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APPRENTICE TO ARTISAN

TRIALS AND TRIBULATIONS OF APPRENTICES
IN A
DUAL SYSTEM APRENTICESHIP PROGRAMME
IN
SOUTH AFRICA



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15 February 2018

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APPRENTICE TO ARTISAN: TRIALS AND TRIBULATIONS OF APPRENTICES IN A DUAL SYSTEM APPRENTICESHIP PROGRAMME IN SOUTH AFRICAN

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A research report submitted to the Wits School of Education, Faculty of Humanities, University of the Witwatersrand in partial fulfilment of the requirements for the degree of Master of Education by combination of coursework and research Johannesburg, February 2018.

ABSTRACT

Worldwide, various governments have taken significant measures to promote vocational education in an attempt to position it as an equal alternative to academic education. The problem, however, is that in many countries neither young people nor their parents perceive vocational education as having the same value as academic education (Allais, Marock, & Molebatsi, 2014)*. This is in contrast to Continental European countries, such as Germany, Austria and Switzerland where approximately two thirds of youth completing general schooling each year select vocational education over university education.*

South Africa a country in which vocational education is extremely stigmatized, is reforming *its apprenticeship system and has set itself a target of qualifying 24 000 new artisans by 2020 (DHET 2015). Technical Vocational Education and Training (TVET) colleges are viewed as key vehicles through which large numbers of artisans can be trained. However, employers do not have trust in the quality and capacity of public TVET colleges and have taken responsibility for training artisans through their own in-house training facilities and private training providers (National Treasury n.d.). The result is that TVET colleges have been side-lined in the supply chain for artisan development.*

It is against this background that the South African government is piloting a dual system apprenticeship project, which aims to: a) improve the quality of artisan training at public TVET colleges; b) build employer trust in the quality of the public artisan training system; and c) position TVET education as an attractive option for young people.

This research is focused on apprentices training to become electricians through a dual apprenticeship model. The dual system integrates classroom theory with on-the-job instruction thus ensuring that learning is integrated and regularly reinforced.

Through semi-structured interviews and a questionnaire, this study brings the voices of 95 electrical apprentices to bear in order to develop a much deeper, richer and nuanced understanding of how apprentices experience the artisan development system. It seeks to understand what motivates young people to enrol at a TVET college, and what apprentices' experiences, perceptions and expectations are of dual system apprenticeships. The study provides insights into the merits and challenges of dual system apprenticeships within the South African context.

KEYWORDS

Apprentice

Apprenticeship

Colleges

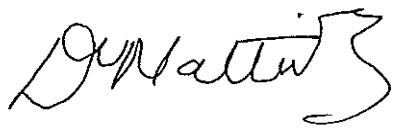
Employers

NC(V)

TVET

DECLARATION

I declare that this research report is my own unaided work. It is being submitted for the degree of Master of Education at the University of the Witwatersrand, Johannesburg. It has not been submitted before for any degree or examination at any other University.



DARRYN VON MALTITZ

15 FEBRUARY 2018

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LIST OF ACRONYMS

ANC	African National Congress
APP	Annual Performance Plan
ASGISA	Accelerated and Shared Growth Initiative
CMEs	Collective Market Economies
CoS	Centres of Specialisation
DHET	Department of Higher Education and Training
DoE	Department of Education
DoL	Department of Labour
DSPP	Dual System Pilot Project
FET	Further Education and Training colleges
GTAC	National Treasury's Government and Technical Advisory Centre
JIPSA	Joint Initiative for Priority Skills Acquisition
NAMB	National Artisan Moderating Body
NATED	National Accredited Technical Education Diploma
NDP	National Development Plan
NPC	National Planning Commission
NC(V)	National Curriculum Vocational
NCV	National Certificate Vocational
NQF	National Qualifications Framework
NEET	Neither in Employment nor Education or Training
OECD	Organisation for Economic Cooperation and Development
QCTO	Quality Council of Trade and Occupations
SA	South Africa
SSACCI	Swiss South African Cooperation Initiative
SETAs	Sector Education and Training Authorities
TVET	Technical Vocational Education and Training
UK	United Kingdom
WestCol	Western College

CHAPTER ONE: INTRODUCTION

BACKGROUND AND CONTEXT

It is a widely held belief in South Africa that the training of artisans in large numbers will contribute towards reducing youth unemployment as these are skills required by employers in large numbers (JIPSA, 2010). Youth unemployment in South Africa is 53,7% compared to Germany's 6,9% ('Trading Economics', 2016). A major drive exists in the country which aims to channel large numbers of youth into apprenticeship programmes (DHET, 2013). This is evidenced by the fact that the DHET has declared the period 2010 – 2020 as the decade of the artisan (DHET, 2014a).

In 2006, the South African government released a policy, the Accelerated Shared Growth Initiative for South Africa (ASGISA), which noted that the shortage of skills in the country was constraining economic growth. In response to this, the SA government established the Joint Initiative for Priority Skills Acquisition (JIPSA), which was located in the Presidency under the leadership of the Deputy President. JIPSA identified the shortages of artisanal and technical skills in the country as an impediment to the delivery of major infrastructure, housing and energy projects. JIPSA had noted the significant decline in the number of people accessing the trade test and recognized that concrete measures would need to be taken to bolster artisan training if the country was to meet the demands of its major infrastructure projects (JIPSA, 2010).

The Department of Higher Education and Training (DHET), created in 2009, took cognizance of JIPSA's reports and set itself a target of qualifying 24 000 new artisans by the year 2020 (DHET, 2015c). This target is linked to the Department's annual performance plan (APP) sub-outcome four which states that the DHET must 'increase access to occupationally directed programmes in needed areas and thereby expand the availability of intermediate level skills, with a special focus on artisan skills' (DHET, 2015a).

Government Gazette number 39077, published in August 2015, notes that there are a number of blockages in the artisan development pipeline. These include: a) a large number of apprentices enter training schemes but fail to pass the trade test; b) the contracting and registration of apprentices takes place after they have completed the theoretical learning at a college; and c) the current mode of artisan training delivery separates out the theoretical, occupational and workplace learning rather than delivering these as integrated components which would better allow for the reinforcement of theoretical learning with on-the-job experience.

TVET colleges have weak linkages with employers (DHET, 2015b) and TVET college graduates experience great difficulties accessing practical experience which prevents them from obtaining the required work experience to access the trade test which provides them with artisan status. The South African government is therefore

experimenting with reintroducing a system of training artisans whereby apprentices rotate regularly between a college and a workplace.

This new system of training artisans will be based on new occupational qualifications. The new qualifications have been developed by the Quality Council of Trade and Occupations (QCTO), which is the quality assurance body for trades and occupations. The two main types of qualifications previously offered in South African TVET colleges, i.e. the new NC(V) and the older NATED programmes will not be applied. The new occupational qualifications differ from both the NC(V) and NATED programmes in that they contain a structured workplace component (QCTO, n.d.).

In August 2016, the DHET began piloting the new electrical qualification through a dual apprenticeship model in four TVET colleges. The lessons learnt from the pilot project will be used to inform the delivery and rollout of 13 additional trades in 26 colleges. This will be done through the DHETs Centers of Specialization project The Centers of Specialization project has two key objectives which are to address the skills demands for the Strategic Infrastructure Projects (SIPs) and to contribute towards building the capacity of TVET colleges to deliver trade qualifications in partnership with employers (DHET, 2016). It is expected that these new occupational qualifications combined with the dual system of delivery will become the preferred approach to artisan development in the future.

PROBLEM STATEMENT

The South African government is of the view that the country is facing a shortage of artisans and has set itself a target of qualifying 24 000 new artisans by 2020 (DHET, 2015c). Training artisans in South Africa is, however, expensive. It is estimated that it currently costs approximately R400 000 to train one artisan. The problem is exacerbated by the fact that currently only 56% of apprentices in training qualify as artisans. It is estimated that between 2009 and 2014 the average cost of those that did not finish their apprenticeship was R4,5 billion per annum (DHET, 2015b). These figures highlight the cost and inefficiency of the artisan training system, which has placed pressure on the Department of Higher Education and Training (DHET) to find more cost effective, and efficient methods of training artisans in large numbers.

Technical Vocational Education and Training (TVET) colleges are viewed as key vehicles through which large numbers of artisans can be produced. TVET education in SA is, however, stigmatized and viewed by learners and their parents as second rate. In general, the majority of youngsters aspire to completing matric and then going on to university (Gewer 2010, cited in Kraak, 2012). This is in spite of the fact that many of them may not be suited or equipped for a university education. Moreover, university places are limited and the labour market has difficulty in absorbing more graduates.

Papier and Needham (2011) explain that in a study conducted by Cosser (2003) students were asked to select the most important reason for choosing a TVET education

and that the top reason cited by students was that they wanted to use it as a route to higher education. Another study undertaken by Cosser (2007) as quoted in Papier and Needham (2011) which examined matric students ambitions and actual destinations found that TVET colleges figured more frequently in students' destinations than they did in students initial ambitions. According to Papier and Needham (2011) after failure to meet university admission requirements the second top reason why students choose TVET is because they cannot afford a university education. These findings clearly show that TVET education in South Africa is not viewed as first choice by students. Students select TVET because their school results do not qualify them for university and secondly because they cannot afford it.

This leads to the question 'What motivates young people to enter apprenticeship programmes and what are their experiences of such programmes? This is an under-researched area in South Africa. Cosser (2003) and Powell (2014) examined the reasons why students choose TVET colleges and Papier and Needham (2011) investigated students perceptions of TVET education but neither of the two studies focused on apprenticeship programmes specifically.

Given the fact that SA intends training artisans in large numbers and that artisan training is expensive, it is important to hear from apprentices currently enrolled on an apprenticeship programme what motivated them to sign up. The study will seek to understand firstly, why the students enrolled at a TVET college and what other options were available to them at the time of enrolling at the college. Secondly, the study will investigate why the students enrolled on an apprenticeship programme specifically. Thirdly, the study will seek to understand what expectations students have of their colleges, employers and the actual qualifications that they will obtain upon successful completion of the programme. The fourth and final question, which will be explored, is how student experienced apprenticeship programmes at the college and employer.

IMPORTANCE AND SIGNIFICANCE OF THE RESEARCH

This research is focused on apprentices training to become electricians through a dual apprenticeship model, where TVET colleges and industry (employers) co-operate in tandem to facilitate training. It aimed to find out why they enrolled on the dual apprenticeship programme. It also sought to find out what their experiences and expectations of the apprenticeship programme have been.

In order to ensure that artisan development is effective and efficient it must be informed by research and take cognizance of the factors that impact on the apprentices' ability to succeed within the allotted time frame and meet industry requirements. As already mentioned, apprenticeship training in South Africa is expensive and inefficient. The South African government will need to drastically reduce wastage in the system and find more cost-effective ways of training artisans.

As a project manager at the Swiss South African Cooperation Initiative (SSACI), I have been involved in two artisan projects. The first was the Dual System Apprenticeship Project (DSAP), which involved training 30 welding apprentices at West Coast Technical Vocational Education and Training (TVET) College in Vredenburg and 24 bus body-building apprentices at Western College (WestCol) in Randfontein. At the West Coast, apprentices were registered for the National Curriculum Vocational (NCV) qualification whereas in Randfontein apprentices were registered for the N2 qualification. At the West Coast, the apprentices rotated between the college and the workplace on a two-weekly rotation whereas in Randfontein the apprentices were based at the employer on a permanent basis. WestCol TVET College sent a lecturer to the employer's premises every Monday and the apprentices spent one day a week doing theory and the remaining four days in the company workshops. I served as the project manager for this project and was responsible for its implementation and oversight.

The second artisan project that I have been involved in is the Dual System Pilot Project (DSPP), which is a project of the Department of Higher Education and Training (DHET). This project aims to train 100 electricians and 100 plumbers at four TVET colleges using the newly developed Quality Council for Trades and Occupations (QCTO) occupational qualifications. As discussed above, neither the NC(V) nor NATED programmes contain a workplace component which results in learners experiencing difficulties in accessing the labour market after graduating. My organization (SSACI) has been appointed as the lead employer in this project and by virtue of being the lead employer also serves on the steering committee currently overseeing this project. SSACI is a public-private partnership in development aimed at strengthening the public skills training system in South Africa and thereby opening up new pathways to skilled employment for young South Africans.

My involvement in the two projects has highlighted the fact that the discourse around artisan development in South Africa is largely silent in terms of the voice of the apprentices. It has also highlighted the many difficulties that TVET colleges experience in their attempts to produce quality artisans that have the skills and attitudes required by employers. Given South Africa's massive youth unemployment problem it is essential that colleges play a key role in producing quality graduates that can be utilized by industry. South Africa's failure to integrate such a high proportion of youth into the formal economy represents a threat to social cohesion given the fact that the majority of the unemployed youth are black (Field, Musset, & Alvarez Galvan, 2014).

The DHET is constantly taking steps to unlock blockages within the artisan development pipeline but little is known about the reasons why students enrol on apprenticeship programmes and what their perceptions, experiences and expectations of apprenticeship programmes are.

This study will seek to bring the voices of apprentices participating in the dual apprenticeship system to bear in order to develop a much deeper, richer and nuanced understanding of how apprentices experience the artisan development system. It will

gain insights into the merits and challenges of dual system apprenticeships within the South African context. It is hoped that this research will contribute to artisan development in the future.

My research questions for this research are:

- What factors motivate young people to enrol at TVET colleges?
- Why factors motivate young people to participate in the Dual System Pilot Project?
- What are apprentices' expectations of the dual system?
- What are apprentices' experiences of the dual system?

This chapter has provided a background and context to artisan development in South Africa. It has explained that vocational education in the country is stigmatized and that young people prefer an academic education. The chapter highlights the fact that the discourse around artisan development in South Africa is largely silent in terms of the voices of the apprentices and it is therefore important that research be undertaken in order to better understand how apprentices experience the artisan development system in South Africa. The report now turns to consider some of the literature pertinent to apprenticeships.

CHAPTER 2: LITERATURE REVIEW

INTRODUCTION

In this chapter, the literature relevant to my investigation is presented. Section one begins by providing a history and overview of the artisan development system in South Africa. It explains that the artisan development system went into serious decline in the mid-1990s which prompted a policy response to train artisans in large numbers. Despite these attempts, the artisan development system in South Africa remains miniscule in comparison to the overall education and training system. In South Africa, an academic education is still the preferred choice of the majority of youngsters.

In section two I examine apprenticeship systems in a wider context. This section examines a body of literature which suggests that there are dominant national patterns of skill formation systems. Hall and Soskice's (2001) notion of 'varieties of capitalism' is an important part of this literature, as well as other authors working in the institutional political economy tradition, such as Busemeyer and Trampusch (2012). It is explained that there are fundamental political and historical differences between countries and these differences play out in the education and training system of a particular country. Countries that have successful vocational and education training systems such as Switzerland, Austria and Germany are, in this literature, termed collective market economies (CMEs). In these countries, the state, intermediary associations, employers and labour unions all cooperate with one another and play an active role in the process of skills formation (Busemeyer & Trampusch, 2012). This is in contrast to Anglo-Saxon countries such as the United Kingdom, which have liberal labour markets and are characterised by limited involvement of firms in the process of skills formation.

Section three draws on a body of work by Clarke and Winch (2006), Brockmann, Clarke and Winch (2011) and Clarke and Winch (2007) to explain that the concepts of 'skill' and 'qualification' are understood differently in different countries. In liberal market economies, there is a distinction between a skill and a qualification. It is possible to have a skill but not a qualification and vice-versa. Employers in these countries are more concerned with whether or not someone has a particular skill to perform a particular job and less concerned with qualifications. By contrast, in Germany there is no distinction between skill and qualification. Someone with a qualification is assumed to have the skills to perform a range of tasks in a particular occupation and the skills can be applied across the occupation rather than being employer specific. In other words, the skills apply across an industrial context and provides the holder of the qualification with a legal status and the right to a certain wage. These differences have implications for artisan development in South Africa where there is a surplus of labour and where employer commitment to an apprenticeship system is low.

In section four, some of the contemporary pressures on apprenticeships are examined. It explains that many governments around the world use apprenticeships as a policy

lever to address different social ills. Apprenticeships are expected to meet the expectations of a number of stakeholders and it is questionable whether a single scheme is able to meet all of these demands. The section explains that the shift from employer led apprenticeships to state sponsored apprenticeships has fractured the pillars of apprenticeships (Fuller & Unwin, 2009).

VOCATIONAL EDUCATION AND TRAINING IN SOUTH AFRICA

The history of the TVET sector in South Africa can be traced back to the 1920s where Technical Colleges were established to support the government's industrial strategy and ensure a constant supply of skilled labour (Pienaar, Venter, Govender, & Jitsing, 2015). Akoojee (2013) explains that apprenticeships were used by the apartheid government to entrench racial inequality and that artisan training became 'synonymous with the privileges of white workers and the power of racially exclusive craft unions' (Akoojee, 2013, p. 117). During the 1960s, South Africa's economy began expanding and when the artisan training system was unable to produce artisans in sufficient numbers, these skills were imported from countries like the United Kingdom. The local unions were particularly interested in ensuring that black people were prevented from obtaining artisan skills.

Under the apartheid training system apprentices were indentured to employers which were largely big employers such as the state-owned enterprises, municipalities and mines. These employers provided surplus artisan training to the South African economy, meaning that these employers trained over and above their own training needs and in so doing provided small and medium enterprises with a pool of trained labour from which it could draw and which it had not invested in (Wedekind, 2013). Employers provided the apprentice with a contract of employment and then sent the apprentice to a technical college for theoretical training.

During the 1970s, the South African economy began contracting and employers began complaining about skills shortages. The response of the apartheid state was to actively promote vocational education for black South Africans. It introduced the Manpower Training Act of 1981 which provided black people with access to apprenticeship opportunities (Wedekind, 2013). By the 1980s, however, the South African economy was in serious decline and employment in the formal sector began contracting (Mbatha, Xolani Ngazimbi and Thembinkosi Twalo, Wildschut, & Mncwango, 2014). As a result the public artisan system also began experiencing a decline which was exacerbated by the increasing commercialization and privatisation of state owned companies which had played a significant role in the training of artisans (Mbatha, et al., 2014). In 1985, 26 000 people applied to do a trade test in an engineering field, but this number had plummeted to 3000 by 1995 (Wedekind, 2015). Contrary to popular opinion it was not the newly elected democratic government of 1994 that initiated the decline in apprenticeships. The system was already in decline by the time that the ANC government came to power.

It is against this background that the ANC government inherited an education and training system which was highly fragmented, unequal and divided along racial lines. A key priority of the new government was to overhaul the education and training system and create a single integrated non-racial system.

After the ANC came to power in 1994, a decision was made to keep education and training under two separate government departments. The Department of Education (DoE) was responsible for education and the Department of Labour (DoL) responsible for, amongst other things, workplace training. The DoL introduced the National Skills Development Strategy in 1997 which provided for the establishment of Sector Education and Training Authorities (SETAs) and announced that the traditional apprenticeship system would be replaced by learnerships (Allais, 2012). Apprenticeship training had traditionally been delivered through a block release system whereby employers signed on apprentices and then sent them to a public college for three months each year to complete theory-based courses known as NATED (National Accredited Technical Education Diploma) programmes. The remaining nine months of the year were spent in the workplace. Colleges thus derived much of their income from the fees paid by employers for apprentices to complete their trade theory. The combination of the trade theory coupled with on the job work place experience provided apprentices with access to a national trade test (the final assessment in order to qualify as an artisan). The new learnership system, instead, would see the development of new qualifications being registered on the National Qualifications Framework comprising of the competencies prescribed by employers and other stakeholders (Allais, 2012).

In response to the DoL's announcement that apprenticeships would be phased out, the DoE began developing new college qualifications and curriculum known as the National Certificate Vocational (NCV) (Allais, 2012). These qualifications would be delivered by the new Further Education and Training (FET) colleges that had been created through an amalgamation of technical colleges. Unfortunately, these new colleges were burdened by significant changes within the system which included the merging of colleges, changes in governance structures and major shifts in learner populations (Akoojee 2008, cited in Wedekind, 2015). The result was that the colleges were unable to deliver quality programmes on the scale required.

In terms of artisan development, it was envisaged that the new NC(V) qualifications would be much broader and substantial in scope than the old apprenticeship qualifications (Allais, 2012). The NC(V) would provide learners with theoretical learning and some practical college workshop experience but no on-the-job training. According to the OECD (2014) weak work-based learning is a key obstacle in enabling students to make a smooth transition from college into the labour market. Upon graduating, it was expected that graduates would apply for jobs with employers who would then provide the relevant work place experience. Unfortunately, employers, not being familiar with the new system, have not embraced it, preferring instead the old apprenticeship system, which saw apprentices rotating between a college and a workplace. According to the

National Treasury's Government and Technical Advisory Centre (National Treasury, n.d.):

> A key challenge to resolve is employers' lack of faith in the quality and capacity of public TVET colleges to deliver artisan programmes. This has meant that many employers have developed their own in-house training capacity or have contracted private training providers to provide most practical training and considerable top-up theoretical training. The outcome has been that TVET colleges have been largely side-lined in the supply chain for artisan development. Improving the quality of public TVET colleges, artisan training would make employers more willing to use them and, in the process, lower the average costs of producing artisans.

It is beyond the scope of this research report to discuss South Africa's schooling system but it is important to point out that a parallel vocational stream was created which ran alongside the academic stream. This meant that young people could choose to leave compulsory academic schooling at the end of Grade 9 and pursue a National Curriculum Vocational (NCV) qualification, which would provide them with the equivalent of a matric certificate upon completion. The reality, however, is that young people are choosing to remain in school, complete their matric and then enrol at a TVET college. Research undertaken by Gewer (2016) found that in 2009, 53% of students enrolled at a TVET college had a matric certificate. The implication of this is that there is weak articulation between the schooling system and the college sector. Both the matric and the NC(V) 4 qualification are registered at level four on South Africa's national qualification framework (NQF). This means that young people finish school with a level four qualification, and enroll at a TVET college where they study for three years and by the time they finish they do not have a qualification higher than their original school-leaving certificate.

The college sector, however, has been at the center of policy uncertainty since 1994 (Allais, 2013b) and had been subjected to a number of changes giving rise to institutional instability. TVET Colleges also have very low throughput levels which is compounded by the fact that colleges have difficulty in recruiting qualified lecturers with industry experience (Wedekind and Watson 2012, cited in Wedekind, 2015). Furthermore, there is a lack of understanding on behalf of industry of the new curriculum offerings of colleges particularly the NC(V) and colleges have weak linkages with industry which results in a reluctance on behalf of some industries to recruit from the college sector. The final consequence is that students opt for a vocational college education as a last resort (Wedekind, 2015).

The fact that TVET is not the first option for most young people is evidenced by the fact that in South Africa an inverse pyramid exists in that more people access the university sector than the TVET sector. However, the ratio between university and TVET student numbers has changed significantly in recent years. This is illustrated in Table 1 below, which shows that despite a significant increase in the number of people enrolling in TVET colleges, more people still prefer an academic education:

Year	Public universities	Public TVET colleges	TVET as a % of university
2010	892 936	358 393	40%
2011	938 201	400 273	43%
2012	953 373	657 690	69%
2013	983 698	639 618	55%
2014	969 155	702 383	72%

Table 1: Numbers accessing universities and public TVET colleges between 2010 and 2014 Reddy et al (2016). TVET as a % of university, own calculations based on Reddy (2016).

Between 2010 and 2014 the number of people enrolling in TVET colleges increased from 358 393 to 702 383 which represents a 96% increase in enrollments. In comparison 892 936 people enrolled at universities in 2010 and this increased to 969 155 in 2014 which represents an 8, 5% increase over the period. Between 2010 and 2014 the percentage of TVET to university enrolments increased from 40% to 72% (My own calculations based on Reddy (2016).

The increase in TVET enrollments is a reflection of government's investment in education and training at intermediate and technical levels (Reddy et al., 2016).

In terms of apprenticeships, participation rates are a small percentage of the overall education and training system. Table 2 below illustrates this point.

Year	Number of artisans registered
2007-2008	6030
2008 – 2009	8935
2009 - 2010	8238
2010 – 2011	11778
2011 – 2012	14023
2012 -2013	15277
2013 – 2014	18110
2015 – 2016	14389
2016 - 2017	16114

Table 2: Number of artisans registered between 2007 and 2017[1]

Whilst the number of people participating in apprenticeship programmes has increased from 6030 in 2007/2008 to 16 114 in 2016/2017, which is a staggering 167% increase, the participation rates are insignificant when compared to the university and TVET enrollments. This suggests that apprenticeship programmes are not popular amongst youth and perceived to be of low status (Kruss, Wildschut, Janse van Rensburg, Visser, & Roodt, 2014). However, it could also be due to the fact that South African employers are not taking on apprentices on a significant scale which raises questions about perceived skills shortages. If employers really are facing a shortage of intermediate technical skills, then surely they would be employing apprentices in large numbers? This

[1] . Personal communication with Jabu Ntshingila, Deputy Director: Information analysis and management at the National Artisan Moderating Body (NAMB) on 27 October 2017

has implications for government policy as simply ensuring a supply of apprentices into the economy will not stimulate a demand by employers for apprentices. Instead, the South African government will need to consider ways of stimulating a demand for apprentices by employers.

This section of the literature review has provided an overview of the history of TVET in South Africa. It has explained that South Africa began experiencing a serious decline in artisan training during the mid-1990s and that an academic education is still the preferred choice amongst the majority of the South African youth. It has shown that South Africa's college system faces a number of challenges. Firstly, there is weak articulation between the schooling system and the college sector. Many young people finish school and then enrol for an NC(V) qualification at a TVET college which does not provide them with a qualification higher than the matric certificate. Secondly, there is a lack of buy-in and support from industry. Industry is not familiar with the new NC(V) and are therefore reluctant to recruit TVET graduates. Finally, the NC(V) does not provide for any work experience which presents graduates with difficulties in accessing the labour market after graduating.

The chapter now turns to explain two major types of skill formation systems, linked to two major differences in the organisation of capitalist economies.

NATIONAL DIFFERENCES IN SKILLS FORMATION SYSTEMS IN WEALTHY COUNTRIES

This section explains that a country's approach to skill formation varies according to their respective culture and political economy (Brockmann et al., 2011). It explores some of the factors that have contributed to successful vocational education in countries such as Germany, Switzerland and Austria. It explains that dual apprenticeships as practiced in the collective market economies are very popular and viewed as contributing to low youth unemployment rates. It is explained that in Anglo-Saxon countries such as England, and therefore in its former colonies such as South Africa, vocational education does not have the same value as an academic education. Finally, it explains Hall and Soskice's (2001) distinction between liberal market economies (LMEs) and coordinated market economies (CMEs). In LMEs the relationship between employers and other stakeholders are primarily coordinated through competitive markets. By contrast in coordinated market economies (CMEs) the relationship between employers and other actors is more strategic (Hall & Soskice, 2001).

According to Busemeyer and Trampusch (2012), coordinated market economies are characterised by high levels of youth employment and high quality occupational skills which contribute to bolstering the competitiveness of the economy. In coordinated market economies, there is a strong emphasis on vocational education, which is regarded as an attractive and viable alternative to academic education. Furthermore, much of the training takes place in the workplace, which is supplemented by theoretical classroom theory provided by the school. This is what is known as 'dual' training or

apprenticeship schemes and the apprentices are regarded as company employees rather than college students (Busemeyer & Trampusch, 2012).

In coordinated market economies, there is a high degree of coordination and cooperation between the state and business in providing, administrating and funding vocational education. Intermediary associations such as employer associations and trade unions play a key role in the administration and reform of training systems. There is a very specific division of labour between the state and the associations and the state does not interfere very much in the day-to-day organisation of training. This is left to bodies such as chambers of commerce and industry which monitor the implementation of training and also ensure that curricula are regularly updated so as to stay abreast with changing skills demands. The key point here is that the institutions that are responsible for these activities are stakeholder bodies and are able to fulfil their mandate much more effectively than bureaucratic state-run bodies. Another characteristic of this system is that it allows for portable, certified occupational skills that are standardised and fully recognized on national labour markets. Firms are limited in the extent to which they are able to influence the content of workplace-based training because of the need to comply with national occupational standards. Unions support this system because the skills that workers gain are broad and portable which means that they are not firm specific and may be transferred to other sectors of the economy (Busemeyer & Trampusch, 2012). Finally, despite the fact that apprentices are free to leave once their initial training is complete, there is low labour turnover in the collective skill formation countries (Thelan, 2004).

By contrast, liberal market economies rely much more on the state to provide general education and this is then topped up by in-company training schemes once people enter the job market. Additionally, as Keep and James (2012) point out, employers in the United Kingdom do not attach as much value to certification as employers in coordinated market economies do. Employers in liberal market economies have an interest in maintaining a flexible and largely unregulated workforce, as they believe that this is their competitive advantage. In liberal market economies such as the United Kingdom production strategies are targeted at the mass market where the labour process is heavily fragmented with high levels of managerial supervision. Busemeyer and Trampusch (2012) explain that liberal market economies are characterised by limited involvement of firms and the state.

Another difference between Germany and the UK is the distinction that Finegold and Soskice (1999) make between high skilled and low skilled economies. They argue that the United Kingdom (UK) was caught in a low skills equilibrium for the following reasons: a) The UK economy is characterised by low skilled industries with low skills jobs; b) the UK education and training system produces relatively unskilled workers because UK employers only require these types of workers; c) UK employers do not have an incentive to enter into higher value-added markets as skilled labour is not available; and d) workers in the UK do not undertake extensive training as there are only a few skilled jobs and thus there is no pay-off for training.

Germany on the other hand, is characterised as a high-skilled economy that is able to compete internationally in a small niche market that produces high quality goods at a high price. In the high skilled model, employers provide high wages to employees that have high skill levels (Clarke & Winch, 2006).

Keep and James (2012), cited in Kraak (2016) are in agreement with Finegold and Soskice (1988) that there is a low demand from employers for higher level skills in the UK and argue that the UK government has misdiagnosed the underlying problems that the country faces. Keep and James (2012) argue that the UK government has focused on the supply of skills in the belief that this will lead to increased productivity and higher economic growth. Instead, the UK government should be focusing on stimulating a demand from employers for high skills.

While this literature focuses on wealthy, developed countries, it is important because it shows how skill formation systems are rooted in a range of other aspects of an economy. South Africa, in the main as a former British colony, can be seen to follow the patterns of the English system (Allais, 2013a).

In many collective skill formation systems, dual apprenticeship systems are crucial, and I therefore explain more on this specific aspect below.

Dual system apprenticeships

The dual apprenticeship training system, characteristic of collective skill formation countries, is popular for a number of reasons. Firstly, these countries have very low youth unemployment rates. For example, the youth unemployment rate is 7% in Germany and 8,6% in Switzerland (OECD, 2016). This is in contrast to the unemployment rate in South Africa which is 53,3% (OECD, 2016). Secondly countries such as Germany and Switzerland have a large number of highly skilled workers (Barabasch, Huang, & Lawson, 2009) and are advanced industrial economies. Thirdly, these countries are held up as high skills exemplars (Green and Sakamoto, 2001; Lloyd and Payne, 2005 cited in Lewis 2007), which occupy the high ground in terms of global competitiveness. The dual system contributes to a well-trained workforce and ensures that young people are able to make a smooth transition from school into the labour market. Furthermore, it enables these countries to fill niches in industrial production which other countries are unable to compete with.

The dual system integrates classroom theory with on-the-job instruction thus ensuring that learning is integrated and regularly reinforced. Raggart (1988) cited in Lewis (2007) argues that the term ‘dual system’ has four of the following aspects: a) training takes place at two venues – industry and vocational schools; b) the state and industry share financial responsibility for training; c) there are split legal responsibilities between state and industry; and d) participants assume dual identities as both trainees and students. Gessler and Howe (2013), however, argue that it is not the existence of two places of learning, nor the successful combination of theory and practice that

distinguish a dual system. Instead, it is the integration of two steering mechanisms – the private legal sphere of enterprise combined with the public-legal sphere of the state.

Internationally there has been much interest in dual apprenticeship systems and many attempts have been made to replicate the system across the world (Wilson, 2000). Brockman et al (2011), explain that these attempts have, however, not always been successful, which has raised questions about policy borrowing. This is because education and training systems exist in strong dependent relations and attempts to migrate policies across nation states often results in these policies falling short of policymakers' expectations.

The paper now turns to discuss the fact that in collective market economies vocational education is highly respected whereas in liberal market economies young people prefer an academic education.

Parity of esteem

Worldwide, various governments have taken significant measures to promote vocational education in an attempt to position it as an equal alternative to academic education. The problem, however, is that in many countries, particularly liberal market economies such as Australia, the United Kingdom, and the United States, as well as former British colonies such as South Africa, neither young people nor their parents perceive vocational education to have the same value as academic education (Allais et al., 2014).

Wolf (2002) provides an analysis of vocational education and training in Britain and explains that despite British policy makers advocating the need for much more vocational education that has the same status as academic education, young people and their parents continue to favour academic education. Wolf (2002) attributes this to the following: young people know or perceive these qualifications to be narrow in focus, low prestige, career limiting and ultimately leads to badly paid work. Furthermore, the world of work is changing rapidly and employers require employees that could adapt easily to new job requirements. A broad academic background is perceived by young people and their parents as being far more desirable and valuable than a narrow vocational education that trained young people for specific jobs with limited career growth opportunities or even into occupations that may not exist in the future. In essence, an academic education is viewed as a much safer option and of substantially higher prestige. Thus whilst vocational education on the face of it seems like an excellent idea to get young people skilled up, provide them with the 'competencies' determined by industry and at the same time contribute to getting the British economy moving again, the reality is that the academic route remains the preferred choice of young people in liberal market economies. Wolf sums up her argument by asking which parent in reality would encourage their child to pursue a narrow vocational education if they had the choice between a vocational or academic education (Wolf, 2002).

Keep and James (2012) argue that the vocational qualifications offered in England tend to be very narrow in conception and do not provide an adequate platform for initial education and training. The narrow vocational qualifications, coupled with an inadequate level of general education and training within vocational education and training programmes, make it very difficult for people with an initial vocational education to return to academic studies. They and Wolf suggest that the type of vocational education provided in liberal market economies such as England is not of the same high standard as that provided in the coordinated market economies.

Atkins and Flint (2015) draw attention to the fact British governments from as early as 1868 have been trying to address issues of perceived poor quality of vocational education and its lack of parity of esteem with the academic curriculum, but have been unsuccessful in changing this perception. This is because the British government has focused on overhauling the TVET system itself rather than focusing on structural societal issues, which embed structural, class-based inequalities into the education system. Keep and James (2012) acknowledge that vocational education in England is perceived as being of poor quality and low value as well as being specifically for working class, low attaining young people.

This is in contrast to the collective skill formation countries such as Germany and Switzerland: in both approximately two thirds of youth completing junior secondary schooling each year enter into the dual apprenticeship system (SERI, 2016). The fact that such a significant portion of students select vocational education over academic secondary education and university education is an indication that vocational education is highly respected. Furthermore, in Germany an initial vocational education does not preclude access to university education later on (Lewis, 2007). The articulation between the two streams is strong, with young people able to move easily from one stream to the other. Mazenod (2016) argues that in order to make apprenticeships more appealing to young people, the British government needs to address issues relating to the vocational/academic divide.

In summary, an academic education is the preferred choice of young people in liberal market economies and vocational education is perceived as being of poor quality, low value as well as being specifically for working class, low attaining young people. In coordinated market economies on the other hand, a vocational education is highly regarded and is the preferred choice of the majority of youngsters.

Summary of section

In summary, this section of the paper has shown that skills formation is embedded in the political economy of nations. Some economies are characterised by lower wages, weak vocational education and training systems, a preference for academic education, weak cooperation between the state, employers and unions regarding the provision and administration of training and fewer requirements for certification. This type of pattern is associated with economies which are more liberalised among the wealthy

industrialised countries, but also is seen in developing countries in Africa which were British colonies. Other economies have strong and robust employer associations that play an active role in vocational education provision and administration, less adversarial industrial relations, higher wages and strong vocational and education and training systems; this pattern is associated with what some literature characterizes as Coordinated Market Economies.

SKILLS AND QUALIFICATIONS

This section draws on the work Clarke and Winch (2006), Brockmann, Clarke and Winch (2011) and Clarke and Winch (2007) to explain that there are a number of difficulties in trying to compare vocational qualifications across countries. Specifically, they examine how labour is formed and valued differently. Between Germany and England, for example, they suggest four factors that lead to differences: Firstly, the term 'skill' is conceptualized and understood differently in the two countries. Secondly, qualifications play different social and political roles in Germany and England. Thirdly, the two countries have different labour processes and industrial structures. Finally, there are differences in the institutional arrangements that govern vocational education and training in England and Germany.

Clarke and Winch (2006) explain that in order to compare skills across societies it is necessary to have a common understanding of what is meant by the term 'skill'. This is where the difficulty arises as the term skill is understood differently and becomes subjected to conceptual inflation with different authors interpreting the term differently. In Anglo-Saxon countries, it is possible for someone to possess a qualification but the qualification provides no guarantee that the person possesses a particular level of skill. By contrast, someone may possess a particular skill but not have a qualification certifying the skill. This results in a situation where individual employers may recognize a particular skill but the skilled person may not be able to perform a wider range of tasks in a particular occupational sector. Furthermore, because skills and qualifications are viewed differently, it does not provide for the entitlement to a particular wage.

The main characteristics of skills in Anglo-Saxon countries are: a) they are regarded as an individual attribute; b) they are narrowly defined and associated with tasks or jobs rather than occupations within an industrial context; c) associated with physical/manual mastery; and d) have no particular association with a knowledge base (Clarke & Winch, 2006, p. 261).

In Germany, by contrast, there is no distinction between skill on the one hand and qualification on the other hand. A person with a qualification in Germany is assumed to have the ability to perform a range of activities and this brings with it particular social and legal entitlements that are recognized by all employers rather than only by an individual employer. Thus, the skilled worker in Germany is recognized as having the necessary knowledge to be employed in a particular industrial sector and not only in a

particular job. Streek (1996), cited in Clarke and Winch (2006) explains that the concept of occupation (or *Beruf*) comprises of *wissen* which is a body of systematically related theoretical knowledge, as well as *konnen* which are a set of practical skills. Thus *wissen* and *konnen* refer jointly to applied theoretical knowledge that is specific to a *beruf* (Clarke & Winch, 2006). The qualified worker in Germany typically has a much broader range of knowledge and responsibility than their British counterparts and are able to apply theoretical knowledge when performing practical tasks. Furthermore in Germany both theory and practice are systematically taught and assessed (Clarke & Winch, 2006; Hanf, 2011).

This section of the paper has shown that there are significant differences in the way that skills and qualifications are understood and interpreted across different contexts, providing an example of differences between Anglo Saxon countries and Germany.

The paper now turns to examine some of the contemporary pressures which apprenticeships face.

APPRENTICESHIPS

The term 'apprenticeship' has global currency in that it is widely accepted in most parts of the world as a particular model of learning through which people are trained. According to Chankseliani et al (2017, p. 90) an

> apprenticeship is a model of learning for an agreed duration that formally combines work-based training (periods of practical work experience at a workplace) with institution based education (periods of theoretical/practical education followed in a school, college, or training center) and that is regulated by a contract/agreement between apprentice and their employer, provides remuneration for the apprentice, and leads to a nationally recognized qualification/certificate upon successful completion.

However, where once apprenticeships were used to train a new generation of skilled workers (Fuller & Unwin, 2011), apprenticeships are now used by a number of governments around the world as a policy lever to address a wide range of social ills including youth unemployment, skills mismatches, skills shortages, economic problems and social exclusion (Chankseliani et al., 2017). As a result, debates about apprenticeships have become somewhat obscure and confusing. For example, Brockmann and Laurie (2016) explain that the British government has used apprenticeships as a policy instrument to simultaneously address youth unemployment as well as produce the high-level skills which Britain perceives itself to be lacking in order to be globally competitive. Furthermore, as pointed out by Fuller and Unwin (2011), apprenticeships are expected to meet the needs and expectations of multiple stakeholders including government, employers, trade unions and individuals. Brockmann et al (2010) question whether a single scheme is able to fulfil all of these roles. Chankseliani et al (2017) make the point that apprenticeships are attractive to politicians because both fellow politicians and voters identify with them but the

problem is that apprenticeships are often viewed as 'the answer' to what is often weakly specified policy problems. In essence 'a policy discourse has developed wherein apprenticeships have acquired the characteristics of 'magic dust' which can be sprinkled on almost any vocational education and training problem (Chankseliani et al., 2017, p. 73).

Chankseliani et al (2017) explain that in Britain the government emphasises the fact that apprenticeships should be employer-led but yet it has unilaterally set a target of increasing apprenticeship numbers without any prior consultation with employers. The result is that employers have no buy-in or ownership of the target and are forced to pay to achieve it through various taxes and levies. This is not an ideal starting point for obtaining employer buy-in to the attainment of the targets. It has also been argued by Chankseliani, Keep, and Wilde (2017) that whilst governments set targets for a take up in apprenticeships and have put in place incentives to train apprentices, employers have not rushed forward to avail themselves to train apprentices. Instead, coercion tactics have been used to force employers to train.

Fuller and Unwin (2009) argue that the shift in the UK from employer-led apprenticeships to state sponsored apprenticeships has fractured the pillars of apprenticeships in the following three ways. Firstly, it has separated the recruitment of young people from the long-term business needs of employers. Secondly, it divests employers from the responsibility of training. Thirdly, it has watered down the concept of an apprenticeship to mean little more than work experience. According to Fuller and Unwin (2009), the UK state's role in using apprenticeships as a model to promote the economic and social goals of the state has contributed towards apprenticeships that are restrictive rather than expansive. As shown in the first section, these problems are even more pronounced in SA.

Fuller and Unwin (2003) conceptualized a continuum for analysing workplace learning. On the one end there is expansive learning and on the other end restrictive learning. Characteristics of the expansive learning environment include: a) apprentices participate in multiple communities of practice both inside and outside the workplace; b) the primary community of practice has a shared participatory memory which could have been gained through a long history of providing apprenticeships; c) apprentices rotate regularly between different departments and in so doing develop broad experience; and d) the apprenticeship programme is structured in a way that enables apprentices to gradually transition to rounded and full participation.

Fuller and Unwin (2003) explain that the way in which skills are distributed in a company will shape the journey of the apprentice from novice to expert. If there is a wide distribution of technical and intermediate skills in a company then there is more likelihood of the apprentice being rotated between different departments and developing broad expertise. Where skills are unevenly distributed, there is less opportunity for the apprentices to develop into highly skilled experts with broad based expertise. Subsequently, it is less likely that apprentices will develop a solid post-school

foundation of learning experiences on which further learning can be built. In a restrictive learning environment on the other hand, it is possible for an apprentice to transition very quickly from novice to expert but the danger is that an individual becomes a narrow expert and is not provided with the opportunity to encounter new learning opportunities and in so doing develop breadth and depth.

From the above it has been shown that apprenticeships are a particular model of learning that have been used by governments to promote sometimes competing economic and social goals. The discussion has explained that state sponsored apprenticeships have fractured the pillars of the apprenticeship system, which in turn has contributed towards young people having a restrictive rather than expansive apprenticeship experience.

SUMMARY

This chapter has explained that South Africa's vocational education and training system is weak, small, and not the destination of choice for learners. There is a lack of buy-in and support from employers, weak articulation between the schooling system and the college sector and the college programmes on offer do not contain a mandatory work component. This makes it difficult for young people to access the labour market.

This chapter then explained that the history of vocational training is shaped by the political history of a nation, and examined some of the factors that have contributed to successful vocational education in what are characterized in some literature as collective skills formation systems.

The chapter also explained that skills and qualifications are conceptualized differently in different countries. In liberal market economies there is a distinction between the terms where it is possible for someone to have a skill but not a qualification or alternatively a qualification and not a skill. This tends to be the case in South Africa.

The chapter has discussed the fact that apprenticeships are a particular model of learning that has been used by governments to promote sometimes competing economic and social goals. It has explained that in England apprenticeships have become increasingly supply led by the state rather than demand-led by employers. The result is that the pillars on which apprenticeships are based have become fractured.

What can be concluded from this overview of relevant literature is that South Africa's vocational training differs significantly from the dual apprenticeship model practiced in the collective skills formation countries. As South Africa moves towards the reintroduction of a dual training system it will need to be cognizant of these differences. While there is much interest in the dual apprenticeship system internationally, and several attempts to duplicate the system in other parts of the word, these attempts have not always been successful.

The next chapter presents the methodology employed to conduct the research.

CHAPTER 3: METHODOLOGY

INTRODUCTION

This chapter focuses on the methodology I used for this study. I describe the research approach, rationale for the selection of the pilot sites, the target group, the place where this study took place, the process of data collection and analysis as well as the ethical concerns addressed.

RESEARCH APPROACH

This empirical exploratory research follows a mixed methods approach, as it is both quantitative and qualitative in nature. I decided to follow a mixed methods approach as it has the advantage of gaining deeper insights and understanding that may be missed when only a single method is used (Johnson & Onwuegbuzie, 2004). It also enables the researcher to cross validate the information gathered and in so doing highlight discrepancies in information obtained. Johnson and Onwuegbuzie (2004) explain that developing an understanding of the strengths and weaknesses of the two research approaches and effectively combining them is likely to result in a product that is superior to single method studies.

The research is therefore positioned within both the positivist and interpretative research paradigms. Positivists believe that social science research should be objective and that what counts as truth is based on measurement that is verifiable. The positivist researcher mainly adopts quantitative research methods which enables them to test a hypothesis and to generalize from large sample sizes to the wider population. The ontological assumption underpinning positivist research is that there is one reality which is knowable within probability (Wagner, Kawulich, & Garner, 2012). According to the positivists, 'educational researchers should eliminate their biases, remain emotionally detached and uninvolved with the objects of study, and test or empirically justify their stated hypotheses' (Johnson & Onwuegbuzie, 2004, p. 14).

Interpretative researchers on the other hand believe that there are multiple socially constructed realities and that truth is context dependent. Interpretivists hold the view that values are an integral part of social life and that no group's values are wrong, but only different (Wagner et al., 2012). The interpretivists mainly use qualitative research methodologies to gather their data and argue that generalizations which are time and context free are neither possible nor desirable (Johnson & Onwuegbuzie, 2004). The focus of the interpretative researcher is on gaining a deep understanding of the phenomenon being studied and generating 'detailed, rich and thick (empathic) description' (Johnson & Onwuegbuzie, 2004, p. 14) of what is being studied.

As discussed in more detail below, I decided to survey the apprentices as well as conduct focused in-depth interviews with them. The questionnaire consisted of 7 questions with a Likert scale, and the interviews were semi-structured, with 12 participants purposively selected.

SAMPLING

Population/Target group

The target group for this study was 100 electrical apprentices at four different TVET colleges that are currently learning to become electricians through a dual apprenticeship model. This group was selected for a number of reasons. Firstly, it is a pilot project of the DHET which is being implemented with technical support from the German government. As such, the project is being closely monitored and there are governance structures in place to oversee the implementation of the project. Secondly, it is the only government project in South Africa that is using the new electrical occupational qualification to train electricians by means of a dual apprenticeship model. I therefore deemed it to be an important project that has the support of both the South African and German governments and which is likely to inform future artisan development policy in South Africa.

The South African government selected four TVET colleges to pilot the dual system project and each of the four colleges enrolled 25 apprentices. There are, therefore, 100 electrical apprentices currently enrolled on the programme. Each apprentice has been assigned to a host employer who is responsible for providing the apprentices with the required on-the-job exposure to the electrical trade. In other words, my population set was 100% of the group of apprentices on a specific learning programme, and my sample was 100% of the population.

The table below provides an overview of the research design and sample sizes in each of the four colleges.

COLLEGE 1	**COLLEGE 2**	**COLLEGE 3**	**COLLEGE 4**
24 questionnaires administered. 24 returned 3 x semi-structured interviews	25 questionnaires administered 24 returned 3 x semi-structured interviews	24 questionnaires administered. 23 returned. 3 x semi-structured interviews	25 questionnaires administered. 24 returned. 3 x semi-structured interviews

Table 3: Research design and sample size in the TVET colleges

The college sites

The colleges selected for my study were purposefully selected: they were the only four colleges in the country selected by the DHET to pilot the new occupational electrical qualification using a dual system approach. Apprentices participating in the pilot project will spend 70% of their time at an employer and 30% of the time at a college over a three-year period.

I sent a letter to each of the college principals (Appendix 1) and formally obtained permission to conduct the research from each college principal (Appendix 2). In order

to protect the privacy of the four colleges I made the decision not to provide any contextual information about them. The reason for this is that the names of the four colleges participating in the project are in the public domain and to provide contextual information about the four colleges would reveal their identities.

The research participants

In this section, I set out how participants were selected to participate in my study. It is important to point out that the qualitative and quantitative research was conducted simultaneously. I did not administer a questionnaire, analyse the findings and then surface particular issues which required more investigation. I administered the questionnaires and then immediately thereafter conducted the semi-structured interviews. I used the qualitative data to assist me back-up and confirm the quantitative data.

Participants selected to participate in the quantitative section of my study

After obtaining permission from each college principal to conduct my research, I visited each of the four colleges during the course of February and March 2017. I explained to the apprentices that I was conducting research and asked the apprentices if they would be prepared to complete a questionnaire. I gave each apprentice a letter explaining my research aims (Appendix 3) and emphasised that they were in no way obligated to participate in the research. Each apprentice signed a consent form (Appendix 4) and returned it to me.

In the questionnaire the options are presented as a Likert scale. Likert scales are a set of statement used in a questionnaire to determine participants preference to a set of statements (Joshi, Kale, Chandel, & Pal, 2015). Likert scales are a non-comparative scaling technique and only measure a single trait (Balasubramanian, 2012). Likert scales typically have a five-point scale. I however decided to use a four-point scale instead and did not include an option to 'neither disagree nor agree' in order to force a choice. Likert scales are easy to construct and participants find that they are easy to read and complete. The weaknesses of Likert scales, however, is that there is a danger of central tendency bias and multi-dimensional concepts are not accounted for (Balasubramanian, 2012).

I administered the questionnaire myself, which ensured that I had a large completion rate. The full questionnaire can be seen in Appendix 5. I read each question to the apprentices and asked that they then select an option. I explained to the apprentices that they should ask for clarity if they did not understand a particular question.

The questionnaire was administered to 98 of the 99 apprentices participating in the project. One apprentice from College 3 had been removed from the programme for being absent from work without leave and one apprentice was off sick on the day that the questionnaire was administered. Of the 98 questionnaires administered 95 were returned. One apprentice from College 3 and two apprentices from College 4 did not

complete the questionnaire. Ultimately, I obtained a 96% response rate to the questionnaire.

The questionnaire was divided into five sections as follows:

a) General demographic information
b) Reasons for studying to become an electrician at a TVET college
c) Reasons for participating on the Dual System Pilot Project
d) Expectations of the Dual System Pilot Project
e) Experiences of the Dual System Pilot Project

Participants selected to participate in the qualitative section of my study

Non-probability purposive sampling was used to select interview participants. I aimed to source three apprentices from each college who were in possession of an NC(V) certificate and who were contracted to different employers. This was because I was interested in finding out why these apprentices were signing up for a second electrical qualification that is at the same level as the NC(V). Secondly, I wanted to obtain insights from apprentices that were at different companies. I also wanted to interview an equal number of males and females so as to be able to obtain a view from both genders of their experience of apprentice programmes. Appendix 6 provides a profile of the apprentices that were interviewed at each college as well as information about the host employers that are providing the on-the-job experience to the apprentices.

Immediately after I had administered the questionnaires, I asked the apprentices to discuss amongst themselves who they believed should be interviewed based on my criteria and the apprentices volunteered themselves on this basis. Once they had volunteered themselves I re-emphasised that I was conducting research in my personal capacity and that they were under no obligation to participate. I provided each apprentice with a letter (Appendix 7) explaining what the research was about and why I would like them to participate. I then read the letter to the apprentices and emphasized that they should not feel obliged to participate in the interviews and that they could withdraw from the process at any time. Apprentices signed the letter of consent (Appendix 8).

At the time, apprentices had only been participating in the project for 6 months and had completed one college block, which ran from 15 August until 28 October 2016 (12 weeks), and one company block, which ran from 31 October 2016 until 10 February 2017 (14 weeks). The apprentices were currently completing their second college block.

Whilst it was my intention to interview apprentices that were working at different host companies this was not possible at College 3 as only 4 of the 23 apprentices on the programme had an NC(V) certificate. All of the other apprentices were in possession of NATED certificates. One of the four apprentices in possession of an NC(V) certificate did not wish to be interviewed and as a result it was necessary for me to interview two apprentices that worked at the same company.

The interviews were semi-structured interview to provide for a consistent set of questions but also allowed flexibility in that I was able to digress, clarify and probe based on comments made during the interview (Kladermans & Staggenborg, 2002).

The interview questions were conducted under the following seven broad themes:

a) Reasons for studying to become an electrician at a TVET college
b) Experiences of job seeking upon completion of the NC(V)
c) Experiences of the NC(V) vs the DSPP
d) Employment and entrepreneurial opportunities
e) Quality of the training received at the college
f) Quality of the training received in the company
g) Expectations of the labour market in terms of availability of jobs upon completion of the DSPP

The interview questions are contained in Appendix 9.

DATA ANALYSIS

In this section, I outline how both the quantitative and qualitative data was analysed.

Quantitative data analysis

I numbered each questionnaire from one to ninety-five. I then developed an excel spreadsheet with the number of each apprentice running down the first column of the spreadsheet and the question number running across the first row of the spreadsheet. Thus, the numbers assigned are categorical or discrete variables because the numbers are substitutes for category labels. Categorical variables can be measured at either the nominal or ordinal level (Mouton, 2009).

The next step was to capture the information for each apprentice. I assigned a number to each response. For example, if someone was a male, I assigned the number one to them and if they were female they were assigned the number two. If they strongly disagreed with a question then it was assigned the number one, if they tended to disagree it was assigned the number two, if they tended to agree it was assigned the number three and if they strongly agreed it was assigned the number four. This was done for all of the questions. Once I had captured all the information it was then possible for me to develop frequency tables for each question; I have used these to present the information graphically.

Qualitative data analysis

I transcribed all of the interviews and loaded them onto a qualitative data analysis programme called AtlasTi. The next step was to code the interviews which was done partly inductively, and partly based on key themes from literature on apprenticeship

and vocational education. By inductive coding, I mean that I did not start with an existing hypothesis or theory but rather used the data to develop categories with which to analyse it.

Being a novice researcher, I had to go back a number of times to code and recode the information. I initially created broad code categories but then realised that these would need to be further broken down into sub-code categories. Ultimately, I ended up with 7 broad codes and 22 sub-codes. The broad codes were essentially themes relating to my research questions.

The broad overarching codes that I developed emerged through key concepts from the literature. For example a key theme in the literature about TVET education is the fact that it targets working class people that are not academically inclined and/or do not have the funding to go to university. I therefore developed a code family called 'reason for NC(V)' and developed sub-codes which I named: lack of money; poor results; good results and funding available. Another important theme about TVET in the literature in South Africa is the fact that employers are unfamiliar with the NC(V) and have not embraced it. During the interviews I probed the extent to which NC(V) college graduates had attempted to access the labour market and developed a code to capture this which I named 'unable to find a job'. A third important theme in the literature about apprenticeships is the work of Fuller and Unwin (2003) who conceptualized the continuum between expansive and restrictive apprenticeships. This was also probed during the interviews, as I wanted to find out how the apprentices were experiencing the workplace. I therefore developed two overarching codes called 'positive experience at employer' and 'negative experience at employer' respectively. Once I had the overarching codes I then developed sub-codes for each. Some of the sub-codes relating to negative experiences at the employer included: lack of electrical exposure; feedback and safety. Sub-codes relating to positive experiences in the workplace included: relevant work experience and employer support. See Appendix 10 for codebook.

Hence, I had some broad over-arching themes which assisted in developing the broad code families. I was, however, aware that I would have to allow for the emergence of new codes and concepts. Once I had completed the coding, I was able to develop a network view for each overarching code and import the sub-codes relating to the overarching code. This provided a graphical representation of all the comments made relating to an overarching code, which assisted enormously in interpreting the data.

ETHICAL CONSIDERATIONS

In terms of following ethical procedures in conducting the research, I was mindful of the following issues: a) informed consent; b) confidentiality and c) consequences of the interviews.

Regarding informed consent, I obtained written consent from all research participants, which included the college principals and the apprentices. Letters were written to the

college principals and the apprentices informing them of the reasons why I am undertaking the research and inviting them to participate. The research participants were told that they have no obligation to participate in the research, have the right to refuse to answer questions, may withdraw at any time and that participating in the research will not compromise their participation in the project.

Apprentices were assured of their confidentiality in terms of the questionnaires as they were not required to write their names on the questionnaires. Apprentices that participated in the interviews were told that they did not have to tell me their names and could use a pseudonym instead. Of the twelve apprentices interviewed only one chose to use a pseudonym. I have, however, changed all the names of the apprentices in order to ensure confidentiality.

RESEARCH LIMITATIONS

Inevitably, this research has weaknesses. The first weakness of this method is that the sampling population is not representative of all TVET apprentices. The research specifically targets electrical apprentices enrolled on the DSPP.

Secondly, the project is being run as a pilot project and may therefore be providing a much better experience than an apprenticeship would in general. The apprentices were selected by their colleges to participate in the programme and not by employers, which is typically the case in apprenticeship programmes. Colleges put together a candidate pool of their best students and thereafter host employers were found to provide them with work experience. In short, the project is not a typical apprenticeship programme. It is a supply led government project rather than demand led by employers.

Thirdly, I as the researcher was to some an extent a 'participant observer' due to having inside knowledge of the DSPP. As noted in the introduction, I currently serve on the steering committee overseeing the project and have an established relationship with all four participating colleges. My status in the project is, however, also a strength as it provided me with insights and access that would not have been possible otherwise. In addition, my employer serves as the lead employer for the project and pays the apprentices a monthly stipend. However, apprentices were unlikely to have been affected by this, as at the time that the research was undertaken I did not know any of the apprentices and had only had one group interaction with them.

Additionally, the use of Likert scales only measures a single trait and are a non-comparative scaling technique. It was therefore not possible for me to discern from the questionnaires dominant themes. For example, I asked respondents in one question whether they did not go to university because they did not have the results. In another question, I asked if they had not gone to university because they did not have the money. The Likert scale did not enable me to measure which of these two factors was the dominant reason for not going to university.

Finally, the fact the research was undertaken right at the start of the dual apprenticeship programme. Apprentices had only completed one college block and one workplace block. As a result, apprentices were not well acquainted with the programme. It would be interesting to survey the apprentices again at the end of the three-year programme to find out whether their expectations and experiences of the programme have changed in any way.

STRENGTH OF METHOD

The key strength of this method is the fact that of the 100 apprentices initially selected to participate in the DSPP, ninety-five participated in the quantitative research study, which represents a 96% response rate. As a result, I believe that this study is able to draw strong conclusions about the specific programme, rather than only identify general trends, and I argue that some of these conclusions could have implications for apprenticeships in general.

This section has explained the methodology employed to conduct the research. The next section presents my research findings.

CHAPTER 4: RESEARCH FINDINGS AND ANALYSIS

INTRODUCTION

The chapter comprises of five sections. Section one is concerned with explaining who the artisans are in terms of gender, age and qualifications. The next section discusses why the apprentices originally enrolled at a TVET college. Section three examines the reasons why the apprentices signed up for an apprenticeship after completing a technical qualification at the TVET College. In section four, apprentices' expectations of the DSPP are examined. The final section of the paper presents the apprentices' experiences of the DSPP at both the college and host employers.

SECTION ONE: WHO ARE THE APPRENTICES?

Below I present the key statistics obtained about the apprentices, followed by some analysis of how this relates to international and South African literature about apprentices.

Age

As can be seen from the figure below 56% of the apprentices in this study are aged between 25-34 years and 44% are aged between 16-24 years.

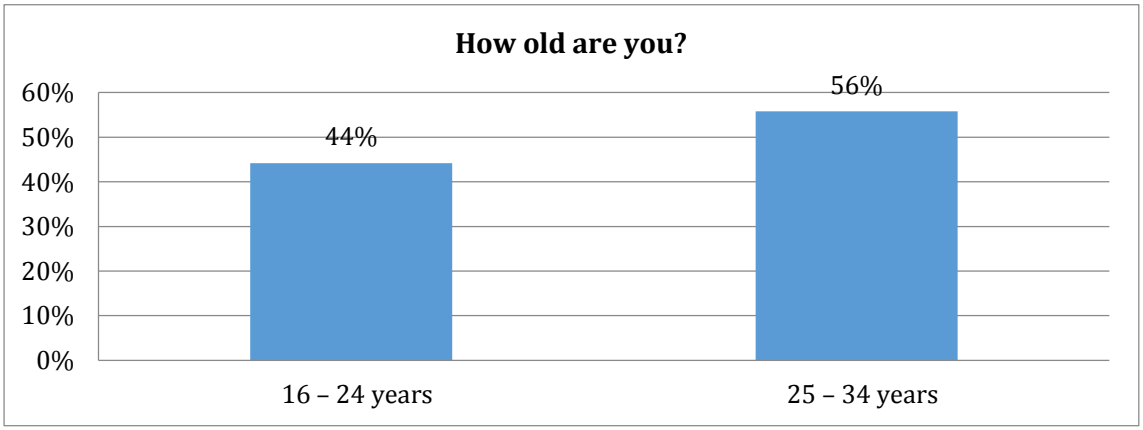


Figure 1: Age of apprentices

This is consistent with current research findings in South Africa that the typical age of apprentices is increasing (Kruss et al., 2012). This is in contrast to Germany where the average age of persons completing their apprenticeship is twenty (Chankseliani et al., 2017). The significance of this is that that persons aged between 25-34 years of age are likely to have more financial commitments than their peers in the 16-24 year old cohort. It is more likely that people aged between 16-24 years of age will be living with their parents or other relatives and not have children to support. People in the older age category will be less likely to be satisfied with the small stipend that is paid to apprentices.

Qualifications

School leaving certificate

Table 4 below shows that 88% of apprentices have a matric certificate.

Highest school leaving certificate	Percent
Grade 9	1%
Grade 10	1%
Grade 11	7%
Grade 12	88%
No response	2%

Table 4: School leaving qualification of apprentices

This is in contrast to the collective skills formation countries such as Germany and Switzerland, where apprenticeships take place at the upper secondary school level.

Technical qualifications

In addition to having school leaving certificates, all of the apprentices have technical qualifications. Figure 2 below shows that 44% of the apprentices have an NC(V) 4 qualification only, 13% have an NC(V) 4 plus some NATED qualifications and 43% have various NATED qualifications only. In total 56% of the apprentices have an NC(V) 4 certificate.

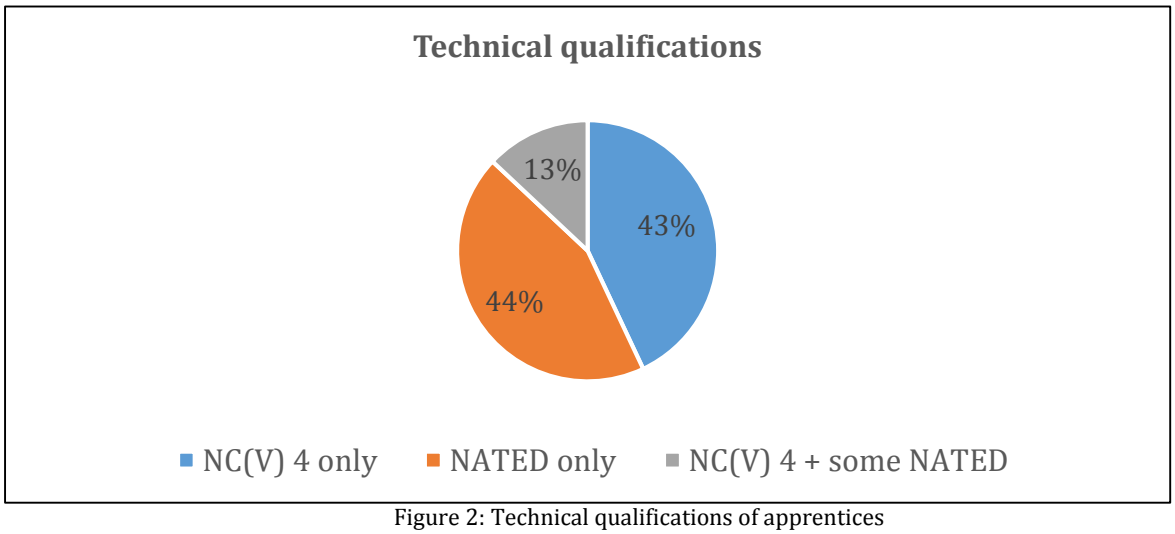


Figure 2: Technical qualifications of apprentices

As can be seen from table 4 and figure 2 above, the apprentices in this study are well qualified which implies that there are inefficiencies within the artisan development system in South Africa. Young people are not experiencing a smooth transition from school onto apprenticeship programmes.

In South Africa, all qualifications are registered on a National Qualifications Framework (NQF). The Grade 12 school leaving certificate, NC(V) level 4 qualification and the new occupational qualification are all registered at NQF level 4. The implication of this is that the apprentices will have spent six years after completing school training to become qualified electricians (three years completing the NC(V) and an additional three years completing the new electrical occupational qualification). The apprentices will also not achieve a qualification higher than the original school-leaving certificate upon qualifying as an electrician. Furthermore, the state rather than individuals or employers have funded both the NC(V) qualification and the new occupational qualification.

Thus, not only is the system inefficient but also expensive. If the South African government is to entrench the dual apprenticeship system in the country it will need to find ways of reducing the time it takes to qualify as an electrician as well as the cost.

Gender

Figure 3 below shows that 45% of the apprentices are female and 55% are male.

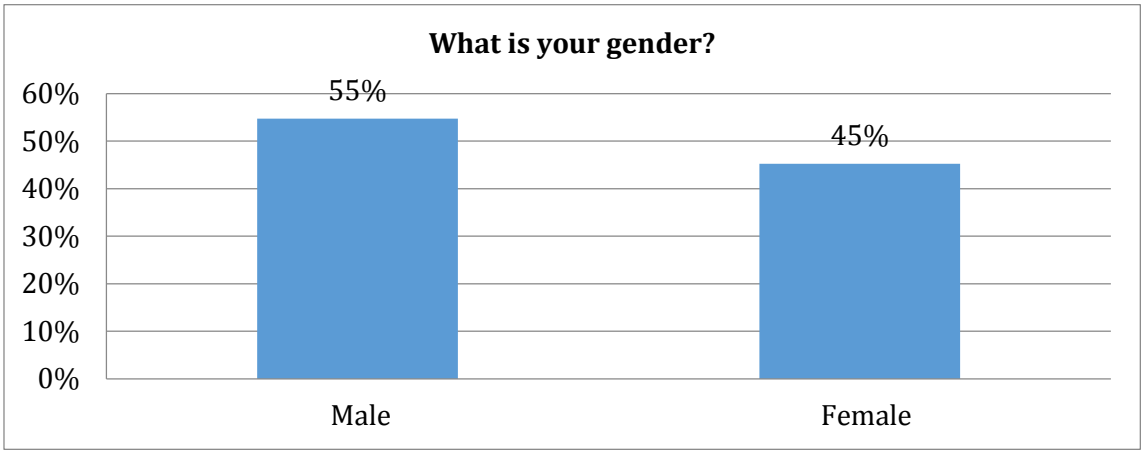


Figure 3: Gender of apprentices

Atkins and Flint (2015) point out that traditionally apprenticeships in the engineering trades are associated with gender stereotyping and biased towards male participation. Gender stereotyping thus has a powerful influence on young people's career making decisions. By contrast, women are well represented on the dual apprenticeship programme. Forty five percent of participants are women. this is in stark contrast to research undertaken by Janse van Rensburg et al (2012), who found that males dominate the apprenticeship pathway system in South Africa. Seventy nine percent of apprentices are male, 15% female and 6% of unknown gender. Surprisingly, the high percentage of women on the project was not due to the project implementers specifically making a decision to select women onto the project. All potential candidates were put through the same selection procedures and the best ones recruited onto the programme. The high percentage of females selected on to the programme must have been due to other factors, such as the role of the college in selecting from an existing pool of candidates. My research was, however, not able to establish this for certain.

It is also the case that female enrolments on the NC(V) Electrical programme have been increasing in recent years whilst male enrolments have been decreasing. Table 5 below demonstrates that female enrolments increased from 31% in 2010 to 45% in 2015 whilst male enrolments dropped from 69% to 55% over the same period.

Year	Male	Female	Total	% Females	% Males
2010	13925	6286	20211	31%	69%
2011	11755	5922	17677	34%	66%
2012	11894	6495	18389	35%	65%
2013	12242	7868	20110	39%	61%
2014	11155	8448	19603	43%	57%
2015	10070	8209	18279	45%	55%

Table 5: Percentage of male and female enrolments for NC(V) electrical[2]

This is a positive finding as it has been argued by Campbell, Thomson, and Pautz (2011) that gender-based occupational segregation creates labour market rigidities in that workers are not allocated to jobs efficiently and therefore the workforce is not utilized efficiently. This contributes to continued skills shortages and hampers productivity.

Size of host company

Table 6 below shows that 63% of the apprentices participating in the project are obtaining their work experience with large companies that have more than 50 people working for them. A further 19% are working for employers that employ between 11-50 people and the remaining 18% are working for small companies that employ less than 10 people.

Size of host company	Percent
Less than 10 employees	18%
11-50 employees	19%
More than 50 employees	63%

Table 6: Size of host company

These statistics demonstrate that small companies are not playing a significant role in the training of artisans. According to the National Development Plan (National Planning Commission, 2011), by 2030, ninety percent of jobs will be created in new and expanding companies. SMMEs therefore represent an important part of the South African economy and could potentially play an important role in the training of artisans. If South Africa is to meet its target of qualifying 24 000 new artisans by 2020 (DHET, 2015a) then it will need to consider ways of stimulating a demand amongst small employers to train artisans.

[2] Personal communication with Nthabiseng Tema, Higher Education and Training Information Systems officer, DHET on 05 February 2018

In summary

This section has shown that there are a high number of females participating in a traditionally dominated male trade. The apprenticeships are taking place at the post-secondary level, which is in contrast to countries like Germany and Switzerland where apprenticeships occur at the upper secondary level. Moreover, the apprentices are not transitioning smoothly from school onto apprenticeship programmes, which is reflected by the fact that the majority of the apprentices are aged between 25 and 34 years. The apprentices are also well educated and already have technical qualifications. Furthermore, nearly two thirds of the apprentices are obtaining the required work experience from large firms that employ in excess of 50 people.

SECTION TWO: WHAT FACTORS MOTIVATE YOUNG PEOPLE TO ENROL AT TVET COLLEGES?

This section of the paper is concerned with the factors that motivate young people to enroll at technical colleges. The findings from the questionnaires are presented and where necessary backed up by the data emanating from the semi-structured interviews. The findings are presented under the following headings: interest in the trade, the appeal of an academic education, careers advice and funding opportunities.

Interest in the trade

The survey results presented in figure 4 below shows that 97% of apprentices either tended to agree or strongly agree that they applied to the college because they wanted to study to be an electrician.

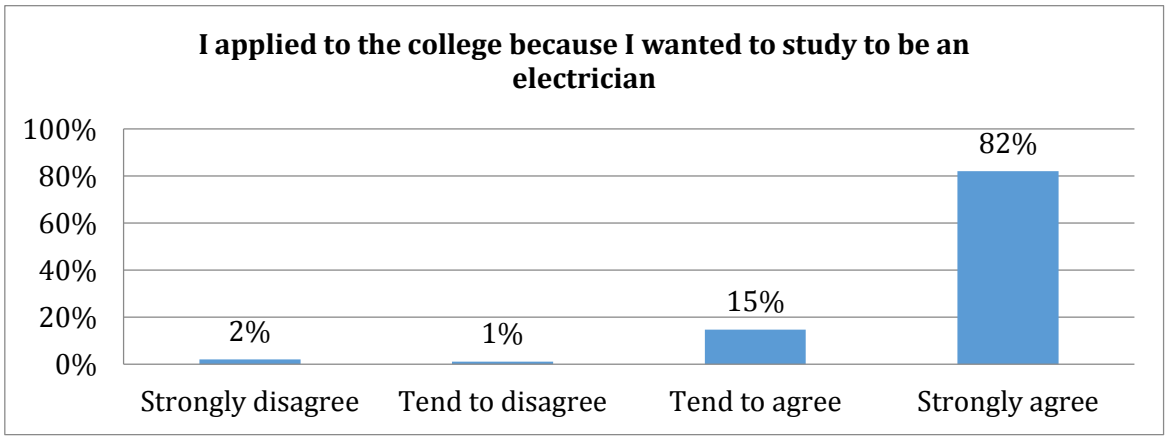


Figure 4: Percentage of apprentices who applied to the college to study electrical

This issue was probed during the semi-structured interviews. Of the 12 apprentices interviewed, 8 indicated that they had specifically decided to study electrical and had applied to the college for this reason. The quotes below illustrate how apprentices answered this question.

Apprentice 1: *It was my number one choice*

Apprentice 2: *I wanted to do electrical, I have a passion for electricity*

Apprentice 3: *Then I discovered that I love electrical and then the love for electrical groomed*

Apprentice 6: *Yes I wanted to study electrical, I fell in love with the trade*

Apprentice 10: *No I wanted to do electrical*

Apprentice 11: *I always wanted to study Electrical Engineering*

Apprentice 12: *Yes that was my passion. When I went to high school so they gave me the brochures and I thought this is what I want – electrical.*

One apprentice said that she had studied electrical because she had two cousins at the college studying electrical. The remaining three apprentices said that they had studied electrical because most of the other courses were already full; in other words, they did not have any other options available to them.

Of the 12 apprentices interviewed, four had found employment after leaving school but had become disillusioned with the work they were doing which was not well paid and unskilled. These apprentices came to the conclusion that the only way to obtain a better job was to study further and as such resigned from their jobs to study full time at the college. Of the four that had left employment to study three said that they had a natural interest in the trade and had applied to the college specifically to study electrical.

These findings show that apprentices are enrolling to study electrical at colleges because they have a strong interest in the field. Many of them spoke about their love and passion for electricity. However, as will be shown in the next section, despite this interest, the majority of apprentices indicated that they would have preferred to study at a university.

The appeal of an academic education

Whilst apprentices indicated that they had registered at the college because they wanted to become electricians, the research also finds that 64% of the apprentices would have preferred a university education. Figure 5 below provides a breakdown of responses.

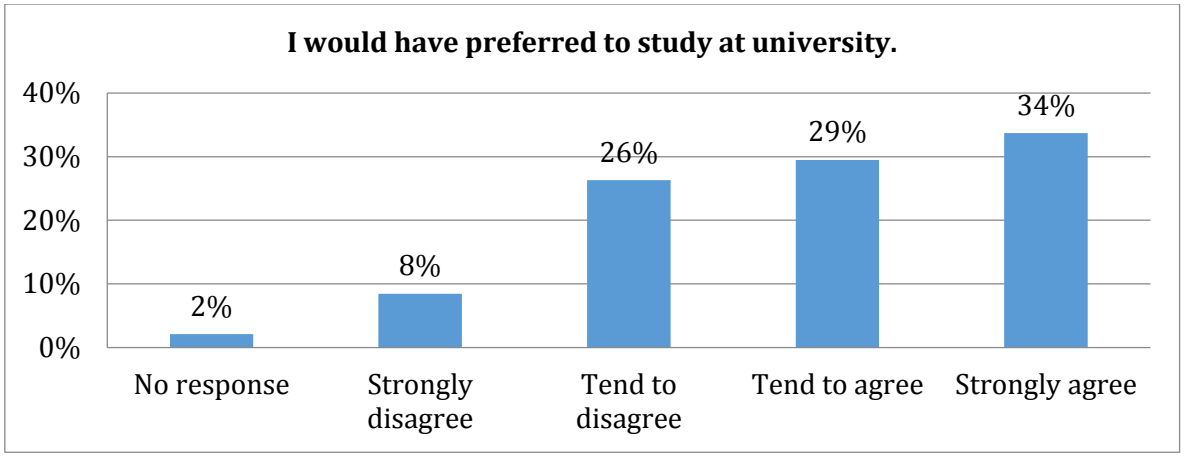


Figure 5: Percentage of apprentices that would have preferred to study at university

Why then did the apprentices not pursue a university education? Figures 6, 7, and 8 below show that 64% did not go to university because their results were not good enough, 63% did not go to university because they could not afford it and, 36% would not have liked to go to university even if they had the funding and the results. Unfortunately, Likert scales do not allow for the weighting of variables and it is therefore not possible to determine which was the dominant reason.

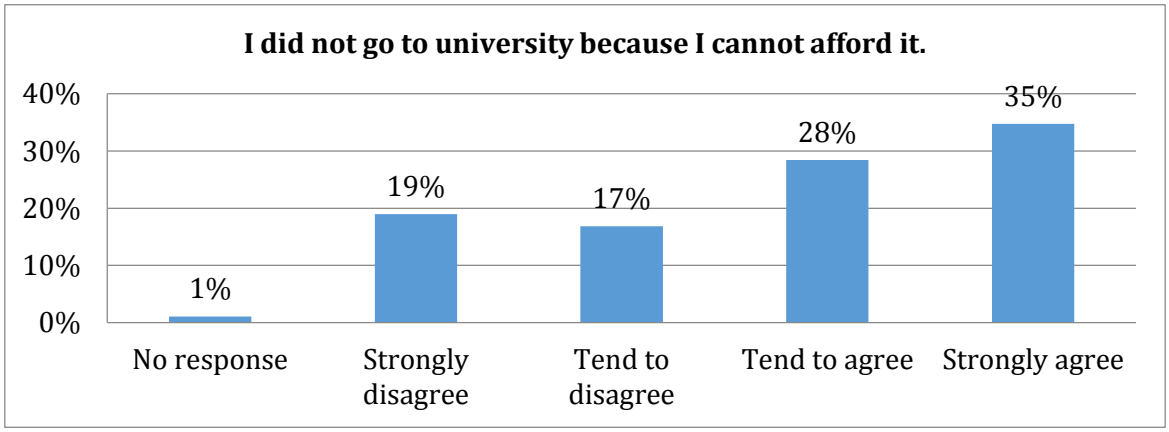


Figure 6: Percentage of apprentices who didn't go to university due to lack of funds

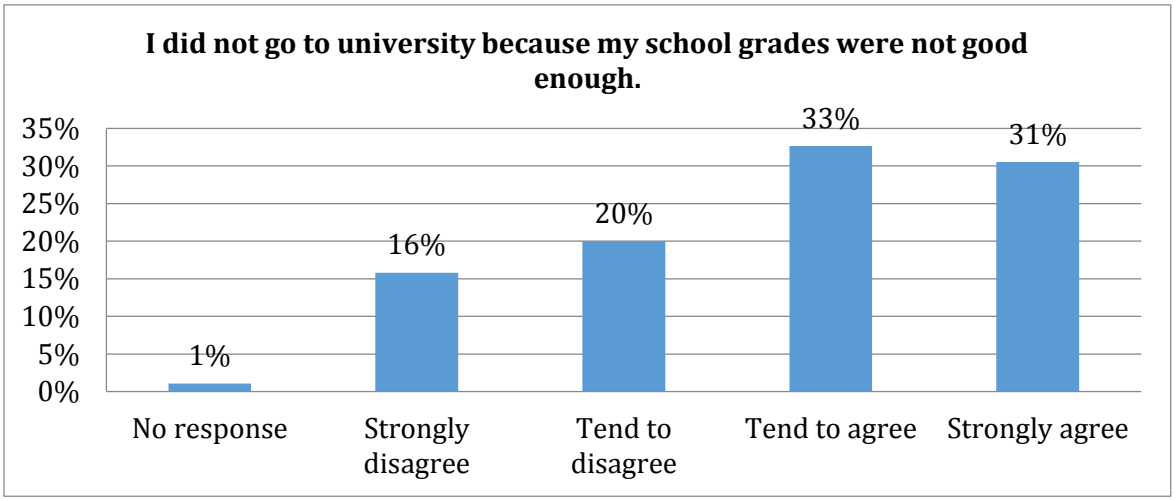


Figure 7: Percentage of apprentices who did not go to university due to poor school grades

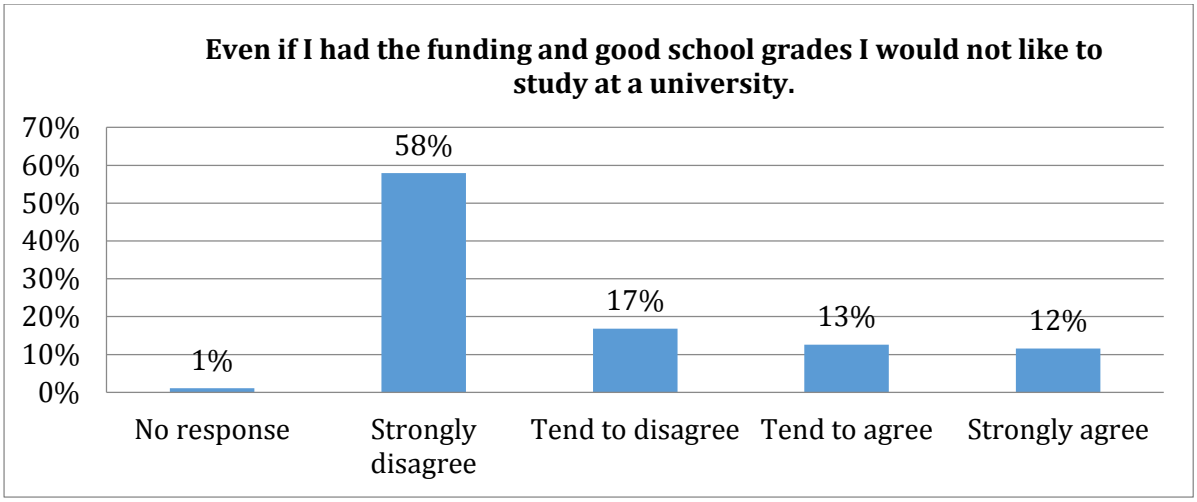


Figure 8: Percentage of apprentices who would not have liked to go to university

During the interviews, the issue of a university education was probed. Seven out of the twelve apprentices interviewed did not have good enough grades to obtain university entrance. Four did have the results to attend university but three out of the four did not have the funding. Only one apprentice had both the funding and the results to attend university.

The quotes below illustrate some of the responses that apprentices made to this question.

Apprentice 1: *We didn't have money for me to follow the university route*

Yes I did have the results to take me to university

Apprentice 2: I *didn't have enough money to study at university*

No I didn't go there, actually I didn't try because I considered NC(V) college, as my tertiary

Apprentice 3: *When I finished matric unfortunately I didn't pass well so I didn't qualify for university so I was fortunate to go to a TVET college.*

Apprentice 4: *I got a position at this college because I didn't do well in my matric, so someone recommended that I come here.*

Apprentice 5: *I wanted to be a Chartered Accountant at first but I didn't have the money for registration and I didn't want to stay at home and not do anything because that is a waste of time.*

Apprentice 9 *I wanted to go to university but as I didn't make it I came to college.*

If I had made it to university they would have paid for me until graduation.

Apprentices were also asked to elaborate on their feelings about not being able to attend university and whether they had any regrets in this regard. Surprisingly, the apprentices do not appear to have regrets about not attending university.

Apprentice 1: *I am very happy here. At first I had doubts about it but once I got in and did the practical part I thought 'this is my place, this is where I belong'.*

Apprentice 5: *I think I made a better choice. It is nice being out there, being practical, doing things with your hands rather than sitting around in an office all day.*

Apprentice 7: *I am glad that I am in this programme because I can see that it's going to be the new way of doing things. I am learning so much about things that I didn't know. When I walk in the street and I see something I think 'oh this means that' my eyes have opened to new things and I am glad that I am doing this electrical course and I am thinking of furthering it in the future. .*

Apprentice 9: *I don't regret it because I love electrical.*

The findings above confirm that in South Africa young people, like their counterparts in England, as discussed in the literature review favour an academic education. However, university was never a real possibility for these young people because either they did not have the money or the results or both to attend university. Consequently, they had resigned themselves to this fact. However, once they had made the decision to attend a TVET college they specifically enrolled at the college to study electrical. Furthermore, the apprentices do not appear to have regrets about not attending university. They are studying a course that they have a real interest in and enjoying studying at the college.

The fact that the apprentices are happy with their career choices and have a strong interest in the electrical field should enhance their success rate. All of the apprentices that were interviewed in this study passed their NC(V) in three years. This is in contrast to research undertaken by DNA Economics (Pienaar et al., 2015, p. 4) who found that

> as few as 2% of students who start NC(V) courses at Level 2 complete the qualification in three years, and only 10% complete their studies in six years. Additionally, throughput rates are especially low in more technically demanding programmes, such as engineering and IT-related courses.

These findings suggest that vocational education can still be of interest to young people. Moreover, TVET colleges could potentially screen new applicants more carefully to ensure that they have a genuine interest in the field for which they are enrolling and have an aptitude for it. Channeling young people into programmes in which they have a real interest and aptitude could significantly increase throughput rates, reduce dropout rates and in turn reduce costs significantly.

The next section explores the extent to which apprentices were provided with career advice and the role that parents/guardians played in guiding their children into apprenticeship programmes.

Careers advice

Interestingly, this research finds that young people believe that their parents would prefer them to do an apprenticeship than go to university. Figure 9 below shows that

44% of the apprentices believe that their parents/guardian would prefer them to do an apprenticeship as opposed to only 14% who believe that their parents/guardian would have preferred them to go to university. A further 20% of the apprentices indicated that they didn't know what their parents preferred and the remaining 20% didn't think that their parents had a preference.

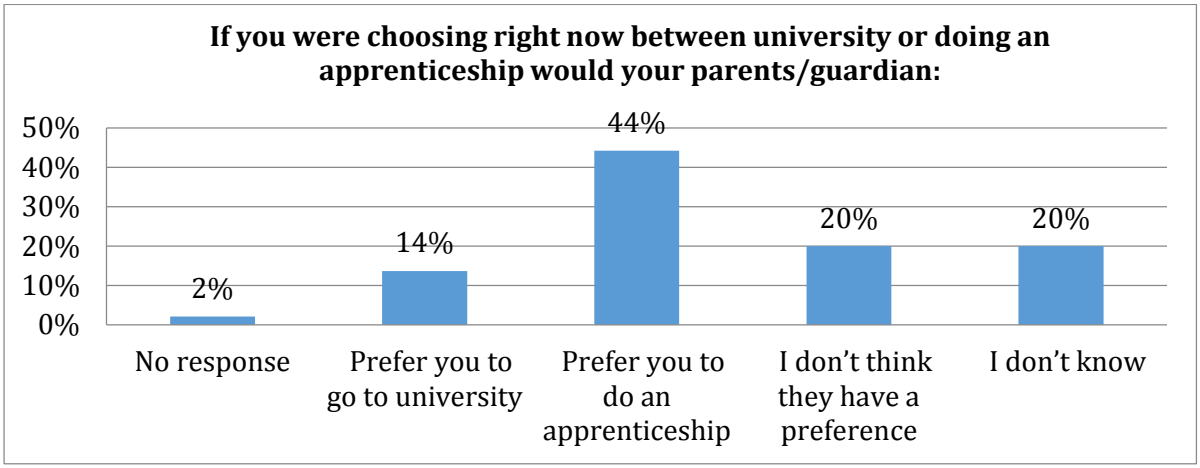


Figure 9: Apprentices perceptions of their parents education preferences

Furthermore, as can be seen from Figure 10 below, only 30% of the apprentices agreed that they were studying electrical because their parents encouraged them to.

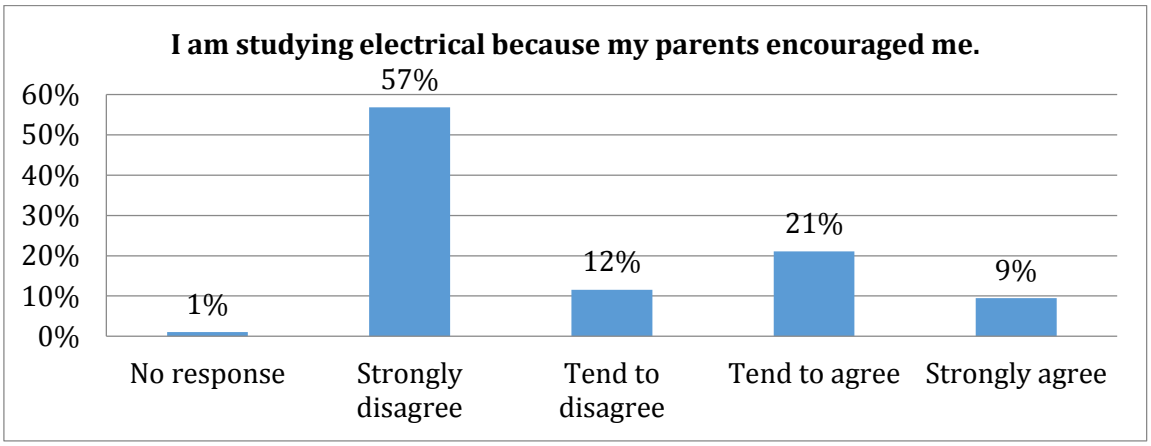


Figure 10: Percentage of apprentices studying electrical due to parental influence

Apprentices were asked where they had received career advice from. Figure 11 below shows that students are not receiving sufficient career advice whilst at school and that college lecturers rather than parents or school teachers are playing a key role in imparting advice about apprenticeships to students. The data shows 31% of the advice was received from a college lecturer and only 7% from parents/guardians and 7% from school teachers. Furthermore, only a minority of students are being provided with advice about apprenticeships at career/events or from careers advisors. After college lecturers, students are obtaining careers advice from the internet (19%) and friends (10%).

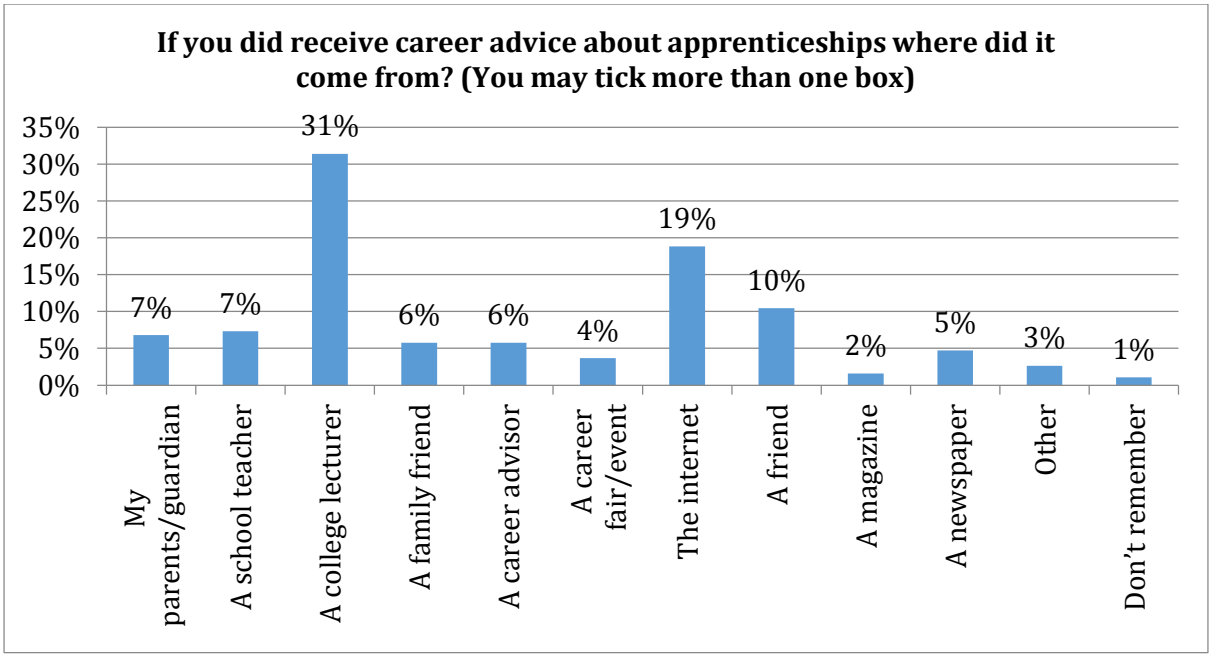


Figure 11: Sources of career advice

These findings were confirmed during the interviews. Whilst not specifically asked about career advice during the interviews, during the analysis of the responses it became clear that apprentices are not receiving sufficient career advice whilst at school and there is ignorance about the NC(V) qualification. This is evidenced by the following comments:

Apprentice 4: *The lecturers said an apprenticeship was better than a learnership.*

Apprentice 5: *When I got to the campus I didn't know which programme; they had NC(V) and NATED but I didn't know the difference between them. Then they told me about NATED, that NATED is usually done by people who are working but don't have the theory*

I decided to enrol for the NC(V) but when I got there I started the course and I found that Grade 12 and Level 4 are equivalent and then I decided to do NATED part time while I do NC(V)

Apprentice 6: *I didn't know anything about NC(V) because I went to apply and register and from there I heard some people talking 'why don't you go for NC(V) as you have Matric' and so on and so forth but I never knew at the time so I went to enrol and did my NC(V)*

Apprentice 8: *You see what happened is that when I first went to the college I didn't know what to study.*

Apprentice 10: *The person who motivated me was working at the municipality and I took it from there. She advised me so I then I decided to come to college.*

Apprentice 11 *So then I decided to go to college because I was advised by my cousin to come here, he was also studying here, so I came here.*

Apprentice 12 *The first time I heard about NC(V) was in 2012. I didn't know about it. I was working for Food Lovers Market so I didn't know there was NC(V).*

According to Hodkinson (1995, p. 5) cited in Fisher and Swift (2012), young people make career choices from an informed position where '…the source of information is often an insider who has no vested interest in "selling" a vacancy and whose judgement they can trust because they know them personally'. The research undertaken by Fisher and Swift found that overwhelmingly (49%) of the surveyed respondents indicated that their parents had the strongest influence on their career aspirations.

The findings from this research, however, find that parents play an insignificant role in the career choices of their children. This may be attributed to the fact that the parents are unable to provide financial support for their children's studies and/or the parents are not well educated and unfamiliar with the education system. As a result, the parents may feel ill-equipped to provide guidance to their children in terms of their future careers. These findings support research undertaken by Gewer (2009, p. 3) who states:

> There is a strong indication that the youth are ultimately making these choices [about their education and training] on their own. This supports the view in the literature that working class parents will often defer to their children to make such choices.

It is not clear why the apprentices in this study believe that their parents would prefer them to do an apprenticeship but one can hypothesize that it is related to the fact that the parents of these apprentices were excluded from apprenticeship opportunities in the past. In South Africa, apprenticeships have been traditionally associated with white working-class males from which other race groups were excluded. Apprenticeships and artisan training was associated with white privilege and racially exclusive craft unions where black people were prevented from obtaining artisanal skills (Akoojee, 2013). The parents may therefore view an apprenticeship as aspirational and something that they would have liked to have done but were not provided with the opportunity to do so.

The fact that young people are receiving most of their career advice from college lecturers shows that career advice is not being provided early enough. This suggests that much more will need to be done to ensure that young people are provided with career advice whilst still at school so that they are better equipped to make an informed career choice.

There is also ignorance about the NC(V) qualification. Three of the 12 apprentices interviewed expressed confusion about the NC(V). This is particularly worrying and reflects the fact that schools and teachers are not providing guidance to their learners about TVET colleges.

Funding opportunities

When apprentices were asked whether they are studying electrical at a TVET college because they got a bursary/funding for it, almost two thirds of the apprentices (63%) either strongly disagreed or tended to disagree that this was the reason that they had enrolled for the programme, as shown in Figure 12 below.

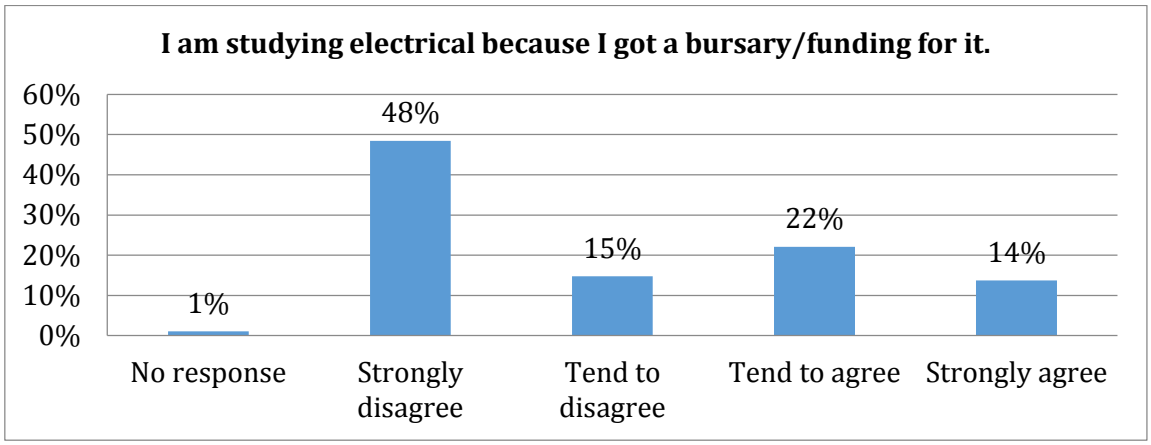


Figure 12: Percentage of apprentices studying electrical because they got a bursary/funding

This suggests that the availability of funding is not significantly driving student enrolments for the electrical trade at TVET colleges. However, this finding needs to be unpacked.

Most TVET college students in South Africa are funded by the National Student Financial Aid Scheme (NSFAS) and the funding is not course dependent. Students apply for financial assistance and if successful may choose any of the programmes offered by the TVET colleges. The implication of this is that students are likely to apply to a TVET college because funding is available but they will not necessarily register for a particular programme because of the availability of funding. However, often courses are full and as such, students are forced to register for a course that still has place available. This was what happened to three of the apprentices that participated in the interviews. Thus, the availability of funding may drive TVET college enrolments but not necessarily into specific courses.

In summary

This section has argued that whilst young people in South Africa favour an academic education over a vocational education, they enrol at TVET colleges because they do not have the financial resources or results to attend university. They therefore enrol at TVET colleges but have a strong interest in the electrical trade and specifically choose to study electrical. Having accepted their situation, they do not appear to have regrets about not attending university. It has also been shown that schools and parents are playing an insignificant role in providing career advice to their children. Finally, there is some ignorance about the NC(V) qualification which suggests that schools and the state are not imparting advice about TVET colleges to their learners.

SECTION THREE: REASONS FOR PARTICIPATING IN THE DUAL SYSTEM PILOT PROJECT (DSPP)

In section one of this chapter it was shown that the apprentices in this study all have existing technical qualifications. Why, then, have these apprentices enrolled on another three year electrical qualification which is registered at the same level as the matric certificate and the NC(V) four certificate?

This section explores the factors which motivate young people to sign up for participation in an apprenticeship programme. The results are presented under the following headings: Work Experience, Influencing Factors, Paths into Apprenticeship Programmes and College Encouragement.

Work experience

The findings show that the main reason students signed up for the DSPP is because they believe it will provide them with the opportunity to enhance their knowledge of the electrical trade and ultimately qualify as an artisan. Figure 13 below illustrates the point that all (100%) of the apprentices agreed that they had joined the DSPP to obtain more knowledge of the trade.

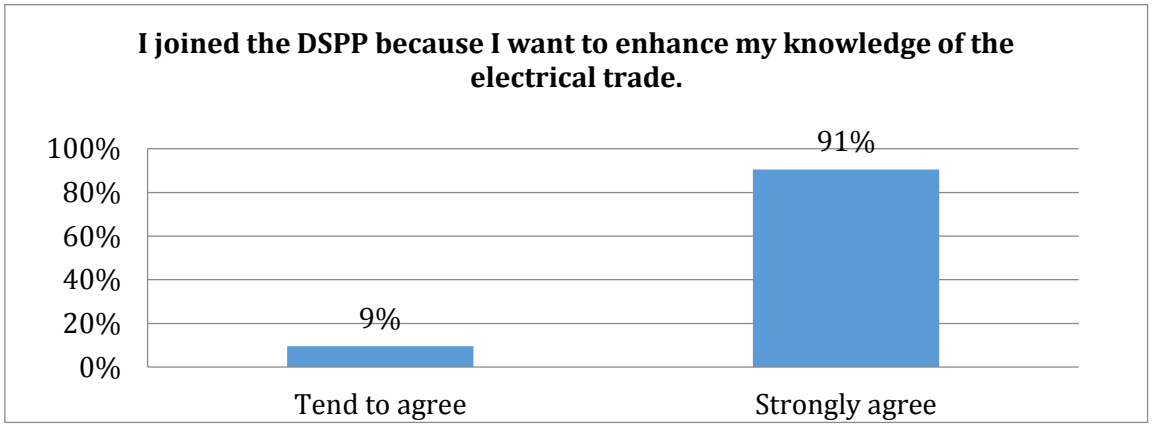


Figure 13: Percentage of apprentices that joined the DSPP to enhance their knowledge

Secondly, as can be seen from Figure 14 below 98% of the apprentices strongly agreed (86%) or tended to agree (12%) that they had joined because they need work experience in order to become an artisan.

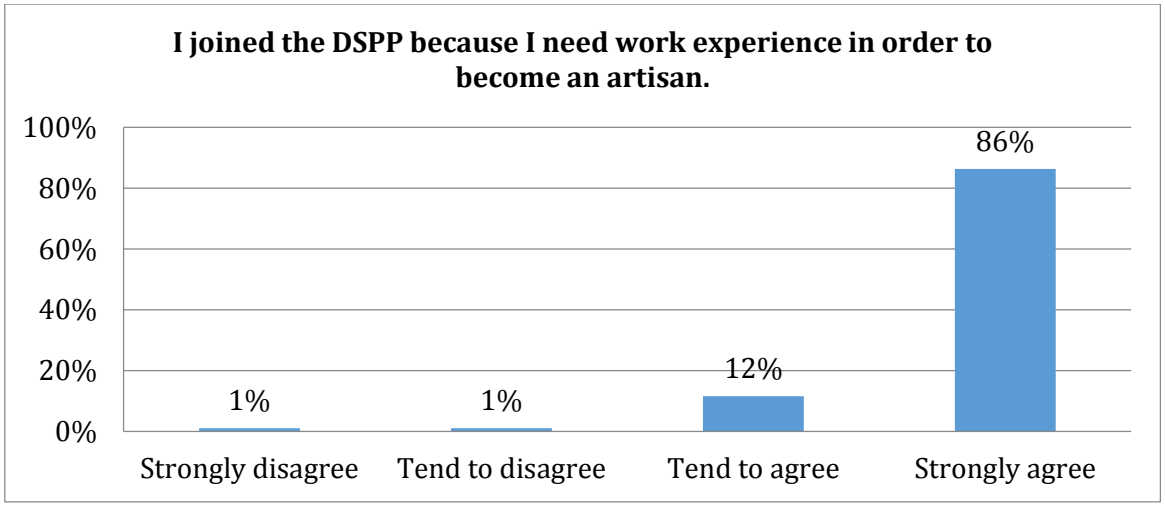


Figure 14: Percentage of apprentices that joined the DSPP to obtain work experience

Thirdly. 95% of the apprentices indicated that they had joined the DSPP because they believe it will make them more employable. This is illustrated in Figure 15 below.

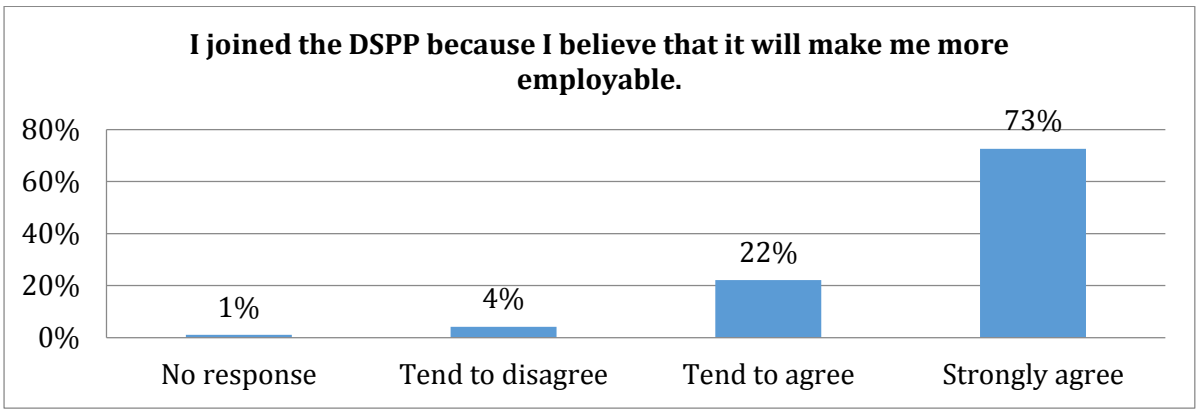


Figure 15: Percentage of apprentices that joined the DSPP to make them more employable

Fourthly, only 33% of apprentices agreed that they had joined the DSPP because they were unable to find a job.

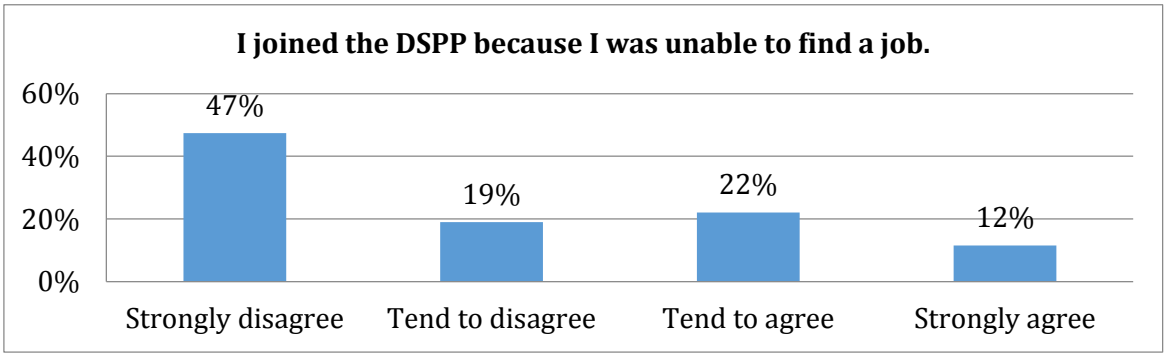


Figure 16: Percentage of apprentices joining the DSPP because they weren't able to find a job

During the interviews, job seeking efforts were probed. Out of the 12 apprentices interviewed only four had made any serious efforts to find a job after completion of their NC(V). All of the other apprentices had joined the DSPP directly after completing the NC(V). However, it is clear that the apprentices that did try and find jobs experienced immense difficulties. The quotes below illustrate this.

Apprentice 1: *When I finished my NC(V) I started looking for learnerships and apprenticeships, that is really what I wanted.*

I sent my CV off many times, I thought they were just throwing them away. I even applied for a post as a prison warder because I wanted to try everywhere because I didn't get any feedback for applications for electrical.

I have applied for more than 10 posts. I have been applying since I completed my NC(V) which was in 2012. Since then I have been applying every opportunity which comes my way

Apprentice 2: *I tried but there is no work. I tried the internet but you won't even get an interview. Actually I was looking for a learnership or apprenticeship but I didn't get one. I took my CV when I heard there was a job but I didn't get anything*

Apprentice 3: *Mostly I was applying for apprenticeships and learnerships but I couldn't find anything*

Whilst not explicit, it is possible to assume that when apprentices said that they wanted to enhance their knowledge of the trade they were referring to obtaining work experience. This is because they already have technical qualifications but lack work experience.

This demonstrates the value that young people attach to work experience. The research participants in this study were prepared to sign up for another three-year qualification so that they could obtain work experience and ultimately qualify as artisans. Eight out of the twelve apprentices interviewed indicated that they had not even attempted to look for a job on completion of the NC(V) but had instead immediately enrolled on the DSPP.

It may also suggest that these apprentices do not have confidence in the NC(V) qualification. If the NC(V) graduates were confident that they would be able to find an employer to provide them with work experience so that they could ultimately access the trade test and qualify as artisans they would have done so. Instead, they elected to enroll on another qualification that would link them to an employer prepared to provide them with work experience. In fact, this was exactly the experience of three of the apprentices in this study. They had completed their NC(V) in 2012 and been looking for apprenticeship or learnership placements ever since but had been unsuccessful.

South Africa has poor labour market outcomes for young people. One in two young people in the labour market is unemployed and nearly one in three young people is neither in employment, nor in education or training (NEET) (OECD, 2015). Furthermore, 'the unemployment rates among TVET college graduates (11%) is more than double (5%) that of university graduates' (Pienaar et al., 2015). However, the labour market outcomes for people completing their apprenticeships is high. The research has shown

that 70% of young people completing an apprenticeship in South Africa experience a smooth transition into the labour market (Kruss et al., 2014).

Thus, by participating on an apprenticeship programme, the apprentices are significantly increasing their chances of employability in the future. Furthermore, work experience provides young people with the opportunity to network with other people in their occupation and in so doing expand their social capital. This is well captured by Apprentice 9:

> *I am going to get work experience, I will have more experience in electrical trades. I'll know how things are done, meet electricians, artisans and other people from other trades so I will grow in this programme so that is why I am doing it.*

Finally, it is important to point out that according to Government Gazette number 38758 (DHET, 2014b) a person will be granted access to the trade test (the final assessment which apprentices must pass in order to qualify as an artisan) if he/she is in possession of an NC(V) 4 certificate and has 18 months relevant work experience. The apprentices in this study already have a qualification that provides them access to the trade test. They don't need another qualification. They need the work experience. The implication of this is that the role of the college is negated.

Prestige

Figure 17 below shows that 92% of apprentices believe that the DSPP is a prestigious programme.

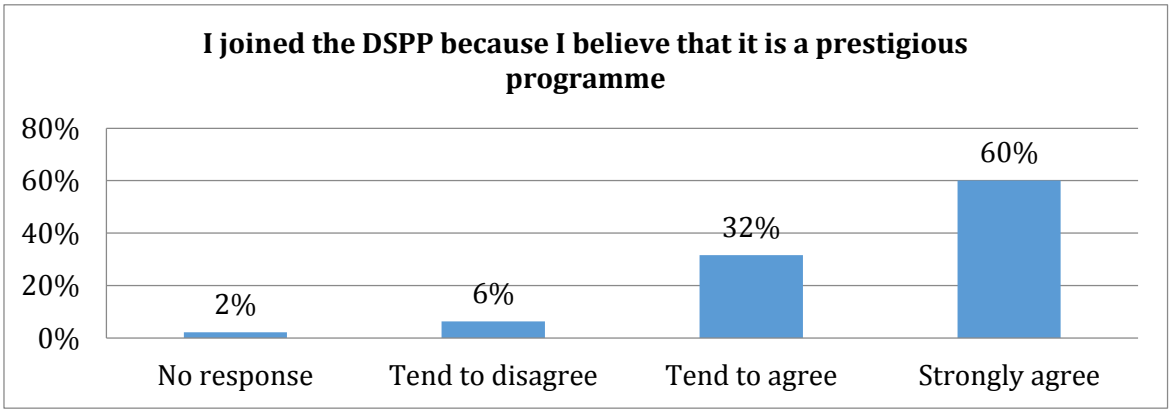


Figure 17: Percentage of apprentices that joined the DSPP because it is prestigious

Apprentices were not asked to explain why they believe that it is a prestigious programme. The programme does, however, contain a number of elements that would be attractive to young people. It is therefore possible to speculate as to the reasons why apprentices believe the programme is prestigious. Firstly, as outlined above, the apprentices place an extremely high value on qualifying as artisans and any programme that simultaneously allows apprentices to gain work experience and a qualification at the same time will appeal to young people. Secondly, the programme also provides the apprentices with a monthly stipend. Thirdly, apprentices had to apply to participate in the programme and were put through a battery of tests before being accepted. It is likely,

that apprentices that were selected onto the programme are proud of this achievement. Finally, the programme was marketed to the apprentices as a new and unique programme being run for the first time in South Africa and through which they could qualify as 'Artisans of the 21st century'.

These findings strongly suggest that the apprentices have confidence in the DSPP's prestige and ability to provide them with the knowledge and skills to qualify as artisans and find employment.

The money factor

When apprentices were asked whether they had joined the DSPP because they were able to earn an allowance the results of the questionnaire were very evenly split. Fifty two percent of the apprentices disagreed that they had joined because they could earn an allowance whilst 48% agreed. However, during the interviews not one apprentice said that he/she had joined the DSPP because of the allowance. In fact, according to Apprentice three:

> *I saw the opportunity of this DSPP so I came here and when they presented it to us I fell in love with it so I thought I would let the job go and take this opportunity because money wasn't the issue. The issue was getting qualified and getting more experience and many more opportunities.*

Whilst Likert scales do not enable researchers to weight statements, the results of the survey show that 98% of the apprentices joined the DSPP in order to obtain work experience but the results were split with regards to the question about earning an allowance. One can therefore surmise that whilst apprentices appreciate the fact that they are able to earn a small allowance whilst studying this is not the main motivating factor for joining an apprenticeship programme. It is a 'nice to have' but obtaining work experience is far more important to them. This finding reinforces just how important work experience is to young people. Even though the apprentices in this study are older and under more pressure than their younger counterparts to earn money, they were still prepared to forego an income in order to obtain the necessary work experience in order to qualify as artisans.

In summary

This section has discussed the high value that young people place on work experience. It has illustrated the difficulties young people have accessing the labour market with only a qualification and no work experience. It showed that the apprentices believe that the programme is prestigious and it seems that whilst apprentices appreciate the fact that they are able to earn an allowance, this is not the key reason why the apprentices joined the programme

SECTION FOUR: APPRENTICES EXPECTATIONS OF THE DUAL SYSTEM PILOT PROJECT

The purpose of this section of the paper is to examine the apprentices expectations of the DSPP apprenticeship programme. The research finds that the apprentices have high expectations of the DSPP. They expect that they will be able to find a good job on completion of the programme, that they will be able to open their own businesses, that they will be able to earn good money, and that they have the same chances of finding a job as a university graduate.

Employment opportunities

In terms of employment prospects, apprentices believe that the DSPP will make them more employable and are positive that they will be able to find employment once they have completed their apprenticeship. Figures 18 and 19 below show that 98% of apprentices tend to agree or strongly agree that they will be able to find a good job upon completion of their apprenticeship and that 68% believe that they have the same chances of finding a job as a university graduate.

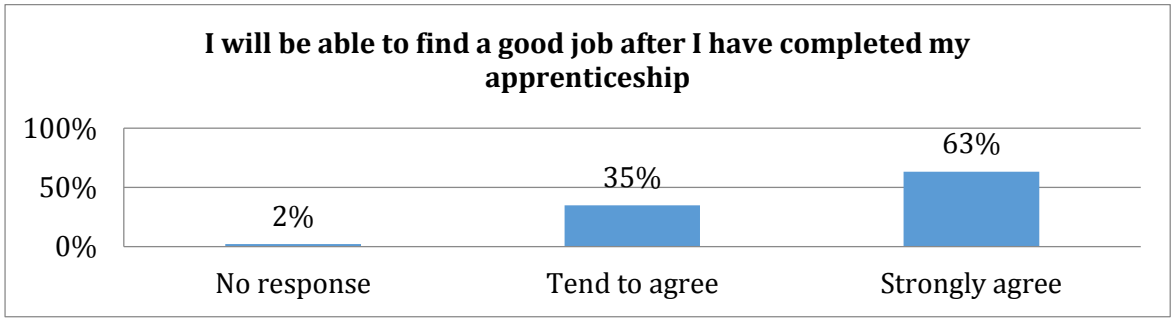


Figure 18: Percentage of apprentices who believe they will find a good job

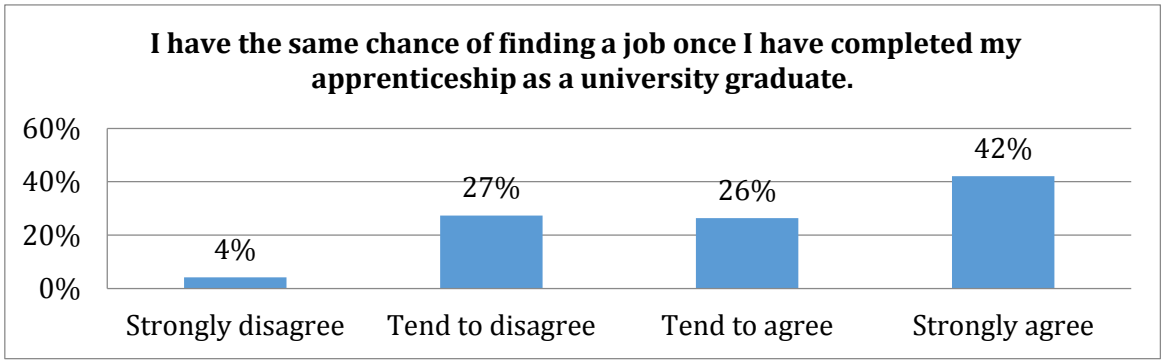


Figure 19: Percentage of apprentices believing they have the same chance of finding a job as a university graduate

During the semi-structured interviews, apprentices were asked if they were confident that they would be able to find a job after completing the programme. All 12 apprentices that participated in the interviews responded positively to this question. Some of the comments made are captured below:

Apprentice 11: *Yes very much so, I think that with the amount of exposure that I am getting from this programme and the qualification that I will have afterwards, in terms of the trade test, I am pretty sure that I will get a job.*

Apprentice 12: *Definitely, I am 100% positive about that.*

Apprentice 2: *I am. I know that I could get a job before I am done with the apprenticeship.*

Apprentice 6: *Yes I am confident of that. No doubts. Even if I don't get a job from the company that I am working for, I believe that there are other opportunities out there.*

Apprentice 1: *I am very confident that I will get a job, as long as I have my trade I think all the doors will be open for me*

Apprentice 4: *Yes I am confident. If for example I get a job in an industry at least I know that I have experience. I know the pressure, I know how to deal with things and I know what to do when I am there.*

Apprentice 7 *Basically if they train you, you are going to find a job.*

These findings reflect the apprentices' high expectations and faith in the DSPP.

It is possible to speculate that the apprentices will find employment as electricians on completion of the programme for a number of reasons. Firstly, as has already been shown the labour market outcomes for apprentices are good. Secondly, South Africa is currently experiencing an electricity crisis and as a result the South African public sector spent 26% of its capital expenditure budget on electricity infrastructure in 2016 (STATS SA, 2017). Finally electricians are included on the Department of Higher Education and Training list of occupations in high demand (Department of Higher Education and Training, 2015).

Entrepreneurial opportunities

In terms of entrepreneurial opportunities, apprentices are confident that they will be able to start their own businesses once qualifying as electricians. Figure 20 below shows that eighty-nine percent of the apprentices tended to agree (42%) or strongly agree (47%) that they will be able to start their own businesses once they have completed their apprenticeship.

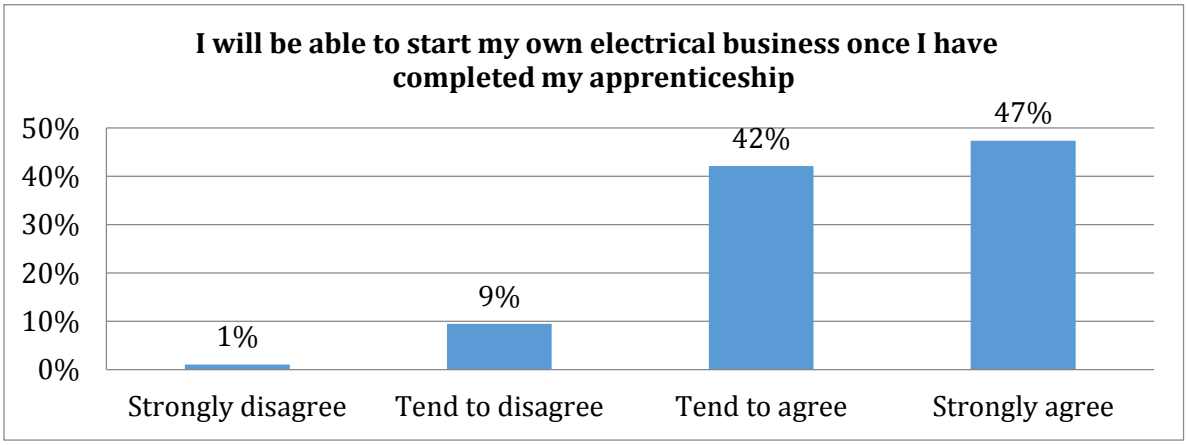


Figure 20: Percentage of apprentices who believe they will be able to start a business

During the interviews, apprentices were asked if they believed that they would be able to start their own businesses on completion of the programme. All of the apprentices responded positively to this question. Some of the responses to this question are captured below:

Apprentice 6: *Of course, of course. I would love to it is just a matter of time.*

Apprentice 11: *That is a thought that has crossed my mind and I am working towards that because there is nothing more satisfying for an electrician than to have your own company*

Apprentice 10: *I am looking forward to doing that, I would like to open my own business*

Apprentice 12*:* *I would definitely do that. Even now I have my clients. So I would.*

Given South Africa's high youth unemployment problem, small businesses have the potential to play a key role in reducing unemployment. However, South Africa's entrepreneurship performance is lackluster (Global Entrepreneurship Monitor, 2016).

The fact that 89% of the apprentices are confident that they will be able to start their own businesses is positive. However, the reality is that there are a number of constraints to starting a business in South Africa. Research undertaken by Lomey and McNamara (2007) about the projected skills demand and supply for the electrical energy sector in South Africa found that unless special efforts are made to stimulate small, medium and micro enterprises in South Africa, the impact of future growth in the electrical industry on the informal sector can be expected to remain erratic and underdeveloped.

Earning potential

Regarding earning potential 99% of apprentices either strongly agreed or tended to agree that they would be able to earn good money once they have completed their apprenticeship. These findings are reflected in the figure below.

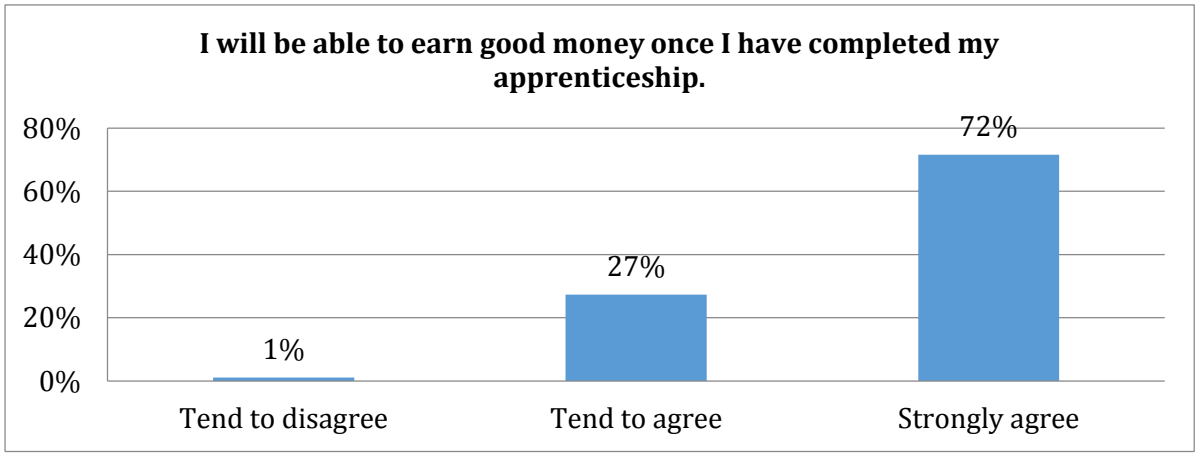


Figure 21: Percentage of apprentices who believe they will be able to earn good money

Apprentices were not asked to explain what they believe is a good salary but it is fairly likely that they have a good idea of what qualified electricians earn in South Africa. According to one employment site the average monthly wage of an electrician in South Africa is R19 374 (Indeed, 2017). The average wage in South Africa is R19 608 (Trading economics, 2017). Thus whilst the apprentices may believe that a monthly wage of R19 374 is good money, in reality this is an average salary in South Africa.

In summary

It has been shown that apprentices are confident that they will be find employment upon completion of the apprenticeship and believe that they will be able to start their own small business in the future. Apprentices are also of the view that they will be able to earn good money on completion of the apprenticeship.

SECTION FIVE: APPRENTICES' EXPERIENCES OF THE DUAL SYSTEM PILOT PROJECT

In this section, the apprentices' experiences of the dual system apprenticeship project are presented and analysed. The apprentices' experiences are investigated in terms of their experience at the TVET colleges as well as at their host employers.

Apprentices' experiences of the DSPP at the college

In general, apprentices are satisfied with their learning experience at the college and are of the view that rotating regularly between the college and host employers is a good way to reinforce classroom theory with on-the-job experience. Apprentices are, however, of the view that they are not being provided with sufficient feedback from their college lecturers.

The information is presented under the following themes: a) information about the DSPP; b) learning materials; c) college workshop, and; d) learning opportunities.

Information about the DSPP

Eighty nine percent of the apprentices surveyed were in agreement that their college had provided them with sufficient information about the DSPP and how it differed from the NATED and NC(V) programmes. However, during the interviews it became clear that the apprentices were not entirely sure what the DSPP is and what they were signing up for. This is evidenced by the following comments:

Apprentice 6: *By the time I heard about the DSPP, to be honest, I was so clueless it was the first time I heard about the DSPP but as time goes by then Mr Smith and other guys try to explain what it was.*

Apprentice 7: *When I was in Level 4 I heard about this (the DSPP) but I didn't quite understand what they were talking about, they just said some of you guys*

have been selected for interviews. I didn't even know what it was about and when we got there they explained just the basics of the programme.

Apprentice 4: *We got this form to fill in about an apprenticeship and the lecturers said an apprenticeship was better than a learnership so I filled it in did all the things they said we must do and they said it was different from the other apprenticeship schemes so I was excited.*

Apprentice 11: *I was told this by my lecturer, it was Mr Jones who was part of this programme at first. We were close to him and he explained what this programme was about and how it worked. He told me to apply, so I gave him my CV and applied.*

It is clear that the college lecturers played a key role in informing their students about the programme and in encouraging them to apply. It is also clear the colleges specifically targeted their existing NC(V) 4 and NATED students/graduates and put a rigorous selection process in place to select the apprentices.

Learning materials

Fifty five percent of the apprentices agreed that the learning materials are easy to understand and 45% disagreed. These findings are reflected in Figure 22 below.

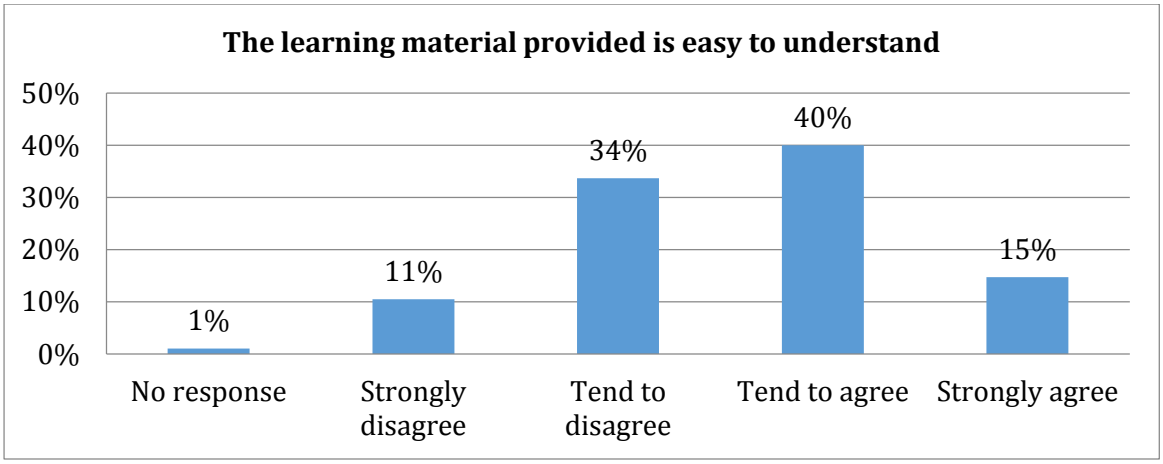


Figure 22: Percentage of apprentices who believe the learning material is easy to understand

The fact that 45% of the apprentices disagreed that the material is easy to understand may be attributed to the fact that the learning materials require that they undertake internet research but they have limited access to computers and the internet.

Despite expressing dissatisfaction with the learning materials, one apprentice spoke about the expanded learning opportunities, which the DSPP is providing in terms of learning how to communicate in a professional environment. This is illustrated in the quote below:

Yes they do support us especially in ways of communication. How do you speak up for yourself in a manner that is not disrespectful or make you unemployable again, how do you behave in the work environment. How do you show that you are

interested in even when you don't know it? So those are the things especially in the English Department.

This is positive as it shows that the lecturers are using the learning materials to develop in apprentices a broad range of skills which include soft skills such as communication and are not only focusing on teaching technical skills.

College workshop

As can be seen from Figures 23 and 24 below, just over two thirds (68%) of apprentices believe that they are obtaining sufficient practice in the college workshop whilst 30% either strongly disagree or tend to disagree that they are.

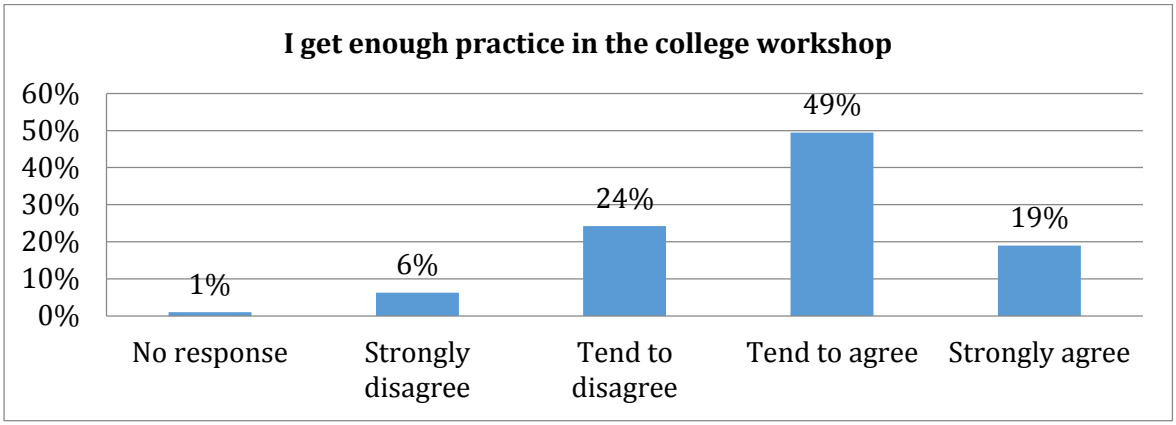


Figure 23: Percentage of apprentices who believe they get enough practice in the college workshop

Apprentices were also asked whether they believed the DSPP was a repetition of what they had already learnt. Figure 24 below shows that 56% of apprentices either tended to agree (35%) or strongly agreed (21%) with this statement.

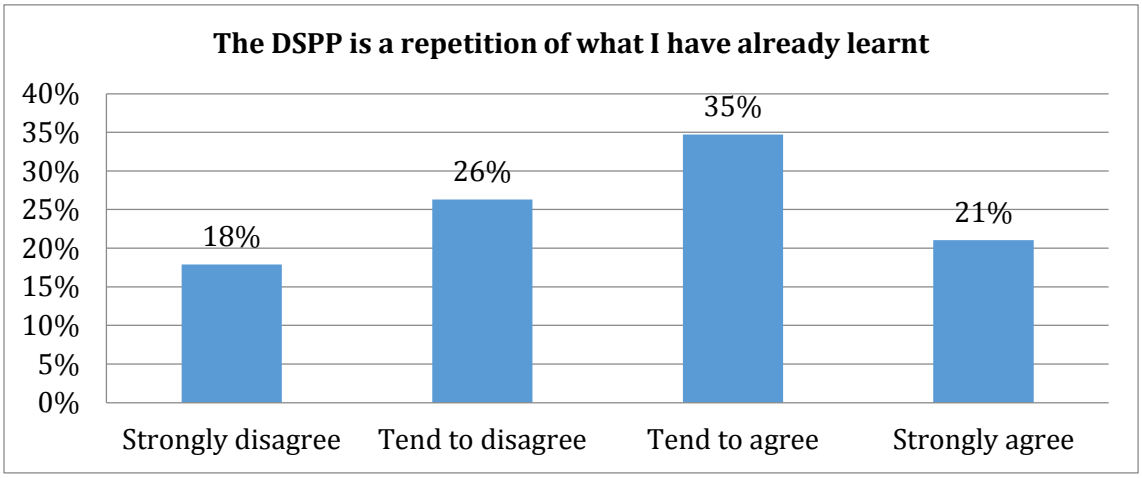


Figure 24: Percentage apprentices who believe the DSPP is a repetition of what they have learnt

During the interviews apprentices were asked whether the DSPP differs from the NC(V). As can be seen from the comments below, the apprentices are of the view that the NC(V) is limiting as it does not provide students with sufficient practical experience in the college workshop. The DSPP, by contrast, contains a strong workplace element. Finally,

it is clear that college lecturers are repeating practical tasks that were done during the NC(V)

Apprentice 2: *Actually at the NC(V) we wanted practical but there was not enough for us to go to industry and look for a job. So in the DSPP we are really winning, I don't want to lie.*

Apprentice 8: *The college didn't give me as much of a chance to experiment as I am having now*

Apprentice 3: *Because you also get workplace experience and with the NC(V) you only get practical's of which it's a safe environment because you are not exposed to the difficulties that you find at work sites.*

Apprentice 10: *It is different because we get a lot of experience but in some of the things like practically here at college, I have already done before so I pass very well and the most thing I have learnt from DSPP is being in the workplace*

Apprentice 5: *Here at school it is more or less the same because now we are repeating the stuff that we did*

Apprentice 9: *Not really different. I know some of the things from NC(V), some of the practical's that we do in DSPP, I did some of them in NC(V)*

Given the fact that 56% of the apprentices have already completed a three-year NC(V) electrical qualification it is perhaps not surprising that 56% of the apprentices also believe that the DSPP is a repetition of what they have already learnt.

Learning opportunities

In terms of learning opportunities, Figure 25 below indicates that 87% of the apprentices agree that their college is providing them with relevant learning opportunities.

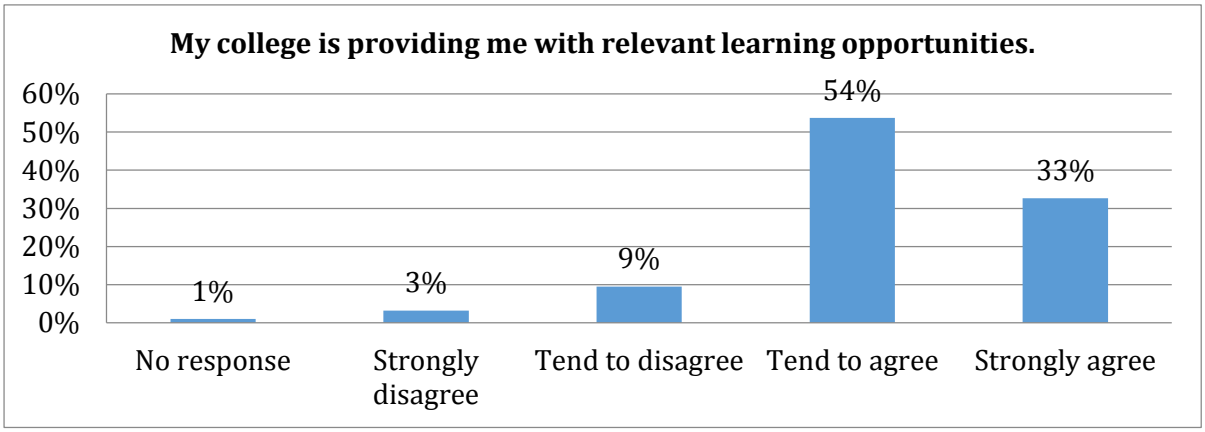


Figure 25: Percentage of apprentices who believe their college is providing them with relevant learning opportunities

Additionally, 71% of apprentices tend to agree (48%) or strongly agree (23%) that their college is providing them with high quality training that is aligned to the skills needs of their host employers. This is reflected in Figure 26 below.

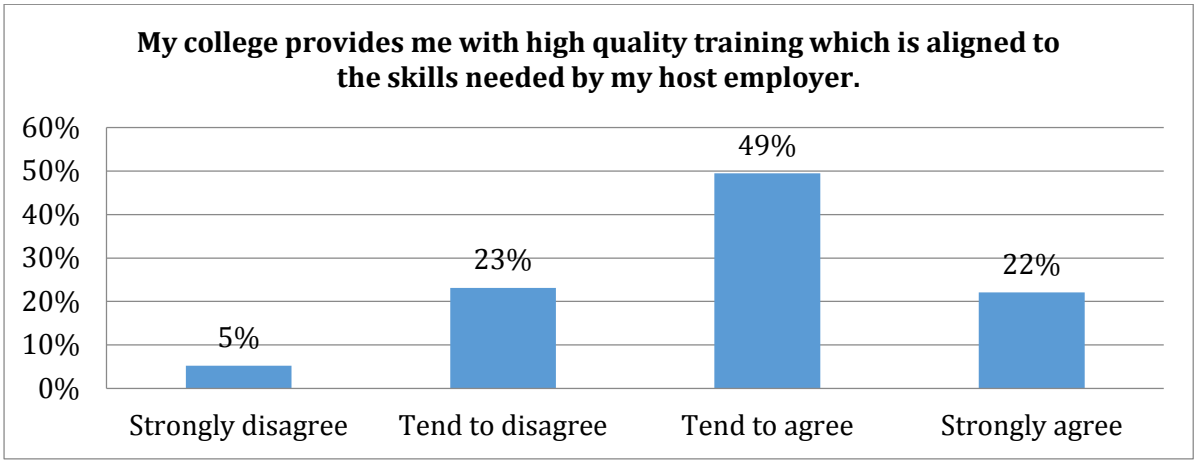


Figure 26: Percentage of apprentices who believe their college is providing them with quality training

In terms of college feedback, however, apprentices are less satisfied. Only 56% of the apprentices tended to agree or strongly agreed that the college provides them with regular feedback. This is in contrast to the 43% that strongly disagreed or tended to agree that the college provides them with regular feedback on performance. This is shown in Figure 27 below.

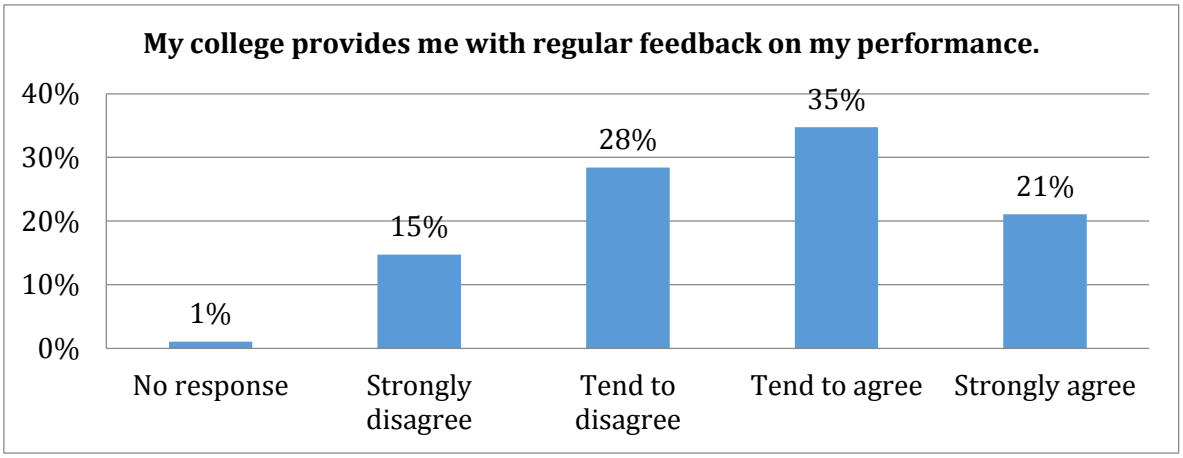


Figure 27: Percentage of apprentices who believe their college provides them with regular feedback

During the semi-structured interviews, apprentices were asked whether they felt that the training that they are receiving at the college is preparing them for the workplace and whether they felt supported by their college. The majority of the apprentices spoke highly of their colleges and their lecturers although one apprentice did remark that she was of the view that her lecturer did not adequately explain how to perform tasks nor provide useful feedback in terms of how tasks could be improved. This is captured in the comments below:

Apprentice 1: *They just give us a task and don't explain it you have to figure it out yourself.*

He doesn't explain to you and say you have to improve here and here. He just says 'poor planning' and leave you like that.

Interestingly, however, despite feeling that her college does not provide her with adequate feedback, Apprentice 1 still feels supported by her college. From the comments below it is clear that the apprentices feel very well supported by their colleges.

Apprentice 1: *Yes the college is supporting us and they are preparing us for the work place*

Apprentice 2: *It is really supportive and they are really motivating us so when we get to the companies we were not duds and nervous because the college prepared us enough for the company*

Apprentice 3: *Yes, they are very easy to talk to. You can ask them anything and they will guide you until you understand*

Apprentice 8: *Whatever goes wrong at the company I know that when I come back and I sit down with my lecturer and he will go through it.*

Apprentice 9: *Very much so, yes. They are giving us their best and if we don't know something, we have to ask them questions, ask them to help us with the practicals*

Apprentice 12: *They do come and check if we are working fine or if we need anything. Yes they really do support us.*

From the responses, it can be seen that the apprentices were more positive in the interviews than in the questionnaire.

Finally, as can be seen from Figure 28 below, apprentices are of the view that the system of rotating between the college and the company is a good way to reinforce classroom theory with on-the-job experience. Eighty four percent of apprentices surveyed responded affirmatively to this statement.

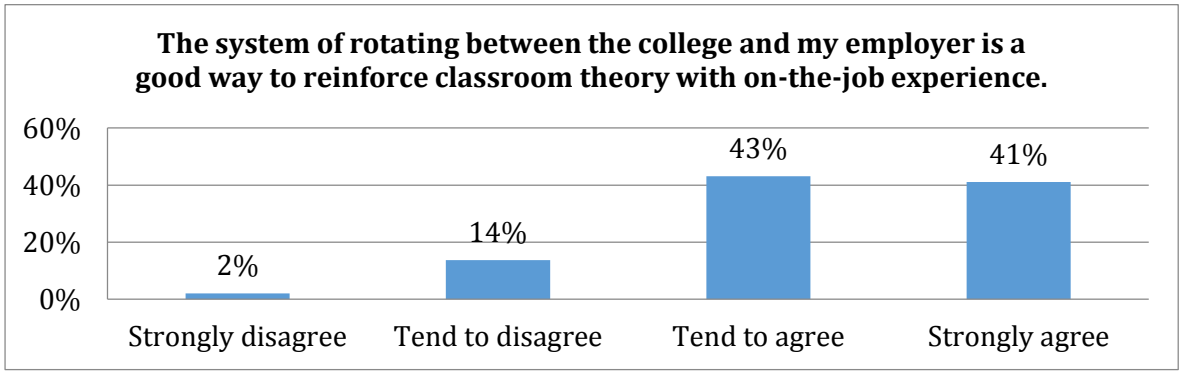


Figure 28: Percentage of apprentices who believe the rotation system is a good way to integrate theory and practice

During the interviews, apprentices were not asked to comment on the system of rotating between the college and the companies. Two apprentices did, however, specifically talk

about the rotation and the fact that it was providing them with learning experiences that they were unable to encounter in the college.

Apprentice 2: *So DSPP is good especially the rotation. When we are the companies we learn to work with many people we encounter many different people so we learn a lot*

Apprentice 11: *In the workplace you will meet different things that you never meet in the college so you have to adapt yourself personally*

The reasons why the apprentices are of the view that they are not being provided with sufficient feedback is not clear. It may be due to insufficient knowledge on behalf of the college lecturers. According to the DHET's Green Paper for post school education and training 'the single greatest challenge in improving and expanding the colleges is the capacity of lecturers, particularly their subject-matter expertise' (DHET, 2012, p. 24). According to this document, college lecturers in technical fields have been recruited from industry but have little pedagogical training. Lecturers of academic subjects on the other hand have teaching qualifications but little industry experience. Finally, there are those lecturers who have completed their N6 courses who have limited subject content knowledge and very little if any workplace experience.

This research did not investigate the qualifications and capacity of the college lecturers but as outlined above it is widely accepted that TVET college lecturer capacity is weak. It is therefore possible to speculate the capacity of the lecturers in this project is also weak and this is why the apprentices are not satisfied with the feedback which they are provided with by college lecturers.

Apprentices' experiences of the DSPP at host employers

The research found that apprentices have both positive and negative experiences at their host employers. Positive experiences at the host employers were reported where apprentices were provided with relevant work experience, where they felt supported by their employers and where they have good relationships with their artisans. Good relationships with artisans stemmed from feeling trusted, given authority to get on with their work and a patient artisan. Negative experience encountered by the apprentices include lack of feedback, not being provided with relevant on-the-job experience, discrimination, issues relating to safety, lack of employer support and conflict in the workplace

An analysis of these findings is presented under the following headings: a) relevant work experience; b) employer support; c) feedback; e) safety, and; f) future employment.

Relevant work experience

There is little doubt that an apprentices' experience in the workplace is shaped by the type of work he/she is given. Where apprentices are being provided with good exposure to the electrical trade, they tend to have a positive workplace experience. Where they

are provided with limited exposure to the trade, they experience the workplace negatively.

As can be seen from Figures 29, 30, and 31 below, 22% of the apprentices that completed the questionnaire are of the view that their employers are not training them, 23% believe that they are not being provided with adequate guidance and mentoring and 29% disagree that their employer is supportive and providing them with the correct workplace exposure.

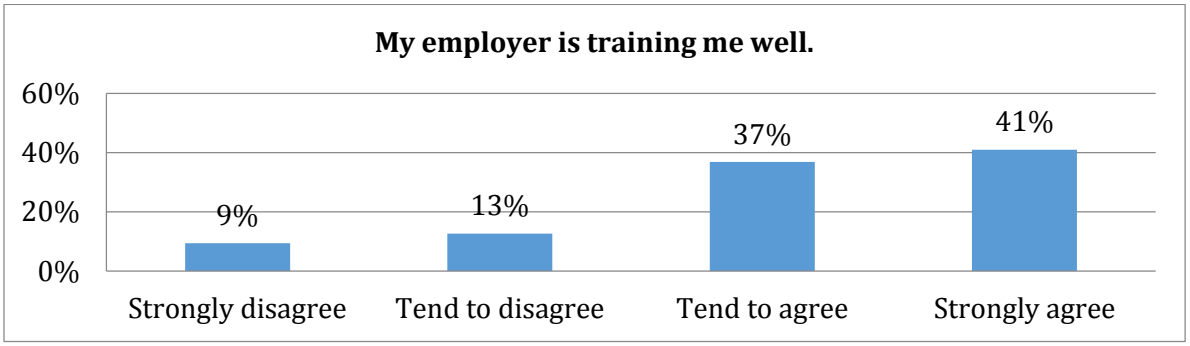


Figure 29: Percentage of apprentices who believe their employer is training them well

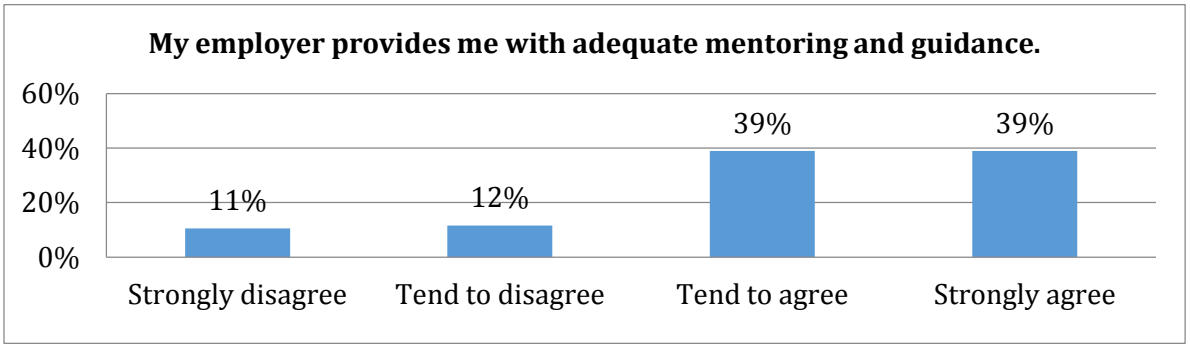


Figure 30: Percentage of apprentices who believe employers provides adequate mentoring and guidance

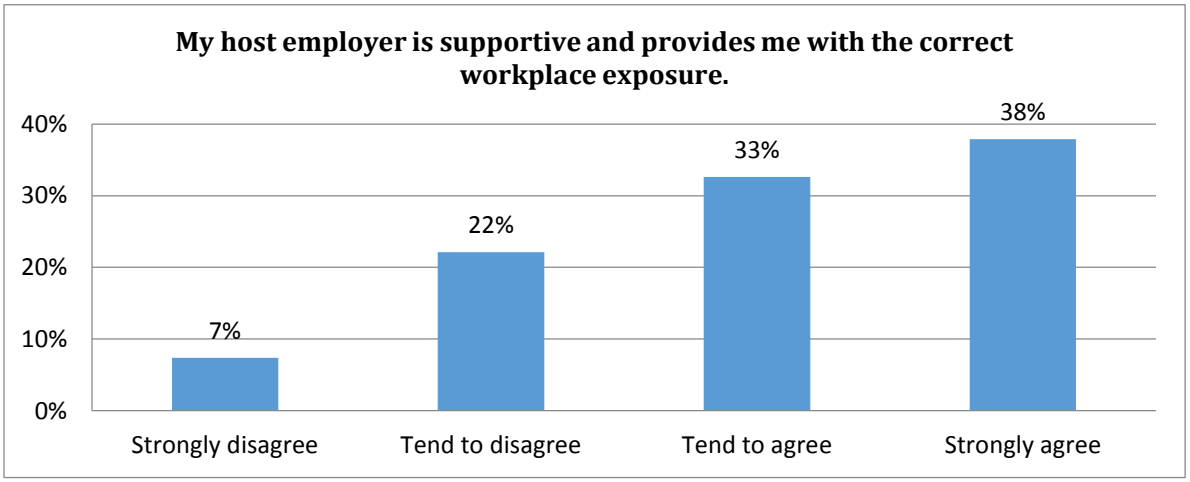


Figure 31: Percentage of apprentices who believe their employer is supportive and providing workplace exposure

This finding was supported during the interviews where it was found that 25% of the apprentices interviewed are not experiencing an 'expansive learning experience' that (Fuller & Unwin, 2003) suggest is crucial for a good apprenticeship as discussed in chapter two. This is captured by the following comments:

Apprentice 1: *When we are there we just sit at the workshop. If there is no breakdown we do nothing so we just have to go and help around and most of the staff is fitting. We do fitting. We are the electrician apprentices, we help the fitters most of the time*

Apprentice 3: *So we couldn't experience the fixing of the lights because we are always on the ground. They also work on replacing plugs, we hardly work on distribution boards. We mostly work on cleaning the workshop or washing the cars*

Apprentice 4: *There are three of us that are unhappy. One guy is unhappy because of what he is doing. He is not doing electrical. He is with an artisan that is a fitter so he is doing fitter's jobs instead of doing electrical.*

This finding is an indication that some host employers have divested responsibility for their apprentice's professional development and growth. This is symptomatic of government supply led apprenticeship programmes. If employers do not have a real need to develop the skills of their workforce then it is unlikely that they will invest the time and the effort to provide their employees with quality training.

These findings suggest that the South African situation is similar to that in the UK described by Fuller and Unwin (2009), as cited in the literature review, where they argue that the shift from employer led apprenticeships to state sponsored apprenticeships has fractured the pillars of apprenticeships.

Employer support

In terms of employer support, the majority of apprentices feel supported by their employers. However, some apprentices complained that their companies are not providing them with the necessary support.

Figure 32 below shows that 21% of respondents disagreed that their company had explained what it does and how it operates.

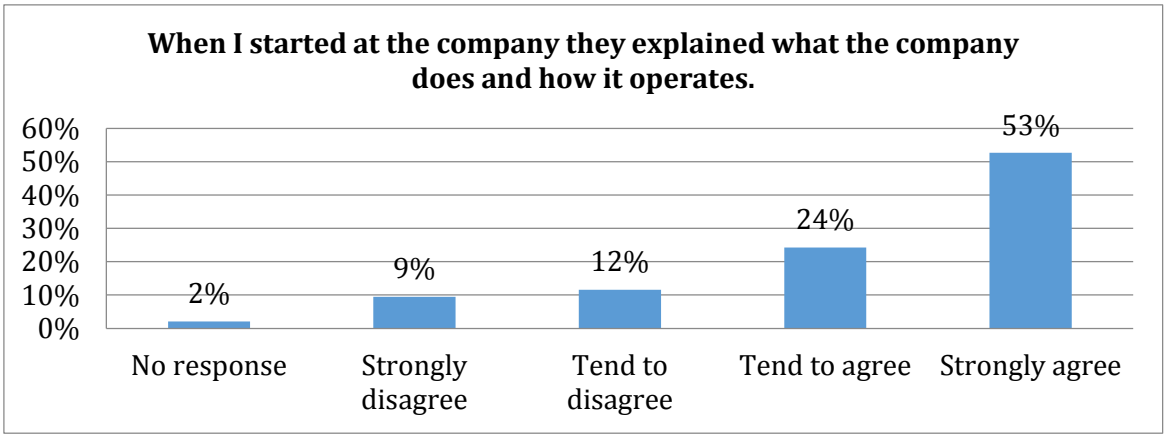


Figure 32: Percentage of apprentices who said employers explained what the company does and how it operates

A further 29%, disagreed that the company had explained what is expected of them and how they would be assessed, as show in Figure 33 below.

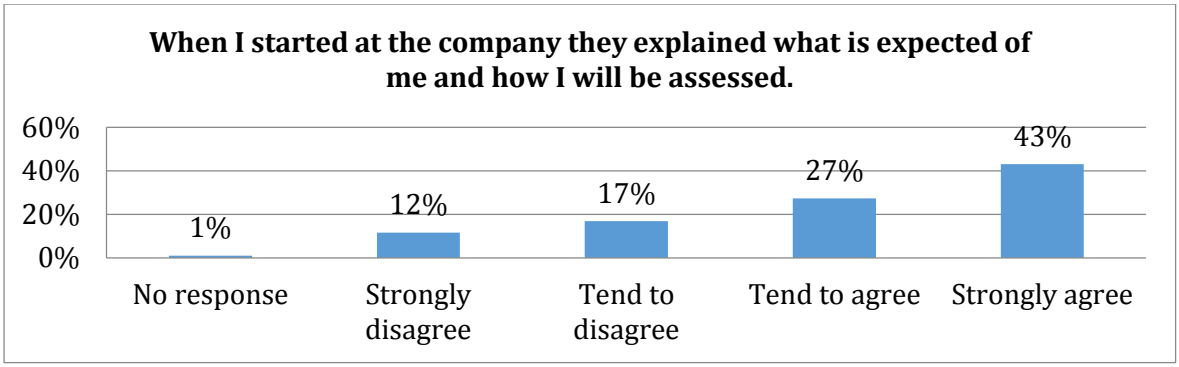


Figure 33: Percentage of apprentices who said employers explained what was expected and how they would be assessed

During the interviews, apprentices were asked whether they felt supported by their employers. Predictably, those apprentices that complained about not receiving the right work exposure also experienced the workplace negatively. These negative experiences are captured in the quotes below:

Apprentice 3: *There is discrimination. The white people have preference. Only whites went, we were not told what the meeting was about.*

Apprentice 12: *Support from the employer? They never even took time to explain to us what we were supposed to be doing but the guys we met, they were mentoring us. Because when we first went we didn't even have an induction, we just went to vans and went to work. So you don't even know what you are going to be doing.*

Apprentice 4: *I was doing the work that the artisan had given me and I heard him shouting, 'I'll smack you, you don't listen' and when I got there to hear what he was talking about, I saw her crying so I went back and finished up my job and he just left us after that.*

However, other apprentices felt well supported by their employers, which is evidenced by the following comments:

Apprentice 2: *But our mentors and the people we are working with don't take advantage of us. In most cases they give us authority to do our work. If there is work they will send us there and they will tell us 'we are sending you there because we trust you'. That is when we get motivated*

Apprentice 9: *I would say yes, not all the workers at the company are qualified artisans but they have experience and they are patient with us. They give us work to do on our own and they have trust in us that we will finish the job and do it correctly*

Apprentice 7: *Yes, more than good opportunities. I can say that they are treating us with respect and they are teaching us so much and they are very patient with us. They understand that we are students and we are learning and they teach us everything step by step.*

In addition to being provided with exposure to the electrical trade, the apprentices' experience in the workplace is to a large extent dependent on the artisan to which he/she is assigned and the extent to which he/she feels supported in the workplace. Whilst some apprentices spoke positively about the artisans they are working under, others reported negative experiences.

When probed as to the reasons that apprentices either felt supported or not supported by their employers, apprentices raised the issue of artisan personalities in a number of cases. For example:

Apprentice 4: *Yes, it is the artisan who is the problem. And if you go to anyone that works there and say 'do you know what Michael is like' they say 'ooh, do you work with Gavin? That guy doesn't know how to speak to people'.*

Apprentice 5: *They have different personalities. He wanted us to make trenches, chase the walls and not for us to do connections. So we told them no 'if we do them together, we must connect together' because there is no point of us digging all the time and you coming and connecting and us not learning anything. So after that he has changed a bit.*

Apprentice 6: And sometimes we find that if a machine is stuck, the big boss will come and shout at all of you because by just stopping the production for five minutes it is costing the company money. It is just the personalities sometimes

Apprentice 10: *I had never been around artisans, they taught me everything. I really like them and I am learning a lot* there.

Artisans play a critical role in developing the skills of apprentices and it is therefore important that artisans provide guidance and support to their apprentices. Apprentices spoke positively about their artisans when the artisans trusted them, were patient, allowed them to get on and do the work but were there for them when they ran into problems or didn't know what to do. However, some of the apprentices reported that they find themselves in very pressurized work environments where their artisans shout at them, threaten to hit them and that discrimination exists in the workplace. These apprentices clearly do not feel supported by their employers.

These negative findings are disturbing and raise a number of questions about bullying and discrimination in the workplace and the extent to which this is tolerated by the company and entrenched within the company culture. It is also raises questions about whether or not South African employers are ready to take on apprentices in large numbers.

Feedback

Regarding feedback from the employers, fifty-seven percent of apprentices agreed that their employers are providing them with regular feedback whilst 43% disagreed with this, as shown in Figure 34 below.

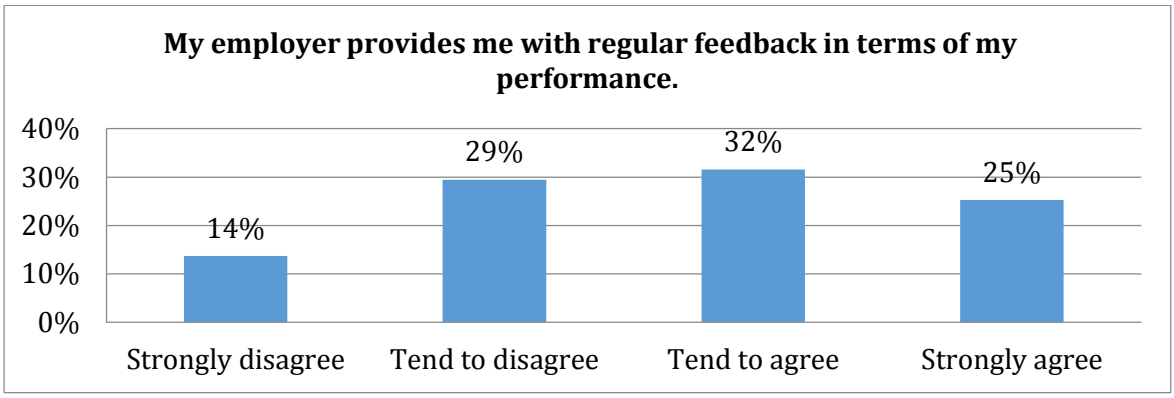


Figure 34: Percentage of apprentices who believe their employer provides them with feedback

As can be seen from Figure 35 below, these results are strikingly similar to the apprentices' responses about whether or not they believed that their colleges are providing them with sufficient feedback.

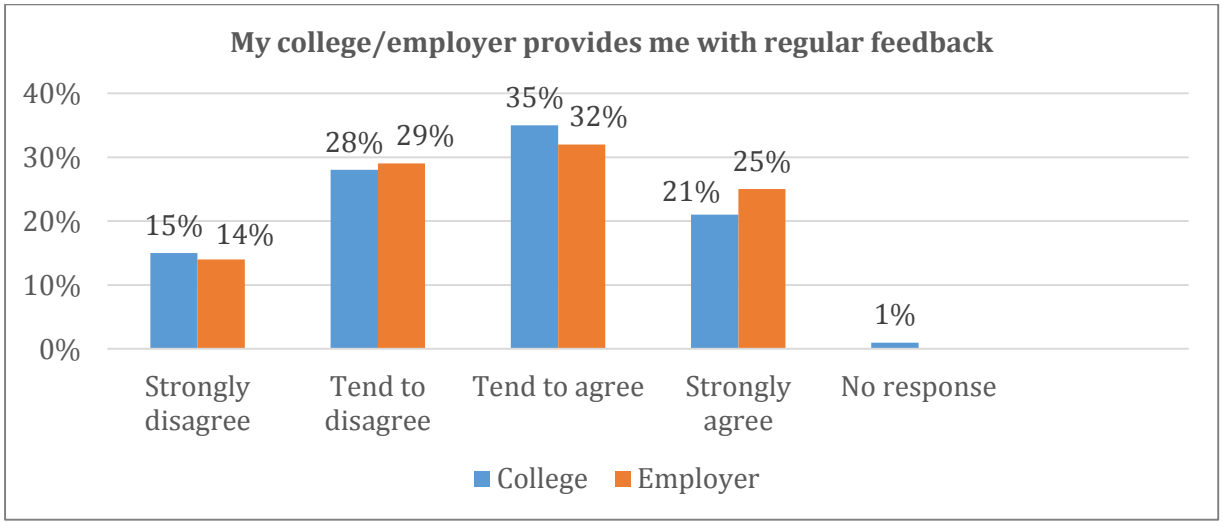


Figure 35: Comparison of college/employer feedback

As feedback forms part of the assessment process, both colleges and employers will need to ensure that apprentices are provided with regular feedback on their performance. Apprentices need to know in which areas they are performing well and in which areas they need to improve.

Safety

The questionnaires did not ask apprentices to comment on safety issues at the place of employment, but the issue was raised by 25% of the apprentices that were interviewed. This is reflected by the following comments:

Apprentice 1: *They make us operate machines which we are not qualified to and when we get hurt it will be our problem, they won't pay us when we get injured.*

The company is treating us very well, the safety is good.

Apprentice 3: *Their scaffolding has wheels and scaffolding is not supposed to have wheels. They are supposed to have scaffolding ladders and they don't have them. They only have one and it is aluminium. For the steel ones, they are using an extension ladder which is not safe.*

I'm not happy with the level of safety there. Their cars, they don't service their cars.

Apprentice 5: *The only problem I would have with the company is that we travel by bakkies and sometimes you get in the back of a bakkie with a ladder, parts and the material. My only worry is that when we have an accident I don't think that we will make it out alive. That is the only think that is bothering me otherwise everything else is fine.*

The comments made by Apprentice 1 are contradictory. On the one hand, the apprentice reports that they must operate machines that they are not qualified to operate and on the other hand, she comments that the safety is good. However, it is evident that the apprentices are concerned about safety.

Obviously, issues of safety are of prime importance and if employers are taking shortcuts then this must be addressed as a matter of urgency. The question that arises, however, is with whom the apprentices should raise safety issues? It is unlikely that apprentices will feel confident enough to raise their concerns directly with the employer which suggests that a mechanism needs to be put in place whereby apprentices can report these issues to the Department of Labour directly and anonymously.

Future employment

Fifty six percent of the apprentices indicated that they would like to continue working for their host employers after completion of the apprenticeship. The remaining 44% said that they would not like to continue working for their host employers. This is captured in Figure 36 below.

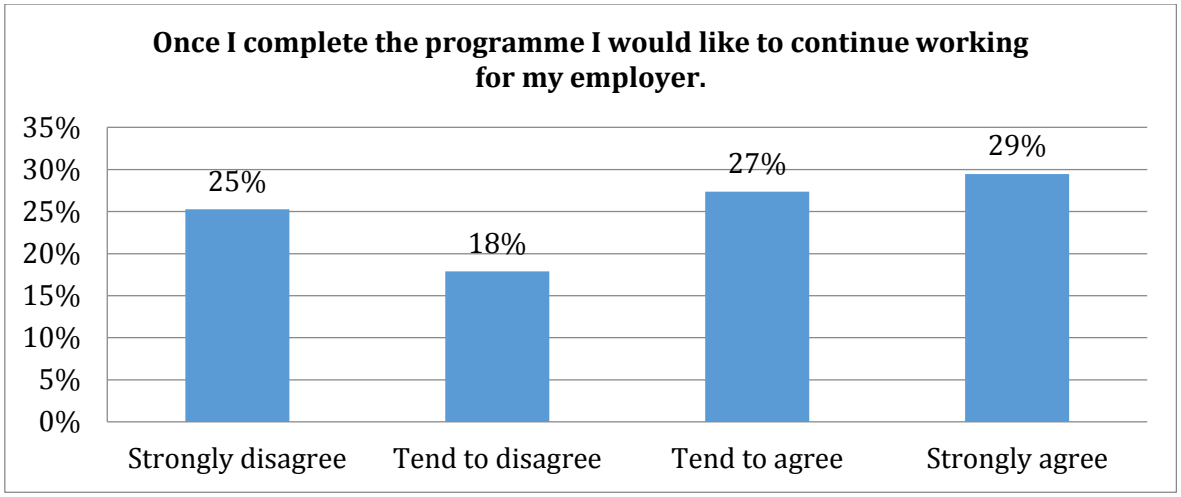


Figure 36: Percentage of apprentices who would like to continue working for their employer

However, 75% of the apprentices indicated that they hoped that their employers offered them a job after they complete their apprenticeship. This is illustrated in Figure 37 below.

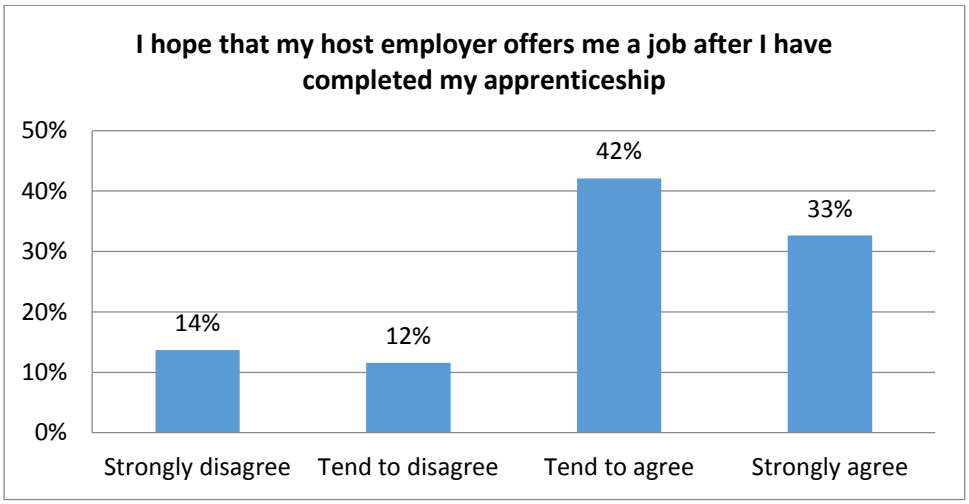


Figure 37: Percentage of apprentices who hope that their employers offer them a job

These findings are somewhat contradictory. On the one hand, 56% of apprentices would like to continue working for their employers but on the other hand, 75% hope that their employers provide them with job offers. The reason for this is not clear but could be due to the fact that the apprentices are hoping to receive a number of job offers so that they are able to select the best one.

From the discussion above it can be seen that if employers a) provide apprentices with exposure to the trade; b) provide support to the apprentice in terms of inducting them into the company and ensuring that the artisans to whom they are assigned are properly equipped to provide the necessary mentoring and guidance; c) ensure that apprentices are provided with regular feedback and support and; d) that they work in a safe environment then it is likely that the apprentices will want to continue working for the employer on completion of the apprenticeship. If on the other hand employers do not

ensure that these mechanisms are in place then apprentices will experience the workplace negatively.

In summary

This section has presented an analysis of the apprentices' experience at both the college and host employers. It has shown that in general the apprentices are satisfied with their colleges and feel well supported. However, a high percentage of the apprentices are of the view that the learning material is not easy to understand, that the DSPP is a repetition of what they have already learnt and the college lecturers are not providing them with sufficient feedback.

Regarding the apprentices' experience at host employers, my findings suggest that the experiences of the apprentices in the workplace is mixed. Some apprentices are having a positive experience whilst others are experiencing the workplace negatively.

Summary of key findings

This chapter has presented my research findings and provided an analysis of the results. In section one, a presentation of the demographic profiles of the apprentices showed that the apprentices are older than their counterparts in countries with strong apprenticeship systems. None of them made a direct transition from school onto apprenticeship programmes. Women are well represented on the programme and the apprentices are already well qualified. The majority of host employers employ 50 people or more and therefore cannot be classified as SMMEs.

In section two, it was shown that apprentices would have preferred to study at a university but this was never a realistic option for them as they either did not have the results or the money or both to attend university. Having accepted that they will need to attend a TVET college, the apprentices specifically enrolled at the college to study electrical and have a strong interest in the trade.

Section three considers the reasons why the apprentices decided to participate in the DSPP. It explains that young people require work experience in order to qualify for the trade test and demonstrated the difficulty that young people have in finding apprenticeship opportunities. The fact that the apprentices believe the DSPP is a prestigious programme was discussed. It is hypothesized that the apprentices consider the programme prestigious because it allows them to work, study and earn simultaneously.

In section four, the apprentices' expectations of the DSPP were unpacked. It was shown that apprentices have high expectations of the DSPP in terms of employment prospects, earning potential and entrepreneurial opportunities.

The final section of this chapter investigated the apprentices' experiences of the DSPP at the college and at the workplace. It was shown that apprentices are mostly satisfied with

their colleges, although a high percentage of them did complain about the learning materials and lack of feedback from lecturers. The majority of the apprentices are of the view that the DSPP is a repetition of what they have already learnt.

Regarding the apprentices' experience in the workplace, it was demonstrated that the apprentices are experiencing the workplace differently. The apprentices experience in the workplace is to a large extent dependent on whether or not they are being exposed to the electrical trade and the extent to which they feel supported by their employer. Incidents of bullying and discrimination were reported which are of grave concern. Apprentices also rated the employers poorly in terms of providing regular feedback. Finally, some of the apprentices raised concerns about issues of safety in the workplace.

CHAPTER 5: REFLECTIONS OF MY FINDINGS AND ANALYSIS

In concluding this research, it is necessary to reflect on the research findings. The reflections are presented under the following headings: a) supply versus demand-led apprenticeships; b) the appeal of dual apprenticeships; c) inefficiencies; and d) ingredients required for a positive workplace experience

Supply versus demand-led apprenticeships

The fact that many apprentices are of the view that they are not being provided with sufficient exposure to the electrical trade raises a number of important issues. These relate to differences between employer demand-led apprenticeship programmes and government supply-led programmes. In countries such as Germany and Switzerland which have successful apprenticeship systems, employers play a key role in financing and administrating apprenticeships and employers take on apprentices because they need them in order to meet their production targets. This pilot project, by contrast, was led by the state and a lead/host employer model was constructed whereby a lead employer was paid to contract the apprentices and pay their stipends. The role of the host employer is merely to provide the required work exposure to the electrical trade. Given the fact that the apprentices had only been at their companies for 14 weeks when this research was undertaken it is not possible to categorically assume that the apprentices are not being provided with relevant exposure to the trade. Employers may initially have only allowed apprentices to hand tools and observe work being undertaken. In time employers may allow apprentices to take on more responsibility and perform the work themselves.

Never-the-less, the issue of work exposure is important as some host employers may be of the view that it is merely their responsibility to provide the apprentices with work experience rather than formally qualify them as artisans. This is an important distinction as it impacts directly on the apprentices' opportunity to pass the trade test and qualify as an artisan. It also may suggest that insufficient attention was paid to the screening and selection of host employers. If host employers are unable to provide apprentices with sufficient exposure to the electrical trade then they should not have been contracted as host employers. Be that as it may, outside of a pilot project it likely that even less attention will be made to the recruitment of host employers. This is of concern given the fact that the host employers commitment to training young people impacts directly on the apprentices' experience of the workplace. As was shown in the previous section apprentices experience the workplace positively when they are doing electrical work and when they feel as though they are contributing towards the company's production targets.

Lack of exposure to the trade also raises issues related to the host/lead employer model and a supposed shortage of electricians in the country. According to the DHET (2016),

in future apprentices will be contracted by an employer before enrolment of the apprentice at a TVET college. This assumes that sufficient employers are available in a particular locality that are willing to offer apprenticeships in a particular trade. If this does happen then this is indeed positive as it means that employers have a need for apprentices and are therefore much more likely to ensure that their apprentices receive the required training in order to qualify as artisans.

However, if there are insufficient employers willing to enter into a direct contract of employment with apprentices in which apprentices are actually on the payroll of the company, then a lead/host employer relationship will need to be constructed and incentives put in place for employers to take on apprentices. This, however, is problematic. Firstly, if employers do not have a real economic need for apprentices and merely sign them on to acquire Broad Based Black Economic Empowerment (BBBEE) points or for any other reason that is not directly related to skills shortages, then employers may have a sense of resentment towards the apprentices. Employers may feel as though they are being forced to take on apprentices and not be as committed to their training as they would be if they truly needed to train a new generation of skilled workers in order to meet their production targets. Secondly, it has implications for the financing of apprenticeships. If employers are not prepared to invest in apprenticeships without incentives then this raises questions about whether or not employers see value in them. Once again, if the state is financing apprenticeships to a significant extent then this suggests that the state rather than employers believe that apprenticeships are valuable.

Furthermore, if colleges are approaching employers in their areas to take on their students as apprentices, it is possible that either employers are not experiencing skills shortages or alternatively, employers do not trust the TVET colleges preferring instead to train the apprentices though their own in-house training centers or private providers. Colleges will need to ensure that they build employer trust in their ability to train apprentices. Colleges will also need to take cognizance of the fact that if they are urging employers to take on their students as apprentices then once again the model is government supply-led and not demand-led by employers. This, as has been shown above, has implications for the outcomes of the apprenticeship programme.

This leads to questions about whether it is the state or employers that believe that South Africa is facing a shortage of artisans. The government in South Africa is of the view that it needs to build an apprenticeship system in order to meet the skills requirements of the Strategic Infrastructure Projects (SIPS). The SIPS projects are massive government projects such as electricity generation, transmission and distribution and the building of schools and universities. The state needs artisans and is trying to coerce employers to train them. However South Africa unlike Germany and Switzerland does not have a tradition of small employers participating in apprenticeship programmes. Instead, the mines and the State Owned Enterprises (SoEs) trained above their immediate needs and provided a pool of artisanal skills to the South African economy from which smaller employers could recruit. However, many of these SoEs have been privatised and have

cut back significantly on apprenticeship training in their bid to become competitive. The result is that the massive capacity that once existed within the SoEs to train apprentices has been undermined and many of the training centres mothballed, as discussed in the literature review (Akoojee, 2013). It could, therefore, be argued that if the government needs artisans for the SIPs projects then it will need to rely on government entities such as municipalities and ESKOM to train them rather than smaller private sector employers.

In short, there is a need to distinguish between who needs artisans. If it is the state, then the state should train them. If, however, the state needs artisans but wants private sector employers to train them as a favour to the state, then incentives will need to be in place and this changes the very foundation of an apprenticeship system. Furthermore, with the SIPS projects coming on board, the government may believe that the private sector will need artisans and will therefore assist the private sector train them by providing incentives. However, the private sector may be reluctant to train them, preferring instead to import skills as and when required.

The question about who needs artisan skills also raises questions about the narrative that has been created in South Africa about the shortage of artisanal skills in the country and the extent to which the state is using this as a lever to address issues of youth unemployment. Employers in South Africa are not rushing to offer apprenticeships on a large scale, which suggests that they don't need these skills. The state, on the other hand, has set targets to train artisans in large numbers but without the cooperation of employers, the state is limited to utilizing its own entities to do this. The state could, of course, tie the awarding of government tenders to training commitments but as has been emphasized throughout this paper, if employers are training for these types of reasons then it has implications for the way in which young people are treated and trained in the workplace.

The appeal of dual apprenticeships

In the section above, it was shown that there are a number of issues relating to supply-led apprenticeships and that when employers are not driving the system there is a danger that apprentices will not be trained to the required standard. However, there is little doubt that the dual apprenticeship system is appealing to young people as it allows them to study, work and earn simultaneously. It provides them with access to the labour market because they have obtained some work experience. This is in contrast to programmes such as the NC(V) which do not contain a compulsory work component. The challenge is how to create a demand by employers for apprentices and for employers to see their value. Whilst there are, a number of initiatives in South Africa aimed at providing young people with work experience these are not formal apprenticeships and tend to take place after young people obtain their qualifications. This in itself is inefficient as initiatives aimed at providing young people with work experience after they qualify cost money and time. Dual apprenticeships, by contrast,

ensure that young people obtain work experience whilst they are studying and are therefore much more likely to transition smoothly into the labour market upon completion. Thus, whilst the South African government has taken significant measures to bolster the supply of artisans into the economy, it could be argued that not enough has been done to stimulate demand. Moreover, private sector employers may not need or want apprentices in the engineering trades but could possibly have a demand for apprentices in the services and financial sectors. This is an area that would require further research, and my research findings suggest that it is worthy of investigation.

System inefficiencies

The research has highlighted the enormous wastage in the artisan development system and consideration will need to be given to issues of articulation. The system in its current format allows young people to finish Grade 9 and then enter into an apprenticeship. The reality, however, is that the South African schooling system is extremely weak and as such employers are increasingly selecting apprentices with a matric certificate. At the current time, the higher education sector in South Africa is in crisis and the country simply cannot afford to fund young people for six years to study to become electricians. At the same time, it is understandable that colleges want to provide their existing NC(V) students with opportunities of employment. A conundrum thus exists which will need to be resolved. Additionally, the fact that young people are required to spend three years studying after completing matric and end up with a qualification that is at the same level of matric is further testimony to system inefficiencies. On the one hand, the new occupational qualifications allow young people to enter these qualifications with a Grade 9 certificate but on the other hand, the reality is that they are unable to because employers insist on a matric certificate. The system as it currently exists limits the educational opportunities of young people because they are simply unable to obtain a qualification that is higher than the matric certificate. The fact that the matric certificate is a gateway qualification to an apprenticeship suggests that much work will need to be done in terms of convincing employers to sign on apprentices with a Grade 9 certificate. However, until the schooling system improves it is doubtful whether employers would be open to this.

Ingredients required for a positive workplace experience

The research has also raised issues about how apprentices experience the workplace and the fact that apprentices experience the workplace differently depending to a significant extent on how much exposure to the trade that they are provided. Where apprentices are provided with what Fuller (2003) refers to as an expansive experience, the apprentices experience the workplace positively. However, if apprentices perform narrow repetitive tasks and are not provided with exposure to the trade then they experience the workplace negatively. In Germany and Switzerland, employers train for the occupation and not for their own narrowly defined needs. In South Africa however, employers tend to train for their own immediate production needs which ultimately ties

an employee to a specific company. Brockmann and Laurie (2016) point out that this has the effect of limiting the life chances of apprentices because they learn a limited set of skills and are unable to develop their conceptual knowledge. This ultimately ties them to their specific employer and also fails to provide them with an adequate base for educational progression. Thus, in Germany and Switzerland all apprentices will receive the same base training for the occupation, which means that the apprentices' skills are portable from one company to the next. In South Africa however, the training provided to apprentices may differ significantly from one company to the next.

The apprentices' accounts of their workplace experiences in my research raise important issues. If bullying and discrimination and unsafe working conditions are experienced by apprentices, who should these be reported to and how should this be dealt with? South Africa has a long history of discrimination and harsh working conditions, which appear to be entrenched in the culture of some employers. The research has shown that apprentices feel well supported by their colleges and are able to discuss problems that they encounter in the workplace with their college lecturers. However, colleges are not well positioned to challenge employer practices. An apprentice is an employee of a company first and foremost and not a college student. This is an important distinction and colleges, apprentices, and employers need to understand this difference. If colleges are of the view that they are sending their students to an employer to obtain work experience rather than employers are sending their employees to the college to obtain the theoretical component of the qualification, then they are contributing to absolving the company of its responsibility to formally qualify the apprentices as artisans.

Finally, the fact that colleges put a candidate pool together from which employers were able to select is testimony to how far the apprenticeship system has drifted from employers. Traditionally in South Africa, companies recruited their own apprentices and sent them to college. This is the system that is currently practiced in Germany and Switzerland. Once again, the issue of youth unemployment is raised and whether or not employers are taking on apprentices as a favour to the college and to contribute towards reducing youth unemployment or because they are experiencing skills shortages. These nuanced differences are important and need to be carefully interrogated. As explained in the literature review, apprenticeships cannot address a wide-range of social ills and it is therefore imperative that policy makers are clear about exactly what it is that they want apprenticeships to achieve. If this is not done then as this research has highlighted a number of unintended outcomes creep into and disrupt the apprenticeship model, which rests on employer ownership.

REFERENCES

Akoojee, S. (2013). Towards a model apprenticeship framework. A comparative analysis of national apprenticeship schemes. New Delhi: International Labour Organisation.

Allais, S. (2012). Will skills save us? Rethinking the relationships between vocational education, skills development policies, and social policy in South Africa. International Journal of Education Development, 32(5), 632–642.

Allais, S. (2013a). Understanding the Persistance of Low Skills in South Africa. In New South African Review 3. (J. Daniels, P. Naidoo, D. Pillay, & R. Southall, Eds.). Johannesburg: Wits University Press.

Allais, S. (2013b). World Yearbook of Education 2013. Educators, Professionalism and Politics: Global Transitions, National Spaces, and Professional Projects. (T. Seddon & J. Levin, Eds.). London and New York: Routledge.

Allais, S., Marock, C., & Molebatsi, P. (2014). The Development of Occupational Standards in English-speaking countries. Johannesburg: University of the Witwatersrand. Research Education and Labour Centre.

Atkins, L., & Flint, J. (2015). Nothing changes: perceptions of vocational education in England. International Journal of Training Research, 13(1), 35–48.

Balasubramanian, N. (2012). Likert Technique of Attitude Scale Construction in Nursing Research. Asian Journal of Nursing Education and Research, 2(2), 65–69.

Barabasch, A., Huang, S., & Lawson, R. (2009). Planned policy transfer: the impact of the German model on Chinese vocational education. Compare: A Journal of Comparative and International Educatin, 39(1), 5–20.

Brockmann, M., Clarke, L., & Winch, C. (2010). The apprenticeship framework in England: a new beginning or a continueing sham: Journal of Education and Work, 23(2), 111–127.

Brockmann, M., Clarke, L., & Winch, C. (Eds.). (2011). Knowledge, Skills and Competence in the European Labour Market. What's in a Vocational Qualification? London and New York: Routledge.

Brockmann, M., & Laurie, I. (2016). Apprenticeship in England - the continued role of the academic-vocational divide in shaping learner identities. Journal of Vocational Education and Training, 68(2), 229–244.

Busemeyer, M., & Trampusch, C. (2012). The Political Economy of Collective Skills Formation. Oxford and New York: Oxford University Press.

Chankseliani, M., Keep, E., & Wilde, S. (2017). People and Policy: A comprehensive study of apprenticeship across eight national contexts (Study). England: University of Oxford.

Clarke, L., & Winch, C. (2006). A European skills framework? - but what are skills? Anglo-Saxon versus German concepts. Journal of Education and Work, 19(3), 255–269.

Clarke, L., & Winch, C. (2007). Vocational Education: International Approaches, Developments and Systems. London and New York: Routledge.

Department of Higher Education and Training. (2015). List of occupations in high demand. Department of Higher Education and training. Retrieved from http://www.dhet.gov.za/Gazette/Government%20Gazette%20No%2039604,%2019%20January%202016.%20List%20of%20Occupations%20in%20High%20Demand%202015.pdf

DHET. (2012). Green paper for post-school education and training. Pretoria: Department of Higher Education and Training.

DHET. (2013). White Paper For Post-School Education and Training. Building and expanded, effective and integrated post-school system. DHET.

DHET. (2014a). Input of the Deputy Minister of Higher Education and Training, Mr MC Manana on the decade of the artisan. Retrieved 13 November 2016, from http://www.dhet.gov.za/SiteAssets/Minister%20Speeches2015/INPUT%20OF%20THE%20DEPUTY%20MINISTER%20OF%20HIGHER%20EDUCATION%20AND%20TRAINING.pdf

DHET. (2014b). Trade Test Regulations. DHET.

DHET. (2015a). Annual Performance Plan. DHET. Retrieved from ww.dhet.gov.za/Strategic%20Plans/Annual%20Perfomance%20Plans/Department%20of%20Higher%20Education%20and%20Training%20Annual%20Performance%20Plan%202015-16.pdf

DHET. (2015b). Draft national artisan development trade test pass rate and quality improvement strategy, 2015 Skills Development Act, 1998 (Act 97 of 1998). DHET.

DHET. (2015c). Strategic plan for the fiscal years 2015/16 – 2019/20.

DHET. (2016). Centres of specialization in the TVET college sector. Retrieved 19 January 2018, from http://www.dhet.gov.za/TVET%20Conference/TVET/Centeres-of-Specialisaiton-in-the-TVET-College-Sector.pdf

Field, S., Musset, P., & Alvarez Galvan, J.-L. (2014). A Skills beyond School Review of South Africa (OECD Reviews of Vocational Education and Training). OECD.

Finegold, D. (1999). Creating Self-Sustaining High-Skill Ecosystems'. Oxford Review of Economic Policy, 15(1), 60–81.

Finegold, D., & Soskice, D. (1988). THE FAILURE OF TRAINING IN BRITAIN: ANALYSIS AND PRESCRIPTION. Oxford Review of Economic Policy, 4(3), 21–53.

Fisher, R., & Swift, J. (2012). Choosing vocational education: some views from young people in West Yorkshire. Research in Post-Compulsory Education, 17(2), 207–221.

Fuller, A., & Unwin, L. (2003). Fostering workplace learning: looking through the lens of apprenticeship. European Educational Research Journal, 2(1), 41–55.

Fuller, A., & Unwin, L. (2009). Change and continuity in apprenticeship: the resilience of a model of learning. Journal of Education and Work, 22(5), 405–416.

Fuller, A., & Unwin, L. (2011). Apprenticeship as an evolving model of learning. Journal of Vocational Education and Training, 63(3), 261–266.

Gessler, M., & Howe, F. (2013). The German dual vocational training system - the origin of the current architecture. Graduate School of Education and Human Development,. Retrieved from http://hdl.voced.edu.au/10707/279998.

Gewer, A. (2009). Features of social capital that enhance the employment outcomes of fet college learners (PHD Thesis). University of the Witwatersrand, Johannesburg.

Gewer, A. (2016). Change Management in TVET Colleges. Cape Town: African minds.

Global Entrepreneurship Monitor. (2016). Entrepreneurship behaviour and attitudes. Retrieved 9 January 2018, from http://www.gemconsortium.org/country-profile/108

Hall, P., & Soskice, D. (Eds.). (2001). Varieties of Capitalism: The Institutional Foundations of Comparative Advantage. Oxford: Oxford University Press.

Hanf, G. (2011). The Changing Relevance of the Beruf'. In Knowledge, Skills and Competence in the European Labour Market. What's in a Vocational Qualification? (M. Brockmann, L. Clarke, & C. Winch, Eds.). Abingdon and New York: Routledge.

Hodkinson, P. (1995). How young people make career decisions. Education and Training, 37(8), 3–8.

Indeed. (2017). Electrician salaries in South Africa. Retrieved 1 January 2018, from https://www.indeed.co.za/salaries/Electrician-Salaries

Janse van Rensburg, D., Visser, M., Wildschut, A., & Roodt, J. (2012). A technical report on learnership and apprenticeship population databases in South Africa: Patterns and shifts in skills formation. Pretoria: Human Sciences Research Council and Department of Labour.

JIPSA. (2010). Growing priority skills in South Africa Final report on JIPSA. Johannesburg.

Johnson, R. ., & Onwuegbuzie, A. (2004). Mixed methods research: A research paradigm whose time has come. Educational Researcher, 33(7), 14–26.

Joshi, I., Kale, S., Chandel, S., & Pal, D. K. (2015). Likert Scale: Explored and Explained. British Journal of Applied Science and Technology, 7(4), 396–403.

Keep, E., & James, D. (2012). A Bermuda triangle of policy? ' 'Bad jobs', skills policy and incentives to learn at the bottom end of the labour market. Journal of Education Policy, 27(2), 211–230.

Kladermans, B., & Staggenborg, S. (Eds.). (2002). Methods of Social Movement Research (Vol. 16). London and Minneapolis: University of Minnesota.

Kraak, A. (2012). Briefing paper on research done in South Africa on: Differentiation in the post-school sector. DHET Labour Market Intelligience project.

Kraak, A. (2016). Change Management in TVET Colleges. Lessons learnt from the field of practice. (A. Paterson & K. Boka, Eds.) (First). Somerset West: African minds.

Kruss, G., Wildschut, A., Janse van Rensburg, D., Visser, M., Haupt, G., & Roodt, J. (2012). Developing skills and capabilities through the learnership and apprenticeship pathway systems. Synthesis report: Assessing the impact of learnerships and apprenticeships under NSDSII. Human Sciences Research Council.

Kruss, G., Wildschut, A., Janse van Rensburg, D., Visser, M., & Roodt, J. (2014). Learnership and apprenticeships: Key mechanisms for skills development and capability building in South Africa. Human Sciences Research Council Press.

Lewis, T. (2007). The problem with cultural fit - what can we learn from borrowing the German Dual System? Compare, 37(4), 463–477.

Lomey, J., & McNamara, K. (2007). Projected skills demand and supply for the electrical energy sector (Sector Studies Research Report). Pretoria: Department of Labour. Retrieved from http://www.labour.gov.za/DOL/downloads/documents/research-documents/Electrical%20Energy_DoL_Report.pdf

Mazenod, A. (2016). Education or training? A comparative perspective on apprenticeships in England. Journal of Education and Training, 68(1), 102–117.

Mbatha, N., Xolani Ngazimbi and Thembinkosi Twalo, Wildschut, A., & Mncwango, B. (2014). Towards Understanding the Distinctive Nature of Artisan Training. Pretoria: Labour Market Intelligience Project.

Mouton, J. (2009). Module 5: Data analysis and reporting. Lecture notes supplied to students of the Diploma in Monitoring and Evaluation at the University of Stellenbosch in 2009. University of Stellenbosch.

National Planning Commission. (2011). National Development Plan 2030. Our future - make it work. Pretoria: The Presidency.

National Treasury. (n.d.). Artisans. Retrieved 3 September 2016, from https://www.gtac.gov.za/PER_Documents/Artisans%20PER.PDF

Needham, S., & Papier, J. (2011). Practical Matters: What young people think about vocational education in South Africa. Cape Town: City and Guilds Centre for Skills

Development. Retrieved from http://www.feti.ac.za/publications/J2%202011%20What-young-people-think-about-vocational-education-in-South-Africa-report.pdf

OECD. (2015). Employment: Tackling high youth unemployment (Policy brief). Retrieved from https://www.oecd.org/policy-briefs/south-africa-tackling-youth-unemployment.pdf

OECD. (2016). Youth unemployment rate. Retrieved 16 January 2018, from https://data.oecd.org/unemp/youth-unemployment-rate.htm

Pienaar, D., Venter, F., Govender, M., & Jitsing, A. (2015). Performance and Expenditure Review Technical and Vocational Education and Training. Final Report. Pretoria: DNA Economics.

Powell, L. (2014). Reimagining the Purpose of Vocational Education and Training. The perspectives of Further Education and Training College students in South Africa (PHD Thesis). University of Nottingham, England.

QCTO. (n.d.). Introduction to the Quality Council for Trades and Occupations (QCTO). QCTI.

Reddy, V., Bhorat, H., Powell, M., Visser, M., & Arends, F. (2016). Skills supply and demand in South Africa. Pretoria: H.

SERI. (2016). Vocational and Professional Education and Training in Switzerland Facts and Figures 2016. Switzerland: Secretariat for Education Research and Innovation. Retrieved from https://www.eda.admin.ch/dam/countries/countries-content/canada/en/Vocational-and-professional-education-and-training-switzerland_E.pdf

STATS SA. (2017). Electricity infrastructure dominates capital spending (Economy data stories). Pretoria: Statistics South Africa. Retrieved from http://www.statssa.gov.za/?p=10252

Streeck, W. (1996). National diversity and global capatilism. (S. Berger & R. Dore, Eds.). New York: Cornell University Press.

Thelan, K. (2004). How institutions evolve: The political economy of skills in Germany, Britain, the United States, and Japan. Cambridge: Cambridge University Press.
Trading Economics. (2016, October 28). Retrieved 28 October 2016, from www.tradingeconomics.com

Trading economics. (2017). South Africa monthly average gross wage. Retrieved 28 December 2017, from https://tradingeconomics.com/south-africa/wages

Wagner, C., Kawulich, B., & Garner, M. (Eds.). (2012). Doing Social Research: A global context (1st ed.). Europe and United States: McGraw.

Wedekind, V. (2013). Rearranging the furniture? Shifting discourses on skillsdevelopment and apprenticeship in South Africa. School of Education, University of KwaZulu-Natal, Pietermaritzburg Campus.

Wedekind, V. (2015). Education, training and the 'precariat': An overview of the South African education and skills landscape.

Wilson, D. (2000). The German 'Dual System' of Occupational Training: A Much-Replicated but Oft-Failed Transfer. (Paper). San Antonio: International Education Society.

Wolf, A. (2002). Does Education Matter? Myths about education and economic growth. London: Penguin.

APPENDIX 1: COLLEGE PRINCIPAL INFORMATION LETTER

13 January 2017

The College Principal

College 1

Private Bag XX

South Africa

1234

Dear Mr/Mrs ……

Request to administer questionnaires and interview Dual System Pilot Project (DSPP) apprentices

I am currently studying a Masters in Education at the University of the Witwatersrand and am required to complete a dissertation as part of the course requirements.

I have decided to focus my research on *'The reasons why young people join apprenticeship programmes and their perceptions, expectations and experiences of dual system apprenticeships'.*

The aim of the research is to find out:

- Why young people choose to study electrical at a TVET college;
- Why young people have chosen to participate in the DSPP;
- What young people expect from an apprenticeship;
- How young people experience apprenticeships.

I hope to bring the voices of apprentices participating in the dual system to bear so that future artisan development policy is informed by apprentices' experience of the system. It is hoped that the findings from this research project will assist to shape a model for apprentice training in the future.

I am therefore requesting permission to administer a questionnaire to the 25 apprentices currently enrolled on the DSPP and to interview three of the DSPP candidates. A copy of the questionnaire which will be administered to the apprentices as well as the interview schedule is attached for your perusal.

While the participation of the DSPP apprentices is important for this research study, it is completely voluntary and Ekurhuleni East College may decline permission for the apprentices to participate.

If you are willing to allow the DSPP apprentices to complete the questionnaire and for three of the candidates to be interviewed by me then I will make arrangements to travel to your college at a date and time that is convenient to both college staff and apprentices. It is envisaged that it will take apprentices approximately 45 minutes to complete the questionnaire. The structured interviews with three DSPP will take approximately one hour to complete. I do not intend interrupting any operational time nor interfering with the day to day running of the institution.

It will be made clear to all apprentices that they may also refuse to participate; refuse to answer any questions in the interviews conducted; and may also choose to withdraw their consent at any time during the research study without any negative consequences. There are no foreseeable individual or institutional risks in participating in this study and no form of remuneration will be offered to participants.

The data collected will be documented in a research report and it is envisaged that the research findings be used for academic purposes including books, journals and or conference proceedings. Apprentices will not be asked to include their name on the questionnaires. The information obtained will however be collated and analysed from a college perspective and the research results will thus compare and contrast the experiences of the apprentices at different colleges and different employers. I will however not refer to your college by name. Instead participating colleges will be referred to as college A, B, C or D.

It is hoped that the knowledge and insights gained will contribute to policy debate within the artisan development arena.

All research data will be stored at the Wits School of Education and will be destroyed after 3-5 years.

Should you require further information throughout the course of the research, please do not hesitate to contact me on (083 267 6938) or darrynvonmaltitz@gmail.com. Alternatively you may contact my supervisor Professor Stephanie Allais electronically at matseleng.allais@wits.ac.za.

A summary of the research report and findings will be made available to you electronically upon finalization in December 2017 should you require a copy of this report.

I have received ethics approval from the University of the Witwatersrand to conduct this research. My ethics clearance number is 2016ECE067M

I look forward to your response as soon as is convenient.

Yours sincerely

Darryn von Maltitz

APPENDIX 2: COLLEGE PRINCIPAL CONSENT LETTER

"The reasons why young people join apprenticeship programmes and their perceptions, expectations and experiences of dual system apprenticeships'.

It would be greatly appreciated if you could please acknowledge receipt of the information sheet requesting permission to conduct research in your institution.

You will be acknowledging that:

- Involvement is completely voluntary and DSPP apprentices may choose not to participate or to withdraw their consent at any given time without any negative consequences.
- You have read and understand the information sheet and acknowledge its contents.
- The DSPP apprentices' inputs will be confidential.
- The name of your college will be confidential.
- DSPP apprentice's individual consent will be obtained before data collection begins.
- The data collection process will not interfere with the day to day running of the institution
- It is envisaged that the research findings will be used for academic purposes including books, journals and or conference proceedings and to inform policy debate.

I, _____ (College Principal/appointed nominee) acknowledge the information stated above and grant permission for Darryn von Maltitz to conduct research within Port Elizabeth College in 2017.

Please provide details should you wish to receive an electronic summary of the research findings.

E-mail address: _____

Signature: _____ Date: _____

APPENDIX 3: LETTER EXPLAINING RESEARCH AIMS

30 March 2017

Dear DSPP apprentice

Request to participate in research project

I am currently studying a Masters in Education at the University of the Witwatersrand and am required to conduct research as part of the course requirements.

I have decided to focus my research on *"The reasons why young people join apprenticeship programmes and their perceptions, expectations and experiences of dual system apprenticeships'.*

The aim of the research is to find out:

- Why young people choose to study electrical at a TVET college;
- Why young people have chosen to participate in the DSPP;
- What young people expect from an apprenticeship;
- How young people experience apprenticeships.

It is hoped that the findings from my research project will help shape a model for apprentice training in the future.

You are receiving this letter because you are enrolled on the Dual System Pilot Project (DSPP) and will therefore be able to provide valuable insights into project. I am inviting you to participate in the research study.

You do not have to agree. Participation is completely voluntary. There are no negative consequences should you choose not to take part in the research study. If you agree, participation will involve the following:

- You will be asked to complete a questionnaire which will take you approximately 45 minutes to complete.
- This questionnaire will be administered at your college at a date and time determined by your college.
- You will not be required to include your name on the questionnaire which will ensure your anonymity.
- You will not be forced to answer any questions you are not comfortable answering.

Please note that while your participation is very important in this study you will not be forced to participate. Your participation will not provide for any advantage, disadvantage or remuneration but will assist in developing a model for dual system apprenticeships in South Africa. You are allowed to choose not to participate or to stop participating at any time during the study without any punishment or negative

consequences. I do not expect there to be any personal or institutional risks and the hope is that the information may be of benefit in improving the research into artisan development nationally.

The data will be documented in a research report. I hope that the results of this research study will be used for academic purposes such as books, journals and conferences.

All the information I collect will be safely locked in a cabinet and will be completely destroyed 5 years after completion of the project.

If you have any questions during the study, please feel free to contact me on (011 642 2110) or darrynvonmaltitz@gmail.com

Yours sincerely

Darryn von Maltitz

APPENDIX 4: APPRENTICE CONSENT FORM

'The reasons why young people join apprenticeship programmes and their perceptions, expectations and experiences of dual system apprenticeships'.

Participant's informed consent to complete a questionnaire

I, _____ (*participant's full name*)

Please tick either the yes or no block below to show that you understand what it will mean to consent and participate:

- I have read and I understand the information sheet.
  - ☐ Yes
  - ☐ No
- My participation is completely voluntary and I understand that I may choose not to participate or to withdraw from the study at any time without any punishment or negative consequences.
  - ☐ Yes
  - ☐ No
- I will also not be advantaged, disadvantaged or paid for participating.
  - ☐ Yes
  - ☐ No
- I do not have to answer any questions I don't feel comfortable answering.
  - ☐ Yes
  - ☐ No
- I will not be required to write my name on the questionnaire
  - ☐ Yes
  - ☐ No

By signing below I give consent to participate in the research project and complete the questionnaire

Signature: _____ Date: _____

Section one: general information

1. Please tick the name of the college that you are enrolled at

☐ Ekurhuleni West College

☐ Ekurhuleni East College

☐ Port Elizabeth College

☐ East Cape Midlands College

2. What is your sex?

☐ Male

☐ Female

3. How old are you?

☐ 16 – 24 years

☐ 25 – 34 years

☐ 35 – 39 years

☐ 40 plus years

4. What is your highest school certificate

☐ Grade 9

☐ Grade 10

☐ Grade 11

☐ Matric/Grade 12

5. What is your highest technical qualification so far?

☐ NC(V) 2

☐ NC(V) 3

☐ NC(V) 4

☐ N1

☐ N2

☐ N3

☐ N4

☐ N5

☐ N6

6. **How many people work for the company where you are doing your apprenticeship?**

☐ Less than 10 people

☐ Between 11 and 50 people

☐ More than 50 people

7. **Did you receive any career advice about apprenticeships?**

☐ Yes

☐ No

8. **If you did receive career advice about apprenticeships where did it come from? (You may tick more than one box)**

☐ My parents/guardian

☐ A school teacher

☐ A college lecturer

☐ A family friend

☐ A career advisor

☐ A career fair/event

☐ The internet

☐ A friend

☐ A magazine

☐ A newspaper

☐ Other

☐ Don't remember

Section 2: Reasons for studying electrical at a TVET college.

9. **To what extent do you agree with the following statements? Please tick the relevant box**

Statement	Strongly disagree	Tend to disagree	Tend to agree	Strongly agree
a) I applied to the college to the college because I wanted to study to be an electrician				
b) I am studying electrical because my parents encouraged me.				
c) I am studying electrical because my father is an electrician.				
d) I am studying electrical because I got a bursary/funding for it.				
e) I am studying electrical because there is potential for me to start my own business.				
f) I am studying electrical because it has good job prospects.				
g) I would have preferred to study at university.				
h) I did not go to university because my school grades were not good enough.				
i) I did not go to university because I cannot afford it.				
j) Even if I had the funding and good school grades I would not like to study at a university.				
k) Electrical is not my career of choice, I would prefer a career in something else.				

10. If you were choosing right now between university or doing an apprenticeship would your parents/guardian:

☐ Prefer you to go to university

☐ Prefer you to do an apprenticeship

☐ I don't think they have a preference

☐ I don't know

Section three: Reasons for applying to participate in the Dual System Pilot Project (DSPP)

11. To what extent do you agree with the following statements?

Statement	Strongly disagree	Tend to disagree	Tend to agree	Strongly agree
a) I joined the DSPP because I was unable to find a job.				
b) I joined the DSPP because I need work experience in order to become an artisan.				
c) I joined the DSPP because I am able to earn an allowance.				
d) I joined the DSPP because I don't have any other options available to me.				
e) I joined the DSPP because I believe that it will make me more employable.				
f) I joined the DSPP because I want to enhance my knowledge of the electrical trade.				
g) I joined the DSPP because my college encouraged me to apply.				
h) I joined the DSPP because my parents encouraged me to apply.				
i) I joined the DSPP because I believe that it is a prestigious programme..				
j) I joined the DSPP for reasons other than those listed above				

12. How did you hear about the DSPP?

- ☐ From my college
- ☐ From my friends
- ☐ From my parents
- ☐ From a brochure
- ☐ From the internet
- ☐ Other

Section four: Expectations of DSPP electrical apprentices

13. To what extent do you agree with the following statements?

Statement	Strongly disagree	Tend to disagree	Tend to agree	Strongly agree
a) I will be able to find a good job after I have completed my apprenticeships				
b) I will be able to start my own electrical business once I have completed my apprenticeship				
c) I will be able to earn good money once I have completed my apprenticeship.				
d) I hope that my host employer offers me a job after I have completed my apprenticeship				
e) I have the same chance of finding a job once I have completed my apprenticeship as a university graduate.				
f) I would move to another province to take up a job offer				
g) The right attitude and willingness to learn are as important as a qualification.				
h) My college provides me with high quality training which is aligned to the skills needed by my host employer.				
i) My host employer is supportive and provides me with the correct workplace exposure.				
j) If I was offered a permanent job with a salary of R6000 a month I would leave the DSPP				

Section five: Experiences of DSPP electrical apprentices

14. To what extent do you agree with the following statements?

Statement	Strongly disagree	Tend to disagree	Tend to agree	Strongly agree
a) My college gave me enough information about the DSPP in terms of explaining what the DSPP is, how it works and how it is different from the NC(V) and N programmes				
b) The learning material provided is easy to understand				
c) I get enough practice in the college workshop				
d) I am being taught how to plan, do and evaluate the workshop tasks that I am required to perform.				
e) The DSPP is a repetition of what I have already learnt				
f) My college is providing me with relevant learning opportunities.				
g) My college provides me with regular feedback on my performance.				
h) The system of rotating regularly between the college and my employer is a good way to reinforce classroom theory with on-the-job experience.				
i) When I started at the company they explained what the company does and how it operates.				
j) When I started at the company they explained what is expected of me and how I will be assessed.				
k) My employer is training me well.				
l) My employer provides me with adequate mentoring and guidance.				
m) My employer provides me with regular feedback in terms of my performance.				
n) Once I complete the programme I would like to continue working for my employer.				

APPENDIX 6: PROFILE OF APPRENTICES

College	Name of apprentice	Gender	Host employer	Information about apprentice
College 1 3 host employers	Apprentice 7	Female	Company A This is metropolitan municipality and is responsible for providing electricity to the local population. It employs 17000 people	Apprentice 7 is 22 years old and had been accepted to study bio-technology at a university of technology. When she arrived to register however she had forgotten her admission certificate at home. She then tried to obtain admission at the University of Turfloop but the classes were full. As a last resort she applied to a TVET college. All the courses were full except for electrical so she tried to register for the NATED courses. These too were full so eventually she enrolled for the NCV as this was the only programme which had space available. She completed the NC(V) in three years and then obtained a job as hostess at a hospital. She is satisfied with the DSPP and feels well supported by her college and host employer. She does not regret becoming an electrician and believes that this is her destiny.
	Apprentice 8	Female	Company B This is large multi-national company employing 1400 people in SA and 351 000 people worldwide	Apprentice 8 is 25 years old. After finishing matric she waitressed for two years and then decided that she would need to study in order to obtain a better job. She went to the college to find out what she could study but most of the courses were full. The only options available to her were electrical, mechanical and IT. She selected electrical because she had watched a TV show that explained that electrical was a scarce skill. She completed her NC(V)in three years and then did N4 and N5.She is enjoying the DSPP but is concerned that her employer is not providing her with the correct work exposure required for the trade test. She feels very well supported by her college.

College	Name of apprentice	Gender	Host employer	Information about apprentice
College 1	Apprentice 12	Male	Company C Is an electrical contractor offering electrical services. It has a permanent staff compliment of 120 people	Apprentice 12 is 25 years old and has a grade 11 certificate and an NC(V) certificate which he completed in three years. He failed matric and then got a job at Food Lovers market. He only heard about the NC(V) after he left school and decided to do electrical because he had done electrical at school and enjoyed it. He has a passion for electricity and is enjoying the DSPP. He is of the view that his employer is not supportive but acknowledged that he is receiving the correct work exposure at the company. He feels well supported by his college
College 2 5 host employers	Apprentice 1	Female	Company D Is a leading South African paper and plastics business. It employs approximately 5000 people in 42 sites	Apprentice 1 is 25 years old and has always been passionate about electricity. She had good enough results to go to university but not the finances. She completed her NC(V) electrical in 2012 and spent 3 years looking for a learnership or apprenticeship or a job but was unsuccessful. She feels supported by her college but commented that her lecturer does not provide her with sufficient feedback. She does not feel at all supported by her employer as they do not do electrical work but instead focus on mechanical work.
	Apprentice 2	Female	Company E Is a casino and hotel. It employs 900 people.	Apprentice 2 is 22 years old and has a passion for electricity. She went to the college because she wanted to study electrical. She has a matric and completed her NC(V) in three years. She also has a N4, 5 and 6. She tried to find a learnership or an apprenticeship but was unsuccessful. She is enjoying the DSPP because of the practical exposure she is obtaining but commented that the DSPP does not have enough theory. She feels very well supported by both her college and employer

College	Name of apprentice	Gender	Host employer	Information about apprentice
College 2 continued	Apprentice 3	Male	Company F Specializes in electrical contracting work. It employs 68 people nationally	Apprentice 3 did not reveal his age. He has a passion for electrical which was instilled in him by his father. He did not get a good matric but managed to complete his NC(V) in three years after which he did his N4 and N5. He indicated that he did not have a desire to go to university and is happy with his choice of attending college instead. He tried to find a learnership or an apprenticeship but was not successful. Eventually he found a job as an assistant with a company that did domestic wiring. When the college contacted him to tell him about the DSPP he quit his job as the DSPP was a route to qualifying as an electrician. He feels well supported by his college but not by his employer and is not happy there. He is of the view that his employer is not providing him with sufficient work exposure.
College 3 12 host employers	Apprentice 9	Female	Company G Is an electrical contracting company that employs 9 people	Apprentice 9 is 23 years old and wanted to study at university but was not accepted and so applied to do electrical at the TVET college. She completed the NC(V) in three years and has an N4 and N5 certificate. She does not regret going to university as she loves electrical. She is of the view that the DSPP and the NC(V) are similar apart from the fact that the DSPP is providing her with good work exposure which the NC(V) did not. She feels well supported by both the college and her host employer and is confident that she will be able to find employment on completion of the DSPP.
	Apprentice 10	Male		Apprentice 10 is 24 years old and started working as a labourer after he finished matric. During this time SA was experiencing load shedding which piqued his interest in electricity. He specifically enrolled at the college in order to study electricity. He did not have the results nor the finances to study at university. He completed his NC(V) in three years and then did N3 and N4. Sinethemba spoke passionately about the value of being in the workplace and interacting with artisans. He commented that he was learning a lot from them and really liked them. He feels well supported by his host company and the college and is confident that he will find employment upon completion of the DSPP

College	Name of apprentice	Gender	Host employer	Information about apprentice
College 3 continued	Apprentice 11	Male	Company I Electrical contractor. Employs 25 people.	Apprentice 11 is 24 years old and obtained good enough results to go to university but due to a lack of finances was unable to. He completed the NC(V) in three years and then did N4 and N5. He feels that the advantage of the DSPP over the NC(V) is that it provides students with work experience. He said that he felt 80% supported by the college but not entirely as the workplace is very different to the college environment. He feels well supported by his host employer and believes that he is being provided with the correct on-the-job experience. He is confident that he will be able to find employment upon completion of the DSPP
College 4 10 host employers	Apprentice 4	Male	Company J Manufacturer of automotive and commercial lighting. Employs 500 people	Apprentice 4 is 23 years old. University was never an option for him as he didn't have good enough matric results. However he does not regret going to university as he likes working with his hands and is enjoying the DSPP. He tried to find a job after completing the NC(V) but was not successful. Bathembu feels well supported by the college but not very well supported by his host employer mainly due to the fact that his artisan is loud and puts a lot of pressure on the According to Bathembu the artisans at his host employer are not as well qualified as the apprentices and the artisans throw this in their faces. This is a cause of friction between the artisans and the apprentices. He did however acknowledge that he is learning a lot at the company. He is confident that he will be able to find employment upon completion of the NC(V)
	Apprentice 5	Female	Company K Electrical company that issues certificates of compliance. Employs 5 people	Apprentice 5 is 23 years old. She enrolled at a TVET college as she did not have the funds to go to university. She registered for the NC(V) as it contained a theoretical and practical component but then discovered that the NC(V) is at the same level as matric so started doing the NATED courses. She has an N4. She is does not regret going to university and is happy with her career choice. She believes that the DSPP is better than the NC(V) as it provides a significant amount of work exposure. She feels well supported by both the college and her employer although she admitted that she had had some difficulties with the artisans that she worked with. This was due to the fact that the artisans were forcing the apprentices to dig trenches and chase walls but did not allow them to make the electrical connections.

College	Name of apprentice	Gender	Host employer	Information about apprentice
College 4 continued	Apprentice 6	Male	Company L Is a multi-national company with 300 sites in 35 countries. It employees 32 000 people globally. It is a key supplier to the automotive industry	Apprentice 6 is 24 years old. After finishing school he got a job as a sub-contractor for Telkom but realized that he would need to study further in order to obtain a better job. He had not heard of the NC(V) until he started working. While he was working at Telkom he developed a passion for electricity and was advised by work colleagues to study electrical at a TVET college. He passed the NC(V) in three years. Apprentice 6 feels supported by his host employer and the college.

APPENDIX 7: QUALITATIVE INFORMATION SHEET

30 March 2017

Dear DSPP apprentice

Request to participate in research

I am currently studying a Masters in Education at the University of the Witwatersrand and am required to complete a dissertation as part of the course requirements.

I have decided to focus my research on *"The reasons why young people join apprenticeship programmes and their perceptions, expectations and experiences of dual system apprenticeships'.* The aim of the research is to find out:

- Why young people choose to study electrical at a TVET college;
- Why young people have chosen to participate in the DSPP;
- What young people expect from an apprenticeship;
- How young people experience apprenticeships.

It is hoped that the findings emanating from this research project will assist in shaping a model for apprentice training in the future.

You are receiving this letter as you are enrolled on the Dual System Pilot Project (DSPP) and will therefore be able to provide valuable insights into the project. I am inviting you to participate in the research study. Participation is completely voluntary and there are no negative consequences should you choose not to take part in the research study. If you agree, participation will involve the following:

- You will be asked to complete a questionnaire which will take you approximately 45 minutes to complete.
- This questionnaire will be administered at your college at a date and time determined by your college.
- You will be asked to participate in a 45 minute structured interview.
- The interview will take place at your college at a date and time determined by your college.
- You will not be required to include your name on the questionnaire, nor reveal your name during the interview. A pseudonym will be used instead of your name. This will ensure your anonymity.
- The interview, with your permission, will be audio-taped to ensure that accurate information is captured.

- You will not be forced to answer any questions you are not comfortable answering.

Please note that while your participation is very important in this study you will not be forced to participate. Your participation will not provide for any advantage, disadvantage or remuneration but will assist in developing a model for dual system apprenticeships in South Africa. You are allowed to choose not to participate or to stop participating at any time during the study without any punishment or negative consequences. I do not expect there to be any personal or institutional risks and the hope is that the information may be of benefit in improving the research into artisan development nationally.

The data will be documented in a research report. I hope that the results of this research study will be used for academic purposes such as books, journals and conferences.

All the information I collect will be safely locked in a cabinet and will be completely destroyed 5 years after completion of the project.

If you have any questions during the study, please feel free to contact me on (011 642 2110) or darrynvonmaltitz@gmail.com

Yours sincerely

Darryn von Maltitz

APPENDIX 8: QUALITATIVE CONSENT FORM

Participation in the research project:

'The reasons why young people join apprenticeship programmes and their perceptions, expectations and experiences of dual system apprenticeships'.

Participant's informed consent to complete a questionnaire and participate in a structured interview

I, _____ (*participant's full name*)

Please tick either the yes or no block below to show that you understand what it will mean to consent and participate:

- I have read and I understand the information sheet.
  ☐ Yes
  ☐ No
- My participation is completely voluntary and I understand that I may choose not to participate or to withdraw from the study at any time without any punishment or negative consequences.
  ☐ Yes
  ☐ No
- I will also not be advantaged, disadvantaged or paid for participating.
  ☐ Yes
  ☐ No
- I do not have to answer any questions I don't feel comfortable answering.
  ☐ Yes
  ☐ No
- I will not be required to write my name on the questionnaire
  ☐ Yes
  ☐ No
- My name will not be revealed in the final research report. A pseudonym (code name) will be used instead.
  ☐ Yes
  ☐ No

By signing below I give consent to participate in the research project and complete the questionnaire

Signature: _____ Date: _____

APPENDIX 9: APPRENTICE INDIVIDUAL INTERVIEW QUESTIONS

Introduction

Hello, my name is Darryn and I am doing research into the reasons why young people choose apprenticeships. I am very interested in talking to you because not only do you have an NC(V) qualification but you are now enrolled on the DSPP which will take another three years to complete.

I would like to ask you a few questions but before doing so, I want you to know that this conversation is confidential. I do not need to know your name and when I write up my research I will use a pseudonym which means that I will make up a name for you. You should also know that you are not obligated to participate in this interview at all and may choose not to answer some or all of the questions. You may also withdraw from the interview at any time. What you share with me today will have no negative consequences for you and specifically will not affect your participation on the DSPP. The information which you provide will be written up into my research report and it is hoped that this information will be used to inform artisan development in South Africa in the future.

I would like your permission to audio-record this interview. This is just to help me accurately capture what you say and will not be shared with anyone. Are you comfortable with this and happy to proceed with the interview?

1. Please tell me why you decided to study an NC(V) electrical at this college?
   Prompt
   What factors did you consider when selecting electrical? (Influences from friends/family, confident that you would be able to obtain a job on completion, ability to start own business, whether university would have been preferred, financial constraints, poor school results)

2. How many years did it take you to complete the NC(V) and did you look for a job after completing the NC(V)?
   Prompt
   - How did you go about looking for a job? (websites, newspaper adverts etc.)
   - How long did you look for a job for?

3. Please tell me about the DSPP. Why did you select to participate, are you enjoying it, is it different to the NC(V) and in what way is it different?

4. Do you feel that the training that you are receiving at the college is preparing you for the workplace and do you feel supported by your college?

5. Do you feel that your employer is providing you with good learning opportunities and do you feel supported by your employer? Also do you feel as though what you are learning at the college is aligned to the work exposure that you have received in industry?

6. Are you confident that you will find employment once you qualify as an electrician?

7. Are there any other issues that you would like to discuss in terms of the training you are receiving in the college and your experiences and expectations of employment?

APPENDIX 10: CODE BOOK

Research question	Overarching code	Sub codes	Definition	Number of apprentices that cited this	Example of quotation
Research question one What factors motivate young people to enroll at TVET colleges?	Reasons for TVET	Natural interest in the trade	Apprentice specifically applied at the college to study electrical	6	Yes I wanted to study electrical, I fell in love with the trade
		Lack of money	Did not have the money to go to university	7	We didn't have money for me to follow the university route.
		Poor results	Did not good have good enough school results to obtain university entrance	5	I wanted to go to university but as I didn't make it I came to college.
		Practical exposure	The college provides practical exposure	2	I got excited about NC(V) because I could do both practical and theory so I would be exposed.
		Good results	The apprentice had good enough results to go to university	4	Yes I did have the results to take me to university.
		Funding available	The apprentice had the money to go to university	2	So I had a bursary all I needed was an institution

Research question	Overarching code	Sub codes	Definition	Number of apprentices that cited this	Example of quotation
Research question two What factors motivate young people to participate in the Dual System Pilot Project?	Reasons for DSPP	Encouraged by college	The TVET college encouraged the student to participate	8	I heard about it from the Lighting lecturer who was teaching Level 4 here in 2015. He told the class and he told us the benefits of it and the level of training so I got interested from there and I wanted to do it
		Unable to find employment	After graduating from the NC(V) the graduate was unable to find employment in the trade	3	I have applied for more than 10 posts. I have been applying since I completed my NC(V) which was in 2012. Since then I have been applying, every opportunity which comes my way
		Experience and networking	The apprentice saw the DSPP as an opportunity to gain work experience and network with people in the electrical trade	1	I did NC(V) in college but in DSPP I am going to get work experience, I will have more experience in electrical trades. I'll know how things are done, meet electricians, artisans and other people from other trades so I will grow in this programme so that is why I am doing it.

Research question	Overarching code	Sub codes	Definition	Number of apprentices that cited this	Example of quotation
Research question 3 What are apprentices' expectations of the dual system?	Expectations	Job confident	The apprentice is confident that he/she will obtain a job on completion of the apprenticeship	12	Definitely, I am 100% positive about that.
		Start own business	The apprentice is confident that he/she will be able to start their own electrical business in the future	12	I think I will give myself five years to open up my own business after I have completed this. I will work it all out and plan while I am working and so when I stop working I can concentrate on my business

Research question	Overarching code	Sub codes	Definition	Number of apprentices that cited this	Example of quotation
Research question 4 What are apprentices' experiences of the dual system	Positive experience at the college	College support	The apprentice feels supported by the college	12	Yes the support is there because whenever there is a misunder-standing or a lack of understanding we have a support system. What-ever goes wrong at the company I know that when I come back and I sit down with my lecturer and he will go through it. And, I know that I have people that I can speak to and who will help me understand.
	Negative experience at the college	Feedback from lecturer	Apprentices believe that they are not being provided with sufficient feedback from their college lecturers	1	They just go 'you have to change these measurements' and when he comes to mark he just says 'poor planning', he doesn't explain to you and say you have to improve here and here. He just says 'poor planning' and leave you like that
	Positive experience at employer	Patience/trust/autonomy	Apprentices feel that their employers are patient, trust them and provide them with the autonomy to do their work	3	They are patient with us. They give us work to do on our own and they have trust in us that we will finish the job and do it correctly.
		Employer support	Apprentice feels supported by his/her host employer	3	From my side, the company is good so far. Our mentors support us and motivate us.

Research question	Overarching code	Sub codes	Definition	Number of apprentices that cited this	Example of quotation
Research question 4 -- continued What are apprentices' experiences of the dual system	Positive experience at employer -- continued	Relevant work experience	The apprentices believes that he/she is being provided with relevant exposure to the electrical trade	6	Yes the company I am at is very good in terms of the exposure. We do everything and we work in nice places like St George's hospital where we get the exposure that I need.
	Negative experience at employer	Feedback	Apprentices do not believe that they are being provided with sufficient feedback from their companies	1	Even this thing that they call feedback from the company. We never heard anything
		Lack of electrical exposure	Apprentices believe that he/she is not being provided with sufficient exposure to the electrical trade	4	So we couldn't experience the fixing of the lights because we are always on the ground. They also work on replacing plugs, we hardly work on distribution boards. We mostly work on cleaning the workshop or washing the cars.
		Safety	Apprentice raises concerns about safety at the host employer	2	Their scaffolding has wheels and scaffolding is not supposed to have wheels. They are supposed to have scaffolding ladders and they don't have them. They only have one and it is aluminium. For the steel ones, they are using an extension ladder which is not safe. They put it there and then take it up with a rope and that is not safe.

Research question	Overarching code	Sub codes	Definition	Number of apprentices that cited this	Example of quotation
Research question 4 -- continued What are apprentices' experiences of the dual system	Negative experience at employer -- continued	Lack of employer support	Apprentice does not feel supported by his/her employer	3	Support from the employer. They never even took time to explain to us what we were supposed to be doing
		Conflict	The apprentice reports conflict between him/herself and the assigned artisan	2	Once when we were working night shift this girl made a small mistake. I was not far from her, I was doing the work that the artisan had given me and I heard him shouting, 'I'll smack you, you don't listen' and when I got there to hear what he was talking about, I saw her crying so I went back and finished up my job and he just left us after that.
		Discrimination	The apprentice reports incidents of discrimination	2	There is one white apprentice and there is discrimination there too because when we got there we clean and wash the vehicles but the white apprentice doesn't do that, he is always in the office with Deon. They smoke together.