trade qualification. The level 3 Plumbing Hand programme was designed specifically to provide the skills for the technical operator 2.

With the alignment of the curriculum to the technical operator qualification, the programme also sought to ensure that the learning material provided candidates with an accurate reflection of the tasks they would face in the workplace. In this way, the learning material was designed to facilitate project-based learning, using real-world simulations of workplace tasks.

The plumbing programme is an integrated learning programme, combining practical skills and work readiness at a TVET college and workplace learning in a plumbing enterprise. The institutional training at the TVET college comprised 12 weeks of theoretical training. During this time, the Plumbing Hand curriculum was delivered, primarily through project-based learning as part of a work-readiness programme. It was delivered in partnership with Harambee, woven into the 12-week syllabus, covering a range of work-readiness behaviours and attitudes. The combination of the work readiness and project-based learning optimally simulates the workplace context for which the candidate must be prepared.

The workplace learning component comprised six to nine months of learning in a plumbing SME under the supervision of a qualified and/or experienced plumber. During workplace learning, candidates followed a structured programme and completed a logbook, which was regularly signed off by a mentor.

At the end of the placement period, graduates were either absorbed into employment or self-employment as technical operator practitioners (which offers a pathway to a trade). With future cohorts, the plan is that those who demonstrate high entrepreneurial potential during the Plumbing Hand programme will enter a micro-enterprise incubation process with support by the Allan Gray Makers programme.

Installation, Repair And Maintenance project

The completion rate was 85 per cent, and both the 2017–18 and 2019–20 cohorts achieved over 80 per cent marks on average for their in-college formative knowledge and practical assessments. The 32 candidates who completed the plumbing programme in 2020 have become the first group of TVET college learners to be registered with the Plumbing Industry Registration Board.

The workplaces provided to students were all SMEs, that are generally disincentivized from training young people due to the bureaucratic challenges associated with accredited training regimes, particularly in micro-enterprises that have limited capacity. In order to make it easier for enterprises to take on young trainees, the National Business Initiative (NBI) acted as the lead employer, signing learning contracts with trainees, taking responsibility for paying their stipends, registering them for Unemployment Insurance Fund (UIF), and ensuring that they were covered by the requirements of the Compensation for Occupational Industry and Diseases Act 130 of 1993.

Smaller programmes such as the Plumbing Hand or Technical Operator programmes are likely more suited to SMEs, who are able to deliver on the smaller scope of the qualification.

▶ Annexure B - Apprenticeship System Development Analysis Mapping

Draft National Apprenticeship and Artisan Development Strategy	COS Mid Term Review Recommendations	Sub System	ILO RSA Adult Research Report Recommendations as possible Enhancements to Sub Systems

Key Priority 1: Formally establish a national artisan advisory body (NADAB) as the primary advisory structure to DHET on issues of artisan development (This may encourage a formal and consistent undertaking by the employers to consistently create workplace training spaces). This structure may also serve as a link to the Human Resource Development Council's efforts to promote artisan development. There are indeed other structures which will foster artisan development.
 	
Key Priority 6: Establish and maintain an Artisan Research and Development mechanism at INDLELA. (This will assist INDLELA to have an instrument for scientific artisan development planning projection).
 	
The current National Artisan Development Support Centre (NADSC) and the National Artisan Moderation Body (NAMB) is able to collect artisan data from SETAs and employers however the capacity and capability to analyse this data beyond the ordinary is limited.
	For all future trades or CoS introduced into the CoS Programme (expansion into new trades or new sites), all aspects of the programme should be in place prior to the roll-out.
	
	Institutional framework
	
	a) Improve engagement and collaboration between stakeholders involved in programme governance, management and oversight to ensure that the CoS Programme is driven using the top-down approach initially to gain momentum, but with the medium to long term goal of becoming a more bottom up driven approach as the relationships between local employers and college campuses grow. Specifically, this includes improving the CoS Programme-related relationship between and with:
	
	i. The Skills Branch of the DHET (including SETA Coordination and INDLELA);
	
	ii. The SETAs and their employer member base; and
	
	iii. The QCTO.
	
	b) To ensure cooperation, options for formalising these relationships, maybe even through a regulated process, should be investigated to ensure accountability.
	
	c) At an implementation level, work to institutionalise, strengthen and capacitate the SPU PMU and the TVET project managers while reducing dependency on the OTCs. The high reliance on the OTCs, while a driving force in the implementation of the programme, has been somewhat counter-productive for the development of relationships between key stakeholders to the programme where consultants were used as intermediaries between TVET Colleges and employers – such a process does not build direct TVET college-employer relationships.
		Institutional Governance, Coordination and Integration	Recommendation from Theme 2
			
			• Use National Open Learning Systems (NOLS) LS to support on-line learning as a digital skills accelerator or reinforced with specialist expertise
			
			• TVET lecturers need to be trained to be instructional designers to incorporate into their teaching processes.
			
			• A process must be developed for recognising content providers
			
			• Strengthening the Continuing Professional Development of lectures to incorporate inputs from professional associations
			
			• Distinguish roles and responsibilities between National vs. College level interventions.
			
			  • National: CPD, Qualification development, trade test development
			
			  • College level: Lecturer development, workplace partnerships.
			
			• Pilot solutions at college level as proof of concept for implementation at national level.
			
			• Gradual move towards simulated learning e.g., Welding as it reduces the cost of consumables

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Key Priority 3: Establish and support a user friendly artisan training quality assurance system and processes in line with the National Artisan Moderation Body (NAMB) and the Quality Council for Trades and Occupations (QCTO). (This will safeguard the quality standards of artisan training in the country and mainstream artisan training practices). The primary NAMB functions in terms of the Skills Development Amendment Act 2008, section 26A which must be fulfilled are: a) Trade test assessment instruments. (b) Moderation of trade testing. (c) Accreditation of trade test centres and providers. (d) Registration of assessors and moderators. (e) Maintenance of artisan national learner register database. (f) Artisan certification.	d) Ensure that all stakeholders understand what their roles and responsibilities in relation to the CoS Programme are while also expanding on how, by whom, where and when these roles are to be performed. This includes when the programme is part of the stakeholders business as usual activities (such as in the case of SETAs, where assumptions were made that the SETAs would recognise this), and where changes may be needed to accommodate the CoS Programme (in the case of employers). These expanded roles and responsibilities need to develop the existing digital based roles and responsibilities (DHET, 2019a) guideline and align to these to the QCTO's quality assurance system. National Occupational Curriculum Content Given the importance of the NOCC as it satisfies the integrated delivery requirement for accreditation from QCTO in a standardised manner across all TVET Colleges, the NOCC documents should be finalised and in place before the roll-out of new trades introduced into the programme. This could be achieved by the NOCC being a mandated integral component of qualification, curriculum and assessment specification development by the QCTO before registration of any occupational qualification on the National Qualifications Framework (NQF). Care should also be taken to overcome some of the weaknesses identified in the NOCC, such as the sequencing of modules and the sometimes siloed way of covering different topics (as opposed to project-based learning). Trade Testing The success with which these challenges are appropriately addressed is dependent on an improvement in the alignment and the working relationship between the QCTO and INDLELA. Attention should be given to this working relationship to ensure that the existing challenges around the trade tests are resolved timeously and in a coordinated manner	Qualification, Curriculum, Programme and Assessment Content Development	**Recommendation from Theme 3** • Prevocational Learning Programme (PLP) to be expanded and customised to allow for broader range of subjects including Core Skills • All occupational qualications to include a customised work readiness module that includes relevant career path suitability assessment as part of learning. • All TVET Staff should be exposure to workplaces as a perquisite for accreditation. • Workplace approval for occupational qualications must include evidence a formal mentor development programme at the workplace.

Draft National Apprenticeship and Artisan Development Strategy	COS Mid Term Review Recommendations	Sub System	ILO RSA Adult Research Report Recommendations as possible Enhancements to Sub Systems
Key Priority 4: Sustain and apply a ring fenced artisan learner (apprentice) grant and disbursement system and processes across all SETAs. (This will ensure the equitable grant disbursement of all artisans training funded by SETA within the Mandatory and PIVOTAL grant system is equitable and the general processes outlined are followed by all SETAs). The developing concept of Centres of Specialization at TVET colleges must also operate within this artisan funding regime for all workplace learning.	Funding 1. Funding should not be fragmented. Efforts should be made to follow the TVET norms and standards funding model. Voted and SDL funds (NSF and SETAs) should also be coordinated to ensure that funding is secured in a holistic way for the CoS Programme (funding needs to link to a learner from registration to certification for the full three-year period of any apprentice in one single agreement). 2. The true cost to employers must be factored into the budgeting and planning (to understand the true cost of producing an artisan), with this also being clearly communicated to employers from the onset of the programme. This includes wages above the SETA rate, allowances and the cost of time and lost productivity involved with mentorship. Funding AllocationThe role of the coordinating SETA must be clarified to avoid the challenges which have arisen (with lead SETAs only funding the trades allocated to them). In this regard, lessons learnt through the Coordinating SETA-TVET Offices (CSTO) project could prove invaluable. WagesThe DHET and DEL should investigate the use of the exemption clause by employers wishing to participate in CoS which include bargaining councils.	Funding	**Recommendation from Theme 4** • An incentive mechanism be developed to ensure participation by more robustly involved employers in a more comprehensive qualification development and implementation process but that is also more efficient and cost effective. • TVET College Program Mix Opportunity for differentiation based on regional (District) labour market needs • Build Capacity of the TVET College management and councils by developing managements understanding of implementing Occupational Qualifications as well as ensuring the participation of industry in TVET College councils. • DHET Conducive environment created for Public Private Partnerships (PPPs) by analyzing and learning from impact of current policies on potential partnerships – especially where money is involved. • Implement costing analysis of all TVET College offerings across the full spectrum of trades & non-trade occupations • Ensure TVET College funding grid is aligned to local economic development • Implement employer capacity building in creating awareness and sharing information on available basket of incentives for apprenticeship training, provide clarity on COIDA responsibilities • Implement employer Advocacy programmes regarding implementation of apprenticeships

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Key Priority 2: Establish and support a national artisan training system based on the simultaneous delivery of the three learning components (theory, practical and workplace learning) based on a block release system between a TVET college or a Training Centre and Industry. (This will promote the DUAL APPRENTICESHIP system which integrates all knowledge and skills sets in terms of artisan training). Very critical to this DUAL SYSTEM is the role of the employers to offer apprenticeship contracts to prospective apprentices before they become enlisted at a TVET college. To encourage employer contracting ab initio research has shown the cost/benefit equilibrium regarding employer training of artisans in important.	Learning Materials A common set of learning materials for all trades must be finalised and in place before expansion for future cohorts. This suggests that even for cohort 2 and 3 of the 13 current priority artisan trades, efforts should be made to standardise the materials used. This should also follow for expansion into new trades with learning materials in place well before roll-out. Consideration should also be given to delays and challenges in the government procurement system when planning for future trades. Mentorship Employer understanding of mentorship must be improved (mentorship versus supervision). In addition, mentorship training should be prioritised in the implementation of the programme (including the identification of who will deliver and carry the cost of such). Workshops The procurement challenges experienced with regard to the infrastructure, equipment and tools of the CoS must be addressed by the NSF. Guidance should be given to the CFOs of the TVET colleges clarifying the importance of following the specifications set out for each occupational qualification. Facilitator Training Facilitator training should be prioritised (including the identification of who will deliver and carry the cost of such). Facilitator training must be based on occupational qualifications and not academic university qualifications so that facilitators have credibility in the system – occupationally qualified trainers delivering Occupational Qualifications, not lecturers delivering Occupational Qualifications.	Delivery System, Resources and Processes	**Recommendation from Theme 1** • Digital skills needs should be categorised in basic, intermediate and advanced skills • More regular updates, possibly quarterly, from employers and SETAs on skills needs (currently scarce and critical digital skills done every two years) • Us the existing opportunity with the phase out of N1-N3 to introduce occupational programmes with latest technological advances included • Ensure that on-line content is adapted to South African content • Revise assessment development procedures to be more dynamic and include latest technology in the assessments • Short programmes to be considered as a solution to continue upskilling • A specific programme should be implemented to develop theses core skills, possible utilising the ILO Global framework on core skills for life and work in the 21st century

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PILLAR 5 =Priority 5: Promote a strong base of artisan training in state owned entities and other government departments through negotiated artisan training quotas and usage of training facilities (This will ensure that the majority of artisan access training in the public training space).	Employer Recruitment The CoS Programme must clarify who is responsible for the sourcing and mobilisation of employers, particularly when more than one SETA is participating in a CoS. COVID-19 The economic impact of COVID-19 should be factored into future planning for the CoS Programme as many employers have reduced workforce numbers. Some employers may elect to exit or reduce their participation. Additional support should be sought where possible to mitigate this risk. Lead Employer - Host Employer Given the challenges experienced in the recruitment of employers (due to bargaining council wage rates and high administrative burdens), the lead employer-host employer is probably the most suitable solution. However, the following must be considered: 1. The CoS and TVET project manager should have a say in the selection of host employers (i.e. it should not be done in isolation by the lead employers). 2. Host employers should also be required to have workplace approval to ensure that they are able to deliver on the WPBL component of the CoS training. A relationship should also be built between the CoS and the host employers, with host employers participating in CoS structures and contributing to the CoS Programme. CoS should also have a record of all host employers participating in the programme.	Employers and Intermediaries Processes	**Recommendation from Theme 5** • A clear and specific strategy to be developed and implemented to strengthen and expand the role of intermediaries that are also involved in the roll out of skills programmes as a precursor to apprenticeship programmes. • There should be less onerous requirements for workplaces to make it more conducive for SMEs to participate as host employers. While there should be minimum criteria, including the need for a qualified artisan, there should be less burdensome requirements for a SME to qualify as an eligible workplace.

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	Process Efficiencies The lack of streamlined processes (for registration, grant approval and disbursement between SETAs) has created significant confusion and may contribute to a higher administrative burden on employers. This is compounded when a single CoS or employer is engaging with multiple SETAs. The role of the SLMs (and SETA Coordination) in the streamlining of these processes should be investigated. Project Management The TVET CoS project manager and administrator roles must be strengthened. If the intention is for these project managers to take over the roles and responsibilities of the OTCs, the transition needs to be planned and implemented with sufficient time to ensure Programme continuity.		


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