

**THE IMPACT OF NATIONAL CERTIFICATE VOCATIONAL ON THE
CONTINUED LEARNING: PATTERNS AND DESTINATION OF THE FET
COLLEGES ENGINEERING GRADUATES IN THE NORTH WEST
PROVINCE**

By

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DECLARATION

I declare that this thesis is my own work and it has never been submitted for any other degree at any other university.

Signed: _____ on this day _____

DECLARATION

I declare that I, the undersigned, have scrutinized the language usage in this thesis and suggested the necessary corrections, which the student and the supervisor can accept or reject.

Signed: Dr CDM Tlale

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*LASTLY, TO THE ALMIGHTY GOD WHO MADE IT POSSIBLE THROUGH HIS GRACE
AND LOVE.*

I PRAISE YOU LORD!!!

DEDICATION

I dedicate this study to the young people who participated in it and to all those who toil every day to better their lives.

I also dedicate this study to my late parents; to my siblings Matota, late Joshua, Sesinyana, Teboho and Matshidiso.

I say “Aluta Continua”

ABSTRACT

Since the advent of democracy in 1994 South Africa has been faced with the shortage of skilled people and this is caused, amongst other things, by the inadequacy of the outdated National Education Programmes for Technical Colleges (NATED) and later referred to as the N-programmes. To address the problem, the former Department of Education (DoE) developed new programmes called the National Certificate Vocational NC (V) for the students of the Further Education and Training colleges (FETs), which were renamed the Technical Vocational Educational and Training Colleges (TVET). The TVET programmes were implemented with the collaboration of industry and other stakeholders who were involved when the NC (V) programmes were developed to ensure their buy-in. Despite all these efforts, Magnus et al. (2013) are of the view that the vocationally-oriented NC (V) programmes offered at colleges are not useful, work-focused and flexible, as a result some leading employers reject the products of the programmes. Returning to the global debate, Lewis (2009) contends that failure of vocational programmes anywhere ought not to be taken as an indictment of vocationalism.

Based on the above scenario, this study surveyed and traced TVET graduates who graduated from 2009 to 2012, to determine the impact of the NC (V) programme on those who decided to either further their studies or be employed. Although the programmes offered by the FET's are rolled out in various study fields throughout the country, the research was limited to graduates who were enrolled in the following three programmes in the North West Province: building construction, electrical, and engineering related studies. The three mega FET Colleges, composed of more than ten campuses as listed in point 1.2.1, are spread throughout the province, which is regarded to be predominantly rural even though it boasts the biggest hub of mines, especially platinum mines. There is also high concentration of tourism industry as well as agricultural businesses that require a skilled labour force to drive economic activities.

An extensive literature review was conducted to appropriately inform the study and to provide a firm basis for the arguments. The NC (V) programmes by their nature and design are closely related to the work of the Sector Education and Training Authorities (SETAs) with respect to the apprenticeships and the learnerships.

Factors relating to the research scope, context and the geographical environment were analysed to ensure proper delineation and delimitation of the study since it covered only the North West Province of South Africa. The study used both qualitative and quantitative research methodologies for the collection of data. An interview schedule was used for the collection of the qualitative data from the Colleges, Department of Higher Education and Training, the Sector Education and Training Authorities (SETAs), the Universities of Technologies (UoTs), and the various employer organizations. The questionnaire was applied to collect quantitative data from the graduates because of their large numbers. The use of both methods, the qualitative and quantitative, enhanced the quality of the verification and the validation of the data.

The correlational relationship and connection between the NC (V) graduates and their post college destinations was determined. This refers to the correlation between NC (V) graduates and the opportunities seized after their college studies. Charles (1998:11) attests that *“although in most cases data for correlation studies are obtained through measurement, at times they come from judgments made by researchers, teachers, or other qualified persons”*. In line with this, the researcher presented the findings from the qualitative method in a manner that outlines the opinions and the post college status of the graduates. The findings of the qualitative method provided background knowledge into the NC (V) programmes, the graduates and their destinations, thereby validating the quantitative findings.

A work integrated learning framework model is proposed for the enhancement of the FET College curriculum, for the improvement of quality work-placement and for the promotion of partnership amongst the beneficiaries; graduates, employers, colleges and the intermediaries.

LIST OF ABBREVIATIONS AND ACRONYMS

ASGISA – Accelerated and Shared Growth Initiative of South Africa
BNVQF – Botswana National Vocational Qualifications Framework
CEBC – Civil Engineering and Building Construction programme
CEFETs – “*Centro Federal de Educacao Tecnologica*”
Dbe – Department of Basic Education
DHET – Department of Higher Education and Training
DoE – Department of Education
EDD – Department of Economic Development
EIC - Electrical Infrastructure Construction
ERD – Engineering and Related Design
ETQA – Education and Training Quality
FET – Further Education and Training
GES – Ghana Education Service
HESA – Higher education of South Africa
HET – Higher Education and Training
HRDC – Human Resource Development Council
HRDSSA – Human Resources Development Strategy of South Africa
HSRC – Human Sciences Research Council
ICCES – Integrated Community Centres for Employable Skills
ILO – International Labour Organisation
ISAT – Integrated Summative Assessment Task
LCA – Leaving Certificate Applied
LCV – Leaving Certificate Vocational
MOE – Ministry of Education
NATED – National Assembly Training and Education Department
NC (V) – National Certificate (Vocational)
NDP – National Development Plan
NERCOM – National Education Review Commission
NGO – Non Governmental Organizations
NQF – National Qualification Framework
NSA – National Skills Authority
NSC – National Senior Certificate

NSDS – National Skills Development Strategy
NVTI – National Vocational Training Institute
NWP – North West Province
OECD – Organisation for Economic Cooperation and Development
PCV – Post Certificate Vocational
PIVOTAL – Professional, Vocational, Technical and Academic Learning
PLATO – Peer tutoring and laboratory for supplementary tutoring
QCTO – Quality Council for Trade and Occupations
SADC – Southern African Development Community
SAQA – South African Qualification Authority
SDA – Skills Development Act
SETA – Sector Education and Training Authority
SME – Small and Medium Enterprise
STEP – Skills Training Employment Placement
TVET – Technical Vocational Education and Training
UMALUSI – Quality Council for General and Further Education and Training Education
UNESCO – United Nations Educational, Scientific and Cultural Organisation
UoT – University of Technology
VET – Vocational Education and Training
WBL – Work Based Learning
WIL – Work Integrated Learning

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CHAPTER ONE: INTRODUCTION AND BACKGROUND INFORMATION

1.1. Introduction

The reader is introduced to the following subheadings: introduction, background information of the study, the research problem, aim and sub-aims of the study, research methodology and design, significance of the study, delimitations of the study, chapter divisions; the definition of concepts and the summary of the chapter.

The study was triggered by a quest to respond to the skills shortage and the inadequacy of the outdated National Education Programmes for Technical Colleges to provide the needed human resources. The study report on the inadequacy of the programmes was released by the then Department of Education (DoE) before it split into the current two departments, namely, the Department of Basic Education (DbE) and the Department of Higher Education and Training (DHET). The then DoE, developed new programmes called the National Certificate (Vocational), in short NC (V), for students enrolling at Further Education and Training colleges (FETs), and the programmes were promulgated in the Government Gazette 28677 of 29 March 2006. "The NC (V) programmes are intended to respond directly to the priority skills demands of the modern South African economy by exposing students to high skills and knowledge" (DHET 2009:5).

The aims of the new the programmes are to improve the skills of those already employed in the workplace and also to support the training of the apprentices. The programmes furthermore target those who are not yet employed by providing them with a vocational training opportunity pitched at levels 2, 3 and 4 on the National Qualifications Framework (NQF).

The National Education Policy Act (NEPA), No. 27 of 1996, gave the Minister of Education the authority to set norms and standards on the National Certificate (Vocational) within the Further Education and Training (FET) band. The Government Notice number 28677 (DoE, 2005: 82) on the policy for the National Certificate (Vocational) states that "the NC (V) at L4 on the National Qualifications Framework (NQF) enables students to acquire the necessary knowledge, practical skills, applied competence and understanding required for

employment in a particular occupation or trade, or class of occupations or trades, or entrance into Higher Education.”

The NC (V) L4 on the NQF provides learning experiences in situations contextually relevant to the particular vocational area on which the programme is based. Thus it offers programmes in the form of subjects that consist of academic knowledge and theory integrated with the practical skills and values specific to each vocational area. To ensure relevance and acceptability, consultations with industry and other stakeholders formed part of the development process leading to the design of the NC (V) programmes.

1.2. Background information of the study

This study’s focus, among other issues, is to investigate the first, second, third and fourth cohorts of the engineering graduates of the NC (V) programmes with the purpose to assess the impact made by the qualification on their careers. These groups of students would have registered as first year students in the year 2007, 2008, 2009 and 2010 respectively. Although there are various other study fields offered by the NC (V) programmes throughout the country, the study only focused on the graduates who followed the engineering stream in the North West Province, which included the following programmes:

- Civil Engineering and Building Construction,
- Engineering and Related Design and
- Electrical Infrastructure Construction.

There are 11 college campuses in the North West Province; all of which are located in municipalities in the top two categories of growth plan. All the colleges are located along national or main roads and are therefore easily accessible. In point 1.2.1 the names and a brief background of the campuses is provided.

1.2.1. The Further Education and Training Colleges in the North West Province

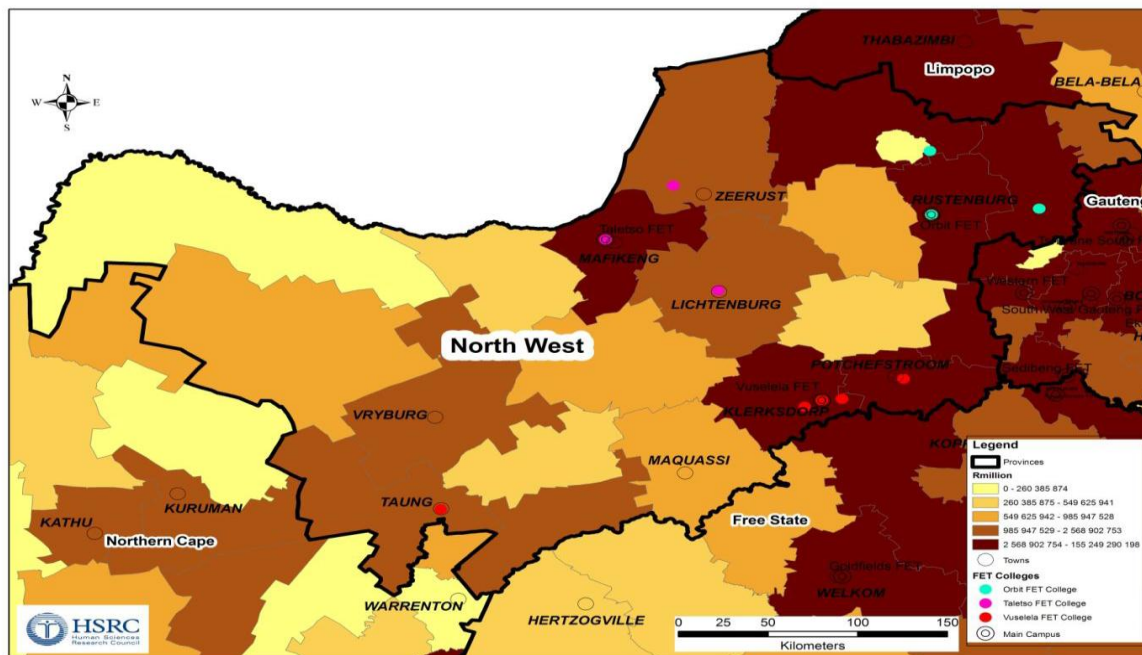


FIGURE 1.1: North West FET college location (HSRC)

The study by the Human Sciences Research Council of South Africa (HSRC, 2006:104) as per FIGURE 1.1 indicated that all college campuses in North West are located in municipalities in the top two categories of Gross Geographic Product (GGP). They are mainly located along national or main roads and are therefore easily accessible. Vusulela FET in Taung is the only one serving the western part of the province. In the east of the province there is a concentration of colleges in the Klerksdorp and Potchefstroom municipalities. Industry, business, institutions of further learning are, in the main, located within the GGP rated areas. The location of the colleges in the GGP areas is important to the study as these increase the opportunities for the work-placement and further study by the NC (V) graduates.

1.2.1.1. ORBIT Further Education and Training College

The ORBIT Further Education and Training College is situated in Bojanala District Municipality within the North West Province, and is one of the three Further Education and

Training (FET) Colleges offering a wide range of Vocational and Occupational programmes.

The college programmes have been designed to empower each student with skills required for a successful career and professional life. Students are exposed to a stimulating learning environment across the three campuses located at Brits, Mankwe and Rustenburg. The Bojanala District Municipality is well known for being one of the top ranking platinum mining areas.

Brits and Rustenburg campuses are in the urban areas whilst Mankwe campus is situated in the semi-rural setting next to one of the big game reserves and the world renowned hotel, Sun City. ORBIT College offers a variety of the NC (V) programmes ranging from business management to engineering, selected according to the needs of the area. Each campus has niche` programmes aimed at addressing the local skills development needs, thus making it easy for the career guidance counselling of learners. Niche` programmes for the Brits campus include financial management, electrical civil and construction engineering, the Mankwe campus specializes in Automotive engineering as well as tourism and hospitality while Rustenburg campus' specialties are jewellery making, and information and communication technology. The study focused only on the engineering programmes and their impact.

1.2.1.2. Taletso FET College

Taletso FET College resulted from a merger between Lehurutshe College of Education, Mmabatho Technical College and Lichtenburg Technical College with the three former Colleges being converted into the campuses of Taletso FET College. Lehurutshe College of Education was a state institution which primarily trained pre-service educators in Engineering and Business Studies, while Lichtenburg College was a state-aided Technical college, and Mafikeng College, a Manpower centre that was fully subsidised by the state. The three campuses are situated in the Ngaka Modiri-Molema District Municipality of the North West Province.

The campuses are situated 80km from each other. The catchment area for the college is approximately 120km in radius, extending from Mafikeng through Zeerust towards the eastern part of the Province. Niche programme allocation to TALETSO FET College is

similar to that of ORBIT College. Lehurutshe campus' niche includes information technology, primary agriculture, tourism and hospitality.

The Mafikeng campus focuses on engineering related programmes, electrical infrastructure and civil construction programmes; while Lichtenburg campus specialises in primary agriculture, farming and information technology. The focus of Taletso FET College on primary agriculture and farming is in response to the rural nature of the region. That means the relevance of the programmes to both the area and learners was taken into account. However, the Mafikeng campus primarily offers engineering programmes which are the basis for this study.

1.2.1.3. Vuselela FET College

The College is situated in the North West Province with the Head Office (Corporate Centre) in the CBD of Klerksdorp. The College consists of 5 campuses, namely:

- Jouberton Centre for Engineering Studies
- Klerksdorp Centre for Business Studies
- Matlosana Centre for Artisans & Learnerships, situated near Stilfontein
- Potchefstroom Centre for Information, Communication & Technology Studies (ICT)
- Taung Campus Centre for Primary Health and Information, Communication & Technology Studies (ICT)

Vuselela FET College offers mainly the NC (V) programmes, NATED N4-N6 Business Studies and NATED N1-N6 Engineering Studies. The College also offers a variety of learnerships and skills programmes.

1.2.1.4. Labour market institutions in North West

In the opinion of Cosser et al. (2011:87) mining is the third most dominant sector in South Africa, being prevalent in 12% of all municipalities. In the North West province, community service is the pre-eminent economic activity in the municipalities of Mafikeng, Potchefstroom, Greater Taung, and Zeerust. The FET colleges in the locality include five campuses of Vuselela and Taletso. Mining activities are predominant in four municipalities and colleges in the locality include Orbit and Vuselela. The three colleges take into

consideration the types of economic activities in their surrounding areas by including relevant programmes in their curricula.

The Taletso college campus in Lichtenburg is the only one in the province located in a municipality where trade is the dominant economic activity. This municipality is well connected to national road networks that serve both the North West and Northern Cape provinces. Vusulela FET in Taung is the only one serving the western part of the province. In the east of the province there is a concentration of colleges in the Klerksdorp and Potchefstroom municipalities.

The research by Cosser et al. (2011:118) noted that all colleges and college campuses in the North West Province are situated in municipalities in which 20% - 60% of the unemployed are of employable age. Eight of the college campuses are situated in the areas where the rate of unemployment is between 20% - 40%. These include Orbit and Vuselela college campuses. Six campuses of Taletso, Orbit and Vuselela are situated in municipalities where the rate of unemployment is higher than 40%. This factor is a serious impediment to students who are looking for employment within the municipalities they are studying in. In the North West Province, 9 of the 11 FET college campuses are within the middle poverty rate category, while the other two are in the lower poverty category (Cosser, 2011:129).

The study further revealed that in the North West Province, one college campus, namely, Lehurutshe campus of Taletso College falls within the first most deprived category and the other one, namely, Taung campus of Vuselela College, is in the second most deprived category. The majority of FET college campuses in the province are in the second least deprived category. Only two campuses are in the first least deprived category, namely, Potchefstroom ICT campus of Vuselela College, and Brits campus of Orbit College (Cosser, 2011:140).

1.3. FET College headcount enrolment by programme

A 2010 Report on the Statistics on Post-School Education and Training in South Africa provided illumination into the students' enrolment patterns in relation to the programmes offered by the FET Colleges. The year 2010 was the fourth year since the inception of the

NC (V) programmes in which the second cohort of the NC (V) students graduated. The NC (V) enrolments were still lower than the NATED N1-N6 and the occupational programmes in 2010 in all the provinces as indicated in TABLE 1.1. The overall NC (V) enrolments for the North West Province are indicated under the three colleges, Orbit, Taletso and Vuselela.

Name of college	NC (V)	Report 191	Occupational Qualifications Programme	Report 550 /NSC	Other	Total
Orbit	4 549	2 979	305	-	769	8 602
Taletso	2 076	859	-	-	207	3 142
Vuselela	3 065	3 230	684	-	1 330	8 309
Totals	9 690	7 068	989	-	2 306	20 053

TABLE 1.1: Headcount enrolments in public FET colleges, by college and programme, 2010 (DHET 2013:21)

In 2010, 358 393 students enrolled in public FET Colleges, of which 169 774 were enrolled for Report 191 programmes. These programmes were traditionally known as the “NATED N1 to N6” programmes. Furthermore, 130 039 students were enrolled for National Certificate (Vocational) programmes (DHET 2013: 21).

Province	Sex	NC (V) L2			NC (V) L3			NC (V) L4		
		No Wrote	No Passed	Pass %	No Wrote	No Passed	Pass %	No wrote	No Passed	Pass %
North West	Female	1536	784	51.0	870	387	44.5	255	120	47.1
	Male	1295	488	37.7	773	312	40.4	227	97	42.7
Mpumalanga	Female	1628	791	44.4	1008	409	40.6	439	145	33.0
	Male	1362	605	33.9	171	40	23.4	89	37	41.6
Free State	Female	861	604	22.7	1059	288	27.2	338	113	33.6
	Male	837	203	23.6	361	83	23.6	134	26	19.4

TABLE 1.2: Number of NC (V) Level 4 students who wrote and passed the NC (V) examination by sex and province, 2010 (DHET 2013: 27)

TABLE 1.2 shows the number of the NC (V) students who wrote the examinations and those who passed, by sex. To present an objective perspective on the performance of the students from the North West Province, similar statistics from two other provinces that are equivalent in the population size were displayed. The 2010 data do not provide a conclusive status of the study sample regarding performance of the colleges, but it gave a glimpse into the challenges that the FET College system encounters. These data represent all the NC (V) programmes offered during the year 2010 and do not represent data on the sample programmes of engineering only.

The NC (V) programmes students enrolment increased from 25073 in 2007 to an estimated 120230 in 2009. The NC (V) programmes addressed the skills requirements of the relevant professions and provided better progression opportunities to students. The NC (V) programmes developed additional skills in language, communication and mathematics, and were more suitable to provide students with skills for life-long learning to enable them to progress further in their careers. It is against this background that the NC (V) graduates in engineering were surveyed to determine the Impact of National Certificate (Vocational) on their continued learning patterns and their destination in the FET Colleges in the North West Province.

There is generally lack of available research results to provide tested evidence of the tendencies of what is happening in the college systems, including the colleges' strengths and weaknesses. Whilst the DHET intends to commission research into this area; it also urges academics and research organisations to identify their own research questions and conduct relevant investigations into the colleges in particular and the skills training system in general. Colleges should offer a comprehensive series of programmes and measures to make learning environments more attractive, to increase attendance, to improve (post-basic) literacy and numeracy and to increase throughput rates. Success in this will have the greatest long-term positive impact on young people's prospects. The aim is that the public further education and training institutions as well as universities and universities of technology, should have the capacity to deliver skills for the new economy.

The new vocational programmes NC (V) in colleges mark a significant move in vocational education towards high-level conceptual knowledge linked to practical application. FIGURE 2.1 shows the anticipated link between higher education band, the skills development area (SETAs) and the FET band, where the NC (V) programme lies.

FIGURE 2.1 envisages the progression of NC (V) graduates to further their studies at universities or to continue their skills development through the SETAs or even at their places of employment. These programmes have implications for college lecturers in terms of teaching, learning and assessment activities. This makes it essential to nurture and develop professionals in order to empower them to meet the demands of the NC (V) and N courses with the right combination of subject knowledge, pedagogy, workplace knowledge and practical experience.

The DHET Strategic Plan 2010-2015 (DHET, 2010: 26) reported that the National Certificate (Vocational) at Levels 2, 3 and 4 of the NQF, was put in place to solve the problems of poor quality programmes, the lack of relevance to the economy, as well as the low-level of technical and cognitive skills of FET graduates. The NC (V) does not meet all the needs of the vocational programmes, and does not enjoy universal support in the industry. In particular, programmes that support artisan training must be revised frequently. The N-courses were fundamentally outdated and lagged behind in applied disciplinary knowledge. The general view is that, while the NC (V) has a superior knowledge base as compared to the N-courses, its modality is insufficiently flexible and inaccessible to part-time students. In addition it currently lacks systemic connections that link it up with both workshop and workplace learning.

1.4. Assumptions

The sampled colleges provided accurate records of their alumni community as these are important in this study. The graduate students from the three colleges took up work opportunities available in the industries as productive skilled workers or seized training opportunities to further their studies either as learners in learnerships, apprentices, technicians or to pursue professional careers through university studies.

1.5. The research problem

What impact does the NC (V) qualification has on the destination of the graduates?

1.5.1. Background to the problem

According to the Human Sciences Research Council Report on the Centre for Poverty Employment and Growth (2009:9), “the figure of nearly 650 000 for the 18 to 24 age group were far too large if South Africa was to meet its targets of high level skilled and high middle level skilled people required for sustained economic development and the improvement of the quality of life for all in our country. The fact that approximately 85% of these persons could continue with higher education (HE) studies at the certificate or diploma level, or with some form of post NQF level 4 studies at FET colleges, gave a strong indication of the direction which any interventions aimed at increasing HE opportunities should take – not primarily degree study at a traditional university.”

The NC (V) was one of these programmes and there was a growing perception that the National Certificate (Vocational) NC (V) programmes introduced in 2007 in the Further Education and Training colleges (FETs) would not positively address the need for the skills shortages or sufficiently prepare graduates for advanced university studies. This situation had created doubt and uncertainty for the graduates of these programmes as well as the general public, especially the parents of these learners who worked hard to support them. The North West Province with its three FET Colleges that were selected in this study were not an exception to the challenges that faced the NC (V) programmes. Conducting an investigation into the impact of the NC (V) programmes would assist in measuring the extent to which the lives of graduates were influenced.

1.5.2. Statement of the problem

Briefly, the statement of the problem was as follows: ‘Is the National Certificate (Vocational) qualification having the necessary rigour and relevance to prepare students for the world of work and the future studies?’

1.5.2.1. Problem formulation

The NC (V) programmes were developed as part of the major Public FET College sector 3 years recapitalization projects that started in 2007 with the aim of addressing the ills of the N-programmes and to improve the level to higher education. There had been ongoing general concern by the business community that the new NC (V) programmes were not

appropriately packaged for the purpose they were intended for. The National Skills Accord (2011:15) states that “The parties see value in a programme that encourages businesses to adopt FET colleges. This will foster close relationships, and ensure that companies are able to support public FET colleges. It will also ensure better alignment between what colleges offer and what industry needs in a specific area.”

One of the concerns was that the curriculum was not flexible enough to accommodate workplace training since it was designed for a continuous three year period, unlike the NATED programmes that used a block release model (i.e. three months theoretical training at the college and three or more months at the workplace).

1.5.2.2. Fine-tuning the research problem

From the researcher’s point of view, the lack of formal recognition by the universities adds to the negative perception of the credibility of the NC (V) programmes. Students were also concerned about the possibility of progressing to the higher education institutions to pursue their career paths. It was against this background that the problem of the study was to investigate where were the cohorts of the engineering groups that completed the engineering course in 2009, 2010, 2011, and 2012 with regard to their career progression?

It was imperative for the researcher to assess the impact of the NC (V) qualification by responding to the main question and the sub-questions as tabulated below;

1.5.3. The main question

Does the NC (V) qualification in the engineering programme from the three colleges in the North West Province of South Africa positively influence the graduate destinations and advance their career choices?

1.5.4. The sub-questions

Three sub-questions were central to this study that aimed to respond to the major question of assessing the impact of the NC (V) qualification.

1.5.4.1. First sub-question: To what extent did the NC (V) engineering qualification influence the college graduates to pursue higher education institutions studies?

1.5.4.2. Second sub-question: To what extent did the NC (V) engineering qualification influence the college graduates to enrol in occupational training programmes such as apprenticeships, learnerships and internships?

1.5.4.3. Third sub-question: To what extent did the NC (V) engineering qualification influence the college graduates to enter the labour market as workers or to start own businesses?

The fourth scenario that relates to the possible unemployment or inactiveness or attrition was regarded by the researcher as a consequence and not an option. However, the data captured addressed this scenario in the overall analysis and reconciliation of the total number of graduates.

1.5.5. Aim and sub-aims of the study

1.5.5.1. Main Aim of the study

The study aimed to assess the impact of the NC (V) qualification on the lives of the graduates by surveying the first three cohorts of NC (V) engineering graduates to establish their whereabouts with respect to career progression.

1.5.5.2. The sub-aims of the study

- **First sub-aim:** The first sub-aim was to determine the influence of NC (V) qualification on the enrolment of graduates at higher education institutions to further their studies.
- **Second sub-aim:** The second sub-aim was to determine the influence of NC (V) qualification on further training of graduates through apprenticeship, learnerships, or internship.

- **Third sub-aim:** The third sub-aim was to determine the influence of NC (V) qualification on the graduates' entrance into the labour market as employees, entrepreneurs or as self-employed individuals.

To place the matter in perspective, the NC (V) students would upon completion of all three levels (NQF L2 – L4) have access to:

- Further studies at university or higher education level programmes;
- Enter into workplaces to acquire practical component of their chosen fields through learnerships, apprenticeships or internships;
- Enter labour market as semi-skilled workforce; and/or
- Establishing own enterprises.

The engineering students who completed their studies were the focus of this survey, which aimed to determine how the NC (V) programme had influenced their careers.

1.6. Research Methodology and Design

These were discussed hereunder to indicate what role they play in this study.

1.6.1. Methodology

The study landed itself to both the qualitative and quantitative methods. Pratt in (<http://www.resinedplymouth.ac.uk>) states that “Quantitative researchers collect facts and study the relationship of one set of facts to another, while the Qualitative perspective is more concerned to understand individuals' perceptions of the world. They seek insight rather than statistical perspective of the world”. The quantitative method was used to collect information from documents containing the performance records of the NC (V) graduates. Questionnaires were also used to solicit information from the graduates.

The qualitative method was used for gathering information from the respondents through interviews. Furthermore, reports and documents related to the progress made by respondents after their college study were studied. The respondents to the interviews

were the academic heads of the colleges, the curriculum senior official from the Department of Higher Education and Training, and the students support managers responsible for students' placement and tracking system.

To validate information from the graduates and the secondary employer feedback collected by the college student support managers, the researcher interviewed ten employers, the Chief Executive Officers from the SETAs, and the directors of cooperative education from higher institutions of learning where the college graduates were employed or studying. Ary et al. (2010:29-31) state that “qualitative researchers seek to understand a phenomenon by focusing on the total picture rather than breaking it down into variables. The goal is a holistic picture and depth of understanding rather *than a numerical analysis of data*”. As argued by Ary et al. (2010:29-31), the researcher focused on understanding the impact of the NC (V) programme and how the programme had benefited the students in accessing the labour market opportunity and also in accessing the institutions of further and higher learning to improve their qualifications.

1.6.2. Research design – survey study

The North West Province boasts three merged FET colleges with eleven campuses spread throughout the province. The North West Province is a rural province despite hosting the biggest mines of platinum particularly in the Bojanala region. There is also a high concentration of tourism industry as well as agricultural businesses that require skilled labour force to drive economic activities which have the capacity to create jobs and workplaces for the graduates. Babbie (2007:244) states that “Surveys may be used for descriptive, explanatory and exploratory purposes. They are chiefly used in studies that have individual people as the units of analysis.” The study used the survey research design since the units of analysis were the graduates in the three colleges under study. A Questionnaire that is attached as Appendice “B” was used as a tool to gather survey information from graduates. Copies of the questionnaires were distributed mainly electronically by email, but for those graduates without email facility, other means such as fax, post and telephone were used.

The report on TVET by Gail Elliot (2010:53) stated that in the rollout of the new curricula in 2007, the NC (V) tended to attract learners who were failing in the school system. An

investigation into the reasons for the high failure rate of NC (V) students in one of the Provinces funded by DANIDA, revealed a myriad of reasons for poor performance: students expectations of practical rather than theoretical content, poorly prepared lecturers, inappropriate assessments, lack of practical training, cognitive levels set too high and so on. Since the implementation of the NC (V) in 2007, three sets of graduates had already completed levels 2 to 4 with the first and second cohorts in 2009, 2010 and 2011 respectively. The study investigated whether the NC (V) engineering graduates of 2009, 2010, 2011 and 2012 in the North West Province were absorbed into the labour market or further in the higher education institution.

1.6.2.1. Research approach of the study

The research aimed to survey all graduates of the first NC (V) level 4 of 2009, the second cohort of 2010, the third cohort of 2011 as well as the fourth cohort of 2012 in the engineering field from all three colleges of the North West Province.

Babbie (2007:244) states that survey research is probably the best method available to the social researcher who is interested in collecting original data for describing a population too large to observe directly. The idea was to directly observe the graduates at their various destinations, but this was not possible; hence, the survey questionnaires were structured to realise the aim of the study. Babbie (2007:244) further indicates that careful probability sampling provides a group of respondents whose characteristics may be taken to reflect those of the large population and carefully constructed standardised questionnaires provide data in the same form from all respondents. As attested by Babbie, the research results of the NC (V) graduates of the North West Province could be used at a National level to extrapolate similar pattern for the other provinces as they offered same programmes. The survey questions solicited the following information from the graduates:

- Biographical data that provided information related to age and gender of the respondents, which was an important statistical variable.
- Educational information relating to entry into the NC (V) programme to determine the correlation to academic achievement.
- Post college activities that referred to the destinations of graduates such as work-placements, apprenticeships, further learning and other career related opportunities.

- Future plans that referred to the plans of the graduates beyond the current post school activities such as their career success and achievements.
- Graduate opinion of NC (V) programmes that concerned information from graduates on their experiences of the NC (V) programme (this information may be useful in the future review of the programme).

The survey questions also aimed at collecting the employers' opinion in order to understand the employers experience and perceptions about the performance of the NC (V) graduates.

All NC (V) engineering graduates were sent a questionnaire containing questions related to the above stated areas. To validate the responses, ten percent of the sample population was interviewed telephonically, taking into account how widely spread they were.

Interviews were conducted with the academic heads of colleges, the Chief Director at the Department of Higher Education and Training as well as the employers. The purpose of the interviews was to gather related or additional and important information that might have been missed by the questionnaires, and also to validate the data collected from the graduates. Interviews with the colleges preceded the survey questionnaire in order to request Student Support Units to provide the researcher with records and contact details of the members of the sample group.

A pilot test was conducted on the questionnaire with a small group of respondents from the final year NC (V) students that was similar to those in the final survey. The questions on the questionnaire were based on the research questions. Neuman (2006:276) emphasises that when preparing a questionnaire, the researcher thinks ahead to how he or she will record and organise data for analysis. He further emphasised the importance of piloting the questionnaire in order to ensure clarity and completeness of the questions. Open and closed questions were used both in the questionnaires and in the interviews as these tend to serve complementary purposes since open questions are inclined to be subjective whilst closed questions are objective.

1.6.3 NC (V) background

1.6.3.1 Entry requirement into NC (V) L2

The minimum entry requirement was Grade 9 with a pass in mathematics and science subjects. However, many learners entered NC (V) L2 with Grades higher than Grade 9. This practice led to a diverse classroom population, often creating challenges for the lecturers in finding the correct focus for the lesson. Correlation between the entry qualification and the completion of NC (V) L4 was made by comparing achievements of the graduates in relation to their entrance qualification.

1.6.3.2 Mathematics and science subjects

The engineering programmes required that new entrants should have a pass in mathematics and science at least at Grade 9 level that gave him or her sufficient background knowledge and would enable him or her to assimilate NC (V) L2 programme content (Dillion, 2010:201). A lack of mathematics and science subjects at Grade nine jeopardised the student's chances of success even if the student's entry qualification into NC (V) L2 was higher than Grade 9. Correlation was made between the achievement in NC (V) L4 and a pass in mathematics and science at entry to NC (V) L2 by comparing the performance of graduates who had a pass in mathematics and science to those who were admitted to L2 with a qualification higher than Grade 9 but did not have a pass in mathematics and science.

1.6.3.3 Career guidance and counselling

Career guidance and counselling services played an important role in the preparation of students for their future employment prospect as well as to balance their expectations. Whereas career guidance opens doors for students to available career opportunities to choose from, career counselling affords individual students a chance to look inwardly for the specific potential to follow a particular career path. The study investigated through the questionnaires and interviews the extent to which graduates were provided the necessary information about opportunities and choices for the labour market and their further studies.

1.6.3.4. Type of engineering field

The NC (V) curriculum provided for the following three streams of learning: Civil and Building Construction, Electrical Infrastructure, and Engineering and Design related qualifications. This study surveyed all three fields while recognising that the importance of differentiating among these three fields while assessing the impact on, and success rates of the graduates concerned. The purpose was to do a comparison of all three fields with regard to throughput rates, work placement as well as access rate to higher institutions in order to determine the extent of the impact of the NC (V) programme on the advancement of the career paths of the graduates.

1.6.3.5. Support services

Student support services played a primary role throughout the college life of the students and it was crucial to ensure that a favourable learning environment was created to increase the students' chances to gain good mastery of the NC (V) programme. For the purpose of this study, these services refer to: user friendly registration services, financial aid, student representative councils, recreation, life skills, and safety and health. Failure to provide support during the registration process and other types of assistance, including financial aid systems, could lead to high drop-out rates.

1.6.3.6. Academic support

Academic support services referred to teaching and learning activities as well as extra tuition interventions, resource centres and all other facilities that helped students with their learning. Barron et al. (2002:6) state that "students learn and develop in different ways at varying rates. For technology offers students diversity, self-paced learning, and opportunities for individual growth and self-expression". There were different forms of additional tuition and academic support such as: the buddy or peer system, e-learning, and the catch-up programme. The extent to which graduates were provided academic support provides an understanding into the extent to which the graduates were exposed to the NC (V) programme. The relationship between the use of academic support and the impact of the NC (V) on the career paths of the graduates is determined.

1.6.3.7. Work placement support

There was a general expectation that colleges should offer work placement support to their graduates by entering into partnerships or by networking with prospective employers, especially those within close proximity to the college. These services placed graduates in favourable positions by placing them in employment for practical training. The study determined the extent to which the NC (V) graduates received work placement support.

1.6.3.8. Work placement opportunities

This variable referred to the available workplace opportunities for graduates to further their training such as apprenticeships, learnerships and internships in order to attain an occupational or professional qualification that certifies them to be artisans, technicians, or even engineer assistants. Sometimes a graduate gathered practical work experience from various employers before qualifying in a chosen field.

This study regarded the placement of learners into the workplace as a sign of confidence by employers in the NC (V) qualification and confirmation of the impact of the qualification on the career development of graduates. Even though a high rate of NC (V) graduates placement suggested that the initial impact of the programme was being realised, further research to investigate the effectiveness of the qualification still needs to be undertaken.

1.6.3.9. Further study opportunities

The impact of the NC (V) qualification was attested to by some of the graduates who pursued further studies in higher education institutions. This was confirmation that this relatively new qualification can enable graduates to advance their careers. In order to check whether NC (V) played a positive role in promoting seamless progression, it was important for the study to examine how many of the graduates chose this route, and in what field. It was also important to check to what extent the NC (V) programme was recognised as an entry requirement into university studies. This variable was crucial given the general negative perception of, and criticisms levelled against the NC (V) curriculum.

1.6.3.10. Appropriateness and relevance of the NC (V) programme

The aim is to gather information related to the overall impression of the graduates on the NC (V) programme. The graduates were allowed space to review the appropriateness and relevance of the programme. Cammarota and Fine (2008:12) in their report on revolutionizing education in the USA outlined the rights of students to evaluate the kind of educational services and support they received. They discovered that involvement of students in their education often lead to improved quality service.

The researcher argued that lessons learnt from Cammarota and Fine apply to this study as well. He was of the opinion that surveying the NC (V) graduates to determine their experiences and perceptions of the programme will lead to improved service by the colleges.

1.7. Significance of the study

The FET College graduates, the Colleges and the Employers would benefit from the findings, recommendations and particularly from the proposed “Work Integrated Learning Framework Model”. The theoretical knowledge provided to learners would also be enhanced through quality workplace experience. This would be assessed and monitored by the College lecturers and workplace mentor as recommended. In this way the graduates’ chances of finding employment or starting own enterprises would be increased because of skills acquired that make graduates employable.

The Colleges would be able to improve the way they engage with the employers with respect to student work-placement as they would be consulted and involved with the training of learners. Their reputation would improve through increased partnerships and sponsorships. Industry would benefit from a pool of work seekers ready to prove their newly-acquired skills. The growth of the economy of South Africa would be possible because of the increased levels of productivity.

The Department of Higher Education and Training might utilise these findings and recommendations as a baseline for country-wide or future studies on the impact of the NC (V) qualification on the lives of students. It would be important and interesting for the

Department of Higher Education and Training to note how the NC (V) qualification improves the employability of the students and capabilities to advance their careers. The plight of NC (V) graduates was highlighted with a view to enhancing post college opportunities.

The relevant National and Provincial departments as well as the colleges could use the findings to improve the related shortcomings raised by the report. The outcomes form a baseline study that could be used to extrapolate similar patterns in other provinces.

1.8. Delimitation of the study

The study was confined to the three Colleges situated in the North West Province of South Africa. The reader is referred to FIGURE 1.1 in point 1.2.1 that showed the NW Province map with the spatial location of the campuses of the three colleges. All three cohorts of graduates from the year 2009 to 2012, from the three engineering programmes, namely, Civil Engineering and Building Construction, Engineering and Related Design and Electrical Infrastructure Construction, were surveyed. The study endeavoured to include all graduates in the sample to enhance the validity of the results.

It was not the intention of the researcher to evaluate the NC (V) as a programme; however, he had to examine the education route of the concerned graduates in order to determine their career prospects.

1.9. Chapter divisions

A summary of how the study unfolded is briefly discussed below.

Chapter 1 provides an introduction to the study outlining the background, problem statement, aim and objectives, definition of concepts, delimitation of the study and the announcement of the study programme.

Chapter 2 provides a summary of the literature review that was conducted to inform the study appropriately and to provide a firm basis for argumentation. Practices in a few

countries were studied and discussed for purposes of comparing experiences in the college sector where there are FET colleges.

Chapter 3 deals with the research methodology and design used for the study. Both qualitative and quantitative methods were used to collect data.

Chapter 4 contains the analysis, interpretation, consolidation and codification of all data collected, and formulations of research findings.

Chapter 5 provides conclusions to the study based on the research findings, makes recommendations to address the findings and proposed a model for addressing problems affecting graduates' prospects of success.

1.10. Concepts

Definitions of some terms and concepts used throughout the thesis are provided here.

1.10.1. Apprentice

In this study an apprentice was defined as an employee who earns a wage and works alongside experienced staff to gain job-specific skills leading to nationally recognised qualifications. An apprenticeship can take between one and four years to complete depending on its level, the apprentice's ability and the sector of the industry (<http://www.sheffield4jobshun.com/apprenticeships>).

The NC (V) graduates have an opportunity to further their training through the apprenticeship route in order to specialise in a specific occupational career. Acceptance of graduates into apprenticeship was a sign of confidence by employers in the credibility of the NC (V) qualification.

1.10.2. Engineering

The concept of Engineering was significant in this study, in which a sample of three NC (V) engineering programmes was selected.(that are aimed at increasing the production of skills aligned to the labour market needs of the province as briefly explained in point

1.2.1.4. Engineering is the science, skill, and profession of acquiring and applying scientific, economic, social, and practical knowledge, in order to design and also build structures, machines, devices, systems, materials and processes (<http://www.sciencedaily.com/articles/Engineering.htm>). The NC (V) engineering in this study is primarily perceived at the skill level where theoretical knowledge is complemented with extensive exposure to practice.

1.10.3. Experiential learning

In this study experiential learning was one of the other available routes of acquiring practical exposure from the workplace as part of the practical learning component of the NC (V) qualification. Historically, artisan training required theoretical as well as practical learning components.

The theoretical component was offered by FET colleges, and trainees entered into employment contracts with the company that hosted their practical training. The company in turn received a tax reduction benefit. The apprentice would then practise his or her trade under the supervision of a qualified artisan. Upon completion of the training the trainee would write a trade test and get a Certificate of Competence (Dept. of Public Works, 2007:9).

1.10.4. FET College

Further Education and Training College (FETC) referred to the three NW Province and other public colleges in South Africa that provide technical, vocational education and training at NQF levels 2, 3 and 4, including career-oriented education and the training offered in technical colleges, community colleges and private colleges.

Private institutions offering FET programmes must register with the Department of Education in accordance with the Further Education and Training Act of 1998 (Act No 98 of 1998). The NC (V) programmes were introduced as an alternative qualification to replace the N-Level programmes as articulated in the background section of this study.

1.10.5. Internships

Internships were important to this study since they are an alternative route for the NC (V) graduates to acquire workplace experience. In some cases the employers may not be in a position to sign on the NC (V) graduates as apprentices due to various reasons, but may be able to offer internship opportunities to the graduates.

Internship is a system of on-the-job training for white-collar jobs, similar to an apprenticeship. Student internships provide opportunities for students to gain experience in their field, provided they have an interest in a particular career, are capable of creating a network of contacts, and have obtained a school credit.

1.10.6. Integration

Integration in this study applied to the connection of the institutional or college theoretical knowledge of the graduates and the practical knowledge obtained in the workplace. Secondly, it refers to the enhancement of the NC (V) qualification to further studies including university entrance and permits the accrual of credits.

Vocational education and training should form an integral part of the overall system of human resources development in the country and provide learners with opportunities for horizontal and vertical mobility within the education and training system. Training standards should be expressed in terms of a nationally agreed framework and internationally accepted learning outcomes and competencies.

1.10.7. Learnerships

The study envisaged a high absorption of the NC (V) graduates into learnership programmes to ascertain the value and impact of the NC (V) qualification. A learnership is a combination of formal and workplace learning experience that leads to a national occupational qualification ([http:// www.quest.co.za/learnership](http://www.quest.co.za/learnership)). This is the most popularly used route of exposing graduates to workplaces for learning.

A learnership is a training pathway introduced under the National Qualifications Framework. FIGURE 1.1 indicates how the NC (V) qualifications fit into the NQF whilst DIAGRAM 3.1 demonstrates a pathway into the college up to the exit level that leads into a need for a learnership. The Department of Public Works (2007:6) outlines that it combines theoretical training at a college, or through a private training provider, with relevant on-the-job training. In order to enrol for a learnership, a candidate had to be contracted to an employer who provided practical on-the-job training.

1.10.8. National Certificate (Vocational) – NC (V)

A qualification at Level 2, 3 and 4 on the National Qualifications Framework (NQF) is awarded to students who comply with the national policy requirements set out in the policy document, *National Certificate (Vocational): Qualifications at Levels 2 to 4 on the National Qualifications Framework (NQF)* as promulgated in *Government Gazette No. 28677* of 29 March 2006.

The Report on the Conduct of National Examinations (2009:5) outlines that “*the NC (V) programmes are intended to respond directly to the priority skills demands of the modern South African economy by exposing students to high skills and knowledge.*”

North West Province (NWP)

1.10.9. Placement opportunity

The Student Support Units, together with the graduates, were expected to apply for placement opportunities including placement for the NC (V) graduates.

A placement opportunity meant any opportunity for work or learning that could be offered to an individual and includes a vacancy for employment, an opportunity for self-employment, a learning programme and a community service (SDA 37 of 2008).

1.10.10. Technical Education

Technical education is vocational or pre-vocational in nature and occurs at lower tertiary levels to equip graduates with middle-level engineering skills.

The NC (V) programme is a vocational qualification with an occupational component for specialisation purpose. The three FET Colleges offer Technical education as stated in point 1.2.1.3. The components of technical education may vary considerably depending on the type of personnel to be prepared and their education level.

1.10.11. Validation

The NC (V) qualification is quality assured by the UMALUSI, which is one of the three quality councils in the South African education landscape. Validation is a process whereby standards of teaching, assessing and grading are checked and approved. This is usually done by “independent” subject experts having no obligation to, or connection with, the institution seeking accreditation. These experts may be called valuers, verifiers or moderators.

1.10.12. Vocational Training

The NC (V) qualification allowed students to undergo vocational training that comprises activities aimed at providing the knowledge, skills and attitudes required for effective and efficient performance within an occupation or group of occupations. Vocational training encompassed initial, refresher, further, updating and specialized job-related training. It may, but does not necessarily include general educational subjects.

1.10.13. Vocational Education

The NC (V) qualification fits the description Vocational Education, which is an education designed to prepare skilled personnel at lower levels of qualification for one or a group of occupations, trades or jobs.

Vocational education is usually provided at upper secondary school level and includes general education, practical training for the development of skills required by the chosen occupation, and related theory. The proportions of these components may vary considerably but the emphasis is usually on practical training.

1.10.14. SAQA

The South African Qualifications Authority (SAQA) was established in terms of *Section 3* of the *South African Qualifications Authority Act of 1995 (Act No. 58 of 1995)* and manages the registration of qualifications including the NC (V) qualification.

1.10.15. SETAs

The Sector Education and Training Authority's (SETAs) played an intermediary role in securing work placements for the NC (V) graduates. Their role was to develop and implement a sector specific skills plan, register and promote learnerships, and to apply to the South African Qualifications Authority (SAQA) for accreditation as an Education and Training Quality Assurance Body (ETQA) for qualifications in its sector,

1.10.16. Umalusi

Umalusi validates the standard setting, assessments as well as the management of the quality assurance process of the NC (V) qualification. The Council for General and Further Education and Training Quality Assurance was established in terms of the General and Further Education and Training Quality Assurance Act of 2001 (Act No. 58 of 2001).

1.11. Summary

The discussion here provided the basis that linked up with all the chapters. Chapter one focused on the background of the study, statement of the problem, and crucial information informing the purpose and objectives of the study. Chapter two addressed the literature review and the related theoretical frameworks impacting the study.

CHAPTER TWO: LITERATURE REVIEW AND THEORETICAL FRAMEWORK

2.1. Introduction

In this chapter the following were addressed: introduction, the prevailing conditions in the Further Education and Training Sector, perspective on the newly introduced programme, an African perspective as expressed in selected countries, international perspective and models beyond Africa, a comparative summary of the experiences from the discussed countries, South African model, Related Theoretical Frameworks and Summary.

The literature reviewed covered opinions, views and experiences as expressed by authors who wrote authoritatively about colleges/institutions which specialise in vocational education and training programmes. Creswell (2008: 116) argues that a literature review is a written summary of articles, books, and other documents that describes the past and current state of knowledge about a topic, organizes a literature into topics, and documents a need for a proposed study. This is a baseline study meant to explore the impact of the NC (V) programme on the destinations of the college graduates in the engineering field as outlined in the background of chapter one at point 1.5 and in the statement of the problem which appears under point 1.5.1 of chapter one.

In this chapter the researcher explored literature that sheds light on the understanding of issues related to career advancement of students who undertook studies in Vocational Education and Training Programmes in the field of engineering. This study intended to ascertain whether the programmes effective or not. However, care will be taken about generalising from a specific context. Furthermore, this study aimed at determining whether the programme addressed questions intended to determine aspects of the programme that proved to be functional and effective and those that proved to be ineffective so as to provide advice as to what improvements were required.

The other aim of this chapter was to study the vocational educational and training programmes and models of other countries to see what was functional and productive so as to be able to borrow and select wisely. The NC (V) programme was the result of the

process of evolution in South African technical and vocational education and training over many years of practice. These practices were influenced by a number of factors including, in the main, economic and technological demands on a national and international levels.

In this chapter, an attempt was made to understand the literature that sheds insight into vocational qualification and its usefulness in shaping the careers of college graduates.

2.2. The prevailing conditions in the Further Education and Training Sector

2.2.1. Overview of the background into the SA's vocational education and training

The TVET College sector in South Africa has strong historical roots that can be traced as far back as the 1800s. A thesis by Sooklal (2005:18-19) outlined in-depth the historical analysis of the origins and establishment of the technical college sector in South Africa from 1867 to 1994. The importance of the FET colleges can be attributed to their role of providing people with skills and employment prospects that are not attainable in any other education sector. There was rapid growth of technical colleges during the 19th and 20th centuries that was accompanied by increasingly formalised apprenticeship training in response to the rapidly-growing needs of South Africa's mining industry, as well as the railways and other industries emerging at the time. In 1995, South Africa pioneered the South African National Qualifications Framework to promote the value of different qualifications that can be clearly recognized by the students, employers and other stakeholders. The purpose of this Framework was in principle to facilitate lifelong learning, improve transitions of TVET programmes and to improve access to higher level education.

The FET College system that is now known as the TVET system designed to create opportunities for youth and adults to acquire skills, knowledge and values for employment and employability. This implied that the TVET curriculum particularly the NC (V) curriculum should address the needs of the students, industry, and community with the ultimate aim of meeting the economic skills demand of the country. Rasool and Mahembe (2014:8) emphasise this point by indicating that the technical vocational education and training

(TVET) discourse in South Africa was inextricably intertwined within a distinctive set of major policies issued by the post-apartheid government, since the advent of democracy in 1994, which envisioned the future state of the country. The promulgation of the *Further Education and Training Colleges Act, No 16 of 2006*, envisaged a considerably broad role for TVET Colleges, which included enabling students to acquire the necessary knowledge; practical skills and applied vocational and occupational competence; and providing students with the necessary attributes required for employment, entry to a particular vocation, occupation or trade, or entry into a higher education institution.

Although according to the Green Paper (2012:21); the “vision for the public FET colleges is one of vibrant institutions that offer vocational and occupational qualifications, mainly to young people (16 to 24 years old) this has not been realized”. From the historical analysis of the Technical Colleges, FET Colleges to the current TVET Colleges there was a general consensus that the sector was not meeting the needs of the economy and of society as a whole (NPC, 2012:50). The National Planning Commission (NPC) candidly asserts that the Further Education and Training (FET) sector was not effective and it was too small and its quality output was poor. According to *The Green Paper (DHET) 2012:x*) “although many advances and gains had been made since 1994, the sector continues to produce and reproduce gender, class, racial and other inequalities regarding access to educational opportunities and success”.

In conclusion, the researcher argues that at the centre of this policy were changes; curriculum review was not adequately consulted by all stakeholders. In chapter 5 of this study a recommendation on how the Community of Practice can be used to promote a coordinated and integrated curriculum review process. The real challenge that faced the TVET system in South Africa was to provide access to high quality technical vocational education for all, without losing sight of the TVET’s special relationship with the world-of-work (McGrath, 2012:627).

To achieve this, the theoretical grounding of the SA TVET policy needs to shift from the human capital approach, and broadened to include human capability and sustainable development approaches.

The public Further Education and Training (FET) College sector was transferred to the newly established Department of Higher Education and Training in terms of the

Presidential proclamation of May 2009. Gewer (2010: 7) described this move as the repositioning of the college to contribute to the development of effective skills base for advancing the South African economy. The Preamble of the FET Act (2006:1) declared that when it comes to training and skills development, two key concerns for the Further Education and Training (FET) Colleges Act of 2006 are “to restructure and transform programmes and colleges to respond better to the human resources, economic and development needs of the Republic, and to provide optimal opportunities for learning, the creation of knowledge and the development of intermediate to high-level skills in keeping with international standards of academic and technical quality” (FET Act, 2006:1).

2.2.2. National Certificate (Vocational) – NC (V)

Umalusi (2007:4) defines National Certificate (Vocational) as a certificate awarded as a final exit qualification at the end of Levels 2 to 4 on the NQF to candidates who have complied with national education policy on the National Certificate (Vocational) as published in the Government Gazette, No. 28677 of 29 March 2006, and amended as amended in the Government Gazette No. 30287, of 12 September 2007.

The impact of the NC (V) on career opportunities was embedded in the purpose of this programme as captured by the Guidelines and Directives for Certification by Umalusi (2007:9). According to the guidelines, the purpose of the National Certificate (Vocational) was to enable students to acquire the necessary knowledge, practical skills, applied competence and understanding required for employment:

- at an elementary level of a particular occupation or trade or class of occupation or trades in the case of Level 2 qualifications;
- at an intermediate level of a particular occupation or trade, or class of occupations or trades in the case of Level 3 qualifications.

The study surveyed learners who passed an exit level 4 to determine whether the purpose of the NC (V) programmes had been achieved. Each of the qualifications on Levels 2, 3 and 4 on the NQF had a minimum total of 130 credits as per the policy of Umalusi (2007:4). The qualification consists of two components, namely, the fundamental component, which formed the basis of all other learning and was therefore a compulsory

component, and the vocational component, which defined the specialisation of the qualification. Levels 2, 3 and 4 qualifications on the NQF are all structured as follows:

- Fundamental component, 50 credits; Language, 20 credits; Mathematics or Mathematical Literacy, 20 credits; and Life Orientation, 10 credits; in order to comply with the entrance requirements of higher education institutions.
- Vocational component, 80 credits; and 20 credits for each vocational subject to ensure the understanding of the graduates in all four vocational subjects
- The duration and entrance requirements for each NC (V) qualification level are a minimum of one year full-time learning and a maximum of three years' part-time learning.

Entrance requirements for NC (V) Level 2 are Grade 9; or ABET Level 4 / NQF Level 1; or any recognised NQF Level 1 qualification; or approved bridging programme equivalent to NQF Level 1; or Recognition of Prior Learning assessment programme, which meets the basic requirements for access to NQF Level 2. This entrance requirement accommodates learners from general schools, technical schools, unemployed youth and youth or adults with informal knowledge or experience that can be credited through the formal assessment process.

The South African occupational and vocational education is a diverse system, unlike in other countries as discussed in chapter two where there is a single system called Technical and Vocational Educational Training (TVET).

The Further Education and Training colleges were traditionally designed to collaborate with industry by offering only theoretical knowledge to students particularly in the engineering field, which industry and colleges formed partnership that allowed workers or apprentices to attend classes for a period of about three months and then be at a workplace for nine months in a year until the apprentice qualified as an artisan in a chosen field.

In the 1980s the industry training boards (NITBs) were established, which sought to close the gap between theory and practice by coordinating training within the industry with common chain value or products. The advent of the South African democracy ushered in a transformation of training boards into Sector Education and Training Authorities (SETAs)

to be responsible for occupational training in the form of skills development. The HSRC 12th report of 2009 on Centre for poverty, employment and growth stated that “... *these levels are integrated with the NQF, as stipulated by the South African Qualifications Authority (SAQA) Act, No 58 of 1995. After the 2009 national elections, skills development, and higher and further education were drawn together under the purview of the new national Department of Higher Education and Training (DHET).*”

This arrangement enhanced the prospects of the learners undertaking the NC (V) programme as the SETAs, Industry and Colleges are managed and coordinated under one department. The article report on espousing the virtues of SA’s vocational training option indicated that the national certificates were designed in consultation with business and industry, owing to the critical skills shortage and students exiting matriculation not having practical skills, and having to be trained to enter the workplace. In addition, it allows students more flexibility for future career choices (<http://www.engineeringnews.co.za/article/false-bay-college>).

Regulation 8(1) of the National Standards Bodies Regulations of 1998, states that, “Accordingly, the NC (V) Level 4 intends to enable students to acquire the necessary knowledge, practical skills, applied competence and understanding required for employment at an elementary level of a particular occupation or trade, or class of occupations or trades. It provides learning experiences in situations contextually relevant to the particular area in which the programme was situated. The NC (V) Level 4 offered programmes in the form of subjects that consist of academic knowledge and theory integrated with the particular skills and values specific to each vocational area”.

2.2.3. Position of NC (V) qualification in the National Qualifications Framework (NQF)

According to South African Qualifications Authority (SAQA, 2012:xi), the NQF is a framework that sets the boundaries, principle and guidelines, which provide a vision, a philosophical base and an organizational structure, for the construction of a qualifications system. Detailed development and implementation was carried out within these boundaries. All education and training in South Africa fits within this framework. It is a national resource, which represents an effort at integrating education and training into a unified structure offering recognised qualifications.

The NQF is a set of principles and guidelines by which records of learner achievement are registered to enable national recognition of acquired skills and knowledge, thereby ensuring an integrated system that encourages lifelong learning. South Africa's National Qualifications Framework (NQF) recognises three broad bands of education: General Education and Training, Further Education and Training, and Higher Education and Training as shown in FIGURE 2.1 and TABLE 2.1 below. FIGURE 2.1 represents the South African Education and Training System (QCTO compilation as presented to the NSA).



FIGURE 2.1: South African Education and Training System (QCTO compilation as presented to the NSA)

A simplified version of FIGURE 2.1 is TABLE 2.1 is shown below. The NC (V) qualification, as indicated in FIGURE 2.1, is positioned in such a way that it should lead to study opportunities at universities, to industrial training such as training for occupational qualification; and to direct employment as a semi-skilled worker or to self-employment.

The NQF consists of 10 levels, as shown below:

Levels	Designation
1	Grade 9
2	Grade 10 and National (vocational) Certificates level 2
3	Grade 11 and National (vocational) Certificates level 3
4	National Senior Certificate and National (vocational) Cert. level 4
5	Higher Certificates and Advanced National (vocational) Cert.
6	Diploma and Advanced certificates
7	Bachelor's Degree and Advanced Diplomas
8	Masters, Post grad diploma and Professional Qualifications
9	Masters Degrees
10	Doctoral Degrees

TABLE 2.1 Representation of National Qualification Framework of SA (by SAQA)

In October 1995, the South African Qualifications Authority Act (No. 58 of 1995) was promulgated to establish the authority, whose main task was to establish the National Qualifications Framework (NQF). The authority started operations in May 1996. By 2001 the NQF was under review, and after that the 1995 SAQA law was replaced by the National Qualifications Framework Act (No. 67 of 2008).

The NC (V) qualification is ranked at levels 2 to 4 of the National Qualification Framework as indicated in TABLE 2.1. Both the NC (V) and the General Education exit qualification, namely, GR 12, are at level 4 of the NQF. This implies that an NC (V) graduate and a school graduate should have equal chances of entry into university. However, given that the NC (V) qualification was only introduced in 2007, universities have not been keen to accept the NC (V) graduates, hence this study.

2.3. A Perspective on the newly introduced programme

The North link FET College website summarised the introduction and understanding of the NC (V) by highlighting that from 2007, the public FET Colleges have been offering exciting, modern and relevant programme of study in vocational programmes. The vocational programmes were the eleven high skills, high quality and high knowledge programmes that were introduced at FET Colleges in 2007. The programmes were intended to directly respond to the priority skills demands of the modern economy. The National Certificate qualification is a full year programme at each of the NQF levels of study. A student is issued with a certificate on successful completion of each level of study. The list below represents the eleven initial programmes launched in 2007:

National Certificate - Office Administration

National Certificate - Marketing

National Certificate - Finance, Economics & Accounting

National Certificate - Management

National Certificate - Building & Civil Engineering Construction

National Certificate - Engineering & Related Designs

National Certificate - Electrical Infrastructure & Construction

National Certificate - Information Technology & Computer Science

National Certificate - Primary Agriculture

National Certificate - Hospitality

National Certificate - Tourism

The study was limited to the three engineering programmes that form part of the above list. The aim was to investigate the first, second and third cohorts of graduates of the NC (V) programmes with the purpose to assess the impact made by the qualification on the career of the graduates.

2.3.1. Prospects and implications for NC (V) graduates

The statement of the problem that appears in point 1.5.1 of chapter 1 is as follows: The National Certificate (Vocational) qualification lacks the necessary rigour and relevance to prepare students for the world of work and the future studies. The NC (V) programmes

were developed as part of the major Public FET College sector 3 years recapitalization project that started in 2007 with the aim to address the ills of the N- programmes and to improve progression to higher education.

Umalusi (2007:9) states that the purpose of the National Certificate (Vocational), which is based on the policy of the National Certificate (Vocational), Levels 2 to 4, as published in the Government Gazette, No. 28677, of 29 March 2006, and on the National Policy for the conduct, administration and management of the National Certificate (Vocational), as published in Government Gazette, No. 30287 of 12, September 2007, is to enable students to acquire the necessary knowledge, practical skills, applied competence and understanding required for employment:

- at an elementary level of a particular occupation or trade or class of occupation or trades in the case of Level 2 qualifications;
- at an intermediate level of a particular occupation or trade, or class of occupations or trades in the case of Level 3 qualification;
- or entrance into Higher Education in the case of Level 4 qualifications.

A study by Umalusi (2006:24) on the comparison of the school and college subject highlighted that developers who were ensuring that vocational programmes prepared learners for higher education have played a role internationally in making such programmes more attractive to learners as well as in raising the standard of the programmes. In the design of their research study, Umalusi was very cognisant of the fact that vocational programmes are supposed to prepare learners for the workplace. However, ascertaining whether or not a learning programme prepared learners for the workplace was complicated, as 'the workplace' in fact was an extremely heterogeneous industry and companies had different requirements. This research intended to explore the extent to which the NC (V) qualification was able to influence the intake of learners into the workplace as well as learner progression to further studies.

At the introduction of the NC (V) programmes in 2007, colleges were expected to employ intensive marketing strategies in their effort to ensure good enrolment of learners in the programme. One of the colleges is the Northlink FET College that posted on its website the prospects upon the completion of the programme.

The College wrote that as a public FET College its student would gain integrated theoretical and practical experience, exposure to a chosen industry as well as a meaningful qualification as part of an affordable education. The invitation on the marketing website was extended to prospective adult learners of any age who were interested in additional training in their career of choice or to start a new one that could equip the students with the necessary skills to build their future.

According to the webpage of Northlink FET College, the National Certificate (Vocational) had replaced the NATED courses (N1 – N3). The National Certificate (Vocational) was a new and modern qualification at levels 2, 3 and 4 of the National Qualifications Framework (NQF). The NC (Vocational) was introduced at FET Colleges at NQF Level 2 in 2007, Level 3 in 2008 and Level 4 in 2009. The National Certificate (Vocational) was the new curriculum that was being introduced to public FET colleges around the country and gave Grade 9 learners a Vocational alternative to an academic Grade 10-12 by offering industry focused training on the NQF levels 2-4.

The qualification was designed to provide both the theory and practice. The practical component of the study could be offered in a real workplace environment or in a simulated workplace environment. It provided students with an opportunity to experience work situations during the period of study. The qualification also provided learners with the opportunity to proceed to higher education studies, subject to appropriate subject combinations. The ILO Report on Closing Skills Gap (2012:6) argues that the recognition that a better educated labour force contributes to higher economic growth implies that successful economies in the developed world have developed or are developing systems and strategies to support lifelong learning and work-force development. These strategies build on the failures of foundation education in schools and offer flexible access to Higher Education and FET Colleges.

In the succeeding sections the study investigated whether the NC (V) lacked the necessary rigour and relevance to prepare students for the world of work or for future studies. In other words, it looked into whether the NC (V) achieved the intended objectives as advocated in the DHET National policies and which were also well articulated in the marketing strategies of colleges.

2.3.2. Educational pathways and articulation

The NC (V) qualification forms part of the foundational programmes of the South African Skills development Strategy as espoused in the third National Skills Development Strategy (NSDS III, 2011:5) which states that the “NSDS III seeks to encourage and actively support the integration of workplace training with theoretical learning, and to facilitate the journey individuals make from school, college or university, or even from periods of unemployment, to sustained employment and in-work progression. Emphasis was placed on training to enable trainees to enter the formal workforce or create a livelihood for themselves.”

The Strategy further argues that “The National Certificate (Vocational) and N-courses are recognised by employers as important base qualifications through which young people are obtaining additional vocational skills and work experience, entering the labour market with marketable skills, and obtaining employment.” (DHET- NSDS III 2011: 16). These sub-aims determined the influence of NC (V) qualification on the enrolment of graduates to further their studies at higher education institutions and encouraged further training of graduates through apprenticeship, learnership, or internship. They found their expression in the intention of the NSDS III and the validity of this intention was investigated by analysing reports of the social dialogue on technical, vocational education and training (TVET).

The Chabane (2012:14) report on the social dialogue on skills development that was commissioned by the National Skills Authority (NSA) and the Quality Council for Trades and Occupations (QCTO) under the auspices of the Department of Higher Education and Training (DHET) did not directly address the NC (V) articulation. The report generally cited that a key aspect of any education system was the ability of learners to access learning across different channels, and the requirements for such access was known as articulation. The learners may self-identify or be guided in either an academic path or a technical/vocational path. It should be possible to transfer across paths to develop new skills or to build on existing ones. Equally important, adult learners in the workplace may not necessarily seek to obtain full qualifications, but may need programmes of shorter duration, targeting the development of a particular skill either for the labour market or for their personal development. In the spirit of lifelong learning, access to such programmes

should be possible for learners of any age. The crucial aspect of this principle was that access was defined as the ability not only to enter learning programmes, but to also receive credit for any knowledge and competencies obtained either in an institution or a workplace, which may eventually be applied towards a qualification whenever the opportunity arises. Giving effect to this principle raised a number of difficulties for education policy makers. Firstly, assessing competence and attaching educational credits that can be recognised by institutions in order to enable them to evaluate the suitability of applicants for their programmes of choice (otherwise known as recognition of prior learning) remains particularly vexing. Taking into consideration the principles embodied in the analysis report, which was discussed in chapter four, one can argue that the NC (V) qualification was better placed to offer learners an educational pathway that allows for articulation into the opportunities of employable skills, to further studies in the workplace and institutions of higher learning.

The other problem was that universities also struggled to determine the equivalences for those prospective learners who lack academic qualifications, but had many years of work experience, which is relevant to their programme of choice. This prompted some people to question whether work experience can prepare one for the rigours of academic study. Finding practical answers to these and other similar challenges was central to ensuring that all learners had reasonable access to any particular learning path they wished to pursue at a given time. The results of the survey of the NC (V) graduates in the North West Province discussed in the subsequent chapters of this study, assisted to determine whether the NC (V) validates or does not validate the principle of articulation and also created educational pathway as intended.

2.3.4. Policy Framework on Vocational Educational and Training in understanding NC (V) Qualification

One of the objectives of NSDS III of the Department of Higher Education and Training (DHET 2011:16) was to ensure that the NC (V) was reviewed with inputs from stakeholders. Ideally, programme curriculum is revised every three years to ensure that it provides a sound basis for building labour market with relevant skills. TheG20 Training Strategy by ILO (2011:5) offers an international perspective regarding the importance of the NC (V) qualification and also declares that “*establishing solid bridges between*

vocational education, training and skills development, and the world of work makes it more likely that workers will learn the “right” skills, namely those required by the evolving demands of labour markets, enterprises and workplaces in different economic sectors and industries.”

This principle concurred with the fundamental concepts underlying the NC (V) qualification as expressed in the Northlink FET College marketing brochure capturing the South African policy on the National Certificate (Vocational). Thus, the new curriculum that was being introduced in the public FET colleges around the country provided the Grade 9 learners with a vocational alternative to an academic Grade 10 – 12 and it offered industry opportunities for focused training in terms of the National Qualification Framework (NQF) levels 2 – 4. These qualifications were designed to provide both theory and practice to students. The practical component of the study may be offered in a real workplace environment or in a simulated workplace environment. This way it provided students with an opportunity to experience work situations during the period of study. The qualification also provided students with the opportunity to enter higher education studies subject to appropriate subject combinations. It was important for this study to highlight international experience regarding different approaches to vocational education and skills development in order to compare as well as to understand the impact of the NC (V) qualification on the lives of students regarding employability and/or future study chances. Vocational training includes activities that are aimed at providing knowledge, skills and attitudes required for effective and efficient performance within an occupation or group of occupations.

The NC (V) qualification fits the description of vocational education, which is education designed to prepare skilled personnel at lower levels of qualification for one or a group of occupations, trades or jobs. While vocational education was usually provided at upper secondary school level, and included general education, practical training for the development of skills required by the chosen occupation, and related theory. The 2012 report of the Pretoria regional office of the International Labour Office (ILO) on the International Policy Benchmarks (IPBs) states that IPBs are selected from the International Conventions, Recommendations and other high level skills development policy documents of the ILO and UNESCO as these present internationally acknowledged sound policies and practices of skills development and are the outcome of extensive consultations between the Organizations’ Member States [countries], employers’ and workers’ organisations, federations of professional associations, and non-governmental

organisations. The relevance of the IPB recommendation to this study was that it promoted the placement of students; and in this instance the NC (V) graduates in the workplaces. One of the policy objectives was that Skills Development policies would build solid bridges between the world of work and the world of learning by promoting collaboration among government, employers, workers and training providers at national, sectoral and local levels. According to the pre-employment policy, institution-based training was combined with workplace learning through apprenticeships and internships and these were the NC (V) pathways.

The DHET SAIVCET Report (2012:18) released by the Department of the Higher Education and Training states that the FET colleges were grappling with a number of issues around their two primary curriculum streams, the National Certificate (Vocational); and the Report 191(2001/08) programmes, as stated in Section 3(4)(l) of the National Education Policy Act, 1996 (No. 27 of 1996) popularly known as N-courses, which had historically provided the trade-theory component of apprenticeships. Contrary to the Report on the conduct of the National Examinations (2009:5) that outlined that “the NC (V) programmes were intended to respond directly to the priority skills demands of the modern South African economy by exposing students to high skills and knowledge, the SAIVCET Report Of 2012 discovered that the colleges have battled to sell the NC (V) to industry.

It was against this background that this research aimed at determining the validity of these two reports by carrying out a survey on the prospects opened to the engineering NC (V) graduates in the North West Province.

The NC (V) programme was introduced in 2007 at NQF levels 2, 3 and 4, and was an altogether new curriculum with its qualification aimed at providing students with a broad, comprehensive and up-to-date foundation for lifelong learning and self-development. Unfortunately, its arrival coincided with signals from the Department of Labour that apprenticeships, of which the N-courses were an integral part, were to be abolished in favour of learnerships. At the same time, the then Department of Education began scaling down provision of the N-courses with a view to phasing them out completely by 2012. Neither of these two developments sat well with industry, which was - with some justification – sceptical about the value of learnerships, especially in the artisan trades where the level and duration of training required were not easily attained through a series

of relatively short inputs like learnerships. Thus, the NC (V) was launched into hostile waters.

DHET (2012:19) SAIVCET report further stated that since the NC (V) was not intended or designed to be part of a traditional apprenticeship, it did not seem to address the urgent need for more artisans and its credibility with industry suffered as a result. Despite being critical of the outdated content of some N-courses, industry generally preferred these familiar, occupation-specific programmes to the new and unproven NC (V) programmes. When, at the end of 2010, the DHET authorised colleges to resume registration of students for some N-courses, an unfounded rumour took hold in colleges and industry alike that the NC (V) had lost a head-to-head contest with the N-courses and was about to be abolished. This misinformed but widely held belief has yet to be dispelled. Through this research that investigated the impact of the NC (V) by determining destinations of the graduates with respect to their absorption in the labour market or the continued learning trends, the notion that the industry disregarded the NC (V) programmes was disproved.

The SAIVCET Report indicated that the colleges had not aligned their institution-level delivery of the NC (V) with the needs of local industry and until very recently few FET colleges arranged any workplace experience for NC (V) students. As a result, most NC (V) graduates had studied for three years, full-time, without ever setting foot in the industry for which they were supposedly being trained. This had not done much favour for their employability or for the credibility of the NC (V), not only in South Africa as it was a global challenge facing vocational education as stated by the German Council on TVET (BIBB) that indicated that “there is barely any vocational education system that is not undergoing reform efforts in order to improve quality and outcomes, to make qualifications more employment-oriented and more closely aligned with the world of work.” (BIBB 2011; BWP Special Edition, Editorial, p3).

Related to this was the problem that public FET colleges were not set up to provide the necessary workplace or practical experience that enables students to acquire the necessary skills to enter the modern workplace. Thus, the colleges over-emphasised the academic components of the qualifications they offered. As a consequence, outputs from FET colleges were commonly viewed by employers as being out-of-step with the skills needs of the economy.

2.3.5. Legislative impact

It was important to know the founding legal framework of the NC (V) qualification in order to understand the purpose and the possible subscription by the users and the labour market community. It was however, crucial to take a closer look at the thinking about the future legislation concerning such a programme. During the Budget vote speech (2011:8), the Minister of Higher Education and Training announced that he had appointed a Task Team to undertake a review of the National Certificate (Vocational) qualifications. The review would ensure that these qualifications served their intended purpose of delivering high-level conceptual knowledge linked to practical training, either as preparation for entry into the job market or for university entry. He further indicated that the Public FET college sector offered learnerships in partnership with various SETAs, Department of Labour as well as commerce and industry. Public FET programmes offered learners the opportunity of exiting at the end of a specific NQF level with the relevant certificate.

The Green Paper Media Statement (2012:5) argues that the SETAs have a key role to play in strengthening vocational education and skills training and in promoting and funding partnerships between educational institutions and employers. They have a particularly important role to play in promoting the revitalisation of the artisan training system, and in building linkages between theoretical education in colleges and universities on the one hand and practical workplace experience on the other. This would build on the National Skills Accord in which government, business and labour have made commitments to increase the numbers of apprenticeships, learnerships and internships.

One of the central themes running through the entire Green Paper is the need to build coherence within the post-school system as a whole, between basic education and the post-school system, and between the post-school system and the labour market. There was inadequate information about labour market needs and future growth possibilities, and this made planning and targeting of provision difficult. The levy-grant institutions – the (SETAs) and the National Skills Fund (NSF) – were poorly coordinated with public provision, and very little of the skills-levy funding had been used to pay for education in the public universities and colleges (Green Paper Media Statement - 2012: 6)

2.3.6. Human Resources Development and the Labour Market

The NC (V) graduates were faced with competing demands and needs of the economy. It was imperative to understand the labour market challenges that influence the intake in the labour market. Akoojee and McGrath (2005: 15) stated that part of the explanation for high unemployment in South Africa was that economic growth had not been high enough over the last 30 years. Whereas growth had averaged more than 4, 5% per annum between 1945 and the early 1970s, the period from the mid-seventies to the beginning of the nineties saw growth average of only about 1, 5% per annum. Since 1993, growth had slowly recovered to reach an average of 3% over the past few years (Landman 2003: 8). These numbers for employment growth include both the formal and informal economy. Thus, it was particularly important to understand better the nature and scale of employment in the South African informal economy.

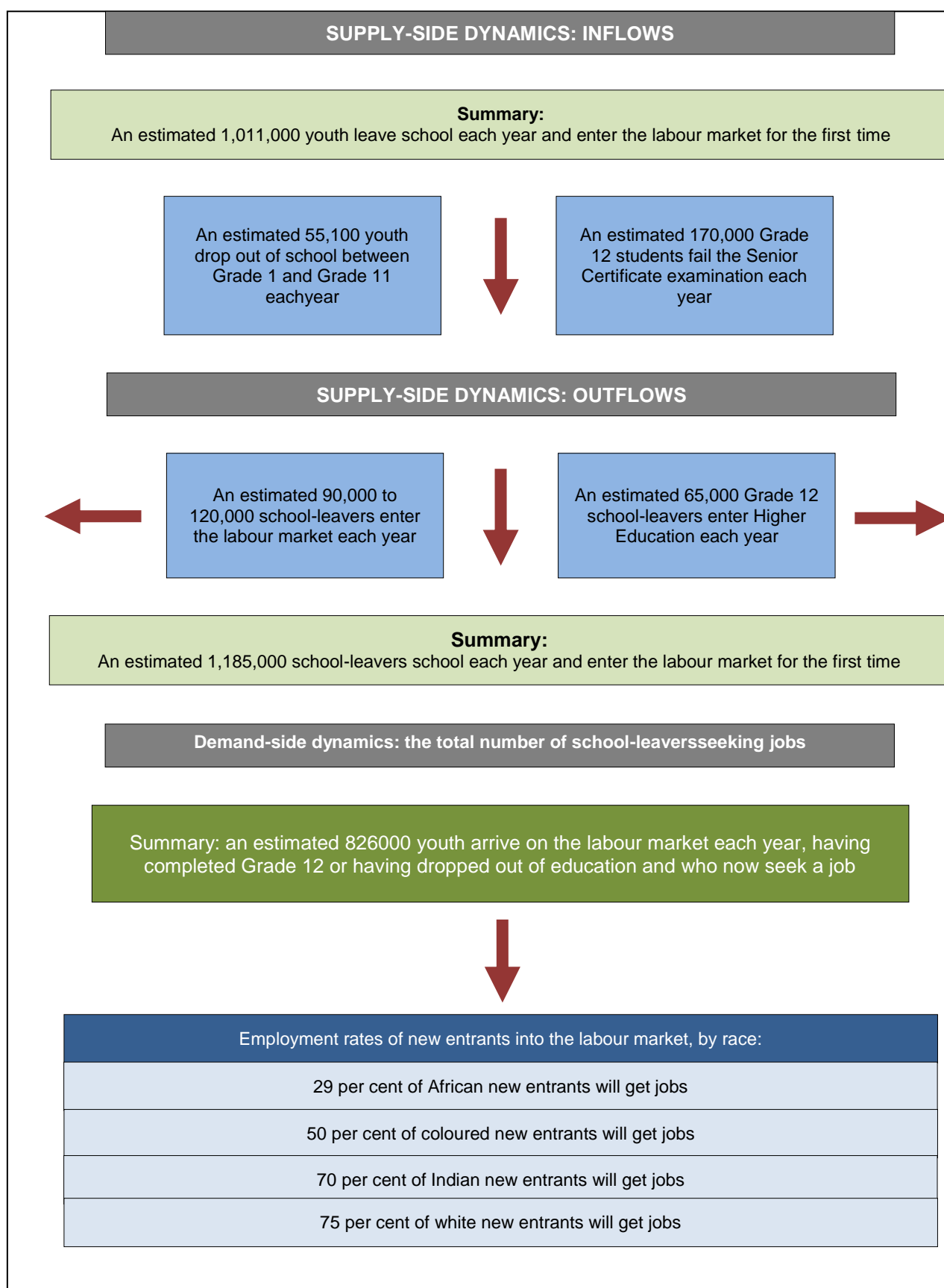


FIGURE 2.2: Average Annual through-flow of school-leavers entering the youth labour market for the first time, 2000-2002 (Akoojee and McGrath 2005:14)

FIGURE 2.2 shows the average annual flow of school leavers entering the labour market for the first time. This figure had observantly increased thereby making it extremely difficult for new entrants including the graduates of the NC (V) programme. Kraak (2004:13) in the commissioned study by the Human Resources Development Council (HRDC) on the overview of the South African Human Resources Development argued that the persistence of skewed subject choices (the avoidance of science, engineering and technology, and a preference for ‘softer’ subjects) has had serious ramifications for the allocation of young school leavers to productive roles in the wider society.

The HRD review study had examined the actual skills deficit in South Africa in each of the three skills bands (high-, intermediate-and low), drawing on evidence. The analysis concluded by arguing that the skills problem was not located only at the high-skills end, but also in terms of intermediate and low-skills needs. Each of these skill bands was experiencing severe HRD problems which needed resolution. The review led to the adoption of commitment of the HRDSA stating that *“We will ensure that young people have access to education and training that enhances opportunities and increases their chances of success in further vocational training and sustainable employment”* (DHET NSDS III 2011:3).

The National Skills Development Strategy III (2011:6) responds to the pressing challenges that are impacting on the ability of our economy to expand and provide increased employment opportunities. The inadequate skills levels and poor work readiness of many young people leaving formal secondary and tertiary education and entering the labour market for the first time was one of these challenges. This was compounded by inadequate linkages between institutional and workplace learning; thus reducing the employability and work readiness of the successful graduates from FET and HET institutions, not to mention the many who entered the world of work without a formal qualification.

2.3.7. Labour Market and Youth Labour Market

Kraak (2004:13) concluded that the youth labour market, as an institutional system, is characterised by severe problems, including most fundamentally, its inability to facilitate the progression of young people from school to other learning or employment activities.

There was clearly a mismatch between the outputs of schooling and the options for the actual employment opportunities available in the labour market.

2.4. An African Perspective as expressed in selected Countries

The researcher selected three African countries to study their vocational education system in order to have points of reference in evaluating the South African system. Two of these countries - Swaziland and Botswana – share borders with South Africa and are members of the Southern African Development Community (SADC). The Strategic Framework and Programme of Action for Technical and Vocational Education and Training in the Southern African Region (SADC 2011:4) indicates that Technical and Vocational Education and Training is one of the sub-sectors of education that is vital for producing relevant skills necessary for improving economic performance, alleviating poverty and reducing unemployment. SADC is cooperating with UNESCO in the improvement of technical and vocational education and training in the region. The third country was Ghana. Ghana is part of the eastern bloc of the African region. Economic Community of West African States (ECOWAS) is a regional group of fifteen countries. It was selected on the basis of its focus on the vocational education (http://www.comm.ecowas.int/sec/index.php?id=about_a).

2.4.1. Swaziland TVET system

Swaziland is a country that shares borders with South Africa and was under the British government and as such has inherited the same education system as South Africa. Thus, the Swaziland Technical Vocational Education and Training (TVET) system has similar characteristics and challenges to that of its neighbour South Africa. MoEE (2011:36 - 37) The Swaziland Education and Training Sector Policy states that “if Swaziland is to become regionally and globally competitive, and a major regional exporter of skilled human resources, there is an urgent need to re-position and market technical and vocational education and training. Current uncertainty about demand for technical education and skills training was compounded by under-enrolment in secondary, prevocational courses and negative perceptions about vocational courses. The sub-sector itself was being restructured and graduate flows may be delayed to 2018.

“This confirms the urgent need for a directive policy and resourcing sufficient to achieve the sub-sector mandate – the sustained flow of skilled graduates in the technical and vocational fields. The TVETSD policy therefore must address structure, regulation, coordinated training and standards, a national qualifications framework (NQF) and project demand and supply, as well as the capacity of sector trainers to operationalise this vision”.

The TVET framework ensured integration of academic, general, and technical and vocational education and training in a way that reflected the needs of a globally competitive Swazi workforce of the future. A system of vertical progression that recognized prior learning should be developed by the relevant department of education, which must allow a high school graduate, with vocational qualification, to enter the programme at a relevant and appropriate level. The South African NC (V) programme was one component of the broader TVET system being investigated for its influence on the progression of students to further studies in universities or through other skills development routes.

The other delivery objective of the Swaziland TVETSD system that was similar to the intention of the NC (V) qualification was to respond to formal, informal and non-formal sectors of the economy and to integrate other contemporary skills that enhanced the employability of the learners. Technical Training and Vocational Education of Swaziland did not have college-focused programmes such as further education and training colleges that offer vocational qualification similar to the NC (V) but instead had a model of technical school, polytechnic and university. However, it was important to note that the purpose of its vocational programmes addressed similar elements of the NC (V), that is, to allow for vertical articulation, promotion of graduates employability and to respond to formal, informal and non-formal sectors of the economy. Swaziland suffers from a lack of curriculum and structural articulation; from secondary/high school, pre-vocational/vocational education, to tertiary/post-secondary vocational technical education, programmes breed a mismatch (<http://www.nzdl.org/gsdImod>).

The World Bank Report (2009:3) indicates that development research showed that good quality, broad based and market responsive technical and vocational education, training and skills development (TVETSD) programmes supplied the skills and competencies that immediately respond to labour market demands and that drive growth in post-industrial economies. The Report indicates that Swaziland envisaged establishing effective

TVETSD governance, management and training system with clearly allocated roles and responsibilities, accountable to the National Assembly through the Ministry responsible for Education and Training. Swaziland aimed also to establish mechanisms for the portability of formal, non-formal and informal qualifications, with provision for flexible exit and entry to both academic and skills related pathways. To this effect, the impetus for vocationalisation of the secondary and postsecondary curricula in Swaziland emerged as a socioeconomic response to the lack of linkages between education and occupations in the workplace. Hence, the point of this study of investigating the post learning impact of the NC (V) qualification.

The researcher noted the common trend facing both South Africa and Swaziland regarding the primary purpose of vocational training such as the NC (V) as well as the similar challenges regarding articulation and relevance. Vocational technical education drives in Swaziland were a quest for greater labour market relevance of education for better articulation between the content of schooling and subsequent application of acquired skills, attitudes, and knowledge (competencies) in the world of work. Subsequently, due to concern about the labour market relevance of education, the Swaziland Government through the Ministry of Education (MOE) appointed a National Education Review Commission (NERCOM) in 1985. As pertaining to vocational technical education, the purpose of the Commission was to isolate the main problems associated with the relevance of education to the national needs.

The common trend of seeing vocational education and training (VET) as a crucial tool of economic development was attested to by researchers such as Godfrey 1991; Crouch et al. 1999; King and McGrath 2002. The introduction of the NC (V) was hoped to increase the skills base of South Africa with the aim of growing the socio-economic situation of the citizens. This fact strengthened the view that policy-makers internationally have seen the development of better technical skills as a key element of improving economic performance. In Organisation for Economic Cooperation and Development (OECD) countries, the expectation that VET systems could solve mounting youth unemployment developed strongly in the 1970s as the advanced economies went into a period of economic weakness that ended the full employment era of the 1950s and 1960s. By the late 1970s and early 1980s, VET systems were being revolutionized in these countries; most spectacularly in the Anglophone countries (Crouch et al. 1999; Wolf 2002). The NC (V) discourse in South African context was seen as one of the many other ways of

revolutionizing VET for better and improved economic benefits, particularly for the youth and the previously marginalized masses of South Africa.

2.4.2. Ghana model

Ghana is a country found in North Africa and had been under the British colonial rule just like South Africa. In other words, it had inherited the same system of education as South Africa. However, the study wanted to understand how the TVET system in Ghana had evolved since it received its independence. Ghana's experience in VET could benefit this study. In the previous section that addressed the experiences of Swaziland, which shares borders with South Africa, it was vivid that both countries were almost on the same plateau with regard to the provision of TVET programmes.

Addison (2008:35) notes that the Ghana Ministry of Education's Policy and Strategic Plans for the Education Sector of 2003 highlight some of the country's experiences on the vocational education and training as progressive in supporting the economy. The Ghanaian Policy on education addressed three forms of education, namely, technical education as education and training that aims at preparing individuals for middle level positions such as positions for technicians, technologists and middle managers; and vocational education as the preparation of skilled personnel for positions below technician level, with emphasis on skill acquisition. On the other hand, it defined vocational training as one that aimed at developing particular skills for employment in a particular occupation, involving little or no general education. In the context of this study, this information explained the different categories of training involved in Technical and Vocational education. From this definition it emerged that Ghana differentiated between technical education (intermediate to high level skills) and vocational education (low to intermediate skills). For the purpose of comparability, the South African NC (V) qualification equated to vocational education that was lower than intermediate level skills.

Boateng (2012:1) states that "Vocational technical education and training in Ghana is currently undergoing restructuring. Many reforms are in place to improve the quality of provision and learning outcomes to make it more accessible and attractive to all, and to ensure it is relevant and connected to the world of work". The TVET should be designed to equip students with the basic core skills and desirable work habits in order to improve

the trainability of the future workforce. This fact aligned itself very well with the international TVET trend regarding the purpose of TVET and also reinforced the argument of this study of investigating the post learning impact of the NC (V) qualification in all the areas of influence (articulation to continued education, continued skills development training, accessibility to world of work and labour market).

General employability skills were included in the preparation of individuals for the world of work and include work attitudes and habits, job-seeking skills, personal management skills, team work and interpersonal skills, creative thinking and problem solving skills, career development and lifelong learning, and quality consciousness. Skill competencies and standards were determined by industrial groups rather than training providers. Enterprise-based training was recognised, promoted and treated as an important part of the testing and certification system.

The third question of this study was intended to establish the extent to which the NC (V) engineering qualification influenced the college graduates to enter the labour market as workers or to start own businesses. The question linked up with the Ghana approach to TVET, particularly the development of skills that render individuals sustainable beyond formal employment. Technical and Vocational Education in Ghana was presumed to be practical and technical, to the extent that it prepared learners to develop creative and manipulative skills needed to generate technological innovations. Vocational and Technical education was associated with subjects such as fashion, catering, leather works, textiles, visual arts, basketry, jewellery, science, woodwork, metal work, building and construction, and electrical. Boateng (2012:110) argues that the fourth form of vocational education in Ghana is a non-formal system approach, which provides opportunities for out of school youth to acquire vocational technical skills, which may be used either to find employment in the formal sector or for promotion of self-employment and the development in the informal sector. In this way vocational and technical education had the advantage of producing self-employable persons, reducing rural-urban migration, being more practical-oriented in approach, helped to produce needed labour force for industrial and technological development, and it lead to productivity and national development.

Unlike the NC (V) programmes that were offered only by the public Further Education and Training Colleges of South Africa, the technical and vocational skills development in

Ghana was delivered by different organisations like multiple ministries, private for-profit and non-profit institutes, NGOs and informal apprenticeships. The Government of Ghana acknowledged five different forms of TVET:

- The formal public system that includes primarily time-bound, institution-based, graded, and certified training. It is offered by institutions such as the National Vocational Training Institute (NVTI), Ghana Education Service (GES), and youth training institutions.
- Formal private not for private TVSD, which is facilitated by various faith based organisations and NGOs.
- Formal private and for profit TVSD, which include a variety of Private Vocational Training Schools that have profit making as one of their objectives.

The informal system included a wide range of flexible programmes and processes through which individuals acquired skills and knowledge from designated training venues outside of the home and, in some cases, at home. Traditional apprenticeships made up the majority of the informal sector. Indeed, Ghana had a long tradition of informal apprenticeships, particularly in the following trades: Cosmetology, Welding, Dressmaking and Carpentry. The informal apprenticeship also had two categories, for profit, which was facilitated by the various trade associations and not for profit facilitated by NGOs and faith based organizations.

Addison (2008:29) notes that with regard to the training system for the informal Sector in Ghana and its implications for employment opportunities, the Ghanaian Government has periodically reformed the education and training system. The principal objective of the reforms was usually to make it more relevant for the world of work. There has also been several government-led vocational and 17 technical skills Programmes such as the three-year National Vocational Training Institutes (NVTIs), the Technical Institutes, the three-year and Integrated Community Centres for Employable Skills (ICCES). There has also been the intensive short duration Skill Training Employment Placement (STEP) and donor-funded projects that sought to facilitate the transition from school to gainful work as well as to address the problem of under- or unemployment in Ghana, particularly in the informal economy.

South Africa was in a process of facilitating a review of community colleges that can learn from the Ghanaian ICCES, particularly the STEP programme. The other form of the Ghanaian STEP version in South Africa is captured in the Report of the Task Team on Community Education and Training Centres that indicates that these centres address the needs of adults and young people for basic and secondary education, vocational and occupational programmes DHET (2012:85). South Africa was faced with high rates of unemployment, which could be addressed through a multi-pronged approach, including the NC (V) programme in order to make graduates employable. The NVTIs that focused on the three year government-led vocational programmes were similar to the South African government-led National Certificate (Vocational) programmes.

2.4.3. Botswana model

Botswana borders South Africa on the west wing while Swaziland borders the south-east wing of South Africa. Like Swaziland, Botswana share skills with South Africa within the Southern African economy particularly through migration of labour. The TVET lessons and experiences of Botswana were informed also by its independence a few decades before that of South Africa. Van Rensburg (2002) as cited by the HSRC (2005:29) states that the TVET in Botswana was relatively young and the first formal government training initiatives started around independence in 1966. The first government technical colleges (TCs), then known as vocational training centres (VTCs), were opened in 1987. The national plan for VET was to integrate the different types of vocational education and training into one comprehensive system. The VET Plan was expected to accord vocational education and training sufficient status as an alternative education route and place it on the same level as academic education in providing opportunities for further education. The plan identified the following scope and objectives for Botswana's national TVET system, which in intent had similarities to that of South Africa:

- to plan, promote and deliver skills and technical training to school leavers and workforce entrants to meet the specific requirements of the formal sector to the standards and quality defined by commerce and industry, and to contribute to the productive development of the informal sector;
- to provide for the continuing education and training of the existing workforce, for their skills upgrading and re-training in the light of rapid technological change;

- to provide opportunities for school-leavers who have completed basic school education to learn skills that would improve opportunities for employment and self-employment.

The Botswana National Policy on Vocational Education and Training (Ministries of Labour and Home Affairs (1997:6) indicated that access to vocational education and training was very limited. Recent enrolment data indicated that less than 10% of all secondary school leavers had access to some form of vocational education and training. This included both technician and skills training. This low participation in vocational education and training was due to lack of available training places as opposed to availability of candidates. In some cases, there were up to 100 applicants for each available training place. If not addressed, this situation could lead to economic imbalances and social problems. Mobility between vocational education and training and academic education was minimal as many of the vocational training qualifications were not recognised as minimum entry qualifications to higher level training within the academic system. The minimal mobility of the TVET graduates to higher institutions was equally the challenge faced by the FET College graduates in South Africa.

The development and the introduction of the NC (V) programmes by the South African Government in 2007 aimed to promote the TVET articulation to higher education studies. The first sub-aim of this study intended to determine the influence of NC (V) qualification on the enrolment of graduates at higher education institutions to further their studies. In the case of Botswana, the opportunity for those who have had the access to craft level training to proceed to technician training was, in practice, limited to those who also hold a Cambridge O-level Certificate. Many developments had taken place within the area of vocational education and training. However these changes had not fully addressed all the issues.

There were still a number of problems which militated against the efficient provision of training such as a coherent qualifications system. Inter-relationships between different vocational qualifications awarded within the country are blurred. Furthermore, there was no clear system of determining equivalencies of qualifications from outside the country. Standardisation of qualifications with clear levels and paths of progression coupled with a strong accreditation system would enable easy evaluation of certificates by both employers and further training institutions. DIAGRAM 2.1 below demonstrates how the

government intended to address the vocational qualification system. The NC (V) qualifications in South Africa assumed a similar pattern to BNVQF. The following diagram shows the Botswana National Vocational Qualifications Framework (BNVQF).

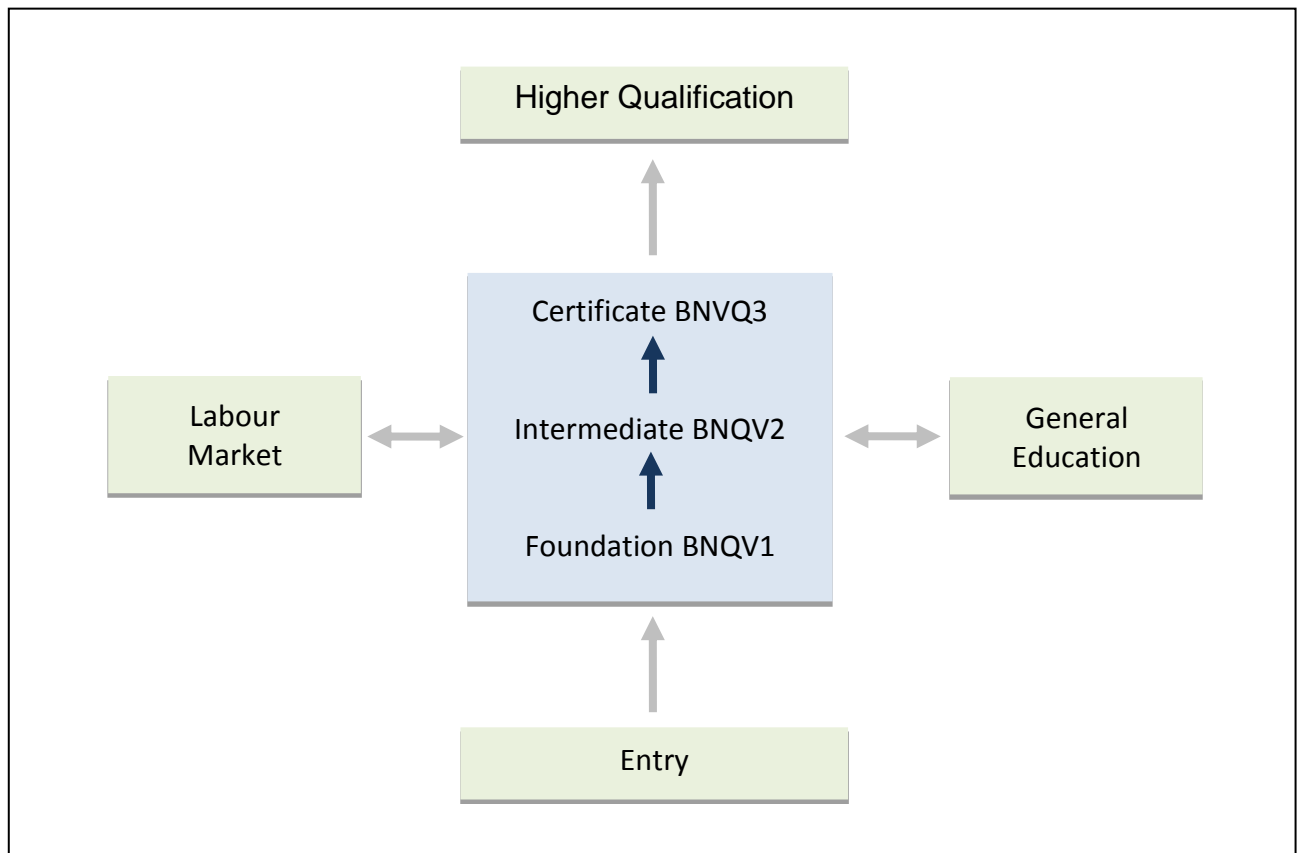


DIAGRAM 2.1: Botswana National Vocational Qualifications Framework

DIAGRAM 2.1 shows qualification level similarities to that of South Africa as explained in the point 1.6.6. The National Vocational Qualifications Framework cannot be fully effective on its own without an overall National Qualifications Framework covering the entire education and training system to ensure effective articulation. The Botswana National Vocational Qualifications Framework mainly depended on the achievements of competencies for recognition of progress from one level to the other. The duration for achieving any level of competence was flexible and depended on the ability of the individual. The levels of the Botswana National Vocational Qualifications as shown in DIAGRAM 2.1 were defined as follows:

BNVQ 1 Foundation

The level includes broad based initial training and reflects competence to perform limited

range of work activities under supervision.

This award would match employer's minimum vocational criteria for recruitment. The South African version of the equivalent qualification was the NC (V) L2. In terms of the Government Gazette number 28677 of 2006, the National Certificate (Vocational) at Level 2 of the NQF enabled students to acquire the necessary knowledge, practical skills, applied competence and understanding required for employment at an elementary level of a particular occupation or trade, or class of occupations or trades. The National Certificate (Vocational) at Level 2 on the NQF provided learning experiences in situations contextually relevant to the particular vocational area in which the programme is situated.

BNVQ 2 Intermediate

The competencies to perform predictable tasks in routine jobs and some non-routine jobs, with minimum guidance and supervision whereas the NC (V) L3 provided competencies at an intermediate level of a particular occupation or trade, or class of occupations or trades in the case of Level 3 qualification.

BNVQ 3 Certificate

Consists of nineteen competencies to perform tasks associated with skilled jobs of non-routine and complex nature and indicates the potential for supervisory functions whereas the NC (V) L4 afforded entrance into Higher Education.

Botswana faced similar developmental challenges to South Africa. The current state of vocational education and training and the proposed direction for its future development required that the vocational education and training policy comes up with clear and achievable goals, objectives, and strategies, which would form the basis of the integrated system. South Africa must avoid designing vocational programmes that were not promoting articulation with university education and industry skills development training as espoused in the SADC Strategic Framework for TVET (2011:5) "Articulation with academic education, whether at school or higher education levels, tends to be poor across the region.

It is argued widely that young people need to be allowed to make choices about educational and occupational paths as early as possible and that education systems should avoid locking them into particular routes”.

2.5. International Perspective and Models beyond Africa

The choice of countries for this study was informed by their perceived good technical, vocational and educational training systems. The TVET system of the following six countries; Germany, Australia, Brazil, Ireland, Denmark and Switzerland were randomly selected to represent European, South American and the Pacific experience and was discussed. The International Labour Organisation (ILO) played an important role in the promotion of the vocational education and training through skills development. The country experiences on TVET was also viewed from the Resolutions and Conventions of the ILO. The ILO Report on International Policy Benchmarking of National Skills Development Policies (2012:16) states that a skill based qualification system will accommodate multiple pathways through education, and between education and work. To minimise the time lag between the emergence of skills needs and the provision of appropriate training, modular qualifications comprising shorter training courses would be developed.

Chapter one of this study stated the purpose of the NC (V) programmes as crucial for the promotion of the economic growth of South Africa as captured by the Report on the Conduct of National Examinations (2009:5) outlines that “the NC (V) programmes were intended to respond directly to the priority skills demands of the modern South African economy by exposing students to high skills and knowledge. “This purpose of the NC (V) was supported by a study conducted on Burma, India, Jordan and Thailand by the UNESCO as cited in the website (<https://list.scms.waikato.ac.nz/mailman/listinfo/g-users>) concluded that “all of the country reports mentioned the importance attached to the practical component of technical and vocational education, despite the problems of inadequate equipment, lack of teachers, lack of facilities for organizing practical periods for students in enterprises”. Four countries, Burma, India, Jordan and Thailand, noted that a period of practical training in industry was a required element in programmes of technical and vocational education.

From the few policies of different countries stated in this section, it was evident that successful economies in the developed world have developed or were developing systems and strategies to support lifelong learning and work-force development. These strategies build on the success and redress the failures of foundation education in schools and offer flexible access to Higher Education and FET. This study assessed how the NC (V) qualification assisted the graduates in their quest for lifelong learning either by accessing higher education, workplace learning by enrolling in skills development programmes or by seizing employment or business opportunity. The National Skills Development Strategy (NSDS III) outlines one of the challenges it seeks to address; that is, the inadequate skills levels and poor work readiness of many young people leaving formal secondary and tertiary education and entering the labour market for the first time. This was compounded by inadequate linkages between institutional and workplace learning, thus reducing the employability and work readiness of the successful graduates from FET and HET institutions, not to mention the many who enter the world of work without a formal qualification (DHET – NSDS III 2011:6).

The different models as outlined below indicate the similarities and, importantly, the cross-cutting principles that strengthen the TVET system, especially the link between educational institutions and the world of work. The National Skills Authority that was established in terms of section 2 of chapter 5 of the Skills Development Act 97 of 1998 and is responsible for advising the Minister of Higher Education and Training, together with the Quality Council for Trades and Occupation convened a Social dialogue on the TVET system that resulted in outlining the systems of the following countries (Chabane, 2012:3-13).

2.5.1. German model

Germany is a country found in Europe. It is highly industrialised and far more developed compared to South Africa, thus, its system of education can offer South Africa many good experiences of how to design programmes suitable for FET colleges. According to Cosser et al. (2011:46) the German model makes provision for companies to offer employment to unskilled school-leavers and then train them, both through FET colleges and on-the-job. For productive employment it is certainly a model the DHET should consider. The Dual System is the largest provider of vocational education and training at upper secondary

school level. After completing their training in the dual system, the majority of participants then take up employment as a skilled worker. Vocational schools prepare students for an occupation or for vocational training, usually in the dual system of Federal statutory instruments. Senior technical schools and senior vocational schools normally build on vocational training in the dual system; consolidate vocational knowledge to prepare learners to meet the academic standard required for entrance to a college.

Rauner (2009:vii) explains that dualism may be viewed as being a quality aspect of vocational education and that all occupations ultimately require and involve learning on-the-job, regardless of whether it is an academic or non-academic area of employment. He attests that wide variety of educational settings available is a valuable aspect of vocational studies, providing students with real-life experiences during their course of studies as this better prepares learners for the world of work. It also provides a more holistic approach to teaching by taking advantage of the different learning modalities available to learners. It is therefore anticipated that the *dualism* of vocational education, a term which suggests that two different systems are involved when combining theoretical and practical learning, will be at the core and one of the main benefits of vocational studies. Below is a clearly structured education System (Germany).

Advanced vocational training			University	
Technical or Trade school				
Vocational qualification			University qualification exam (Abitur)	
			13th grade and Abitur prep	
Training and education at companies and part time vocational schools (Berufsschule)	Full-time vocational school (Berufsfachschule)	Vocational upper secondary school (Fachoberschule)	Continuation with Gymnasium or Gesamtschule	
Secondary general school (Hauptschule)	Intermediate school (Realschule)		Grammar school (Gymnasium)	Comprehensive school (Gesamptschule)
Primary School (Grundschule)				
Kindergarten				

FIGURE 2.3: A summary of success factors in an education system-European study.

Vocational grammar schools and specialised grammar schools provide, in addition to general grammar school education, specialised knowledge in various areas such as economics, technology, nutrition, agriculture, and information and communication technologies. They usually lead up to the university entrance examination for the duration of three to four years. Tertiary education includes the colleges and other institutions offering programmes of study providing vocational qualifications for students who have completed upper secondary education with an entitlement to study at a college or university of applied science. Subject-restricted higher education entrance will be possible for vocationally qualified persons after successful final VET examinations and three-year on-the-job experience.

The South African system of TVET, particularly the NC (V) programmes, can learn lessons of an integrated education and training system that is coherent and that promotes articulation from TVET to higher institutions.

2.5.2. Australian model

Australia is one of the Oceania countries, which are located between the South Pacific Ocean and the Indian Ocean. It is a developed and one of the wealthiest countries of the world that covers a total area of 7,741,220km², making it the sixth largest country of the world. Australia is an island country, with no land boundary, and is also occasionally called an island continent due to its size. It is more developed than South Africa (<http://www.mapsofworld.com/australia/location-map.html>, 29/8/2014).

The Australia's Vocational Education and Training (VET) system is characterised as being industry-led, with the content of courses based on the skills and competences specified by industry. VET courses have been packaged into industry training packages developed by industry, with the aim of meeting the needs of an industry or a group of industries. This approach supports the main purpose of the VET, which is provision of specific skills to be used in workplaces. By contrast, school and university education are thought of as having broader purposes, and often being ends in their own right. While university graduates tend to do well in the labour market, many have degrees which are generic in nature. Vocational Education and Training (VET) is designed to deliver workplace specific skills

and knowledge based competencies. In Australia there are strong linkages between VET, the labour market and the economy, which assist employers and individuals to meet their training and skill needs as depicted in FIGURE 2.4 below. There are a variety of arrangements which occur between Vocational Education and Universities. Entry into universities may be formally based on a memorandum of understanding between the university and Registered Training Organisation (RTO), or a learner may organise an interview with the university to have his or her experience recognised. FIGURE 2.4 on the following page provides an overview of the Australian system.

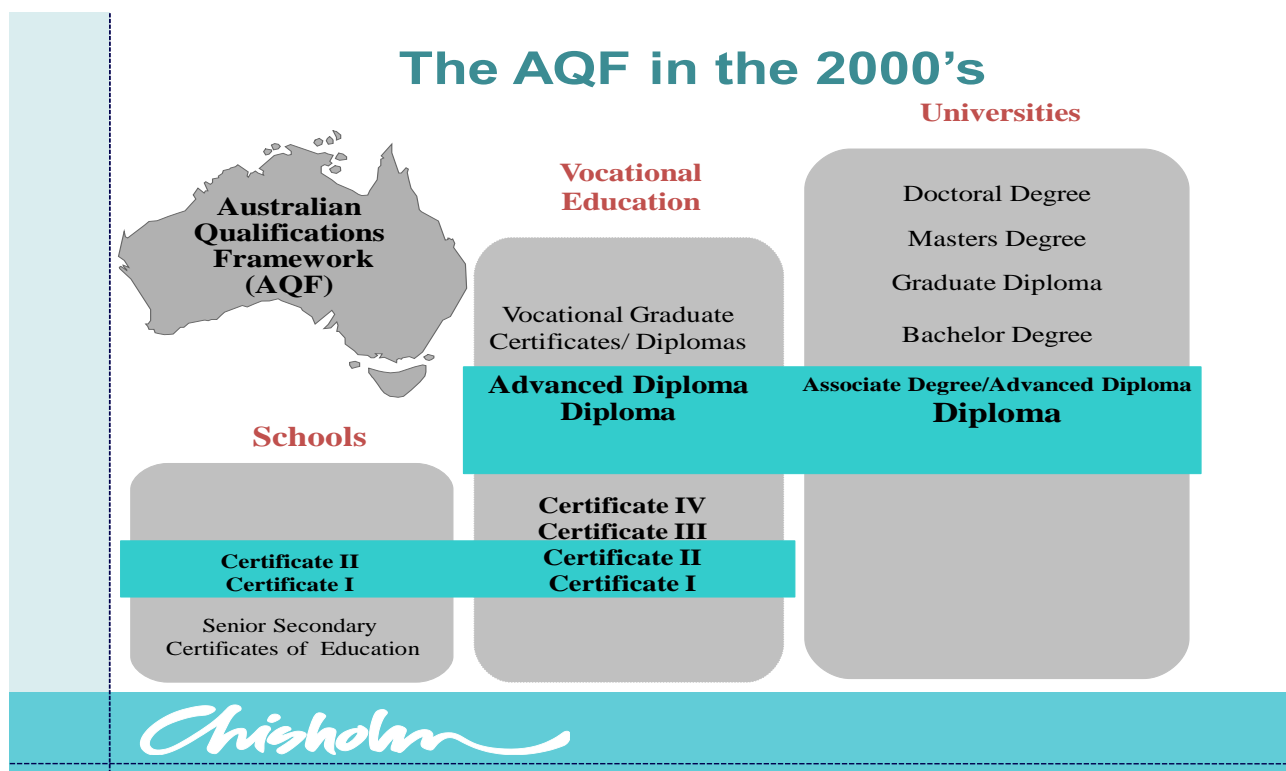


FIGURE 2.4: A summary of Education and Training System of Australia (NSA-QCTO Report, 2012)

Brian Knight and Peter Mlotkowski (2009:9) state, in their report on the overview of vocational education and training in Australia and its links to the labour market, that a number of major initiatives have not developed as intended by federal and state ministers, including VET in schools and school-based apprenticeships and traineeships. The report states that most students in the public VET system are enrolled in programs covered by national training packages, but the great majority of qualifications have few or even no students, and many believe that there is excessive fragmentation of training

content. Recognition of prior learning (RPL) has been promoted as a strategy for getting existing skills formally recognised, in order to facilitate further skills acquisition and speedier qualification completion. Modest increases in recognition of prior learning have occurred, but the provision of these services by registered training organisations and the take-up among students have not met expectations. An ongoing area of concern has been the limited articulation arrangements between VET and higher education, although there are examples of good VET– higher education articulation arrangements, often where courses have been designed with articulated pathways as an option. The researcher noted similar challenges to the South African vocational system that led to the introduction of the NC (V) qualifications as a way of addressing such challenges. These challenges included nationally developed programmes that may not address industry specific needs. The learners were taking longer to complete the qualification that was not articulating well to institutions of higher learning.

Although Australian employers made extensive use of the VET system, both public and private, a number of large industries and employers have opted-out of the recognised VET system or have established their own registered training organisations and firm-specific training packages, constraining portability. It should be noted that although the theory of Connectivism is ideal for the effective functioning of the TVET system, there appeared frequent disjuncture and fragmentation due to the demands from employers and the challenges related to the supply. Some of the underlying factors leading to misconnection were the time taken by the institution to develop curriculum and the training of the learner versus the ever changing economic demands making it impossible for the two to happen simultaneously.

2.5.3. Brazilian Model

Brazil is located in South America and is the biggest country in this region. In the Latin America it is also the biggest country of this region not only in territory but also in population, with over 190 million of people. Brazil is bordered by Venezuela, Suriname, French Guiana, Guayana, Colombia, Peru, Bolivia, Argentina, Paraguay and Uruguay. (<http://www.whereisbrazil.net/#sthash.YUJY1QuZ.dpuf>-30/8/2014). Brazil is an emerging economy that uses vocational education to support the economic growth. Two parallel systems of education and training exist. The NSA and QCTO workshop report (2012:8-

10) indicates that the bulk of the Brazilian training system is private, under the ownership and responsibility of employers' associations even though the funding is public.

This is the well-known "System S" because all its many bodies have names starting with the word **Serviços** (services). However, while it is legally under the oversight of the Ministry of Labour, in practice, this Ministry has hardly any power over it. The joint budget of these institutions is several times larger than that of the Ministry and the quality, stability and strength of the staff much higher. Educators wanted to bring training under the umbrella of the Ministry of Education. Employers wanted to be in charge of this task. The government decided that employers' associations would do the training and they would therefore follow their own schemes, independent from education authorities. In effect, training would be fully undertaken by the private sector. However, the funding would be public, being provided by a 1% levy on the payroll.

Technical and Vocational School at secondary level

Souza Consultores (2005:19) explain that the concept of preparing for work is present within the parameters of the curriculum for secondary education. Preparation is basic, in other words, it is one that can serve as basis for the training of everyone and for all types of work. Preparation for work embraces the general content and skills needed to enter the world of work and those that are relevant or indispensable for entering a course of vocational training and practicing a technical career. In the first case, content would include general notions concerning the role and value of work, the end-products of work and conditions of production, among others. At the beginning of the 1990s, the structure of the vocational education system in Brazil was very precarious and heterogeneous. There was a segment for Federal Technical Education Centres (CEFETs) and federal technical schools of good academic quality; however, it was related to the country's needs and largely unrelated to the employment market requirements of the regions where the institutions were situated.

In relation to this part of the system, the following paradoxical situation existed: the better the school, the more dysfunctional was its role in light of its original mission of training technical manpower. The segments of the "S" system – SENAI, SENAC, SENAR (National Service for Rural Training) – had expanded and as a rule maintained good standards and close ties with the employment market. Nonetheless, they were still very

small in terms of meeting social demands and their interconnection with the educational system as a whole was still difficult.

Souza Consultores (2005:19) further stated that this new paradigm, which guided most of the educative reforms of secondary and vocational teaching in the world during the 90s, was the basic inspiration of the Brazilian reform. The main change in the legal situation under the current administration since January, 2003 was to the interface between vocational education and secondary school education that now may occur in three ways; integrated, in the same educational establishment with a single enrolment for each student; concomitantly, in the same educational establishment or in separate educational institutions, taking advantage of the educational opportunities available, or a complementary partnership; and finally, offered only to those who completed secondary school education considered fundamental for obtaining professional license of secondary education level. Technical vocational education in Brazil was offered by public and private institutions in 20 areas of training. Most of the institutions offering technical courses in Brazil were private and represent 71% of the total institutions, while the state sector had 600 establishments representing 20% of the total.

Although the vocational education and training system of Brazil indicated high involvement of employers, its setback was its inability to accommodate high numbers of learners as well as the monopoly of total control of training. The World TVET Database and country profile on South Africa by the UNESCO-UNEVOC (<http://www.unevoc.unesco.org/printwtddb.php?ct=ZAF&do=print>) indicated that *“the government of South Africa uses TVET system to promote the integration of education and training, as well as the enhancement of learner mobility and progression, to ultimately meet human resource needs. TVET systems are built to address these needs and to further promote personal, social, civic and economic development in their country”*. This meant that the South African vocational education and training system still promoted an interventionist approach in order to reach its developmental and economic growth goals of which the NC (V) qualification played an important role.

2.5.4. Ireland model

Ireland is the third largest island in Europe. It lies in between the Atlantic Ocean and the Irish Sea. Politically it is divided into a sovereign state, the Republic of Ireland, that covers about five-sixths of the island, and Northern Ireland, which is part of the United Kingdom, covering the north eastern sixth of the island. (<https://answers.yahoo.com/question/index?qid=20061123081655AAyVcub>). The population of the island is just under 6 million (2006); just over 4.2 million in the Republic of Ireland (1.6 million in Greater Dublin) and just over 1.7 million in Northern Ireland (0.6 million in Greater Belfast). Keogh (2000:5) states that Ireland is a small, open, trade-dependent economy increasingly based on the hi-tech and internationally traded services sectors. Its openness is reflected in the international mobility of its labour and capital.

The Irish education and training system is characterised by late vocational choice. This system is characterised by an optional “Transition Year”, aiming to provide students with an opportunity to receive a wide range of educational inputs, soft skills and work experience. A limited amount of VET takes place through the Leaving Certificate programme and out-of-school programmes for early school leavers. The vast majority of young learners make their first definite vocational choice on completion of the Leaving Certificate (ISCED 3) at age 17/18 when they proceed to higher education and training, or to non-tertiary further education and training (e.g. in a Post-Leaving Certificate course (ISCED 4), to an apprenticeship or other specific training (ISCED 5b).

The National Framework for Qualification (NFQ) made it possible, in theory at least, for a person with a vocational qualification to progress to a course that would enable him to gain a qualification required to become a member of a profession, such as a primary degree. Keogh (2012:17) reported that *VET in Ireland is centrally coordinated and organized as opposed to being social partner or industry driven as is the case in some other European countries. The Irish education and training system is characterised by late vocational choice. A limited vocational choice is made at the beginning of upper secondary education (16 / 17 years) when a small percentage of learners opt either to:*

- Progress to an apprenticeship or a traineeship with FÁS the National Training Authority or another VET course such as Youth reach, a Community Training Workshop or provided under another Government Department; or
- Progress to the Leaving Certificate Applied (LCA) or the Leaving Certificate Vocational (LCV) where they make what might be termed a 'reversible' choice in that it can be overturned on progression to higher education, to non-tertiary further education and training or to employment on completion of the Leaving Certificate.

The Irish model of organizing TVET had similarities with the South African system since learners choose the vocational route as the last option. Secondly, although South Africa previously had employer demand driven TVET system, most post college placement challenges reflected a supply driven approach where the colleges enrolled learners into programmes that might not guarantee future employment. The NC (V) programmes were designed to address the general requirements for further learning as well as to meet the needs of industry. The Irish system has a number of education and training interventions at various levels as an attempt to respond to the socio-economic needs of the country.

Keogh (2012: 31) concludes the report by citing the 2010 OECD report on learning for job in Ireland that listed a number of the strengths of the system including: diverse post-school VET provision by a diverse range of providers; good collaboration with the Social Partners; innovative ways of engaging employers in the provision of VET; a well-structured apprenticeship system and a comprehensive national framework of qualifications covering all kinds and levels of general education and vocational education and training. The OECD report indicated that of all these, the development of the NFQ stands out as one of the most influential developments in education and training in Ireland in decades. It further stated that the NQF brought coherence and transparency to the previously fragmented, incoherent and virtually incomprehensible array of qualifications and that it continued to exert a strong positive influence on individuals and the system as a whole.

Its true potential in terms of access, transference and progression had yet to be realised and that was one of the tasks of the responsible institutions to ensure these towards 2020. FIG.2.5 as indicated below is adapted from Eurypedia -The European Encyclopedia on National Education Systems. FIG. 2.5 on the national education and training system in

Ireland showed different pathways that students could follow for career development and growth. The vocational system was marked by various interventions allowing for student exit and re-entry into the system (https://webgate.ec.europa.eu/fpfis/mwikis/eurydice/index.php/Ireland: Overview).

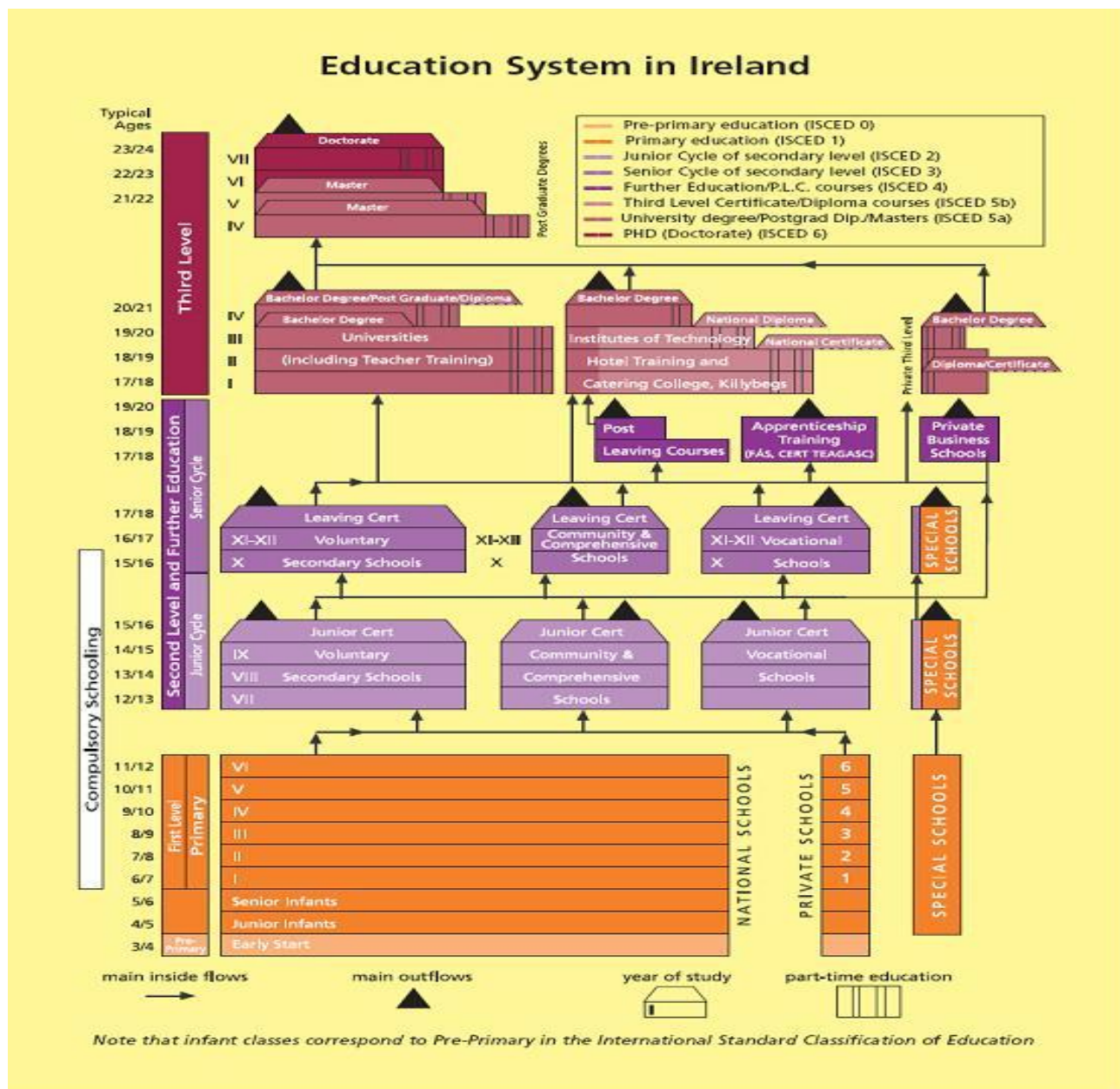


FIGURE 2.5: Structure of the National Education and Training System in Ireland (Keogh 2012:37)

The South African Education and Training System can learn from the strength of the Irish Education System of promoting seamless progression and articulation of learners from school to vocational education and training colleges; to workplace training opportunities

and to university education. FIG 2.5 represents coherent learning pathways that prepared learners for various educational routes. The two Irish certificates (Leaving Certificate Vocational - LCV and the Post Certificate Vocational – PCV) are equivalent to the NC (V) programmes. The Irish LCV and PSC allow for learner mobility and thus this study will assess whether the NC (V) qualification promoted seamless progression to further training, education and work placement opportunities.

2.5.5. Denmark model

Denmark is the smallest of the Scandinavian countries with population of around 5.64 million inhabitants and it occupies the Jutland peninsula, a lowland area. It is a Nordic country in Northern Europe, located southwest of Sweden and south of Norway, and bordered to the south by Germany. The country also consists of several islands in the Baltic Sea; the two largest are Sjaelland, the site of Copenhagen, and Fyn (<http://www.infoplease.com/country/denmark.html#ixzz3Cr2qj5n4> – 09/9/ 2014).

Figure 2.6 shows that the Danish Education and Training System is divided into two parallel parts; namely, the mainstream education system; and the vocational and general stream comprising of adult education and continuing training system. The Chabane (2012:7) report further indicates that the 10th grade is intended as an option for young people in need of further academic competence and clarification regarding their future choices before entering youth education, either general or vocational upper secondary education. The South African TVET system shares similarities with the Danish system when it comes to the choice at the 10th grade. Important to this study is that the Danish vocational education and training qualifications provide access to the labour market as skilled workers or to specific short and medium-cycle higher education programmes at vocational colleges and academies or university colleges. FIGURE 2.6 below summarises the Danish education system that includes the TVET component.

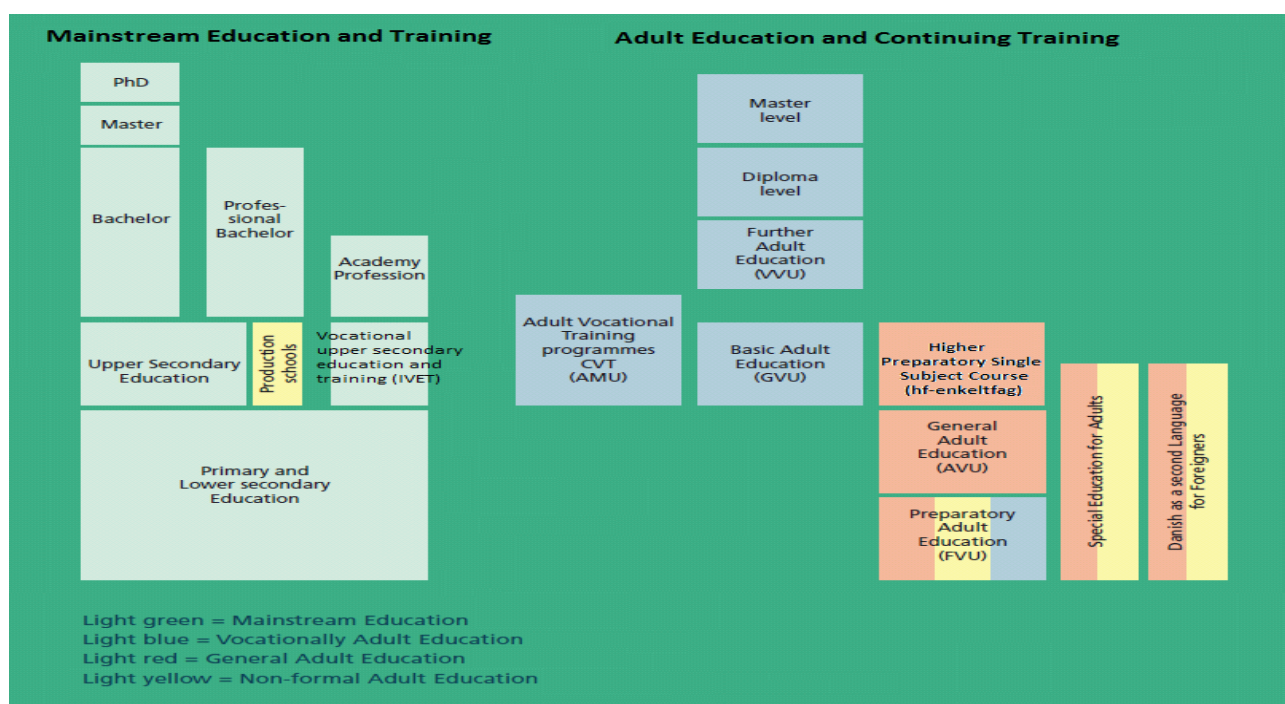


FIGURE 2.6: Education System of Denmark (Chabane 2012:27)

An additional option is provided to the students in the vocational stream wishing to change to the academic stream by writing the higher technical examination course or the higher commercial examination course as indicated in FIGURE 2.6 above. In addition, the person could opt for the new programme offering a combination of a VET qualification and preparation for higher education. Several short-cycle higher education programmes taking two to two-and-a-half years to complete, are offered by the nine new business and technical academies. These short-cycle higher education programmes lead to the completion of an academy profession degree. Admission requirements for academy profession and professional bachelor programmes were either relevant vocational upper secondary education or general upper secondary education combined with relevant labour market experience. There might be more specific requirements regarding certain attainment levels within particular general subjects for some programmes and applicants with vocational upper secondary education background might have to supplement with additional general education subjects.

The higher preparatory single subject programme as shown in FIGURE 2.6 can provide access to a supplementary diploma or degree programme, which South African system can learn from. Unlike the uncertainty that exists concerning NC (V) provision of access to

a bachelor's programme, IVET did not provide direct access to a university-based bachelor's programme.

2.5.6. Switzerland model

Switzerland is part of a European nation located at the central part of the continent. Its official name is Swiss Confederation, and it's a landlocked country bordered by Italy in the south, Germany in the north, France in the west, Liechtenstein and Austria in the east. It is one of the richest countries of the world in terms of per capita gross domestic product because Switzerland has a stable, modern and one of the most capitalist economic systems in the world. The significant industries of the country are chemicals, health and pharmaceutical, banking, musical instruments, measuring instruments, real estate, insurance, and tourism (<http://www.whereig.com/Switzerland> - 9/9/2014).

Hoeckel et al. (2009:18-19) attest that Switzerland's vocational education and training system is strongly employer-driven. The involvement of professional organisations in the process of VET policymaking is stipulated by law. Employers have responsibility for determining the content of VET through ordinances, which prescribe the competencies to be taught in every programme, training plans, and national examinations. Employers have the exclusive right to initiate the design of new ordinances, to update existing ones, and to prepare training plans. Employers are also directly engaged in the provision of VET by offering apprenticeship places, contributing to the establishment and operation of industry courses and carrying out the part of the national examination process that is related to the workplace. One third of employers provide apprenticeship places - an impressive figure bearing in mind that 99.7% of employers are SMEs. The tri-partite Swiss partnership arrangements, including the Confederation, the cantons and professional organisations rely on the principles of consensus and cooperation.

The contrast between the Swiss VET system and the South African model, in particular the NC (V) programmes, was that the latter still needed meaningful involvement of the stakeholders; whereas the former was mature in respect of the participation of the stakeholders. This fact was attested to by the Chabane's report (2012: 20) in indicating that *"the shift in employers' perceptions and willingness to participate in apprentice training poses a significant challenge in skills development. In SA, employers do admit to*

resorting to poaching to address their skills needs“. The study hoped to share the successes and challenges of the South African NC (V) model through the determination of the employers' intake of the graduates and then build upon such successes as greater employer participation in the design or review of the programmes as well as in the work placement of graduates.

While the Swiss model leads to a process of policy making and reform that is relatively lengthy, entailing extensive consultations in quest of agreements, it helped to ensure responsiveness to stable and long-term employer needs. Hoeckel et al. (2009:18-19) explained that implementation of a reform process had been described as extremely smooth and quick since employer support for the reform was built-in. Close cooperation between partners allowed for adaptation to changes in the labour market (e.g. Commissions for Quality and Development including all relevant stakeholders had been established for each ordinance; they meet on a regular basis and make sure that changes in the labour market were taken into account).

The apprenticeship system is “market-driven” in the sense that provision was determined by the availability of training places in companies (alongside students' preferences). In order to start their apprenticeship, students need first of all to find a place in a company and sign a contract. A place in a vocational school was automatic. In this way student choice was balanced by employers' needs. Students were more likely to find a job in their field of training upon finishing their apprenticeship than in an exclusively school-based system because the provision of apprenticeship places was directly linked to employer's needs. This Swiss model appropriately articulated the intentions of the NC (V) programmes as outlined in chapter one.

The third sub-aim of this study determined the influence of NC (V) qualification on the graduates' entrance into the labour market as employees, entrepreneurs or as self-employed. Lessons that can be learned from the Swiss model was that the Small and Medium Enterprises (SMEs) in Switzerland were well represented through their trade associations, helping to ensure that training reflected the needs of all types of employers and not just of a few large companies. Similarly, the assessments that students must pass to get their Federal VET Diploma proved to be fair and valid, as they are conducted nationally by the professional organisations, and the examiners themselves are trained by a national agency rather than being employees of particular companies.

Advantages and disadvantages of the Swiss Model

In industry courses, VET students learn the basics of their occupation. Close supervision by a more senior colleague or a vocational trainer at the host company meant that they can immediately be integrated into the production process and add value to the host company from the start of their apprenticeship (Dionysius *et al.* 2009). This encouraged employers to offer apprenticeship places. An assessment of apprenticeship place demand and supply was conducted through regular collection of data that allowed mismatches to be identified. Following such an exercise the government may encourage training or provide transition solutions such as full-time schooling at a cantonal level.

One risk in any dual-track system was that the work-based and school-based components become easily disconnected from one another and thereby contradicting the theory of Connectivism, which according to Downes' words, "to teach is to model and demonstrate, to learn is to practice and reflect" Siemens (2005) on line "http://www.itdl.org/journal/jan_05/article01.htm". The traditional way of imparting vocational skills was for the master craftsman to model and demonstrate the skills that the learner should learn and master. An apprentice was required to spend about ten percent of his time at a college learning theory related to his trade and the rest of the time at factory shop floor understudying a qualified artisan. In Germany for instance, the operation of the school-based components by the *Länder* and the operation of work-based components by national trade associations and the Federal Ministry of Labour made coordination between the two partners a challenge.

In Switzerland, national VET ordinances for each occupation were designed to clarify the relationship between work-based and school-based components since they set out what was expected of each component and how they fit together. At the vocational school level, there appeared to be a process of constant communication between vocational teachers and vocational trainers; such coordination further developed at an informal level. One other common risk for vocational education was that it became overly-narrow or even company-specific when employers played a leading role, to the extent that individual workers were limited in their mobility. However, Switzerland had developed several mechanisms to avoid this. VET ordinances incorporate relatively broad conceptions of vocational competencies, and were worked out with trade associations, not by individual companies that might be tempted to promote company-specific training. Although, the NC

(V) learners received theoretical and practical instruction at the college, they were also required to gain workplace experience. The NSA and QCTO Social dialogue report compiled by Chabane (2012:5) outlined that in Switzerland there were five key factors responsible for the success of the TVET system, namely,

- Strong integration of the private sector indicating that the private sector was involved in training by offering apprenticeships, curriculum development, organizing of intercompany courses, sending instructors to trainings, supporting the assessments by providing infrastructure as well as examiners.
- Balanced responsibility of the three stakeholders (Federation, Canton and Private sector).
- Federation, providing sufficient resources for the education and training of the participants (teachers, instructors) and for the maintenance and development of a sustainable system.
- Canton, implementing the federal laws, providing TVET-schools, monitoring.
- Private sector (employers, employers' associations), funding two third of the costs.

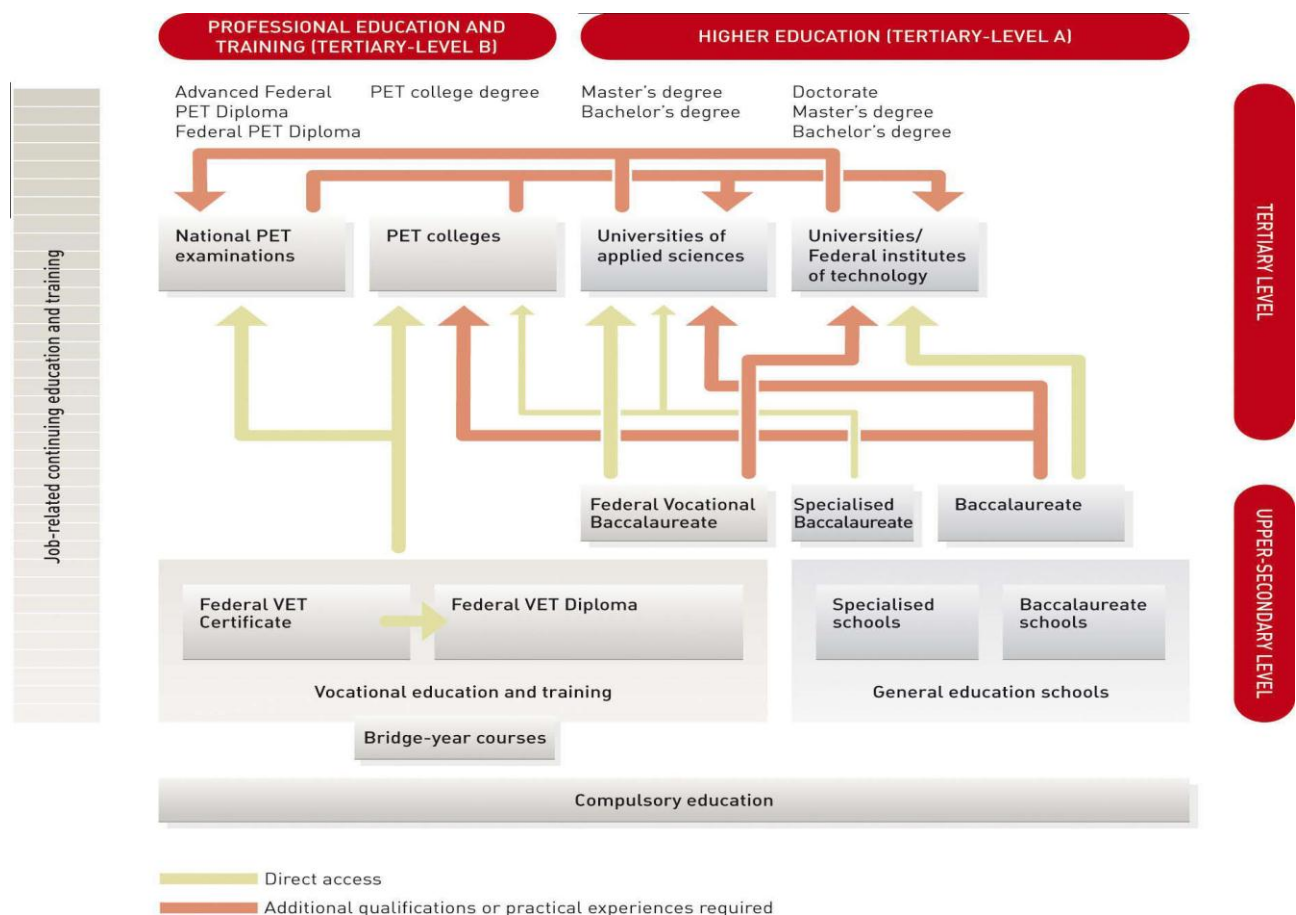


FIGURE 2.7: Education System of Switzerland (Chabane 2012:31)

Permeating through the system in search of the pathway through the TVET was for young learners never a dead end. Every learner can go as far as his or her ability might take him or her finally, even to university as shown in FIGURE 2.7 above. The system took care of weaker learners. It was a success story of the last 10 years, when the 2-year apprenticeship, which was completely embedded in the whole training program, could be implemented. The system managed to integrate diverse groups of learners who were in one way or another disadvantaged, extremely well.

In summary the strength of Switzerland's VET/PET system lied in the fact that it was strongly employer-driven and the partnership worked well at each level. In-school education and in-company training were well integrated. In-company training was sufficiently broad and not too company-specific.

2.6. A Comparative Summary of the experiences of the discussed Countries

Cosser et al. (2011:46) argued that it was crucial for colleges to keep student exit data as it was critically important information not only in the event that the college became unable to substantiate claims of employment placement of their students but also for the redesign of their mission statements. There needed to be a far greater focus than hitherto, not only on where FET college students had come from but also where they go to after leaving the college whether as graduates or non-completers.

In 2011, the Department of Economic Development (EDD-Skills Accord 2011:1) facilitated the signing of the National Skills Accord by the DHET, organised labour, the organised employer association and the community constituency in which all the parties identified a number of commitments they each could make regarding training. Making internship and placement opportunities available within workplaces for FET graduates was declared as a second commitment. The NSA-QCTO social dialogue reiterated the important role played by the experiential training of learners, especially following the vocational route.

The report as compiled by Chabane (2012:17) concluded the findings with the observation that the TVET qualifications generally required both a combination of theory and practical experience in the workplace as depicted in most models discussed in this chapter. Ideally, close links should exist between local employers and institutions offering TVET programmes, facilitating both alignment of curricula to industry's needs and identification of placement opportunities for learners for their practical exposure. All the countries identified the cooperation of employers and employer organisations as central to the success of their TVET models. In Brazil and Germany, employers had a keen interest in ensuring that learners emerged from training programmes with skills relevant to the workplace.

German employers in particular, considered it much more cost effective to invest upfront in recruiting suitable candidates and teaching them the correct skills from the beginning, then retaining them as employees on completion of their studies. Employers exerted significant influence in the way training was conducted, and were fully committed to ensuring that learners obtain work placements for any practical training associated with

their training. In Germany, the employers and learners entered into contracts that spelt out the content of training and the competencies that would be developed as a result. In Brazil, industrial bodies located in each state control the content of training and institutions that deliver it. These Bodies provided oversight to ensure that programmes were aligned to needs expressed by employers, even to the extent of sanctioning managers of training institutions who were not seen to be delivering on this mandate.

By contrast, in Denmark and Ghana, the government played a bigger role in facilitating the relationship between trainees and employers. Ghana's COTVET had responsibility to facilitate the linkages between industry and institutions to ensure demand-driven curriculum development and placement. Employers form part of the standing committees responsible for occupationally driven standards and the quality assurance associated with them. Due to the relative newness of this system, the full extent of employer buy-in was yet to be established. Denmark on the other hand, had a relatively well established system of apprenticeships. Both public and private Employers pay into a centrally managed fund, which supported technical and vocational education and training. There were few legal requirements to become a trainer. Trainers in enterprises who were responsible for apprentices must be master craftsmen. Students must have completed a VET programme and have work experience.

The shift in employers' perceptions and willingness to participate in apprentice training poses a significant challenge in skills development. It appears counterproductive that employers should be unwilling to take on learners in fields where skills were supposed to be in short supply. However the costs and administrative burden associated with such an undertaking were contributory factors influencing employers' attitudes. The global recession had meant that companies were looking for ways to cut costs, and may decide that it was more cost effective to recruit workers trained elsewhere who were ready to hit the ground running. The government of Germany also introduced an incentive scheme to encourage reluctant employers to continue taking on apprentices, as the numbers had declined significantly in the wake of the recession.

The report retorted that in South Africa, in some cases employers admitted to resorting to poaching to address their skills needs. The DHET had signed a Skills Accord with the social partners in an attempt to commit parties to ensure training and the development of skills including access of FET graduates to workplace training. The NSDS III had also

provided for a special fund called the PIVOTAL grant to incentivise the employers when taking on learners for workplace training. Workplace learning should be an integral part of all vocational programmes. Establishing effective partnerships between education and training systems and employers to provide for workplace training would ensure that skills have real labour market relevance and that young people gain an early appreciation of and exposure to the world of work, (DHET-NSDS III 2011:12).

The NSDS III captured the importance of workplace learning by alluding that many of the professional areas of study combine course work at universities, universities of technology and FET institutions with structured learning in the workplace. This was achieved by means of professional placements, work-integrated learning, apprenticeships, learnerships, internships, skills programmes, and work experience placements. To address the critical needs for economic growth and social development, there must be improved access to, and success at, post-school learning sites alongside structured bridges to the world of work and quality learning in the world of work. To give greater effect to these programmes and ensure greater employer participation, a PIVOTAL grant had also been incorporated into NSDS III (DHET-NSDS III 2011:14).

The Minister for Higher Education and Training hosted a roundtable on skills development with the United States of America Undersecretary of State (DHET Speech 2011:2) and emphasised that part of the DHET objectives was to make work integrated learning a critical component of training. Research abound indicates that work experience played a critical role in employability. But beyond that, some of our university of technology and FET programmes, had workplace learning as a critical component of a qualification. Therefore learners must, after a period of academic training at an institution, spend a particular period in the workplace for practical training in order for them to attain a qualification. The Minister stated that due to the limitations of the DHET efforts in this area, there were a number of young people who had completed the academic programme at institutions of learning, but because they could not get workplace training they were unable to attain their qualifications. Lack of workplace training lead to a huge wastage of resources since the learners would have already invested two to three years in academic training, only to be denied the required workplace training.

2.7. South African Model

The HSRC Report by Akoojee et al. (2005:99) indicated that after a decade of democracy, South Africa had achieved much in the way of transformation. However, the pace of change was scarcely fast enough to keep up with accelerating social and economic challenges. In seeking to meet both social and economic aspirations, the government had increasingly identified skills development as a crucial issue. The report explained that South Africa's vocational education and training (VET) system and its performance are profoundly shaped by the history of South Africa's colonisation by the British and the subsequent enshrinement of racism at the centre of social and economic policies under apartheid.

According to the National Skills Development Strategy III (2011:15) the public FET college system was central to the government's programme of skilling and re-skilling the youth and adults. This was as a result of South African economy facing serious constraints in successfully expanding production for domestic and international markets in areas such as manufacturing due to the weak skills base. The problem in the formal economy was also mirrored in the informal economy where South Africa was far weaker in terms of technical and craft skills than the majority of other African countries as cited by Akoojee et al. in the HSRC (2005:101).

NSDS III was seen as a transformation key to the integration of education and training and responding to the skills needs in our country. In recent years, FET colleges had been striving to make the transition from their former status as technical colleges to being responsive and vibrant post-school institutions for vocational education. Within a relatively short space of time, public colleges were merged from an inequitable assortment of 152 small individual colleges to 50 mega-institutions, which were multi-site and diverse. Since then, the college sector had seen a large investment by the state through the recapitalisation process which started in 2007 (DHET NSDS III 2011:15).

The Department of Education (DoE) Strategic Plan of 2007-2011 stated that Further Education and Training (FET) and Higher Education enjoyed strong support from the department through the merger and recapitalisation processes, which were aimed at addressing the acute skills shortage experienced in South Africa. Huge financial

investments had been injected into these sectors to expand skills and capacity in order to support economic growth and global competitiveness. As part of the recapitalisation strategy, the Minister of Education set norms and standards for the National Certificate (Vocational) programmes within the Further Education and Training (FET) band in accordance with the *National Education Policy Act of 1996 (No. 27 of 1996)*. Chief among these programmes was the Civil Engineering and Building Construction, Engineering and Related Design, Electrical Infrastructure Construction programmes, which aimed at addressing skills shortage.

As outlined in chapter one, these three programmes were pivotal to this research which aimed to assess the impact of the NC (V) qualification on the lives of the graduates by surveying the first three cohorts of NC (V) engineering graduates to establish their whereabouts with respect to career progression. South Africans can learn good practices from the Ghanaian TVET model of strengthening the informal sector by reviewing its vocational programmes and curricula. The Danish and Irish models provided for flexible entry and exit points in the vocational and education system with a provision for government intervention. These models also allowed learners to take a preparatory or orientation programme before enrolling in either a vocational or higher academic courses. The other models indicated the importance of a strong partnership base with industry at various levels of instruction.

All of these lessons could be key in the review of the NC (V) programme and for the economic inclusive growth path as envisaged by the NSDS III that states that *“For our country to achieve high levels of economic growth and address our social challenges of poverty and inequality, we must work together to invest in education and training and skills development to achieve our vision of a skilled and capable workforce to support an inclusive growth path”* (DHET NSDS III 2011:5).

2.7.1. Funding and support for NC (V) students

Support to students including financial support, as mentioned in chapter 1 of this study, played an important role in enhancing the student chances of completing the NC (V) programme and later accessing further career opportunities. The DoE Report (1997:37-38) on education indicated that the FET college sector in the 1990s was a neglected

sector, colleges lacked infrastructure, governance and management structures, administrative and organizational systems; quality training of trainers; linkages with industry; quality assurance and management information systems. Amongst government interventions to improve vocational education in South Africa, student financial aid and erratic funding emerged as a challenge. As a result, government introduced a recapitalisation process from 2006 to 2009 in order to improve the situation including the infrastructure.

During the Budget vote speech in 2011, the Minister of Higher Education and Training, Dr. B E Nzimande (DHET 2011:7-8), pronounced that since the last period of the last budget vote there was an intensive policy consultation and development. He emphasised that hands-on support was given to FET colleges in the areas of governance and management; curriculum and qualifications; examinations and assessment; planning and funding; and the establishment of partnerships and linkages with employers, SETAs and other stakeholders. He emphasized that the aim of the department was the substantial transformation and improvement of the capacity of the colleges over the next few years to offer a range of courses for the production of mid-level skills for the economy. The Minister announced that for 2011 the allocation for the FET Colleges bursaries had tripled. R1.235 billion was made available to financially needy yet academically capable students.

This meant that 100% of eligible students from poor and working class households enrolled in the NC (V) and Report 191 (NATED) would be totally exempted from college fees, covering for the first time more than 169 000 students. The Minister elaborated further that “An announcement by the President was made on January 8 and elaborated in his State of the Nation Address regarding further assistance for FET students and final year university undergraduates who qualify for the National Student Financial Aid Scheme (NSFAS)”.

The Minister of Higher Education and Training Dr B.E Nzimande was quoted by the City Press newspaper of the 17th October 2011 (Moyane 2011:26) saying that South Africa, based on its gross national income, was classified as a middle-income or developing economy.

And with the kind of complex and fast-growing economy the country had, it must also have competent, well-skilled and top-notch human capital to manage and drive such an

economy for the benefit of its citizens. Out-of-school and unemployed youth were also encouraged to register with their nearest FETs and higher learning institutions to further their studies. The bottom line here was that money was no longer a barrier for those who were thirsty for knowledge and skills – anyone could now pursue a career of his or her choice. From the policy point of view, as attested in the above paragraph, the South African TVET model had political and financial support.

Cosser et al. (2011: 39) reported that from the 2010 FET audit, 58% of students nationally were not recipients of financial support and that if this figure is indeed representative of the country as a whole, it underscored the significance of the DHET decision to fund all final-year financially needy FET College students enrolled in 2011. It was important to emphasise that learners who enrolled for NC (V) programmes received immense financial support given the nature of the departmental programmatic funding norms. The assumption was that funding did not inhibit the performance of learners.

2.7.2. Career guidance support for the NC (V) students

Career guidance support to the prospective FET College students prior to their admission into various college programmes played an important role in ensuring good throughput rate. The questionnaire in this study included a question on career guidance to determine the extent to which support was provided to the NC (V) students at entry into the college. The Social dialogue analysis report (Chabane 2012:21) argued that career guidance was a useful vehicle for assisting young people to make informed choices in school. It was made available to young learners from about junior secondary level. In some countries career guidance was available up to further and tertiary institutions.

The thrust of career guidance services ranged from educating pupils about available career opportunities, assisting with subject choice based on the interests of the individual as well as labour market conditions, and promoting retention or minimising the dropout rate from junior to senior secondary phase.

Career guidance also sought to empower learners to identify their own strengths and weaknesses and use them to guide their subject and career choices. It was an opportunity to begin educating learners about the world of work. The Chabane report (2012:21)

pointed out that Ireland and Denmark had career guidance entrenched in law, specifying the scope and methods of career guidance to be made available to learners; with Denmark investing in a fairly expansive infrastructure to ensure that guidance services are widely available. The availability of career guidance and its quality was highly varied across different types of institutions. Furthermore, career guidance was subject to economic changes; in periods of economic uncertainty, this was one of the services that were likely to be compromised or eliminated from school programmes. Career guidance and academic support remained crucial to the future success of the NC (V) graduates performance and possibly the post college prospects.

2.7.3. Skills development opportunities for the NC (V) graduates and progression to institutions of higher education

The renewed recent focus aiming to strengthen support for the FET College sector and as a result the NC (V) programmes, was of interest to the recommendation of this study. The DHET Media Statement (2012:4) regarding the Green Paper on Post School Education and Training cited that the key area of focus for expansion would be the public further education and training (FET) college sector. The expanded FET colleges sector was envisaged to play the central role in expanding the development of artisanal and other mid-level skills for the economy. Such skills were in extremely short supply and colleges, working together with employers, from both public and private sectors, would spearhead the tackling of this problem.

This statement was attested to by the Northlink FET College webpage which claimed that the education and training offered at the College was customised and responsive to the needs of learners and industry and the careers encouraged are essential for the upliftment of the South African economy. Northlink College further stated that an FET vocational programme equipped learners for a successful and rewarding career in an industry that had great need for practical skills, experience and knowledge, and it also provided learners with access to higher education and lifelong learning. The Further Education and Training college sector was regarded as a supply side for the skills development programmes such as learnerships and apprenticeships, which form part of career path for the NC (V) graduates. Daniels (2007:7) contested that the Department of Labour's

National Skills Development Strategy reiterated the importance of learnerships, which were published as part of the Skills Development Act (SDA).

Cosser et al. (2011:73) argued that the reality after a decade of training is that the FET colleges were not brought into the loop of SETA learnership training, since the bulk of SETA training initiatives are run by private sector training agencies. Much of the training conducted was foundational, located at the low NQF levels. The National Skills Summit of 2010 culminated in the declaration by social partners who sought to increase access to programmes leading to intermediate and high level learning, by improving NC (V) success rates. The other imperative declaration concerned the increase of access to occupationally-directed programmes for adults and youth in needed areas. Thereby the availability of intermediate level skills would be increased. The number of workplace learning opportunities for those who have completed vocational programmes, such as the 'N' or NCV programmes, through the provision of appropriately restructured learnerships, internships or apprenticeships, would also be increased (DHET Skills Summit Report 2010:4).

One of the objectives of the NC (V) was to allow the learners to progress to university or other higher education studies. The DHET Green Paper Media Statement (2012:4) attested to this fact by emphasizing that vocational education at the FET colleges must not be a dead-end; the Green Paper makes proposals to ensure pathways that NV (C) allow students to move on to university education after completing their vocational qualifications if they wish to do so. In this regard, the NC (V) can draw a lesson from Botswana Policy on Vocational Education and Training, which states the need to improve the quality of vocational education and training.

To promote flexible educational career paths in both systems, and to enhance horizontal and vertical mobility, close links were developed between the National Vocational Education and Training System and the other sectors of the formal education system, particularly in the development of curriculum, strengthening of pre-vocational subjects in schools, and career guidance and counselling (Botswana Policy on Vocational Education 1997:14).

2.8. Related Theoretical Frameworks

Traditional philosophies of vocational education were to provide learners with job entry skills for occupations requiring less than a university degree. This point was argued by Foster (2008:3) that *“The real issue is thus not between ‘academic’ and ‘hands-on’ — an artificial distinction — but rather one of ‘wholeness’. Traditional education is one-sided — as is vocational education. Whole humans experience the world as a whole and solve problems holistically. The traditional curricula we continue to operate by separate the whole of life into compartments with more or less value. Educational efficiency requires us to package content in accessible ways, but the traditional disciplines and their separateness may not be the best way. We should reconfigure and reintegrate knowledge and curricula into what we now understand are more holistic and natural and expedient divisions*(<http://www.journal.kfionline.org/issue-12/the-philosophy-of-vocationaleducation>).”

In agreeing with Foster (2008:3), concerning the importance of ensuring the interconnection of theory and practice, this research determined the extent to which the NC (V) theory acquired by the graduates enabled them to link with their post college destinations such as the world of work and further training. As such, in this study the theory of Connectivism was selected because of its appropriateness in promoting the connection of the theoretical offering by the college and the practice in the workplace and it was discussed in the succeeding paragraphs. Given the success of the history of the South African technical and vocational education with its close link to industry, there was seemingly no need to assess the impact of the vocational programme since they were offered in conjunction with the employers.

As a result, there was a limited amount of research done on the vocational education and training with respect to college graduates of the new programmes, which were introduced in 2007. The closest related research studies were on the learnerships trends. This study primarily focused on surveying the engineering NC (V) graduates who qualified between the period 2007 and 2012 from the three FET colleges in the NW Province in order to find out how the programme influenced their post college destinations. Akoojee et al. (2005:99) attest that South Africa’s vocational education and training (VET) system and its performance were profoundly shaped by the history of South Africa’s colonisation by the British and the subsequent enshrinement of racism at the centre of social and economic

policies under apartheid. Shelhamer and Latham (1986:15) in their study discovered that the basic philosophy of vocational education underwent modifications as follows:

- Vocational education should involve occupational awareness, exploration and preparation.
- Vocational education emphasizes leadership development, hands-on experience, entrepreneurship, as well as attitudes, knowledge, and skills related to jobs and job tasks.
- Vocational education prepares students for advanced training and education at the post-secondary level.

The researcher concurred with the three philosophical modifications that do not only form the fundamental purpose of the vocational education and training up to today, but were also encapsulated in the purpose of the NC (V) qualification. This study intended to determine the extent to which the NC (V) qualification realised the three modifications. McGrath et al. (2004: 17) argued that South Africa's apartheid-driven industrial development path had led to an intense polarisation of skills between high skill and low skill elements; with a serious underdevelopment of the intermediate skill segment which was seen as essential to successful industrialization and competitiveness internationally.

The situation was worsened by the reduction of or withdrawal from industrial training of vocational occupation by industry resulting in more and more colleges offering theoretical training to large numbers of learners who could not get practical training from the workplaces. The circumstances led to the change in philosophy as there has been a recent trend to reform the vocational educational systems leading to massification and redress of the historical baggage that excluded in particular African people. Educational reform was also creating a pool of employable cadre, who should be able to work in industry, pursue further studies or establish their own business.

The vocational education and training approach changed from theory of Connectivism to the development of a learning society. Therefore, the basic philosophy of vocational education was being questioned since the purpose of vocational education shifted from just imparting craftsman with skills to provide a basis for further learning as well as equipping graduates with the necessary enterprise development skills. Hence, it was the purpose of this study to assess the extent to which the NC (V) training programme equips

graduates with the necessary skills for immediate employment after graduation or should vocational education simply provided students with the necessary prerequisites for further training after college study.

2.8.1. Connectivism

This study recognized the connection and interrelatedness of the NC (V) programme in the sense that it aimed to prepare learners for multiple opportunity destinations and was thereby obliged to address the fundamentals of the chosen future occupations, the higher education specific prerequisites subjects, the life and critical skills subject as well as the practical component of the qualification. This approach tended to assume the framework of the learning theory. Learning is commonly defined as a process that brings together cognitive, emotional, and environmental influences and experiences for acquiring, enhancing, or making changes in one's knowledge, skills, values, and world views (Illeris, 2004; Ormrod, 1995). It is also thought of as the way in which information is absorbed, processed, and retained.

In order to place the framework of Connectivism into perspective with respect to this study, it was important to understand what Connectivism stands for. An online article on 'Connectivism: a learning theory for the digital age by Siemens' (<http://www.elearnspace.org./blog/> Retrieved 21.11.2014), states that "Connectivism is driven by the understanding that decisions are based on rapidly altering foundations. New information is continually being acquired. The ability to draw distinctions between important and unimportant information is vital." For the use of this research, the graduates should be able to recognise the connections of the theoretical knowledge acquired at the colleges with their new anticipated landscape in order to be declared competent and effective in their career.

The theory of Connectivism is enhanced by other learning theories such as the theory of Constructivism that suggests that learners create knowledge as they attempt to understand their experiences (Driscoll 2000:376). Given the emphasis that is placed on the "hands on" experiences of the NC (V) graduates to facilitate their career advancement in the workplace, it is important to understand that the college curriculum should instil right behaviour, attitude and knowledge of the graduates. In this regard, Driscoll (2000:376)

further argues that behaviourism and cognitivism view knowledge as external to the learner and the learning process as the act of internalising knowledge; whilst constructivism assumes that learners are not empty vessels to be filled with knowledge.

In this study, the researcher viewed the graduates as active participants attempting to create meaning by establishing various connections in theory and practice as well as with the people and environment that enhance their career opportunities. Graduates choose and pursue their own post college destinations, sometimes with little knowledge that real-life learning is complex. The theories did not give us solutions, but they do direct our attention to those variables that were crucial in finding solutions. As the purpose of the NC (V) programme was explained earlier as being multifaceted in the preparation of learners for the world of work and further studies, it also tended to cut across the three main categories or philosophical frameworks under which learning theories fall, namely, behaviourism, cognitivism, and constructivism. Behaviourism focuses only on the objectively observable aspects of learning. Cognitive theories look beyond behaviour to explain brain-based learning. And constructivism views learning as a process in which the learner actively constructs or builds new ideas or concepts.

The traditional way of imparting vocational skills was for the Master craftsman to model and demonstrate the skills that the learner should learn and master. The learner had to understudy the Master craftsman for years by making connections of how the master executed tasks and skills to completion. The vocational education theory later evolved into the apprenticeship model where industry entered into a training contract with the apprentice. An apprentice was required to spend about ten percent of his or her time at a college learning theory related to his trade and the rest of the time on the factory shop floor understudying a qualified artisan. Unfortunately, this upgraded approach had its limitations in the sense that the theoretical scope of the trainees was limited and did not prepare the learner for further studies or even prepare him or her for holistic development as no other critical life skills, managerial, business skills or communication skills were provided. The theory of Connectivism adopted in the modelling of the NC (V) was informed by a number of government priorities. In addition some researchers such as Kraak (2004:13) argued that the youth labour market was probably the most important phase in any young person's development, particularly the transition from school to work or to further or higher education and training. These included institutions of further and

higher learning, pre-employment training, and those that provide employment advice and career counselling.

The introduction of the NC (V) qualification was a deliberate intervention of government to redress the backlog in skills development created by an inadequate system of the past. The intervention was aimed at enabling students to acquire the necessary knowledge, practical skills, applied competence and understanding required for employment. A similar view was that of the Botswana Ministry of Labour and Home Affairs (1997:13), which was to develop an Integrated National Vocational Education and Training System that provides for the education and training of a skilled workforce for the economy and requires the involvement of all key stakeholders, that was, Government, the private sector, employers, and employees in the development and running of the system. It also encompassed trades and occupations covering a wide variety of economic activities and was flexible enough to be able to integrate new occupational activities as they develop the Botswana National Policy on Vocational Education and Training (1997:13).

2.8.2. Community of Practice (CoP) in Vocational Education and Training

The learning concept of Community of Practice was not optimised by the FET College Sector to enhance other curriculum review processes. A community of practice is a group of people who share a common concern, a set of problems, or interest in a topic and who come together to fulfil both individual and group goals. Cops often focused on sharing best practices and creating new knowledge to advance a domain of professional practice. Interaction on an ongoing basis was an important part of this. A community's specific purpose and goals informed the appropriate activities and technologies that should support it. Many virtual communities of practice rely on face-to-face meetings as well as Web-based collaborative environments to communicate, connect, and conduct community activities (<http://www.educause.edu/nlii/VirtualCommunities/944> evaluating community-oriented technologies). These learning principles can benefit the colleges with the promotion of student experiential learning, the relevance and responsiveness of the NC (V) programmes.

The FET Colleges made use of the Academic Boards to monitor and to review the success of their academic programmes and curriculum, including the NC (V) programmes. These boards were made of mostly internal representatives of each college ranging from

the lecturers, student support officials, campus heads, and academic programme managers led by the principal or the deputy principal. These boards failed to address pertinent curriculum matters given the issues raised in point 2.2 that outlined the prevailing conditions in the Further Education and Training Sector. At national level the DHET coordinates the FET College programme review process by, among others; inviting participants from industry and the colleges. From both college and DHET processes, the FET College graduates find it difficult to fully access workplace for practice training and employment.

This study argued that the theory of Connectivism combined with the establishment of the FET College Community of Practice learning theory could reduce the misalignment between the NC (V) programme theory and practice. Wenger (1998: 72–73) described the structure of a CoP as consisting of three interrelated terms: 'mutual engagement', 'joint enterprise' and 'shared repertoire'. In agreeing with Wenger, the introduction of College CoP would allow members to establish norms and build collaborative relationships that lead to a social entity. College CoP would through their interactions, create a shared understanding of the key drivers for the curriculum or programme review. Lesser and Storck (2001: 836) indicated that an important aspect and function of communities of practice was increasing organisation performance of which, in the case of the FET Colleges, the connection to the world of work would improve the NC (V) programme responsiveness to the skills needs. Lesser and Storck (2001:836) identified four areas of organizational performance that can be affected by communities of practice; decreasing the learning curve of new employees; responding more rapidly to customer needs and inquiries; reducing rework and preventing "reinvention of the wheel" and spawning new ideas for products and services. The College CoP should be guided by the four organisational performances to address the NC (V) curriculum and experiential learning for the college graduates.

2.9. Summary

In this chapter, the researcher focused on the role that vocational education and training in other countries could play to improve the South African approach with the aim of exploring the value of the NC (V) programme and its impact on the destinations of the graduates. It was observed that although Connectivism as a learning framework was the closest to how

learning was organised in the NC (V) programme, the programme prepared learners broadly, thereby requiring of them to construct new ideas and strategies as they endeavour to achieve their goals.

Cosser et al. (2010:42-43), emphasised the importance of the efficiency rates that, when all was said and done, colleges were inevitably judged on the quality of their student outputs. The analysis of their research indicated that the throughput rates for the NC (V) and NATED programmes of the FET Colleges left much to be desired. He retorted that if the sector was seriously to compete, it would need to pay serious attention to the quality of teaching and learning, and that colleges would have to be judged in large measure on the basis of the academic performance of their students. Cosser et al. (2010:42-43) further discovered a discernible trend in college efficiency rates of a steady improvement in the throughput rate within the NC (V) across all provinces between 2007 and 2009. This study was given great impetus by the findings of Cosser as it was one of the early researches undertaken on the NC (V) qualifications.

Chapter 3 focused on the research design and methodology that was used to assess the impact of the NC (V) programmes on the destinations of the engineering graduates from 2007 to 2012.

CHAPTER THREE: RESEARCH DESIGN AND METHODOLOGY

3.1. Introduction

A combination of the qualitative and quantitative research methodology was employed to gather data on the impact the NC (V) qualification had on the advancement of the FET graduates. The qualitative method was used in the interviews conducted with the college management representatives, the representative from the department of education as well as the employers of the graduates who gathered data about the performances of the graduates who completed their studies from 2009 to 2012. Mason (2002) (<http://www.sagepub.com/upm-data/43589>) states that *“Qualitative data can provide information about the quality of standardized case records and quantitative survey measures, as well as offer some insight into the meaning of particular fixed responses”*.

The advancement urgency of the FET graduates including the NC (V) graduates was highlighted in the National Development Plan (NDP) 2030 (2012:3) concerning the inadequate skills levels and poor work readiness of many young people leaving formal secondary and tertiary education and entering the labour market for the first time. The NDP 2030 (2012:3) argues that the lack of skilled workforce is compounded by inadequate linkages between institutional and workplace learning, thus reducing the employability and work readiness of the successful graduates from FET and HET institutions, not to mention the many who enter the world of work without a formal qualification. The National Skills Development Strategy, NSDS III (2011:7) agrees with the NDP concerning the inadequate skills levels and poor work readiness of many young people leaving formal secondary and tertiary education and entering the labour market for the first time.

The aim of this chapter therefore, was to discuss the methods the researcher used in the study to collect the data meant to assess the impact of the NC (V) qualification on the post college experience of the graduates by surveying the first four cohorts of NC (V) engineering graduates to establish their whereabouts with respect to career progression.

The researcher gathered data in order to determine the impact of the National Certificate Vocational, NC (V) qualification in engineering in the North West Province of South Africa on the continued learning patterns of former students. The independent variable of this study was vocational engineering training and the dependent variable was the destination of the graduates. This dependent variable implied the future educational and employment activities of the students who have graduated from the offered programmes of study. The Department of Education introduced new vocational programmes in 2007 with a view of aligning the college provision of tuition with the industrial and business skills needs. The newly introduced programmes called the NC (V) L2 to L4 were rolled out in a phase-in approach. The engineering programme stream that formed part of the first set of qualifications to be rolled out nation-wide, were selected for this research for purposes of delimiting the study.

The NC (V) qualifications were developed to promote articulation of the Further Education and Training College graduates to higher education institution, to prepare graduates for the workplace or industrial training or for self-enterprise development. The research design used the survey instrument because its strengths allowed it to compensate for the weaknesses of other methods and can therefore maximise the likelihood of securing data from different types of respondents. For example, a survey could be sent electronically to sample members who have e-mail addresses and mailed to those who do not. Phone reminders could be used to encourage responses to Web or paper surveys (<http://www.sagepub.com/upm-data/43589>). The quantitative aspect of the research was conducted through questionnaires while the qualitative aspect was conducted through interviews.

3.2. Surveys – Research Design

Mouton (2001:152) defines a survey research as a study that is usually quantitative in nature, which aims to provide a broad overview of a representative sample of a large population. This definition is accurately elaborated by McMillan and Schumacher (2001:602) as “the assessment of the current status, opinions, beliefs, and attitudes by questionnaires or interviews from a known population.” The researcher’s understanding that was deduced from the two definitions was that once survey data has been collected, codified and consolidated it is used to describe and explain the status of the phenomena

as outlined in the problem statement. An online Business dictionary collaborates the definition of the survey design, as retrieved on the 25 April 2014 as a method of sociological (<http://www.businessdictionary.com/definition/survey-research>) investigation that uses questions based on knowledge and experiences or statistical surveys to collect information on how people think and act. Survey research designs usually pose fewer ethical dilemmas than do experimental or field research designs.

Potential respondents to a survey can easily decline to participate, and a cover letter or introductory statement that identified the sponsors of, and motivations for, the survey gave them the information required to make this decision. Little was concealed from the respondents, and the methods of data collection were quite obvious. Survey-based research owes its continuing popularity to its versatility, efficiency, and generalisability. Although a survey was not the ideal method for learning about every educational process, a well-designed survey can enhance our understanding of just about any educational issue.

It was on this understanding that the choice of the research design for this study was made and was also informed by the purpose of investigating the impact of the NC (V) qualification in the NW Province. The design was appropriate in this regard since a large group of graduates who might have been dispersed throughout the province and beyond, were asked questions on their NC (V) experiences. Babbie (2007:244) states that "Surveys may be used for descriptive, explanatory and exploratory purposes. They are chiefly used in studies that have individual people as the units of analysis." This study used the survey research design in which the units of analysis are the engineering NC (V) graduates from the three colleges in the North West Province. The North West Province boasts three merged FET colleges with eleven campuses spread throughout the province. The North West Province remains largely rural despite hosting the biggest platinum mines, particularly in the Bojanala region. There is also a high concentration of tourism industry as well as agricultural businesses that require skilled labour force to drive the economic activities that have capacity to create jobs and workplaces for the graduates. The survey was intended to determine how these prospective workplaces; the North West University with two campuses and other institutions of higher learning in the province including those outside the province, accommodated the NC (V) graduates. This study investigated whether NC (V) engineering graduates of 2009, 2010, 2011 and 2012 in the North West

Province were being absorbed into the labour market or were furthering their studies in the higher education institutions.

The researcher also designed the interviews schedule comprising of sets of questions for each of the four categories of units that were interviewed. The college respondents were divided into three categories with each category consisting of three respondents with similar job level and responsibility. These were the category of the Principals or Deputies; the Academic Programmes Heads and the Student support Managers. The other categories of the DHET; the Universities; the SETAs and the Employers had each a set of questions designed to solicit specific data relating to the study and complementing the questionnaire data. The researcher undertook a field trip by visiting all the three colleges within a space of two months to conduct separate interviews with first the principal, then the academic programmes head and lastly with the student support manager. The interviews with the two DHET representatives were also conducted face to face at their offices. Only two of the SETAs respondents had face to face interviews and the rest of the interviews with the other respondents were conducted telephonically.

3.3. Methodology

As argued by Ary et.al (2010:29-31), the researcher focused on understanding the features that set-apart the NC (V) programme and how the programme is expected to benefit the students in accessing the labour market opportunities and the institutions of further and higher learning. Qualitative research refers to research that analyses verbal or written data and is concerned with the themes and meanings in the data. Quantitative research methods involve analysing numbers, such as statistics that are generated via survey research. The blending of qualitative and quantitative research is referred to as mixed methods. Mixed methods can incorporate the strengths of both approaches, obtaining a more comprehensive view of the topic without limiting the data being collected (Renata: <http://www.ehow.com/how>). The researcher used the two methodologies, namely, qualitative and quantitative for data collection and this is described in the next paragraphs.

3.4. Qualitative research methodology

The qualitative researcher seeks to discover the meanings that participants attach to their behaviour, how they interpret situations, and what their perspectives are on particular issues (Woods, 2006: 40-41).

Woods goes further to say there is a wide range of approaches to qualitative research, however, most qualitative approaches have:

- a focus on natural settings; (the interviews for this study are conducted at the colleges, in the offices and through the natural environment that does not reflect any simulation and thereby ensuring most conducive setting for the participants)
- an interest in meanings, perspectives and understandings; (the researcher focuses on the content and the accuracy of the responses but also listens to the meanings, perspective and understanding of the participant from his viewpoint)
- an emphasis on process; (for the fact that three colleges and various organisations are interviewed, a clear process is followed for the reliability and validity of the results)
- a concern with inductive analysis and grounded theory. (the researcher has embedded knowledge and previous experience of how the colleges function and this is used to assist the analysis process without undue influence)

Qualitative research unlike quantitative approaches is less structured than most and it does not rely on self-response questionnaires containing structured response formats. For this study, the interview schedule with structured questions is used. The questions are categorized for different participants such the college principals, college student support managers, employers. The qualitative research is more researcher-dependent in that the researcher must extract meaning from unstructured responses, such as text from a recorded interview or reports representing the meaning and experience. For this study, the researcher recorded the interview data by taking notes and by using voice recorders where the interviewees consented to it.

The NC (V) qualification was an independent variable and the dependent variable was the post college destinations of the graduates, which the researcher explored.

This study in particular focused on the impact that the NC (V) programmes had on the post school activities of the graduates. The second point of interest to this study was around the views and opinions of the beneficiaries of the NC (V) programmes in the form of graduates, colleges, department of education, the employers, institutions of higher learning and the public. Their perspectives and understanding of the influence such a qualification had was of paramount importance to this study. Woods (2006: 42) argues that research methods employed have to be sensitive to the perspectives of all participants. In addition, the methods must pick up the interaction between perspectives and situation to see how they bear on each other. In this study, the sample was four cohorts of graduates drawn for a period of four consecutive years from the three colleges. For the purpose of this study the cohorts meant the four different groups of the NC (V) engineering graduates who completed their studies from the three NWP colleges between 2009 and 2012. The qualitative methodology was used for the gathering of information from the study participants, in particular, the interviews, reports and documents related to the progress made by respondents after their college study. The respondents of the interviews were the academic heads of the colleges, the curriculum senior official from the Department of Higher Education and Training, and the students support managers responsible for students' placement and tracking system. The graduate's data was mainly collected by the questionnaire. To validate information from the graduates and the secondary employer, and feedback collected by the student support managers, the researcher interviewed a representative of the employers and the higher institutions of learning where the college graduates were employed or studying.

Ary et al. (2010:29-31) state that *"qualitative researchers seek to understand a phenomenon by focusing on the total picture rather than breaking it down into variables. The goal is a holistic picture and depth of understanding rather than a numerical analysis of data"*. There were a number of possible and interesting variables that could still be researched further in this topic, however, the researcher agreed with Ary on the statement of understanding a phenomenon, hence, the focus was on the overall impact and influence of the NC (V) qualification on the post college activities on further learning and employment prospects of the graduates.

3.5. Quantitative research methodology

Quantitative research is a formal, objective, systematic process in which numerical data are used to obtain information about the world. This research method was used:

- to describe variables; (for this study two variables are clarified as the NC (V) qualification - independent and the student destination as the dependent variable. The questionnaire collected information concerning the relationship between the two variables)
- to examine relationships among variables; (the impact of the NC (V) qualification depended on the extent to which the graduates were able to access entry into their destinations of choice in relation to NC (V) to determine cause-and-effect interactions between variables' (Burns and Grove 2005:23). In this study the quantitative research method was used to examine relationships among variables as well as to determine cause-and-effect interactions between those variables as discussed in point 1.2 of this study.

Hohmann (2005:71) explained that quantitative research methods were originally developed in the natural sciences to study natural phenomena, whilst Burns and Grove (2005:37) states that “quantitative researchers attempt to remain detached from the study and from the sample in studies where the sample is made up of human beings. They strive to maintain objectivity, in other words they try to not influence it with their own personal values, feelings, and experiences. This is because quantitative researchers believe that researcher involvement in the study could bias it. By 'bias it', they mean that they do not want to sway the study towards the perceptions and values of the researcher, rather than allowing the hard scientific facts to hold sway. Biasing a research study is considered by scientists as being poor scientific technique and is definitely a no-no in quantitative research”. This principle, as attested by Burns, was of vital importance in shaping the design of this study. As indicated in chapter 1 and elaborated later under the subsection dealing with the research approach, the design of this study was a survey using questionnaires in the main because the questionnaires can solicit comprehensive data with respect to the research questions.

3.6. Population and Sample

The total population for this study was identified from the three colleges which offered the National Certificate-Vocational NC (V) Level 4 to students who have passed their engineering programmes and were regarded as NC (V) graduates. As indicated in chapter 1 at point 1.2 of this study that the NC (V) programmes were newly designed and rolled out from 2007 in all 50 Further Education and Training Mega-Colleges including the three Colleges of the North West Province. The total number of the graduates, who passed during the first year of graduation in 2009, to the fourth year of graduation in 2012, composed the population of this research. The minimum duration for the NC (V) qualification is three years provided that a learner passes all seven subjects at each level of the qualification. Lists of four cohorts from the engineering field in the three colleges, comprised of eleven campuses, were received and created a sample of the research study.

3.6.1. Purposive sampling

This is the most important kind of non-probability sampling. Researchers rely on their own experience, ingenuity and/or previous research findings to deliberately obtain units of analysis in such a manner that the sample they obtain may be regarded as being representative of the relevant population (Welman and Kruger, 1999:63). For the purpose of this study 180 former NC (V) students in the engineering field who completed their studies between 2009 and 2012, nine college officials, one DHET senior manager, ten employers, and representatives from Universities and SETAs, were purposively selected to form a sample to be interviewed. Neuman (1997: 201) refers to sampling as a process of systematically selecting cases for inclusion in a research project. When a researcher randomly assigns, he or she sorts a collection of cases into two or more groups using random process. A researcher can both sample and randomly assign. The researcher in this study chose the route of purposive sampling because of the specificity of the target group. For the collection of both the quantitative and the qualitative data, the researcher used the purposive sampling in selecting the participants.

Neuman (1997: 222) argues that a sample stands for or represents the population. Researchers are not interested in samples in themselves; they want to infer to the

population. This research study on the NV (C) qualification in the North West Province was conducted on specific focus groups of the NC (V) graduates between 2009 and 2012 in the engineering field. From the lists received from the colleges, 180 graduates were purposively selected on the basis of complete contactable data and were requested to respond to the questionnaires.

The researcher identified and verified the lists of all former NC (V) engineering students who had completed three years of vocational programmes and had graduated from the colleges between 2009 and 2012. The researcher was able to obtain student names and addresses from the completed college lists. Given the focus of the research study on the engineering field, the estimated population is 600 graduates and 180 graduates were used as a sample. The researcher selected twenty for each of the three programmes for each of the colleges to ensure equal representation per programme per college. Vockell and Asher (1995: 170) define population as ‘the entire group from which the sample is drawn.’ The sample in this study was drawn from a population in the North-West Province. The research population and sample comprised students from three colleges in the North West Province as shown in TABLE 3.1 below:

Programme	North West Province Public Further Education and Training Colleges			Total
	Orbit	Taletso	Vuselela	
	2009 - 2012 No of Graduates			
Civil & Construction	20	20	20	60
Electrical	20	20	20	60
Engineering & design	20	20	20	60
Total	60	60	60	180

TABLE 3.1: Sample by College and by programme

3.6.1.1 Interviews sample

As indicated in the earlier paragraph that for the interviews the researcher selected nine officials from the Colleges, two from the DHET, three from the SETAs, two from the Universities of Technology and ten from the employer organisations. These were officials whose work was fully linked to the NC (V) graduates, or was a responsible official for the institution or the organisation. For the colleges the researcher used his background experienced of having worked at the colleges and selected from each of the three colleges, the Principal or the Deputy as the officer responsible for the College, the Head of Academic programmes as an official responsible for the teaching and learning in all the programmes including the NC (V), and the Student Support Manager as an officer responsible for the college internal and exit support of the students. For the rest of the sample from the other remaining organisation, the researcher relied on the assigned or delegated official by the organisation.

From the DHET the interviews respondents were the Chief Director representing the Deputy Director-General responsible for the Colleges and the Director responsible for curriculum development for the Colleges. All twenty-one SETAs were invited to participate in the research study because they are the intermediaries between the colleges and the workplaces. Three SETAs responded and formed part of the sample (one Chief Executive Officer and two Senior Executive Managers responsible for programmes and quality assurance). All the six Universities of Technology and one comprehensive University (i.e a South African University a traditional university that also comprises of a university of technology) out the total of twenty-one universities were invited. The selection of the universities was based on their establishment of work integrated learning units which got them closer to industry, the SETAs and the Colleges. Two Directors of Cooperative Education Departments from the Universities of Technology participated. Lists of companies that recruited students were received from the Colleges. From a total of thirty companies ten companies formed part of the sample and their eight Human Resources Managers and two Technical Department Supervisors were interviewed. The interview schedule was arranged as follows:

INTERVIEWEES	INSTITUTIONS AND ORGANISATIONS							
	DHET	Orbit	Taletso	Vuselela	Employer	SETA	University	Total
Deputy Director – General FETC	X							2
Principal		X	X	X				3
Deputy Principal		X	X	X				3
Student Support Manager		X	X	X				3
SETA						X		2
University							X	3
Employer					X			9

TABLE 3.2: Interviews Schedule.

3.7. Qualitative ethical consideration

Neuman (1997: 376) states that a researcher learns intimate knowledge from the field that is given to him or her in confidence. He or she has a moral obligation to uphold the confidentiality of data. This includes keeping information from others in the field confidential and disguising members' names in the field notes. Neuman (1997: 377) adds that the intimate knowledge and reports that the researcher obtains, on the one hand, and the rights of the respondent on the other, create a dilemma. For this reason the researcher contacted the Student Support Managers through the College Principals to obtain lists of the graduates with an undertaking to use them only for the purpose of the research and that the consent of the graduates had to be obtained.

The necessary permission to conduct the research and requesting individuals to co-operate with the researcher was applied for and obtained. For this purpose four letters were issued, one to the Department of Higher Education and Training, and the other three, containing similar content, were sent to the three colleges in the North West Province. Henning, van Rensburg and Smit (2004:73) indicate that respondents need to give informed consent to participate. This means that they had to be fully informed about the research study in which they were going to participate. They needed to know that their privacy and confidentiality would be protected and what was going to happen with their information after recording. To this end, the graduates were provided with general

information about the researcher, and about the purpose and scientific nature of the research.

The first communication was conducted with the Director-General of the Department of Higher Education and Training (DG of DHET). After a week, the researcher received confirmation from the Director-General that approval to conduct research had been granted. The second communication was with the principals of the three colleges. An approval letter from the DG of DHET was attached to letters for the principals. Approvals from the three colleges were received after a number of e-mails and telephone reminders and follow-ups had been issued. Consent letters to the employers, universities, the SETAs were also emailed. For the graduates' consent were mostly requested telephonically before the questionnaires could be completed.

3.8. Instrument Design - Questionnaire

Imenda and Muyengwa (2000: 150) stipulate that questionnaires are typically used to glean information from a large number of people about the way they think and behave. Questionnaires are usually employed in surveys because of their capacity to reach large numbers of people. Questionnaires, as in the case of all instruments, should be designed in such a way that each major section corresponds to one of the research questions, hypothesis, and/ or objectives. The questionnaire was designed to gather general information concerning the respondent's vocational engineering experience, information concerning the educational activities of former vocational engineering students after college graduation, and the degree of impact vocational engineering training had on the decision to participate in educational activities. The questions on the instrument were designed by the researcher himself after reviewing the reports and literature relating to the purpose of the NC (V) programme as well as the objectives of the study. The major objective of the educational advancement section of this study was to determine the impact of NC (V) programmes on the educational advancement of former students as measured by:

- attendance, and success at a public Further Education and Training College, and
- the post-college educational, further training or employment progress of the former student.

The questionnaire was distributed mainly electronically by e-mail, but for those graduates without e-mail facility, other means such as fax, post and telephone were used. The first section of the survey questionnaire was meant to gather general administrative information relating to biographical data. Data collected included contact details of the sample population, and analytical reports on the throughput rates from the colleges and Department of Higher Education and Training. The second and third section of the questionnaire meant to gather information on the background and experience of the graduates when entering the college and during their education and training lifespan. The last section of the questionnaire elicited information regarding the impact of the NC (V) on the graduates outside the college environment.

The structure and approach to the questionnaire sought to solicit far more detailed information on the graduates' college success and the post college experience. The researcher employed a mixed form of questioning. Multiple choice questions allowed respondents to offer different responses to the same questions. When using these types of questions, it became easy to complete the questionnaire and the answers from the NC (V) sample group were checked quantitatively with ease. The rating scale such as the Likert was used to allow for more open-ended responses. This approach accommodated extreme views. Open-ended questions soliciting qualitative responses were used to elicit the opinions of respondents. Care was taken in the analyses of this type of question as there was possibility of subjectivity. The order of the questions was designed in a friendly way and ranked from the more comfortable to the complex ones. Questions were made simple and written in a language familiar to the respondents. The questions were grouped together around similar topics to facilitate a quick and easy way of responding.

The first section of the questionnaire addressed the gathering of general information. Closed-form questions were used to gather demographical information including gender, age, race, and name of college attended; engineering programme field; student academic background and other information regarding the college experience. Sections B and C of the questionnaire were used as multiple choice and open-ended questions to gather information on the college experience commencing from the time of admission to exit. The experience covers academic, financial and social services support to enhance the students' chances of completion. A very interesting question related to whether the student would recommend the NC (V) programmes to others was also included. The last

section of the questionnaire gathered information regarding the post college experience and whether the NC (V) qualification influenced the post-college destinations of the graduates.

3.9. The Pilot Study

A pilot test was conducted by means of a questionnaire applied to a small group of final year NC (V) students as these respondents were in many respects similar to those in the final survey. The questions in the questionnaire are based on the research questions.

Neuman (2006:276) emphasizes that when preparing a questionnaire, the researcher thinks ahead to how he or she will record and organise data for analysis. He further emphasised the importance of piloting the questionnaire in order to ensure clarity and completeness of the questions. Open and closed questions were used both in the questionnaires and in the interviews as these tend to serve complementary purposes because the open questions are inclined to be subjective whilst closed questions are objective.

Thirty questionnaires were given to the NC (V) L4 students and 14 completed questionnaires were returned. The nine college officials were also requested to provide their opinions on the questionnaire and by participating in interviews. The researcher used the results of the completed questionnaires to review and modify the questionnaire as follows:

- The purpose of the questionnaire was clarified in order to be transparent to the respondents.
- Question 7 and 8 were incomplete and were accordingly completed.
- The fourth option of “2012” was added to Question 9.
- There was a typographical correction on question 17 “NC M (V) to NC (V)”.
- Question 20 was reviewed to address one question instead of two.

3.10. Elements of the Questionnaire

The researcher identified key elements for the questionnaire in order to address the aim and sub-aims of the study as captured in point 1.5.5 of chapter 1.

3.10.1. Biographical

Biographical data was used for statistical information to assist in determining issues of demographics, gender stereotypes in male dominated career fields, and equity issues that relate to people with disabilities and age factors.

3.10.2. Educational

The educational aspect was limited to the entry level of a student into the first year of NC (V) programme, which is Grade 9. The focus was mainly on the individual educational experience of the graduate at the college such as college climate, student support services, academic support, and relevance of the chosen programme. The quality of educational support services during the college life and the experiences were later compared to the post-college readiness to solve or to cope outside the college environment.

3.10.3. Post college activities

The post college activities refer to the options opened for a student to be able to further his or her studies and includes the field and the type of institution whether the graduate is employed through learnerships, apprenticeship or internship, whether permanently or temporarily, and what the job entails. Understanding and knowing the post college activities of the graduate enabled the researcher to correlate the NC (V) qualification with the opening of the job placement and further educational opportunities for the graduates.

3.10.4. Future plans

The study probed the kinds of future plans graduates contemplate with respect to their careers, further studies, and employment opportunities. The outcomes would assist the researcher to test impact of NC (V) on the future plans of the graduate.

3.10.5. Graduate opinion of NC (V) programme

The last section of the questionnaire solicited information relating to the general opinion of the programme by the graduate. This section ensured the capturing of salient issues that were missed by other sections, and also validated the responses in the rest of the questionnaire.

3.10.6. Methods and Figure 1.3 on the impact of NC (V)

The process used to develop the list of background and experience variables is shown in Figure 1.3 on the next page. The graduate's route of background and experiences was captured from the time of entry into the college environment, and then as they proceeded through the activities during the period of study from Level 2 to 4 of the NC (V), and finally when the graduate progressed towards the certification or graduation day. After the certification that signalled exit from the college, the graduate was faced with possibilities such as employment opportunities, further studies, self-employment or even lack of employment. This fact is clearly articulated in the National Skills Development Strategy 2011-2016 under outcome 4.3.1 that states, *"the National Certificate (Vocational) and N-courses are recognised by employers as important base qualifications through which young people are obtaining additional vocational skills and work experience, entering the labour market with marketable skills, and obtaining employment."*

The existing literature was examined to determine if other researchers had identified potential variables that could be used. The researcher's previous personal experience as a student at colleges, employee in industry, lecturer and manager at some colleges, assisted him in understanding salient variables associated with the study. The initial interviews with the student support services unit managers added to and provided

guidance during the utilization of the knowledge gained from the literature and own experience in order to create a list of variables on the background and experience of graduates.

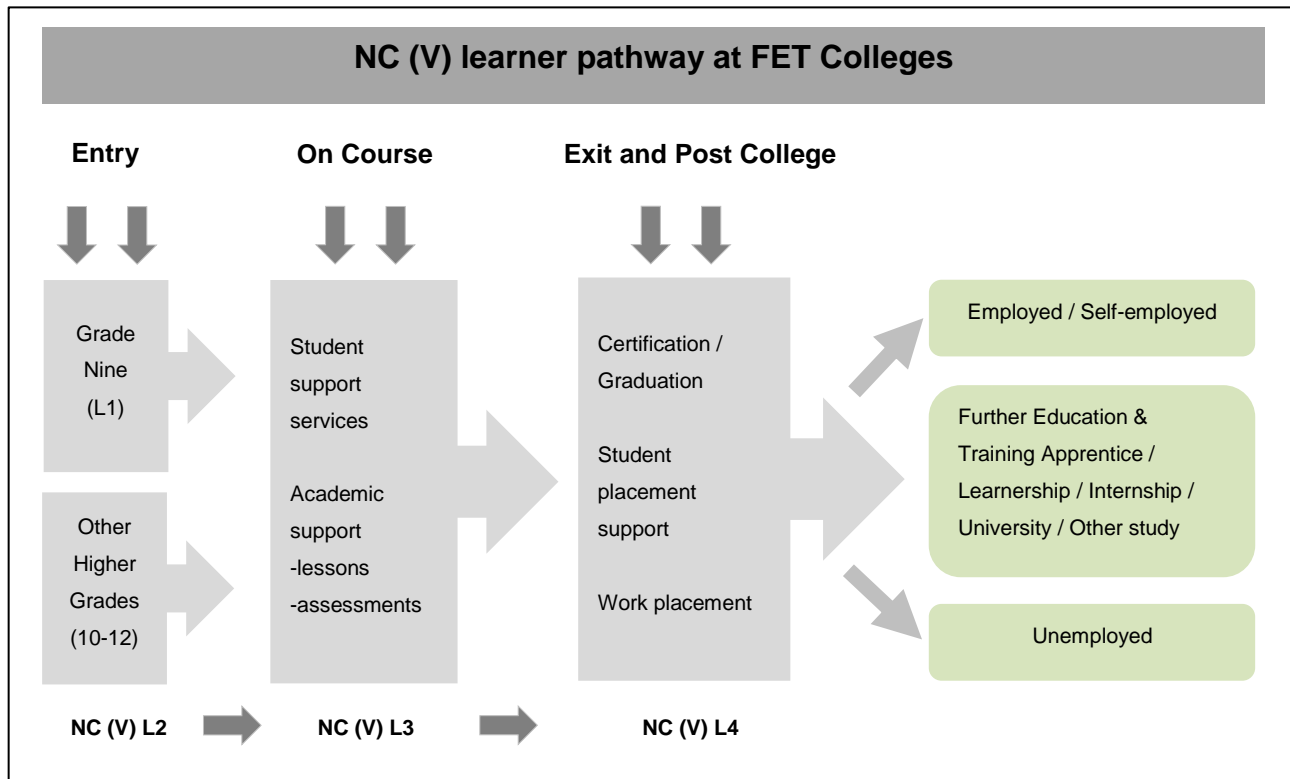


DIAGRAM 3.1: NC (V) learner pathway at FET Colleges – Own compilation

The vocational element of the NC (V) programme related to how the knowledge and skills gained during the period of learning whilst at the college directly or indirectly influenced the post college life of the graduates. Variables in the list were evaluated to determine the appropriateness and relevancy to the study. The approach to evaluate the variables was guided by the draft criteria as indicated below:

- NC (V) curriculum relevance that addresses the vocational and occupational knowledge and skills required in the workplace while also meeting the entry or articulation requirements for further training NC (V) scope addresses the extent the graduates' knowledge and skills are expanded in relation to the job requirements.
- NC (V) instructional period refers to the required time for the graduates to be able to apply the knowledge and skills learnt in a work situation.

Data accuracy related to the correctness of information from the colleges and information provided by the graduates. The listed four criteria covered aspects related to the background and experience of the graduates during training at the college and the post-college work or further study experiences.

DIAGRAM 3.1 depicts the student's pathway in the FET career study programme. The diagram shows different stages of the pathway into NC (V) level 1 programme using different entry qualifications such as grade 9, 10, 11 and 12. The researcher included this anomaly as a variable in the questionnaire to examine its influence on the achievement of the students. Stages two and three addressed the tuition, academic support, assessment, certification and aftercare support given to the student during the enrolment in NC (V). These elements formed part of the questionnaire and interview questions. The diagram further shows the possible impact of the NC (V) qualification on the graduates when attaining entry into the labour market, further education and training or pursuing self-employment opportunities.

3.10.7. Research questions

The research questions were developed with the aim of determining the academic status, background experience and destinations of the students, which indicate the degree to which the NC (V) qualification impacted the careers of the graduates. The academic status of students at entry stage depicts students' readiness and is particularly important for ensuring success in the engineering field as per the requirements for admission into the programme.

The questions below formed the basis of the survey questionnaire aimed at understanding how the respondents experiences of NC (V) programme from the time of admission into the college until graduation time. The impact of the NC (V) qualification is determined by the extent to which graduates were able to seize labour market and further study opportunities.

The first question concerned the entry qualification of students; although the official admission requirement to NC (V) is grade 9, learners with grade 10, 11 and 12 were also admitted at the entry level. The results were classes of students of differing academic levels that influenced the extent to which the NC (V) qualification impacted the careers of

the graduates. Another example is the second question that gathered data about background knowledge in both subjects required for all engineering related programmes. The data in question informed the graduate performance at exit level.

The questions were as follows:

Questionnaire

- At what grade or level was your Mathematics and Science when you entered NQF L2?
- How long did it take you to complete NC (V) Level 4?
- When did you complete NC (V) Level 4?
- Which Engineering study field did you complete?
- What are you currently doing? (options: Employed, Self-employed, Student, Unemployed, Other - apprentice, learnership, internship)
- Are you studying or pursuing studies in North West Province?
- Did you receive career guidance, counselling and induction at the college?
- How would you rate Student Support Services at your college?
- How would you rate academic support you received during your study at the college?
- Would you recommend NC (V) engineering qualification to anyone?
- How would you rate the exit support of the college (this includes, placement into workplaces, university, learnerships, apprenticeships, etc).
- How long have you been studying / training / employed / unemployed since you graduated from the college?

Subjective questions

The section afforded the respondents an opportunity to express their views or opinions:

- What did you like or dislike about the NC (V)?
- To what extent did the NC (V) qualification influence your current choice of destination (study, work, further training)?

- Is your current study / training / employment in line with your NC (V) qualification? If, Yes, mention your study/training field or employment position and category How did/does NC (V) qualification assist(s) you in your studies / training / employment?
- How would you summarise your experience, benefits and the relevance of NC (V) qualification in 100 words?

3.11. The Research Approach of the Study

The research surveyed all graduates of the first NC (V) level 4 graduates of 2009, the second cohort of 2010, the third cohort of 2011 and the fourth cohort of 2012 in the engineering field from all three colleges of the North West Province. Babbie (2007:244) states that survey research is probably the best method available to the social researcher who is interested in collecting original data for describing a population too large to observe directly.

The researcher was indeed unable to directly observe the graduates at their various destinations however; he could reach all of them through survey questionnaires. Babbie (2007:244) further indicates that careful probability sampling provides a group of respondents whose characteristics may be taken to reflect those of the large population and carefully constructed questionnaires provide data in the same form from all respondents. As attested by Babbie, the research results of the NC (V) graduates in the North West Province can be used at a National level to extrapolate similar patterns for the other provinces as they offer the same programmes. The survey questions solicited the following information from the graduates as well as from the employers:

- Biographical data that provided information related to age and gender of the respondents, which are important statistical variables.
- Educational information relating to entry into the NC (V) programme to determine the correlation to academic achievement.
- Post-college activities that refer to the destinations of graduates such as work placements, apprenticeships, further learning and other career related opportunities.
- Future plans that refer to the plans of the graduates beyond the current post school activities such their career success and achievements.

- Graduate opinion of NC (V) programmes that relate to the graduate's experiences of the NC (V) programme. The information might be useful in future review of the programme.
- Employers' opinion regarding their experience and perceptions of the performance of the NC (V) graduates.

A sample of 180 NC (V) engineering graduates was sent a questionnaire containing questions related to the above stated areas. 70% of the questionnaires were completed telephonically while 30% of the responses were received from the College Student Support Services. The interviews responses from the Colleges, the representatives of the SETAs, the DHET, the Universities as well as the employers helped to validated the questionnaire responses to an extent as this was evident in chapter four and five. The purpose of the interviews was to search for related, additional and important information that might have been missed by the questionnaires and also to validate the data gathered from the graduates.

3.12. Interviews

The interviews were conducted at three different levels at the selected colleges. The first level interviews were conducted with the principals or deputy principals to gather information concerning the purpose of the NC (V) qualification. The second level interviews were held with the managers responsible for the academic programmes, including the NC (V) programmes. The researcher wanted to know the success stories and the challenges related to the implementation of the NC (V) programmes. The last level was the interviews that were with the student support managers responsible for the academic and social support of the students at the colleges. The objective of the interviews was to understand the support provided to the students at the colleges as well as the post-college support.

Woods (2006:47) explains that a great deal of qualitative material comes from talking with people whether it is through formal interviews or casual conversations. If interviews are going to tap into the depths of reality of the situation and discover the subjects' meanings and understandings, as with observation, it may be that the researcher should begin with a more focused study and to ascertain specific information. In these cases a structured

interview might be more appropriate. Here the researcher decided on the structure of the interview and set out with predetermined questions. As with systematic observation, this is less naturalistic. Within this space, the same techniques as above might apply, but there is clearly not as much scope for the interviewee to generate the agenda. For this reason, some researchers use semi-structured interviews – interviews, which have some pre-set questions, but allow more scope for open-ended answers. In this research nine interviews were arranged with the three colleges, one interview with the representative from the DHET and several employers. The research took a structured format as participants were asked questions in a written questionnaire during an interview and the answers recorded and notes were taken. Neuman (1997: 31) states that the researcher manipulates no situation or condition; people simply answer questions. The researcher asks many people numerous questions in a short period of time, and typically summarises answers to questions in percentages, tables or graphs.

3.13. Limitations of the Study

The researcher as an employee of the Department Higher Education and Training stationed at the national office, conducted the interviews with all the participants from the national office himself, and received additional reports on student performance. This may have influenced the neutrality and responses of the participants during the interviews. This also raised issues of possible misinterpretation of what was said as the information was subjected to the researcher's interpretation. Time and financial constraints were some of the chief reasons the researcher chose the sample within the three colleges of the North West Province and the head office.

The study focused only on the students who graduated and did not take into consideration the NC (V) students who were recruited whilst still studying. Some of those students might have diverted from the NC (V) programme to other programmes.

3.14. Summary

In this Chapter, the research design and the methodology on how the researcher intended to investigate and assess the impact of the National Certificate (Vocational) in the engineering field on the post-college destinations, and activities of the graduates from the three colleges in the North West Province was discussed. Chapter 4 will reflect on the data consolidation, presentation and analysis on the research study.

CHAPTER FOUR: DATA PRESENTATION, ANALYSIS AND INTERPRETATION

4.1. Introduction

In this chapter the reader is introduced to the following subheadings: introduction, data presentation, data analysis and data interpretation. The researcher reduced and displayed data from the questionnaire responses of the NC (V) graduates and the interviews. The aim was to present the evidence and analysis of the impact of the National Certificate Vocational level 4 qualifications in the engineering studies from the three FET colleges in the North West Province. The chapter presented and examines how collected data was analysed and verified in the study as discussed in the previous chapters. The methods used in the data collection process are explained in detail including the procedure followed in analysing data. The data was consolidated and analysed according to themes aligned to the main study problem and the sub problems in order to realise the main aim of the study and the sub-aims as stated in chapter 1.

4.1.1. Data presentation

The first category of the data from section “A” related to the general information outlining the demographics of the NC (V) graduates, data relating to experience and background variables of the research participants was consolidated and analysed. Sections “B and C” of the questionnaire provided data on the experience of the graduates at the colleges and their experience of post-college destinations. The data from the various interviews conducted with the respondents from the colleges, the Department of Higher Education and Training (DHET), the employers and the institutions of higher education and training was analysed to verify and validate the data collected through the questionnaires. The college interviews conducted with the principals, the academic managers and the student support managers were aimed at providing the general overview on the initial introduction and the background of the NC (V) programmes in the Further Education and Training Colleges.

In summary, chapter 4 presented the consolidation and analysis of the empirical inquiry according to two phases in line with the mixed methodology chosen for this study.

The first phase is the quantitative phase, which relied on the questionnaire and the second phase is the qualitative phase, which was informed by the interviews and the secondary data from the reports and the records.

4.1.2. Data analysis

The researcher studied the interviews reports and derived meaning from different records; he then identified constructs such as themes, incidences, patterns and trends. This was an imperative phase in determining what occurred rather than merely describing the events. Neuman (1997: 420) indicates that data in the form of words, which are relatively imprecise, diffuse, and context-based; can have more than one meaning. A structured interview schedule ensured that the interview sessions remained focused on the research aims and that similar questions were asked to all similar groups. Collins (1984: 353) attests that words are not only more fundamental intellectually; one may also say that they are necessarily superior to mathematics in the social structure of the discipline. For this study, quantitative data was analysed by clustering sub-questions in order to relate headings of these questions to the objectives of the study to facilitate an easy interpretation of information. Larger common themes were allocated a colour or number. These were counted and displayed in a table. Codes were counted and totals given for response frequency.

4.1.3. Data reduction

After the collection of data through the interviews, the questionnaires and the secondary source reports from the Department of Higher Education and Training (DHET), a data reduction exercise was conducted. Data reduction is a process of selecting, simplifying, abstracting and transforming the data that appear in written-up field notes or transcriptions (Mutshinyani 2002:73; Miles and Huberman 1994: 11). The researcher undertook a field study to determine the influence of the NC (V) qualification on the post college destinations of the graduates by acquiring data from college principals or deputy principals, the academic managers, the student support managers, the Further Education and Training Chief Director, the employers and the representatives from the institutions of

higher learning. Data gathered from the respondents was intended to verify, validate and support the information from the questionnaires. This information was used to support the objectives of the study and for the analysis purposes.

4.1.4. Data display

The study presented visual displays to show inferences and conclusions. The structure of the data was enhanced by the way it was organized, summarized and, simplified for the analysis and interpretation phase. Laporte (1997) and Patton (1990) state that qualitative researchers tend to use inductive analysis of data, meaning that critical themes emerge from the data. Qualitative analysis requires some creativity, for the challenge is to place the raw data into logical, meaningful categories; to examine them in a holistic fashion; and to find a way to communicate this interpretation to others. The study themes were categorised to ensure that logic and meaning were maintained, information was coded, and questions were aligned to responses.

4.2. Interviews

The interviews were conducted as per Table 4.2 – Interviews Schedule below, and data was organised by consolidating all information recorded and then reducing it through the process of identifying common themes and concepts. Cohen, Manion and Morrison (2000: 147) state that data analysis involves organising, accounting for, and explaining the data; in short, it is making sense of the data in terms of the participants' definitions of situation, noting patterns, themes, categories and regularities.

4.2.1. Section A: Planning, management and objectives / purpose of the NC (V) Qualification – Interview with the Principals.

Respondents: *The Principal or Deputy Principal of the three Colleges*

Two deputy principals and one principal from the three sample colleges were available to respond to this section of the interview schedule. The interviews were conducted at their

respective colleges on different dates. The respondents were identified as “PO”, “PT” and “PV”.

TABLE 4.1: Key concepts and common themes from the interviews with the College Principals

Question 1	PO	PT	PV
In your own understanding, what is the purpose of the NC (V) qualification?	<ul style="list-style-type: none"> - <u>Linking</u> theory and practice - Make education and <u>training effective</u> - Assist in driving the <u>skills agenda</u> - Equip the learners with <u>the skills competency</u> - Colleges <u>failed to understand the mandate</u> 	<ul style="list-style-type: none"> - Allow students to <u>articulate to further</u> learning and training - Meant for <u>vocational and occupational</u> training purpose and <u>not for academic study purpose</u> - For <u>self-employment and entrepreneurship</u> 	<ul style="list-style-type: none"> - To <u>replace NATED N-programmes</u> that were theoretical and lacking focus on the practical component - <u>Business was not happy with the N-programmes</u> - To provide simulation of practice learning of theory <u>and exposure to industry.</u>
<p>Analysis</p> <p>The respondents raised common views on their understanding of the purpose of the NC (V) programme and these views converged with the notion that the programme is aimed at preparing individuals with the vocation that should lead to an occupation. This notion is emphasised by the expressions such as linking theory and practice; skills competency; and exposure to industry. The second element of the programme addresses articulation for further learning, self-employment and entrepreneurship, and thereby playing a significant role in driving skills agenda. The respondents highlighted views that initially, the colleges did not understand the NC (V) programmes’ mandate, that the programme was not for academic study and that industry wanted responsive programmes.</p>			
Question 2	PO	PT	PV
Do you think the objectives of NC (V) are realised since inception in	<ul style="list-style-type: none"> - <u>Commencement was very slow</u> with low student numbers enrolling and <u>teething challenges</u> 	<ul style="list-style-type: none"> - <u>Objective is not yet fully realised</u> since <u>work integrated learning</u> is still not fully effective 	<ul style="list-style-type: none"> - <u>Not realised due to low entry requirement of Grade 9</u> and students <u>are too young</u>

2007?	<p>with regard to college readiness</p> <ul style="list-style-type: none"> - After seven years, the colleges are currently <u>experiencing growth in enrolment and improvement</u> of pass rates resulting in better spin-offs - Graduates <u>participate in industry workplaces</u> to concretise their understanding. 	<ul style="list-style-type: none"> - <u>Private Sector is not adequately involved</u> in opening –up <u>workplaces</u> for students - <u>SETAs have recently started to assist the colleges in placing learners in industry</u> since the establishment of DHET in 2009 	<ul style="list-style-type: none"> - Grade 9 students <u>share the same class</u> with <u>Grade 12</u> students making class management and teaching difficult - <u>Grade 12</u> students feel that they are <u>repeating levels of learning</u> with a different learning content - <u>Correct calibre of student</u> is not attracted
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Analysis

Early years of the programme was marked by teething problems that included slow commencement with regard to low number of students and the system was not fully functional. The respondents agreed that although the objectives of the programme have not yet been fully realised, there are signs of improvement such as student enrolment growth, increasing pass rate and placement of students into the workplace that is also facilitated by the SETAs.

The respondents alleged that the realisation of the objectives is also hampered by other factors such as the inadequate involvement of the private sector that is supposed to open up workplaces for students; low entry requirement of Grade 9 that leads to enrolment of students who are too young to deal with the college environment. Grade 9 students share the same class with Grade 12 students making class management and teaching difficult and those Grade 12 students feel that they are repeating levels of learning with a different learning content.

Question 3	PO	PT	PV
What informed the planning and management of	<ul style="list-style-type: none"> - <u>Engineering studies were critical</u> for the college and the community 	<ul style="list-style-type: none"> - <u>Campuses should be centres of excellence</u> and the three engineering 	<ul style="list-style-type: none"> - <u>Workshops are not big enough</u> to accommodate more than 15 learners

the NC (V) engineering programmes for your college?	<ul style="list-style-type: none"> - <u>Resourcing the college</u> was important for effective implementation - <u>Training of personnel, expanding infrastructure</u> and ensuring that the required funding is solicited 	programmes are divided per campus	<ul style="list-style-type: none"> - <u>Shortage of staff and the required machinery</u> due to lack funding - Existing <u>partnerships with some industry</u> is at its infancy stage - Most of the <u>lecturing employees do not have industry experiences</u> as the college cannot afford industry experienced lecturers - From level 4 <u>students can go into artisan training articulation to higher education institution.</u>
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Analysis

Planning and management of the programme was influenced by the fact that the college and community viewed engineering studies as critical in meeting the skills needs. Planning considered resourcing of the college with the required equipment; expansion of infrastructure; and training and increasing the number of personnel. Planning considered turning campuses into centres of excellence. Transitional challenges, which included staff shortage, obsolete machinery, weak public-private partnerships and under-qualified, inexperienced lecturers, had to be managed.

4.2.2. Section B: Teaching, Learning and Assessments – Interviews with the Academic Manager

Respondents were the Academic Programmes Manager from the three colleges. The interviews were conducted at the three colleges on different dates. The responses were coded as “AO”, “AT” and “AV.”

TABLE 4.2: Key concepts and common themes from the interviews with College Academic Programme Heads

Question 4	AO	AT	AV
What is your perception and that of the teaching staff about the value of the NC (V) qualification?	<ul style="list-style-type: none"> - There are <u>different perceptions</u> about the value of the NC(V) qualification - <u>Relevance to industry; Industry involvement</u> in supplementing training or learning that is taking place at FET Colleges - Understanding the <u>direction the country needs to take to close skills gaps</u> - Student apathy - Management of colleges and lecturing staff <p>Qualifications</p> <ul style="list-style-type: none"> - The qualifications can achieve much more than they do currently - All stakeholders should begin to see and acknowledge the immense positive contribution these qualifications can have, and that all the teething challenges that are 	<ul style="list-style-type: none"> - All stakeholders should begin to see and acknowledge <u>immense positive contribution</u> these qualifications can have, and that all the teething challenges that are evident - <u>Mind set was not adapted</u> and have since improved - <u>NATED programme and NC (V) will be on par</u> given the work of the Quality Council for Trades and Occupations (QCTO). 	<ul style="list-style-type: none"> - Because of the <u>potential it has in impacting</u> the careers of the students - Programme <u>provides opportunities</u> after completion unlike Grade 12 that is an exit level at the school level which does not offer the work ready skills - <u>Lecturing employees were resistant</u> to the NC (V) programme in the beginning and there was <u>lot of administration</u> work at initial stage - There is a <u>change of mind-set and lectures see value and enjoy the dynamics</u> of the programme

	evident.		
Analysis <p>There were different perceptions about the value of the NC (V) qualification; such as lack of recognition of qualification by employers; relevance to industry; Industry involvement and understanding the direction the country was taking regarding the provision of the needed skills. One of the perceptions is that the programme can contribute in closing skill gaps and producing work ready graduates.</p>			
Question 5	AO	AT	AV
What is the experience of teaching staff in offering the NC (V) curriculum particularly in the engineering stream?	<ul style="list-style-type: none"> - There is a <u>critical shortage of sufficiently and/or relevantly qualified staff to do justice to the programmes</u> referred to. - History dictates that there has been a very <u>thin supply of engineering related educator who has the didactic skills to deliver effective teaching and learning delivery.</u> - The shortage has led to colleges recruiting <u>lecturers who have some exposure to engineering field who are not even artisans</u>, and these recruits are expected to do justice to the programmes. 	<ul style="list-style-type: none"> - Students and lectures are getting <u>acquainted with modern technology and work integrated learning (WIL)</u> approach as sponsored by the Education, Training and Development Practitioners (ETDP) SETA. - Part of the <u>ETDP SETA intervention is to place lecturers in industry for in-service training.</u> 	<ul style="list-style-type: none"> - The <u>lecturing staff was negative towards the new programmes, the NC (V) but that has since changed.</u> - “<u>Old toppies</u>” meaning old male lecturing <u>employees were resisting the change brought by NC (V)</u> but they have embraced change due to the recruitment of the NC (V) students by Anglo Gold mining industry.

	<ul style="list-style-type: none"> - <u>Colleges are not able to recruit and retain artisans due to the salaries</u> that are not competitive with the private sector. - The situation is worsened by the <u>lecturers engaging in blame shifting.</u> - However, the lecturers are expected to execute their professional duty by lifting the standards of teaching and learning in their respective areas. - Generally, <u>staff currently views the NC (V) programme positively.</u> 		
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Analysis

Question 5 shows that the lecturing / teaching staff's view was negative towards NC (V) programme particularly the "old male" lecturing employees who resisted change brought by NC (V) and worsened by the lecturers engaging in blame shifting. There was a critical shortage of sufficiently and/or relevantly qualified staff to teach the NC (V) programme. One of the SETAs assisted by placing lecturers in industry for in-service training. Introduction of modern technology, work integrated learning and in-service training for both lecturers and students made NC (V) appealing and attractive; thereby changing the negativity surrounding the programme. The lecturing staff embraced change due to the recruitment of the NC (V) students by mining industry.

Question 6	AO	AT	AV
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What is the pass rate and throughput rate of NC (V) L4 Engineering Programmes since 2007 to date?	<ul style="list-style-type: none"> - The <u>NC (V) level 4 pass rate has improved to 67%</u> since the first graduate cohort in 2009. - The <u>throughput rate is also gradually improving.</u> 	<ul style="list-style-type: none"> - Correct data will be made available at a later stage, although <u>there is gradual improvement in the pass rate and throughput rate.</u> - The NC (V) programme is one of the most difficult programmes, especially the engineering field particularly for the Grade 9 and Grade10 learners. - <u>It is observed that Grade 11 and Grade 12 learners perform better in the NC (V) programmes.</u> 	<ul style="list-style-type: none"> - Statistics for the pass rate and throughput rate are not broken down. Initially, <u>the pass rate was.</u> - <u>The throughput rate stands at 11% and 13%</u> for two campuses, whilst <u>the certificate rate is at 7%.</u> However, the pass rate for the other two campuses was at 60%-73%. <u>Generally students struggle with the pass rate in subjects like Mathematics and English.</u>
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Analysis

There has been an increase in the pass and throughput rates among NC (V) students. The pass rate and throughput rate of the initial cohort of graduates ranged from 11% - 13% with the certification rate being much lower at 7% in other colleges. There is a view that students struggle in subjects such as Mathematics and English that affect the overall pass and throughput rates.

Question 7	AO	AT	AV
What can be done to improve the NC (V) curriculum?	<ul style="list-style-type: none"> - For one to come to an informed conclusion as to what can be done to improve the NC (V) curriculum, the point of departure is to 	<ul style="list-style-type: none"> - It means <u>lecturers must improve their knowledge and qualification</u> for an example, lecturers and learners from carpentry 	<ul style="list-style-type: none"> - In general the curriculum is good as it allows students to link with industry. - Improvement on the curriculum is to <u>provide more</u>

	<p><u>understand the purpose of the NC (V) courses.</u></p> <ul style="list-style-type: none"> - These courses were aimed at <u>reducing irrelevant skills and increase skills that will be relevant to the needs of business and industry as well as create a platform for growing self-employed populace.</u> - These three critical areas do not make reference to enhancement of skills that are relevant to the day to day business operation, and there is <u>a need for captains of industry to continuously feed information for the development of NC (V) in industry.</u> - Failure to do this leads to a system that is playing guess work as to what is relevant to industry, and will <u>produce students who will have lost touch with the real world of</u> 	<p>programme were sent to Durban to <u>visit related companies.</u></p> <ul style="list-style-type: none"> - The group identified <u>good practice and areas of improvement on teaching and learning</u> were identified. - Additional comment is that the public has negative opinion of colleges. The perception is that offerings are of poor quality. - The NC (V) programmes are different from the NATED programmes and the SETAs are concentrating on the efforts to support the placements of student in industry. 	<p><u>placement opportunity.</u></p> <ul style="list-style-type: none"> - There should be a <u>bigger push by DHET to influence the establishment of college, SETA and industry partnerships.</u> - There should be <u>improved support from the DHET with respect to better administration system</u> and the revision of programme. - Additional comment is that there should be <u>better link with schools Department of Basic Education (DBE) that is responsible for general schooling phase and DHET in order to improve the quality of learners coming out of the schooling system</u> since failure to do so will lead to high failure rate at the level of the colleges.
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	<p><u>work.</u></p> <ul style="list-style-type: none"> - Furthermore, our country forms a critical part of the global business world, and therefore we need to up our <u>education, technology and skills to at least match some of the developed countries.</u> - We therefore need to look beyond our country and <u>learn from our global counterparts what trends</u> are emerging and what technologies are being adopted. - This implies that our <u>curriculum needs to reflect our position among the globally competitive world.</u> - It is important to state that there is nothing wrong with the NC (V) curriculum. - The problem is <u>entrance requirement which is grade 9 with a pass in mathematics</u> according to the 		
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	<p>DHET policy.</p> <ul style="list-style-type: none"> - This policy should be revised to <u>reflect entry requirement higher than grade 9.</u> - I should also add that we are not doing justice to FET Colleges by negatively profiling the system – colleges should <u>start sharing good experiences.</u> 		
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Analysis

Firm recommendations were made by the respondents that there is a need for captains of industry to continuously feed information for the curriculum review of NC (V) in industry to tighten college responsiveness to the needs of industry. Skills training offered should be of relevance to industry and also to enable students to become entrepreneurs. South Africa, and in particular the North West Province, forms a critical part of the global business world and therefore the review should ensure the programme is globally comparable. An additional recommendation is that there should be better link with schools, the Department of Basic Education (DBE) (responsible for general schooling phase) and the DHET in order to improve the quality of learners coming out of the school system since failure to do so will lead to high failure rate at the level of the colleges. There should be improved support from the DHET with respect to better administration system and the revision of programmes. The dilemma with regard to entrance requirements, which is Grade 9, that includes Grades 10 to 12 must be reviewed. Work placement or exposure of both lecturers and students may be significant in the long term in the improvement of teaching and learning. In essence, DHET should facilitate the strengthening of the partnership between colleges and SETAs. Some of the direct quotes from the respondents were:

“For one to come to an informed conclusion as to what can be done to improve the NC (V) curriculum, the point of departure is to understand the purpose of the NC (V) courses.

These courses were aimed at reducing to produce and increase skills that will be relevant to the needs of business and industry as well as create a platform for growing self-employed populace.”

“I should also add that we are not doing justice to FET Colleges by negatively profiling the system colleges should start sharing good experiences.”

4.2.3. Section C: Academic and Student Support Services – Interviews with the Student Support Managers

Respondents were the Student Support Managers of the three colleges and were given these codes; “SO”, “ST” and “SV”. The interviews were conducted at the three colleges on different dates.

TABLE 4.3: Key concepts and common themes from the interviews with College Student Support Managers

Question 8	SO	ST	SV
What academic and student support service is the college providing for the NC (V) students particularly in the engineering stream?	<ul style="list-style-type: none"> - Refers to additional <u>academic support such as language and mathematics proficiency skills.</u> - <u>Social support: life skills programmes such as learnership, self-management, time-tabling, financial aid, sports and work placements.</u> - <u>Entry support to guide prospective students to choose</u> 	<ul style="list-style-type: none"> - Pre-support services to prospective students by <u>giving information related to admission, writing of placement tests etc.</u> - <u>Support services include contact sessions with HODs for selection programmes.</u> - <u>Financial aid support for qualifying students.</u> - <u>And also HIV/AIDS</u> 	<ul style="list-style-type: none"> - Students are supported to make <u>informed decisions during registration time.</u> - They are given <u>tutoring support e.g. peer tutoring and laboratory for supplementary tutoring (PLATO).</u> - <u>Other support give to students include social services: sporting activities and sporting codes.</u>

	<u>programmes.</u> - <u>HODs assist students in the selection and placement process.</u> - <u>Laboratories assist students with special supplementary educational programme for language and science subjects.</u>	<u>counselling, career guidance and sporting activities.</u>	
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Analysis

Academic and student support services refer to additional academic support such as language and mathematics proficiency skills. The services include social support, life skills programmes such as leadership, self-management, time-tabling, financial aid, sports and work placements.

Entry support service guides prospective students to choose programmes they want to follow at the college. Other services provided are financial aid support for qualifying students, information related to admission, writing of placement tests and any other information that will assist the students.

Laboratories assist students with a special supplementary educational programme for language and science subjects. They are given tutoring support e.g. peer tutoring and laboratory for supplementary tutoring (PLATO).

Other support services given to students include social services, including HIV/AIDS counselling, career guidance and sporting activities.

Question 9	SO	ST	SV
<i>What is the perception of the students about the NC</i>	- In the past, students <u>perceived NC (V) qualification as not good at all</u> ; however,	- <u>Grade 12s feels that they wasted time at school</u> since they did <u>similar level</u> of	- Student <u>perceptions were negative particularly those who completed Grade 12.</u>

(V) qualification?	<p>they're currently <u>satisfied</u>.</p> <ul style="list-style-type: none"> - Students <u>are currently consciously choosing to enrol in NC (V) programmes</u> and there are <u>number of success stories</u>. 	<p>education.</p> <ul style="list-style-type: none"> - However, <u>Grade 9s are correctly placed for progression</u>. - <u>Most lecturers complained that NC (V) level is too high (complex) for Grade 9 and 10 students</u>. - For the first three years, <u>industry did not know the NC (V) programmes</u> as they knew NATED. - <u>NC (V) programmes provide students with practical experience and set it apart from NATED programmes</u>. 	<ul style="list-style-type: none"> - <u>Grade 9-11 learners are targeted as new entrants</u>. - Students are <u>counselled during placements</u> in different programmes with the funding support from SETAs.
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Analysis

Question 9 shows that in the past students perceived NC (V) qualification negatively. The negativity was mainly as a result of Grade 12s dissatisfaction of repeating same subjects as those of mainstream schooling and also the complexity of NC (V) for Grade 9s and 10s students. Furthermore, lack of recognition or popularity of the programme by the employers deepened the negativity towards NC (V) programmes. However, this negative perception is fading away because of better understanding and good performance of the graduates in the work environment. The programme's ability to offer students theory and practical, funding support and work placement by SETAs made it appealing to most students as attested to by some of the direct responses below.

"Students are currently consciously choosing to enrol in NC (V) programmes and there are number of success stories."

"Grade 12's felt that they wasted time at school since they did similar level of education."

“Most lecturers complained that NC (V) level is too high (complex) for Grade 9 and 10 students.”

“For the first three years, industry did not know the NC (V) programmes as they knew NATED.”

“NC (V) programmes provide students with practical experience and set it apart from NATED programmes.”

Question 10	SO	ST	SV
<i>How have the employees, industry and public reacted to the NC (V) qualification?</i>	<ul style="list-style-type: none"> - The <u>initial reaction was negative</u> and <u>change was resisted</u>. - <u>SETAs and NGOs collaboration on provision of internships assisted in changing the perceptions of college’s employees and industry</u> about the programme. - Business breakfast sessions hosted by colleges was meant <u>showcase the NC (V) graduates</u>. 	<ul style="list-style-type: none"> - Graduation ceremony was meant to have alumni and an alumnus unit has been recently established. - <u>Employers are appreciative of employed NC (V) qualification</u> graduates. 	<ul style="list-style-type: none"> - As indicated earlier, <u>industry did not believe or accept the programme</u>. - However, <u>negative perceptions changed and they are now recruiting NC (V) learners</u>.

Analysis

Question 10 shows that there was negative reaction from employees, industry and public concerning NC (V) programmes, mainly due to the fact that employers viewed graduates as under-qualified when compared to those from other public higher institutions including NATED graduates. The establishment of partnerships among the SETAs, the Colleges, NGOs and the employers as well as other interventions such as business breakfast

sessions played a significant role in changing negative perceptions of industry, students and the public towards NC (V) programme. Thus, employers have shown appreciation by recruiting more learners who pursued the qualification.

Question 11	SO	ST	SV
<i>Does the college have the NC (V) graduates alumni, and how do you get feedback from your previous students?</i>	<ul style="list-style-type: none"> - Yes, the college <u>alumni association and the NC (V) alumni is work in process.</u> - The college utilises on <u>various means of communications such as e-mails and short messaging services (SMS)</u> for getting feedback to their destinations. 	<ul style="list-style-type: none"> - The college has a <u>responsibility to promote (awareness) NC (V)</u> within the <u>community.</u> - <u>Word-of-mouth</u> and <u>evidence-based marketing</u> are effective ways to promote NC (V) programme. - <u>Student support unit</u> is currently <u>establishing alumni structures for the NC (V)</u> programme. 	<ul style="list-style-type: none"> - <u>Not yet established,</u> but will soon be set-up. - <u>Over 60%-70%</u> of feedback was <u>received from the college graduates.</u> - Alumnus will soon be <u>established to encourage and motivate future graduates.</u>

Analysis

Question 11 shows that NC (V) graduates alumni were in the process of being established by all the three colleges. Furthermore, colleges often utilised various means of communications, such as emails and short messaging services (SMS) for networking with former students. “Word-of-mouth” and evidence-based marketing were effective ways to promote NC (V) programme. The alumni association would serve as a motivator to current and future students.

Question 12	SO	ST	SV
<i>In your opinion, what can be done to profile</i>	<ul style="list-style-type: none"> - <u>Profiling work in the media should be done</u> by the college. 	<ul style="list-style-type: none"> - <u>Advocacy campaigns</u> should ensure better 	<ul style="list-style-type: none"> - <u>Open days for marketing purposes</u> were convened at the

and promote NC (V) students?	<ul style="list-style-type: none"> - There were attempts to expand the NC (V) which included sending arts student to Grahams Town as part of the <u>college advocacy</u>. - DHET initiated the <u>establishment of SETAs offices in the college to facilitate student placements in the industry</u>. - <u>Career guidance officers</u> must be present at the college <u>SETA offices</u> to <u>provide counselling services</u> to the students and the public. 	<ul style="list-style-type: none"> - understanding of these programmes. - There is a need to <u>review NC (V) programme entry level since Grade 9's are not coping</u>. - Lecturers widely <u>suspect that NC (V) was borrowed from the former Technikons</u> (currently University of Technologies). - Learners entering the <u>NC (V) programme at a higher grade than it is required should be accelerated</u>. - There is a partnership <u>agreement between the colleges with SETAs to provide work placements</u> to graduates. 	<ul style="list-style-type: none"> - college as well as the promotion of NC (V) qualification. - <u>Alumnus will be invited</u> to make <u>motivational talks</u> and in assisting to market the college. - Additionally, <u>process of an accelerated NC (V) programme for Grade 12</u> should be completed urgently.
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Analysis

Responses to question 12 indicated that the college should play a significant role in profiling and promoting NC (V) students and graduates. The establishment of alumni networks should be for post college support, motivation and marketing purposes. Learners enrolling for NC (V) programmes with higher grades than was required should be credited the units of study they had already passed, hence, the recommendation for the development of a fast tracked NC (V) programme. DHET initiated the establishment of SETAs offices in the college to facilitate student placements in the industry. Career

guidance officers must be present at the college SETA offices to provide counselling services to the students and the public.

4.3. Interviews and analysis – DHET

The Chief Director and the Director at the National Office of the Department of Higher Education and Training substituted the Deputy Director-General for Vocational Education and Training who was not available for the interview meeting with the researcher. The interviews took place at the national office and focused on policy matters relating to the NC (V) qualification.

4.3.1. Section A: Policy on the NC (V) Qualification – Interviews with Chief Director and the Director responsible for the FET College in the Department of Higher Education and Training at the National level

Section 4.3.1 presents data collected from the interviews with the Chief Director and the Director responsible for the FET College in the Department of Higher Education and Training at the National level. The analysis and interpretation of the responses was guided by the four main questions as per the interview schedule. Key concepts and themes that emerged from the interviews were highlighted by underlining them.

Question 13: *What is the policy that informed the conceptualization of the NC (V) qualification and its roll-out in 2007?*

Respondent: Conceptualisation of the NC (V) qualification was not necessarily informed by policy, but it was triggered by the research report done by UMALUSI the Quality Council for Further Education and Training. The research compared the mainstream Grade 12 to the FET College NATED levels (N1 – N3) that focused on occupational training whilst remaining equivalent to Grade 12. The report led into meeting between the then Department of Education (DOE) and industry.

As a result of the research report, a need to develop an alternative qualification was identified. The question we asked then was, do we improve NATED or develop new

programmes? The conceptual design was more aligned to the National Senior Certificate (NSC) that was recently introduced. The idea and thinking was that the NC (V) should have same rigour to NSC for progression to university. The other matter was Skills Development that had a myriad of programmes and this influenced NC (V) to have three levels to allow students in and out of the college and industry, but this proved to be incorrect due to low age of students.

Recapitalisation of the FET college sector coincided with the introduction of the NC (V) programme. In summary, there was no policy but a need for curriculum development particularly in the area of scarce skills existed. Scarce skills list by Department of Labour (DoL) guided the NC (V) development process.

Question 14: *What was the objective of the qualification and according to the National Department have these programmes met the envisaged outcomes, particularly in the engineering field?*

Respondent: Accelerated and Shared Growth Initiative of South Africa (ASGISA) report on the skills in short supply informed the need of the NC (V) programme particularly in the engineering field. We cannot say we have not met the needs since the rate is very low and no specific target was set and certificate very low. The NC (V) was aimed at producing a skilled citizenry. It was only after the development of FET plan in 2008 that targets were set to 1 million, 800000 for public colleges and 200000 for the accredited private training sector. The objective of curricula was to introduce a vocational education system programme that can articulate. The challenge is that if industry does not know a programme, it regards it as inferior. The first three years were a learning curve as the system was faced with teething problems.

Particular economic sectors were targeted during the development of the programme but their participation was not good. Moreover other variables were at play. The Association of University Principals, Higher Education of South Africa (HESA) agreed to the NCV framework whilst other individual universities still apply rules on deferential basis. In summary, ample research exists on the development of a holistic citizen and the NC (V) produces a good base for further development including artisans.

Question 15: *How did the Department ensure the buy-in and participation of industry, business and the community in the development and implementation of the NC (V) programmes?*

Respondent: Discussions were held with SETAs, but these were not helpful. Industry was only good at criticizing and not making meaningful input and industry environmental factors are fluid and ever-changing. A great deal of constituencies participated in the development but the challenge was in the implementing phase

Question 16: *How have the NW Province Colleges performed with regard to the NC (V) programmes in engineering field?*

Respondent: The College in the eastern part of the province has been performing comparatively well while the college in the Ngaka Modiri-Molema district has not been able to register upward trend. Colleges have been extremely stagnant and it was only recently that colleges looked into developing niche, particularly one college focused on mining industry, others on business, tourism and agriculture, as well as hospitality. The SETAs played huge role in influencing the choice of NC (V) in colleges.

Respondent: *Interview with the Director for Curriculum Development*

An interview with the Director for curriculum development was based on follow-up questions regarding the views of the DHET on the colleges, NC (V) programmes, Grade 9 as an entry level and other issues related to the programmes.

Respondent: NC (V) programmes are internationally comparable; The Department of Communication collaborated in the development and implementation of the NC (V) programmes. The pass and throughput rates are adversely affected by the quality of the learners (Grade 9) coming from schools. The college lecturers were not adequately qualified to offer the programme.

Question 17: *When will the NC (V) policy be reviewed and which areas will be revised and why?*

Respondent: Under normal circumstances seven years is adequate to review a programme and to update the subjects with input from college and industry. Programme reviews are undertaken to align the NATED with the NC (V) qualification.

4.3.2. Section B: Analysis of NC (V) programme / qualification pass rates – DHET Reports

This section of the study presents data that was sourced from the DHET reports and also collected from the three North West Province Colleges. The aim of the data on the pass rates in the three engineering programmes was to corroborate the information gathered from the interviews and by means of a questionnaire. The two DHET managers also referred to the NC (V) pass rate performance of the colleges.

Not all of the data required for this study was found in the form in which it could assist the study. In the meetings with the officials of the DHET who were responsible for examination results records and statistics, it was indicated that raw data was available but that it would need to be packed differently. Data, which was available was presented and analysed in TABLES 4.4 – 4.12

TABLE 4.4: Number of NC (V) Level 4 students who wrote and passed NC(V) examination by gender in 2010 in the North West Province (DHET 2010:27)

Gender	NC(V) Level 4		
	Number wrote	Number passed	Pass rate %
Female	255	120	47.1%
Male	227	97	44.9%
Total	482	217	45%

TABLE 4.4 displays the number of the students who wrote and passed the NC (V) level 4 in more than eleven NC (V) programmes in 2010 in the NW Province. There were more female students who wrote and passed than male students. 2010 ushered in the second cohort of the graduates since inception in 2007. 217 students representing 45% of all students wrote and passed level 4; however, this number did not suggest that all of the 217 students qualified for the exit certificate since some of the students carried lower level

subjects which they still needed to pass. The 217 was the overall number of all the 11 programmes and therefore the total number of the three engineering programmes that this study focused on could not be ascertained.

TABLE 4.5: National Pass rates of NC (V) students by level and programme, 2010 (DHET 2010:28)

Programme	NC(V) Level 4			National NC (V) L4 for all programmes	NW NC (V) L4 for all programmes
	Number wrote	Number passed	% passed		
CEBC	741	135	18.2%	37.5%	44.9%
EIC	1444	433	30%		
ERD	1419	376	26%		
Total	3604	944	24.73%		

TABLE 4.5 shows National pass rates of the NC (V) students per level and per programme in 2010, which was the second cohort of graduates since inception in 2007. Only 18,2% of 741 students on the Civil Engineering and Building Construction (CEBC) programme passed. This figure may not necessarily represent the certification rate that may be even lower. Of 1444 students who wrote Electrical Infrastructure and Construction programme, only 30% passed and whilst only 26% of 1419 students who wrote the Engineering and Related Design programme passed. The certification rate situation may be similar in all programmes; unfortunately the correct certification rate figures could not be obtained but the DHET officials, including the colleges, confirmed that was, in most cases, lower than the pass rates. TABLE 4.5 further displays the total figures for the three engineering programmes showing that the North West Province at 44, 9% performed better than National at 37, 5%.

TABLE 4.6: Number of NC (V) Level 4 students registered, wrote and passed, per course and gender in 2011 for FET Colleges (DHET 2011:23)

NC (V) Level 4	FEMALE			MALE			Total Regional	Total wrote	Total pass	Pass %
	Enrolled	Wrote	Passed	Enrolled	Wrote	Passed				
CEBC %	471	449	200 45%	874	815	326 40%	1345	1264	526	41.6
EIC %	1066	969	416 43%	1874	1694	720 43%	2940	2663	1136	42.7
ERD %	624	555	192 35%	2070	1835	616 34%	2694	2390	808	33.8
Total %	2161	1973	808 41%	4818	4344	1662 38%	6979	6317	2470	39.1

TABLE 4.6 provides data on the total number of male and female students who enrolled, wrote and passed at all the 50 colleges (at National level) in 2011. Although the number (enrolled and those who wrote exams) of male students was almost two times higher than that of the female learners, the pass rate of the female students was slightly higher than that of male students in 2011.

Female students scored 45% at CEBC compared to male students who scored 40%. In IEC both groups scored 43%, whilst in ERD female students scored 35% and the male students scored 34%. The average pass rate of female students was 41% and of male students was 38%.

TABLE 4.7: Students who entered, wrote and passed the NC (V) examination in 2012 for all NC (V) programmes in NW Province (DHET 2012: 29).

NC (V) Level 4			NW Province Pass %	National Pass %
No. enrolled	No. wrote	No. passed		
1044	941	501	53.2%	41.3%

TABLE 4.7 represents the total number of students who enrolled, wrote examinations and those who passed in North West Province. The North West Province pass rate was still higher than the National pass rate at 53.2% to 41.3% for all the NC (V) programmes. In 2010 these figures stood at 44.9% to 37.5%. This implied that for both the North West Province and the National level there was improvement in the past rates.

TABLE 4.8: College “A” NC (V) level 4 for the indicated programmes for 2009 to 2010

College A	2009			2010		
Programme	Wrote	Passed	Pass %	Wrote	Passed	Pass %
CEBC	9	0	0	13	2	15,3
ERD	13	8	61,5	28	15	53,5
EIC	22	10	45,5	40	20	50
Total	44	18	40,9	81	37	45,7

TABLE 4.8 and TABLE 4.9 below represent data on the three NC (V) level 4 programmes from 2009 to 2012 for College ‘A’. The columns of the pass percentages show that there has been remarkable improvement in the pass rate in all the programmes. Unlike College ‘C’, Colleges ‘A’ and ‘B’ were able to provide data for all the years in all programmes.

TABLE 4.9: College “A” NC (V) level 4 for the indicated programmes for 2011 to 2012

College A	2011			2012			Total	Average %
Programme	Wrote	Passed	Pass %	Wrote	Passed	Pass %	No's.	
CEBC	38	21	55,2	26	16	61,5	39	45,3%
ERD	57	27	47,4	33	25	75,8	75	57,2%
EIC	128	77	60,1	67	40	59,7	147	57,2%
Total	223	125	56	126	81	64,3	261	55%

TABLE 4.10: College “B” NC (V) level 4 for the indicated programmes for 2009 to 2010

College B	2009			2010		
Programme	Enrolled	Wrote	Pass %	Enrolled	Wrote	Pass %
ERD	0	0	0	0	0	0
EIC	21	21	0	15	12	33%
CEBC	20	20	15%	-	-	-
Total	41	41		15	12	

TABLE 4.10 and TABLE 4.11 below represent data collected from College 'B' for all the three engineering programmes for the years 2009 to 2012. The data shows that College 'B' did not offer all the three programmes in 2009 and 2010 but started offering all the programmes in 2011 and 2012.

According to TABLE 4.10 and TABLE 4.11, the pass rates of College 'B' were much lower than the National level in all the 4 years. This was despite the fact that the enrolled numbers of students in all the three programmes were the lowest among all the colleges.

TABLE 4.11: College "B" NC (V) level 4 for the indicated programmes for 2011 to 2012.

College B	2011			2012		
Programme	Enrolled	Wrote	Pass %	Enrolled	Wrote	Pass %
ERD	14	14	0	19	19	15
EIC	37	37	14%	60	60	18%
CEBC	40	40	0%	40	40	20%
Total	91	91		119	119	

TABLE 4.12: College "C" NC (V) level 4 for the indicated programmes for 2012

College C	2012					
Programme	Enrolled	Written	Pass	Pass %	Throughput	Retention
ERD	176	164	131	80	74	93
EIC	482	456	314	69	65	95
CEBC	310	295	252	85	81	95
Total						

TABLE 4.12 represents data received from college 'C' on the NC (V) level 4 for the three engineering programmes. Only data for the year 2012 was made available despite numerous requests for the comprehensive data. The data indicated a high number of enrolled students and a relatively good number of those who wrote examinations.

The pass rate in all three programmes for the year 2012 was higher than the pass rates of the other two colleges. The fact that college 'C' did not make available the figures for the other three years made it difficult to compare it with the other two colleges on equal basis.

4.4. Interviews and analysis – Universities, SETAs and Employers

Respondents were University representatives, the Sector Education and Training Authorities (SETAs), and the employers. The interviews were conducted telephonically with the purpose being to determine the extent to which the NC (V) programme was influencing the graduate destinations and their continued learning patterns.

The employers were coded as “E1”, “E2” and “E3”; the representatives of the institutions for higher education were coded as “H1”, “H2” and the SETAs were coded as “S1”, “S2”.

4.4.1. Section A: Feedback on the NC (V) Graduates – Interviews with Directors of the UoT Work Integrated Learning Units / Cooperative Education Departments

Interview schedules were sent by e-mail to six universities of technology, one comprehensive university and to one traditional university, requesting the Work Integrated Learning / Cooperative Education Directors to indicate their availability for telephonic interviews as per Section E of the schedule or to direct the request to the appropriate person. After two weeks a second reminder was sent. A consolidated summary of responses of two directors from the telephonic interviews to the four questions is presented in TABLE 4.13 below

The interviewees were the two Directors of the Work Integrated Learning Unit known as Cooperative Education Department in the Universities of Technology. TABLE 4.13 presents raw data from the two respondents for all the four questions, and a summarised analysis for each question.

TABLE 4.13: Key concepts and common themes from the interviews with Representatives of the Universities

Question 1	H1	H2	Themes / Concepts
What is your knowledge and understanding of the NC (V) qualification particularly in the engineering field?	<ul style="list-style-type: none"> - I have not much knowledge of the NC (V). 	<ul style="list-style-type: none"> - My understanding is that the NC (V) qualification is done by students who passed matric/grade 12 as an alternative to higher education - Programme is done in two parts, the first 18 months is for theoretical instruction at the college and the other 18 months is for practical instruction at the work place - Students can register at university for further studies. 	<ul style="list-style-type: none"> - No knowledge - Grade 12 is entry requirement into NC (V) programme - Alternative study route to university - It has two components of theory and practice - There is progression to university
<p>Analysis</p> <p>The responses indicated that they had no knowledge or little understanding of the NC (V) qualifications. Indication of the understanding was that entry requirement into NC (V) programme was Grade 12 and that it was an alternative study route to university. The NC (V) qualification consists of two major components of focus, which are theoretical and practical instructions. After completion of the qualification the student can register at university.</p>			

Question 2	H1	H2	Themes / Concepts
Did you employ / enrol the NC (V) graduates on the basis of their NC (V) qualification and if so what has been your experience with regard to the performance of these graduates?	<ul style="list-style-type: none"> - I will find out from the engineering faculty and or the student administration unit. 	<ul style="list-style-type: none"> - University has no record that these students came through NC (V) - Data on how many students emerged from the NC (V) programmes can be retrieved from the centralised record management system but this can consume time - There is no articulation and students from Colleges are not credited their previous qualification when they register for admission - Recently made aware of this information in meeting with FET college principals that was convened at our university of technology 	<ul style="list-style-type: none"> - No knowledge - No dedicated tracking of NC (V) - Qualification does not receive special credit for articulation and progression - University started engagement with colleges

Analysis

On the question whether the universities of the respondents enrolled the NC(V) engineering graduates for further study, the respondents indicated that they did not know and the information could be available from the student administration unit. Although the

respondents promised to obtain the relevant information they did not do so, and at some point they indicated that the retrieval process was time-consuming. They emphasised that there was no special focus on the dedicated tracking of NC (V) students and that they were not given any credits on the passed subjects for articulation and progression purpose. One respondent indicated that her university had recently had a meeting with the regional FET Colleges to forge partnerships and that was where she came to know of the NC (V) qualification.

Question 3	H1	H2	Themes / Concepts
Is your Organisation / Institution intending to increase the current number of the NC (V) graduates you are having?	<ul style="list-style-type: none"> - Every faculty uses its own standard to admit students and if students do not meet the minimum requirements are advised to do bridging courses - Universities are public institutions that should continue to increase their intake including graduates from the FET Colleges. 	<ul style="list-style-type: none"> - No, only now that this information is shared and there are plans. 	<ul style="list-style-type: none"> - University uses its own criteria for admission - Bridging courses are made available - Universities will continue increasing intake from colleges

Analysis

Universities used their own criteria for the admission of the students and if students did not meet the criterion they were advised to do a bridging course. Respondents indicated that Universities are public institutions that should continue to increase their intake including graduates from FET Colleges. The recent meeting with FET Colleges had set in motion plans to fast track issues of student progression and articulation.

Question 4	H1	H2	Themes / Concepts
What will be your advice to the colleges, students and the	<ul style="list-style-type: none"> - It will take some time before we know the full 	<ul style="list-style-type: none"> - Important to stress 18 months experiential period 	<ul style="list-style-type: none"> - Impact of NC (V) will improve in due time

DHET concerning improvement of NC (V) qualification?	<p>impact of the NC (V) qualification</p> <ul style="list-style-type: none"> - Necessary reviews should be done for articulation to higher institutions of learning. 	<p>in order to improve planning and implementation for employability</p> <ul style="list-style-type: none"> - Leaving students to own devices is not helpful - Promote reflective learning during placement where there is learning - Colleges to develop learner guide outlining students' expectation from the workplaces - Learner guides should contain areas that students should cover during experiential training, what assignments to submit as well as the role and responsibility by three partners (relationship among the institution, work place and the learner) 	<ul style="list-style-type: none"> - NC (V) should be reviewed for articulation to university - Quality of experiential training to be improved - Workplace learner guides to be developed to improve tripartite relationship and experiential training
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Analysis

It would take some time before the full impact of the NC (V) qualification can be known. Where necessary a curriculum review should be undertaken for articulation to higher

institutions of learning to improve the NC (V) qualification. The quality of experiential training should be improved by developing workplace learner guides in order to improve the tripartite relationship involved in training.

4.4.2. Section B: Feedback on the NC (V) Graduates – Interviews with the Chief Executive Officer (CEO) and Senior Manager of the SETAs

All the 21 SETAs were invited to participate in the research and a number of written indications of willingness to participate were received. As the focus of the study is on the three engineering programmes, purposive sampling was used to select five SETAs with engineering scope. Three of these SETAs indicated their availability for the interview and were finally interviewed. Two separate interview meetings were convened with the CEO of the SETA, a Senior Manager of a second SETA whilst the Senior Manager of the third SETA was interviewed telephonically.

Table 4.14 presents data on the interviews with the managers of the three SETAs. All the four questions posed for the respondents were analysed and interpreted as indicated.

Table 4.14: Key concepts and common themes from the interviews with Representatives of the SETAs

Question 1	E1	E2	E3	Themes / Concepts
<i>What is your knowledge and understanding of the NC (V) qualification particularly in the engineering field?</i>	- <u>NC (V) is one of FET College programmes intended to prepare students for occupational careers</u>	- I got <u>involved when I wanted to recruit learners particularly from business studies.</u> - <u>Lack of practical</u>	- <u>Yes, NC (V) as a new vocational qualification was well received by business sector except the engineering</u>	- <u>NC (V) prepares learners for occupational careers.</u> - A <u>new vocational qualification well received by business</u>

		<u>component</u> <u>and there are</u> <u>no specific</u> <u>programmes</u> <u>aligned to</u> <u>business</u> <u>place.</u> - <u>Work</u> <u>readiness gap</u> <u>is evident</u> <u>during</u> <u>recruitment.</u> - <u>Future</u> <u>programme</u> <u>review should</u> <u>include</u> <u>additional</u> <u>modules on</u> <u>work-</u> <u>readiness.</u> - <u>Business</u> <u>complains</u> <u>about poor</u> <u>output from</u> <u>colleges that</u> <u>need lot of</u> <u>polishing due</u> <u>to profit</u> <u>making</u> <u>motive.</u>	<u>sector which</u> <u>preferred the</u> NATED programme.	<u>sector except</u> <u>the</u> <u>engineering</u> <u>sector that</u> <u>clung to</u> <u>NATED.</u> - I came to know <u>it by</u> <u>coincidence</u> <u>during</u> <u>recruitment of</u> <u>interns</u>
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Analysis

Respondents from SETAs (Sector Education and Training Authorities) understood the NC (V) qualification as one of the FET College programmes intended to prepare students for occupational careers. It was a new vocational qualification that, according to one respondent, was well received in the business sector but not so much by the engineering sector that clung to the NATED programmes.

Question 2	E1	E2	E3	Themes / Concepts
<i>Did you employ / enrol the NC (V) graduates on the basis of their NC (V) qualification and if so what has been your experience with regard to the performance of these graduates?</i>	<ul style="list-style-type: none"> - FET College students are <u>given internship opportunities by SETAs by opening up workplaces.</u> - SETAs have <u>funded and facilitate various partnerships between and big industry with aim of placing FET college students into learnerships.</u> 	<ul style="list-style-type: none"> - <u>3000 students were recruited and placed.</u> - <u>Some of the recruits could not cope with long hours of work and dropped out.</u> - <u>Hard work was not what they have expected and hence they found it difficult to adjust.</u> 	<ul style="list-style-type: none"> - Yes, <u>graduates were placed for experiential training with fewer employers.</u> - <u>The company has placed NC (V) graduates who did business management programmes as interns.</u> - <u>Some employers are happy with the performance of NC (V) graduates.</u> 	<ul style="list-style-type: none"> - <u>NC (V) graduates are recruited and placed in the workplace like all other FET graduates</u> - <u>Some graduates are not well prepared for the workplace environment and find it difficult to cope.</u> - <u>Other employers are satisfied with the performance of the graduates.</u>

Analysis

The NC (V) graduates were recruited and placed in the workplace like all other FET College graduates. The responses highlighted that the NC (V) graduates were not well prepared for the workplace environment and find it difficult to cope. SETAs in general were facilitating and funding the workplace of the FET College graduates. Although there were still workplace readiness challenges regarding the graduates, some employers were happy about the performance of the graduates.

Question 3	E1	E2	E3	Themes / Concepts
Is your organisation / institution intending to increase the current number of the NC (V) graduates you are having?	<ul style="list-style-type: none"> - <u>SETAs will continue to facilitate placement of all prospective students including those who studied NC (V) programmes into workplaces.</u> - Placements will be in the form of <u>internships, learnerships, apprenticeship, further industry training and higher education studies.</u> - Where pre-requirements gaps exist, <u>short bridging courses such as engineering drawing</u> are offered. 	<ul style="list-style-type: none"> - Every year targets are set to recruit. - SETAs will continue placing graduates with employers. 	<ul style="list-style-type: none"> - It is within SETAs mandate to increase the number of the NC (V) graduates. 	<ul style="list-style-type: none"> - <u>SETAs will continue to increase and facilitate placement of all graduates in need of work placement</u> as it is the role of the SETAs. - Placements will be in the form of <u>internships, learnerships, apprenticeship, further industry training and higher education studies.</u> - Where pre-requirements gaps exist, <u>short bridging courses such as engineering drawing course</u> are offered.

	- <u>Our SETA funded in-service for FET College lecturers for their up-skilling.</u>			
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Analysis

The SETAs would continue to increase and facilitate placement of all graduates in need of work-placement as part of their role and mandate. Placement would be in the form of internships, apprenticeship and scholarship support for higher education studies. Where entry requirement gaps exist, bridging programmes or courses would be provided.

Question 4	E1	E2	E3	Themes / Concepts
What will be your advice to the colleges, students and the DHET concerning improvement of NC (V) qualification?	<ul style="list-style-type: none"> - Our SETA has <u>compiled a 300 page research report indicating that NC (V) programmes are of good quality.</u> - <u>DHET and Colleges should continuously conduct reviews on NC (V) programmes like it is case with the updating all</u> 	<ul style="list-style-type: none"> - Review and <u>development of curriculum should be undertaken</u> urgently where <u>industry should play important</u> role. - College <u>infrastructure should in relation to the offering of the</u> NC (V) should be <u>improved.</u> <u>Learners must not see things</u> for the 	<ul style="list-style-type: none"> - NC (V) <u>curriculum does not afford students sufficient time for practical training.</u> <u>Simulation that these students do at their colleges does not make them job ready.</u> I will recommend that they <u>should spend six months to a year in the</u> 	<ul style="list-style-type: none"> - <u>Some SETAs are already collaborating with the Colleges to facilitate placement of graduates and in some cases documented reports are available</u> - <u>-NC (V) curriculum review should be undertaken to strengthen industry participation,</u>

	<p><u>other programmes.</u></p>	<p>first time in the <u>work place and pressurised to catch up with technology.</u></p> <ul style="list-style-type: none"> - <u>Soft skills and self-mastering skills such as communication proficiency and critical thinking express improved.</u> <p>Curriculum should <u>provide an element of entrepreneurial skills, innovation, and productivity.</u> <u>Learners must imagine themselves starting enterprises.</u> <u>Workplace experience component should run parallel with theory from the onset.</u></p>	<p><u>real work environment.</u></p>	<p><u>experiential learning at the workplace, soft and self-mastery</u></p> <ul style="list-style-type: none"> - <u>Skills including communication proficiency and critical thinking.</u> - <u>Curriculum should provide an element of entrepreneurial skills, innovation, and productivity.</u> <u>Learners must imagine themselves starting enterprises.</u> <u>Workplace experience component should run parallel with theory from the onset.</u>
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Analysis

Review and development of curriculum should be undertaken urgently where industry should play an important role. Curriculum review should be considered the strengthening of industry participation, experiential learning at the workplace, soft and self-mastery skills including communication proficiency and critical thinking. Curriculum should provide an element of entrepreneurial skills, innovation and productivity. Students should imagine themselves starting enterprises. Workplace experience component should run parallel to the college theoretical tuition from the onset.

4.4.3. Section C: Feedback on the NC (V) Graduates – Interviews with the Employers

Twenty-five employers were invited to participate in the interviews. The lists of names of the employers were requested from the three colleges in the North West Province. Ten employers across the North-West Province were randomly selected. The selection was highly dependent on the availability of the individual company representatives. Employers are coded as E1 to E2.

The interviews focused on the four questions from Section E of the interview schedule that solicited feedback on the NC (V) from the employers. The interviews were all conducted telephonically because the representatives or managers from industry and business found it convenient. Purpose of this study was stated and consent of the respondents was obtained before each interview could be carried out. The respondents were assured of their anonymity and that the information they shared will be confidential. It took over a month to conclude the interviews with the ten employers because of the unavailability and hectic schedule of the 25 targeted employers. The length of the interviews took an average ten minutes as most of the respondents were straightforward in providing answers.

Summary of the responses from the Employers

Data collected from the employers was primarily qualitative. To analyse the collected data, the researcher followed the advice of LeCompte and Preissle (1993: 238) in Cohen,

Manion and Morrison (2000: 148) who said that in qualitative analysis, the researcher should assemble chunks or groups of data, put them together and make a whole collection. Answers were categorised into similar themes and concepts for every question. Two similar themes of “Yes” or “No” were applied to questions 1 and 2, with additional theme of “Not sure” applied to question 1; whereas two themes of “Yes” and “Yes-but” applied to question 3. Question 4 solicited more than one view from the respondents and these resulted in six themes ranging from theme 6 to 11 on the recommendation or the concern, namely:

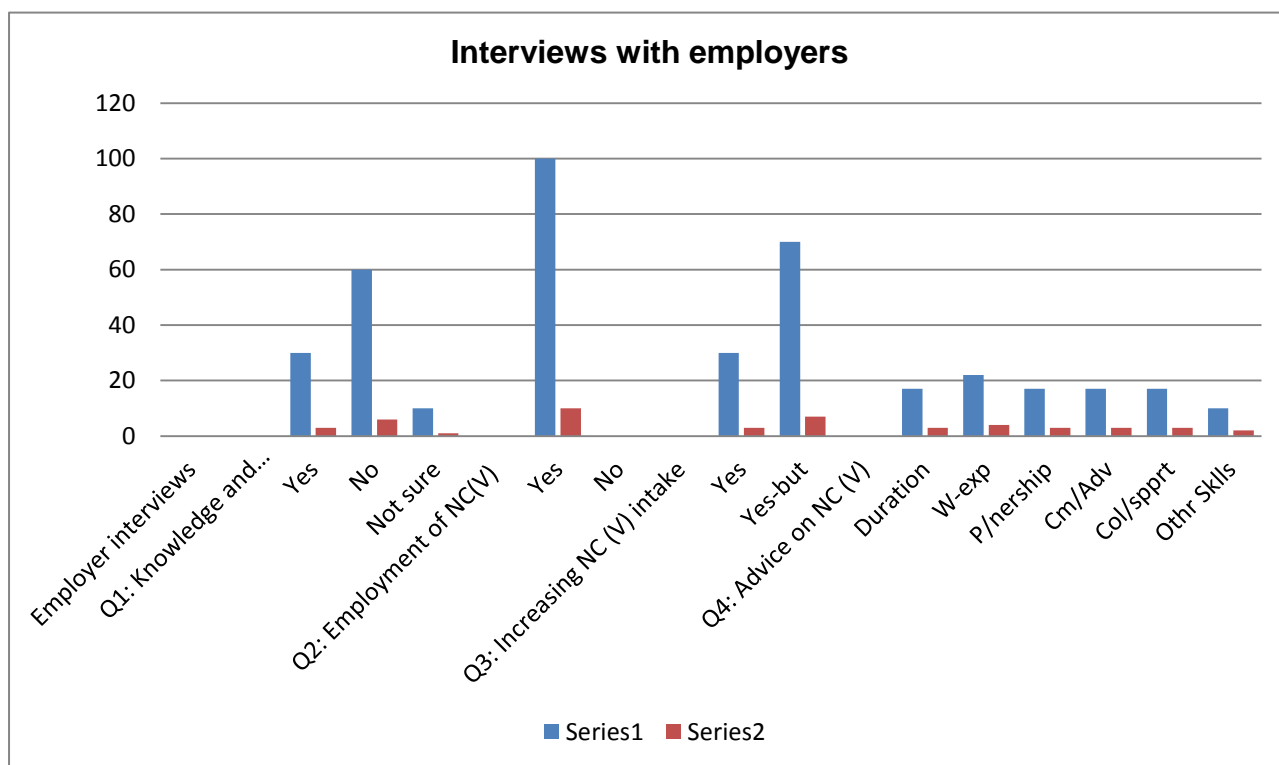
- Theme 6 – duration the graduates spend in the workplace;
- Theme 7 – exposure to the workplace for experience;
- Theme 8 – partnership or relationship with industry or business;
- Theme 9 – advocacy and communication by the colleges;
- Theme 10 – support by the college to the graduates; and
- Theme 11 – other skills

Table 4.15 below displays the quantitative representation of the response from the employers on their opinion of the NC (V) graduates in the workplace.

TABLE 4.15: Interviews responses of the Employers on the NC (V) graduates

Question	Response from the Employers according to common themes						
	Theme 1	Theme 2	Theme 3	Theme 4	-	Total	
	Yes %	No %	Not sure %	Yes-but %	-	-	
Question 1: What is your knowledge and understanding of the NC (V) qualification particularly in the engineering field?							
Q1	3	6	1	-	-	10	
	30%	60%	10%			100%	
Question2: Did you employ / enrol the NC (V) graduates on the basis of their NC (V) qualification, and if so, what has been your experience with regard to the performance of these graduates?							
Q2	10	0	-	-	-	10	
	100%					100%	
Question 3: Is your organisation/institution intending to increase the current number of the NC (V) graduates you are having?							
Q3	3	-	-	7	-	10	
	30%			70%		100%	
Question 4: What will be your advice to the colleges, students and DHET concerning improvements of the NC (V) qualification?							
Q4	Theme 5	Theme 6	Theme 7	Theme 8	Theme 9	Theme 10	Total
	Increase Duration %	Workplace Exposure %	Industry Partnership / Relationship %	Advocacy / Communication %	College Support	Other skills	-
Q4	3	4	3	3	3	2	-
	17%	22%	17%	17%	17%	10%	100%

Graph 4.1 below represents a comprehensive opinion of the employers regarding their experience of the NC (V) graduates.



Graph 4.1: Interviews responses of the Employers on the NC (V) graduates

In response to question 1, 60% of the respondents indicated that they knew and understood the NC (V) qualification particularly in the engineering field, 30% indicated that they did not know, and some of them confirmed their knowledge of the NATED programme while 10% of the respondents were not sure.

To question 2, 100% of the respondents said their companies employed the NC (V) graduates and that the graduates' performance was satisfactory.

Responses to question 3 showed that 30% of the employers would employ or accommodate the NC (V) graduates in their businesses while 70% indicated that they could employ or provide workplace experience to the graduates provided that there was appropriate college support to the graduates, funding for work placement purpose, improved college relationship and communication with the employers and if their businesses expands.

Question 4 solicited advice of employers to the colleges, students and to the DHET concerning improvements of the NC (V) qualification.

From the six themes that emerged from the responses of the employers, four themes on duration the graduates spent in the workplace, partnership or relationship with industry or business; advocacy and communication by the colleges; and support by the college to the graduates; shared a score of 17%. 22% of the responses indicated the importance of graduates' exposure to the workplace for experience; while 10% of the respondents indicated the importance of acquiring other additional skills such as communication and administration.

4.5. Questionnaires – Engineering Graduates

The questionnaires were completed by NC (V) engineering graduates from the three NW Public FET Colleges who completed their studies between the years 2009 and 2012. This was a mixed survey method that used the telephonic questionnaire completion, completion by emails and direct completion through the colleges. Out of a total of 180 graduates who were contacted and requested to participate in the study, a total of 120 questionnaires were returned. One college returned 20 completed questionnaires, the second college returned 38, nothing was received from the third college and the rest of the questionnaires were completed by means of a telephone. The questionnaire had three sections, namely: Sections A, B and C. Section “**A**” focused on the demographic profile of the graduates, and Sections **B** and **C** consists of multiple questions and open-ended questions.

Consent to participate in the survey was requested from each respondent and there were those respondents who declined. The purpose of the questionnaire was explained to every respondent. The information gathered through the questionnaire may be used to develop a work integrated learning framework. The principle of confidentiality and anonymity was observed in the consolidation and analysis of the data. Respondents were requested to answer all the three sections, “A, B and C”.

4.5.1. Section A: Demographic Information

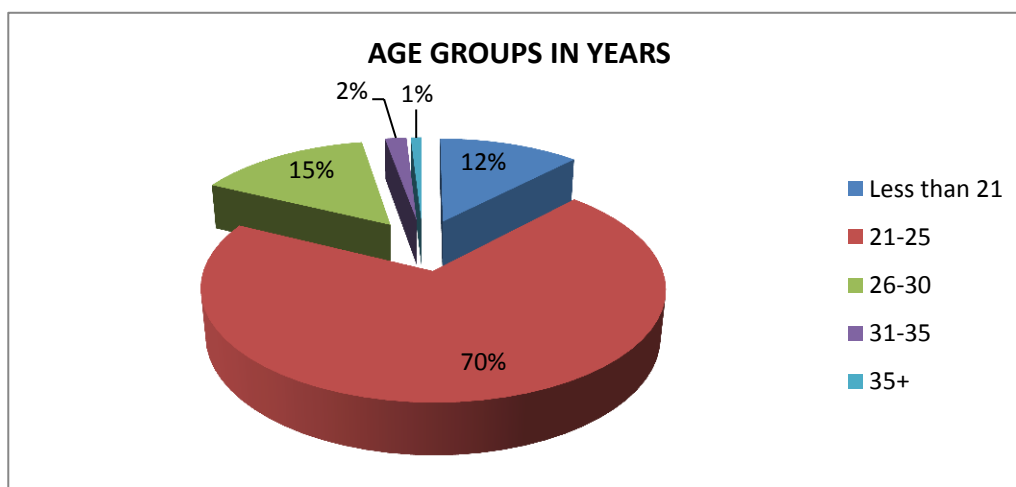
This information is primarily for developmental and transformational purpose.

Question 1: Age groups in years

Less than 21		21-25		26-30		31-35		35 ⁺		Total
1	13	2	75	3	16	4	2	5	1	107
%	12		70		15		2		1	100

TABLE 4.16: Ages of NC (V) engineering graduates in years

TABLE 4.16 and Graph 4.2 show that 70% of the students aged between 21 and 25 years have responded to the questionnaires and have completed the NC (V) engineering qualification.



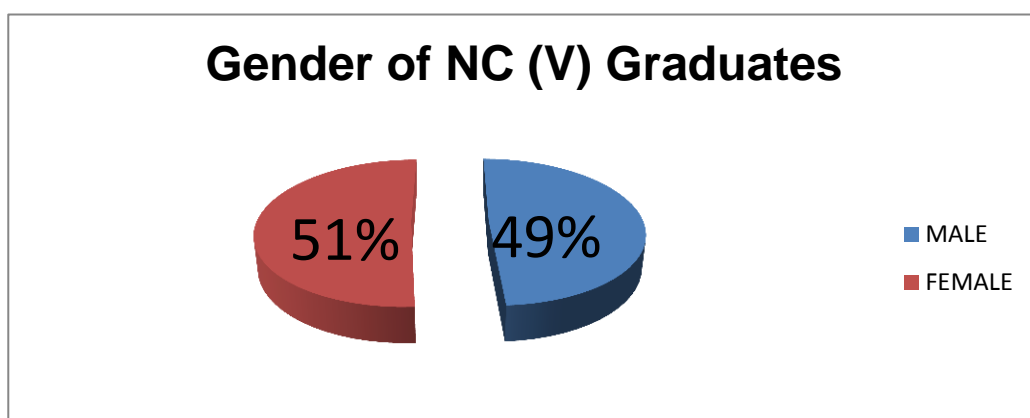
Graph 4.2: NC (V) engineering programme graduates by age

Question 2: Gender

	Male		Female	Total
1	53	2	54	107
%	49		51	100

TABLE 4.17: NC (V) graduates according to gender

The figures indicate a balance of gender in the NC (V) graduates representing a good intake of female students enrolling in the previously male dominated study field. The data could also indicate that more female students took interest in responding to the questionnaire than their male counterparts. The figure was not compared with the gender baseline data of the entry level and therefore it may also indicate that the female students in the engineering field in the North West Province are performing better than the male students. It was not the aim of the study to determine these gender variables or to segregate the graduates in terms of gender, but rather to have an overview picture of the learner profile.



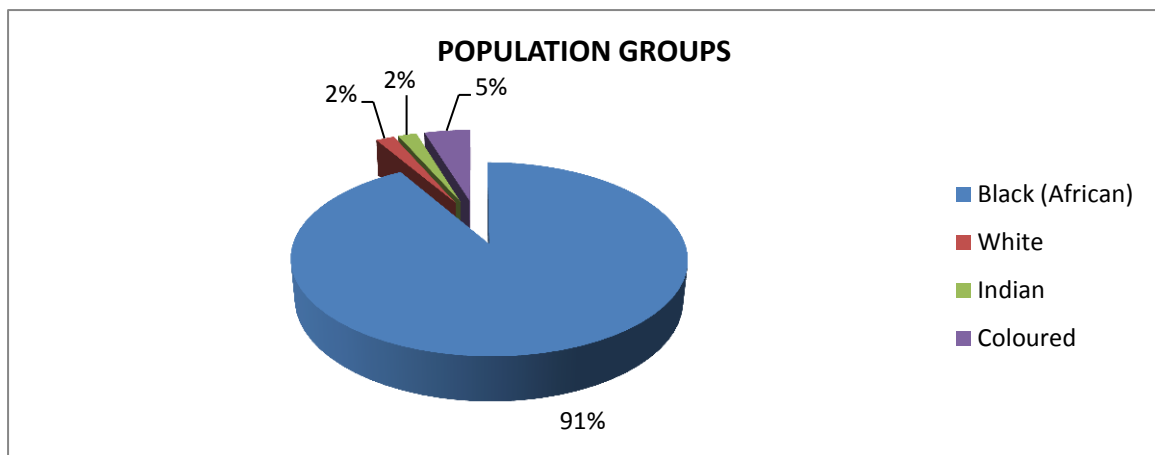
GRAPH 4.3: Gender of the NC (V) graduates in engineering field

Question 3: Population group

Black (African)		White		Indian		Coloured		Other		Total
1	98	2	2	3	2	4	5	5	-	107
%	92		2		2		4		-	100

TABLE 4.18: NC (V) graduates per population group.

The data on the respondents' population group corresponds with the demographics of South Africa but also showed a transformational trend since the advent of democracy and equality in 1994. 92% of the respondents were Black followed by 4% of Coloureds, then 2% Whites and another 2% Indians.



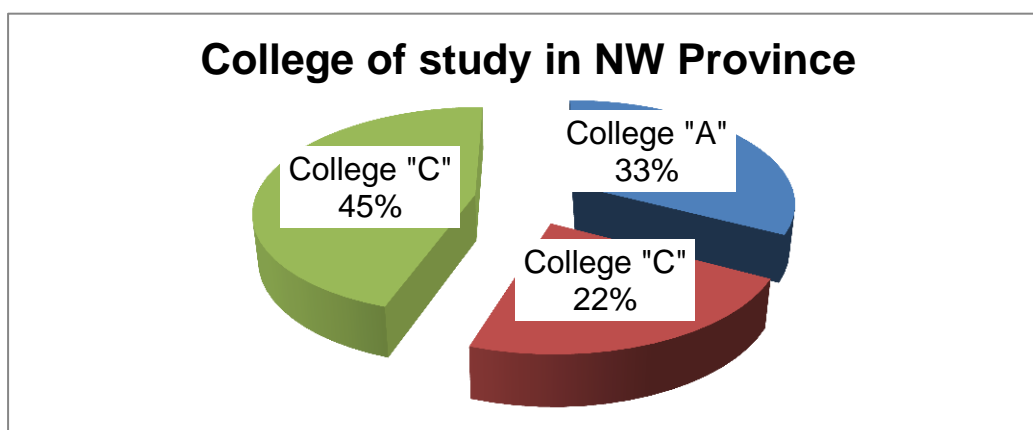
Graph 4.4: NC (V) graduates in engineering studies by population group

Question 4: College of study

“A”		“B”		“C”		Total
1	35	2	24	3	48	107
%	33		23		44	100

TABLE 4.19: NC (V) engineering graduates by college of study

Majority of the respondents who represented 44% of graduates studied at College “C”; 33% studied at College “A” and 23% at College “B”. Apart from a higher number of the completed questionnaires, College “C” provided a comprehensive contact list of graduates, unlike colleges “A” and “B” that provided contact lists with fewer contactable graduates. Hence, College “C” had a higher participation rate of the study.



Graph 4.5: NC (V) engineering graduates by College of study

Summary of demographic information

Majority of the NC (V) engineering students were aged between 21 – 25 years at graduation. Female graduates from the NC (V) engineering in the NW Province were slightly more than their male counterparts in this historically male dominated occupation. Black African graduates were in the majority and this corresponds with the demographics of South Africa but also showed a transformational trend since the advent of democracy and equality in 1994. Majority of graduates studied at college “C” and this could also reflect a high response rate from college “C”.

4.5.2. Section B: Background Variable

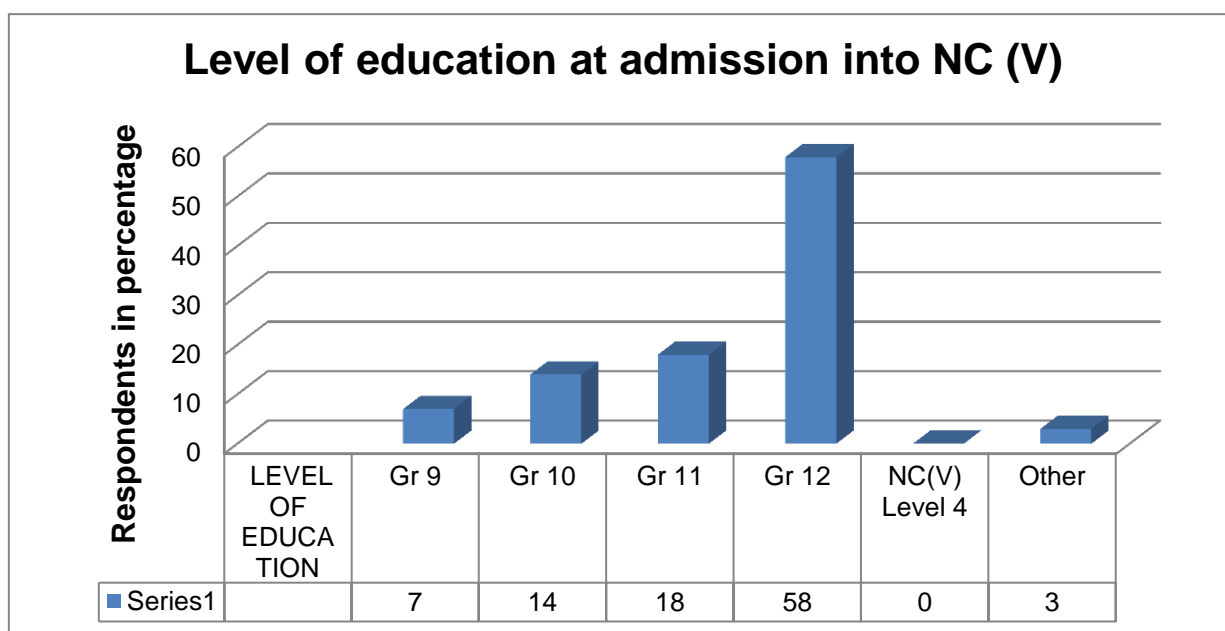
Question 5: Level of education

GR 9		GR 10		GR 11		GR 12		NC(V) L 4		Other		Total
1	7	2	15	3	21	4	63	5	-	6	1	107
%	6		14		20		59		-		1	100

TABLE 4.20: Respondents’ level of educational qualification at entry into NC (V) L2

Although the minimum entry requirement is Grade 9 as discussed in section 1.6.4.1.1 of chapter 1, the data collected shows that the majority of the NC (V) graduates, that is 59% of them, entered the programme after having completed Grade 12, followed by Grade 11

at 20%, Grade 10 at 14%, then Grade 9 at 6% and other levels at 1%. Since this research focused only on the students who passed NC (V) level 4 and did not survey the students at admission to the programme, one can conclude that those with Grade 12 had a better chance of completing NC (V) level 4 engineering programme.



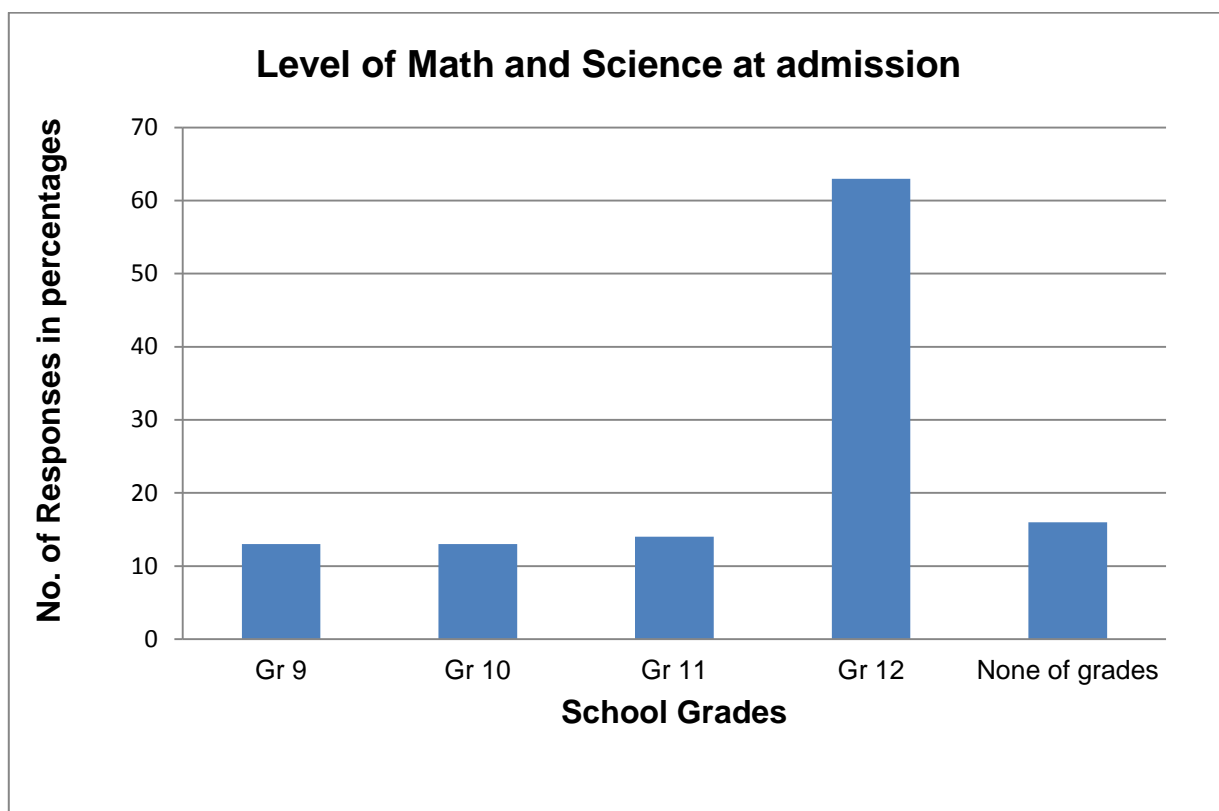
Graph 4.6: NC (V) graduates in engineering programme by entry qualification

Question 6: At what level was your Mathematics and Science when you entered NQF L2?

54% of the respondents confirmed that they already had mathematics and science at Grade 12 level at entry into NC (V) programme. Only 11% of the respondents had mathematics and science at Grade 9 as shown in TABLE 4.21.

GR 9		GR 10		GR 11		GR 12		None of Grades		Total
1	12	2	14	3	16	4	58	5	7	107
%	11		13		15		54		7	100

TABLE 4.21: Level of Mathematics and Science at admission into the NC (V) programme
Graph 4.7 displays responses on the level of Mathematics and Science at entry into NC (V) L2 programme.



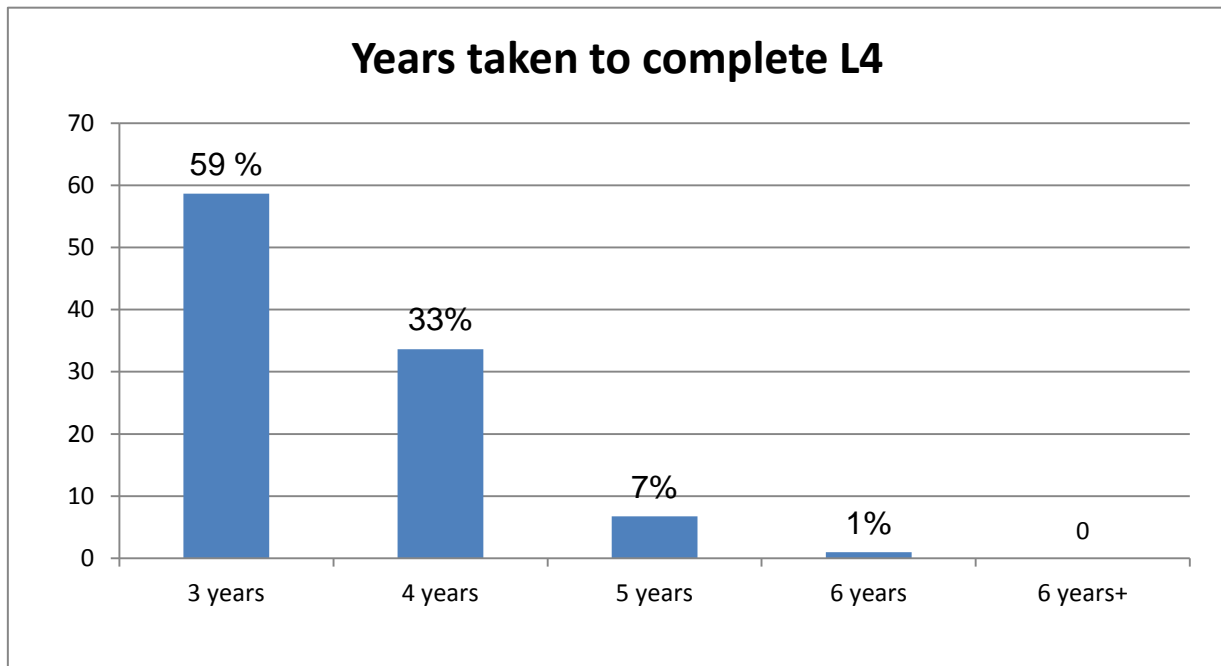
Graph 4.7: Respondents' level of Mathematics and Science at entry into NC (V) L2 programme

Question 7: How long did it take you to complete NC (V) Level 4?

Table 4.22 shows that 59% of the respondents completed the 3 year NC (V) programme in record time, while it took 35% respondents 4 years, 5% of respondents 5 years and 1% respondents 6 years to complete the programme.

3 years		4 years		5 years		6 years		6 years ⁺		Total
1	63	2	38	3	5	4	1	5	-	107
%	59		35		5		1		0	100

TABLE 4.22: NC (V) L4 completion rate in number of years



Graph 4.8: Respondents' number of years taken to complete NC (V) L4

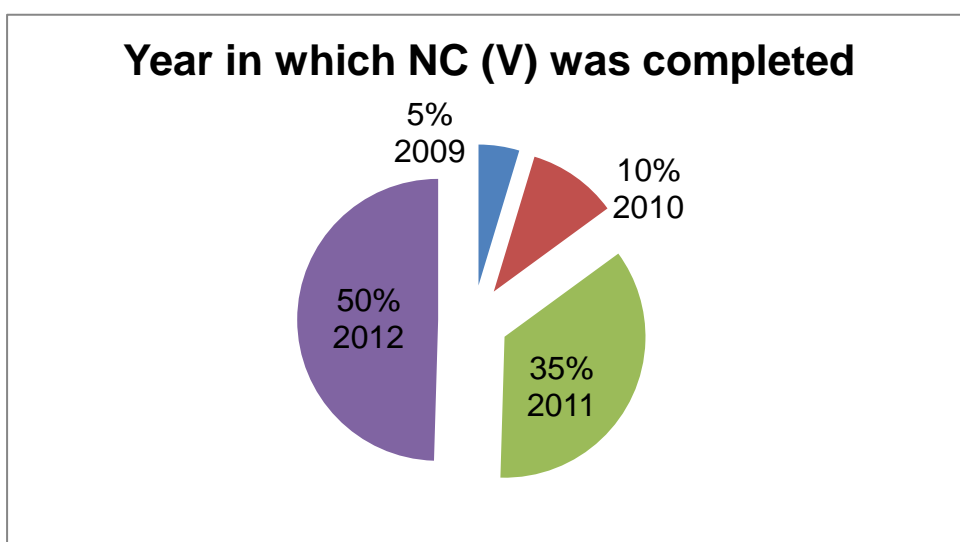
Graph 4.8 displays a graphical representation of the number of years taken by the graduates to complete NC (V) L4.

Question 8: When did you complete NC (V) Level 4?

The data on the year of completion of the NC (V) qualification indicates a gradual increase in the number of the graduates resulting in an upward trend in the percentage from 5% in 2009 to 50% in 2012.

2009		2010		2011		2012		Total
1	5	2	11	3	38	4	53	107
%	5		10		35		50	100

TABLE 4.23: Respondents' year of NC (V) completion



Graph 4.9: Respondents' year of NC (V) completion

The increase in the completion rate can possibly be linked to a number of variables such as high qualification level with mathematics and science at admission, or effectiveness of the system as a whole as it matures. All of these factors can be researched further.

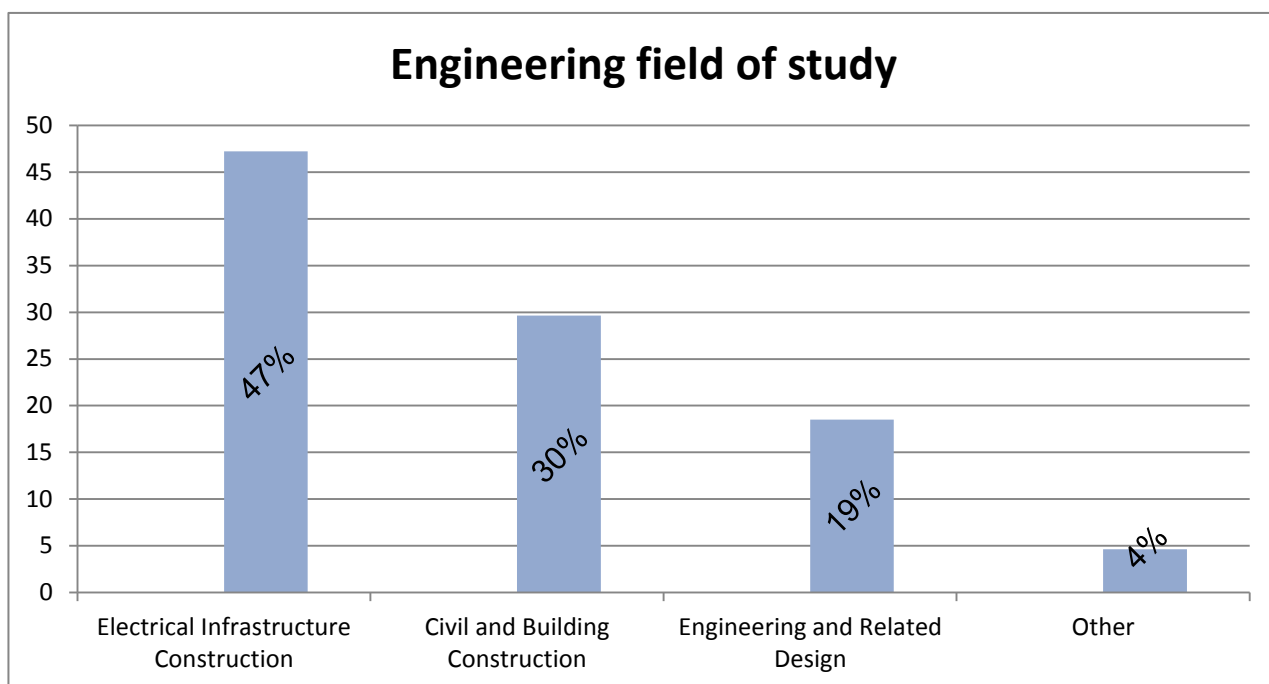
Question 9: Which Engineering study field did you complete?

Electrical Infrastructure Construction (ERC) is the most popular engineering programme studied with 47% of respondents electing to study it, followed by Civil and Building Construction (CBC) at 30%, and Engineering and Related Design at 19%.

Electrical Infrastructure Construction		Civil and Building Construction		Engineering and Related design		Other		Total
1	54	2	27	3	23	4	3	107
%	47		30		19		4	100

TABLE 4.24 Respondents' engineering field of study

Graph 4.10 shows that most students studied towards Engineering Infrastructure Construction qualification, followed by Civil & Building Construction.



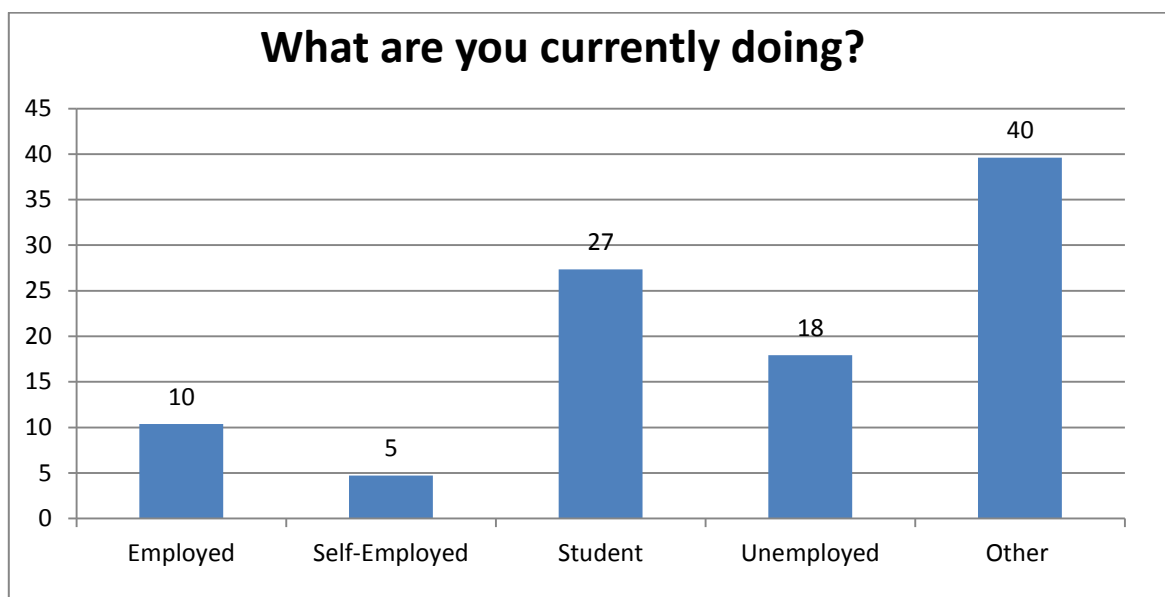
Graph 4.10: Respondents' engineering field of study

Question 10: What are you currently doing?

TABLE 4.25 shows that 40% of the NC (V) engineering graduates were undertaking further training in apprenticeship, learnerships and internships, while 27% of them were students either at a university or at the colleges. The third highest group is 18% of respondents who were unemployed, followed by 15% of respondents who were employed.

Employed		Self-employed		Student		Unemployed		Other(apprentice, learnership, internship)		Total
1	12	2	5	3	31	4	17	5	42	107
%	10		5		27		18		40	100

TABLE 4.25: Destination of respondent's post NC (V) graduation



Graph 4.11: Destination of respondents post NC (V) qualification

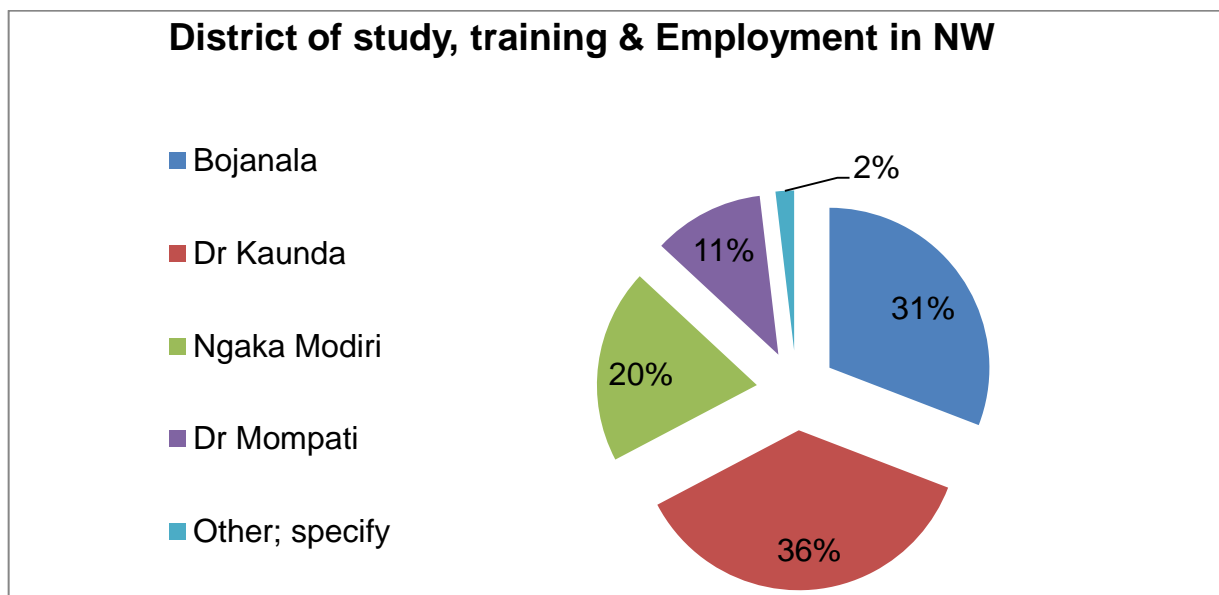
Graph 4.11 Shows that most NC (V) students are in internships, learnerships and apprenticeship training.

Question 11: Are you studying or pursuing studies in North West Province?

Bojanala Region		Dr. Kaunda		Ngaka Modiri		Dr. Mompoti		Other		Total
1	33	2	39	3	21	4	12	5	2	107
%	33		43		17		1		6	100

TABLE 4.26: Region or District of study in North West Province

TABLE 4.26 shows that the highest number of graduates studied in Dr Kaunda District Municipality at 43%, followed by Bojanala District Municipality at 28%.



Graph 4.12: *Municipal District of further study, training and employment in North West Province*

Graph 4.12 shows that a large percentage (36%) of students are pursuing their studies, training, and work within Dr Kaunda district municipality in the North West Province.

Summary of background variable

The majority of students possessed Grade12 at entry into NC (V) level 2, which was two levels lower (GR 12 = NQF L4). Since this study focused only on students who passed NC (V) level 4 and did not survey the students at admission to the programme, one can conclude that those with Grade 12 had a better chance of completing NC (V) level 4 engineering programme. The majority of the students already had Grade 12 Mathematics and Science at entry to NC (V) programme. Almost 60% of the graduates completed the 3 years NC (V) programme in record time and more than a third took 4 years to complete. There was a gradual increase in the number of graduates resulting in an upward trend in the percentages from 8% in 2009 and 46% in 2012.

Electrical Infrastructure Construction (EIC) was the most popular engineering programme studied by respondents followed by Civil and Building Construction (CBC). The two most popular destinations of the graduates were the industry training in the form of apprenticeship, learnerships, internships and continued studies at further and higher institutions of learning. 15% of the graduates found employment in the line of study and

18% were unemployed. Majority of graduates studied in Dr Kaunda District Municipality, to be specific 43% of them, followed by Bojanala District Municipality at 28%.

4.5.3. Section C: Graduates experience at the College.

This section consists of multiple choice and open-ended questions. The respondents were required to read the statements or questions carefully before making a tick in the appropriate space. The second important element of this section was its qualitative aspects where respondents were given an opportunity to provide their views on the research.

4.5.3.1. Support at entry to college

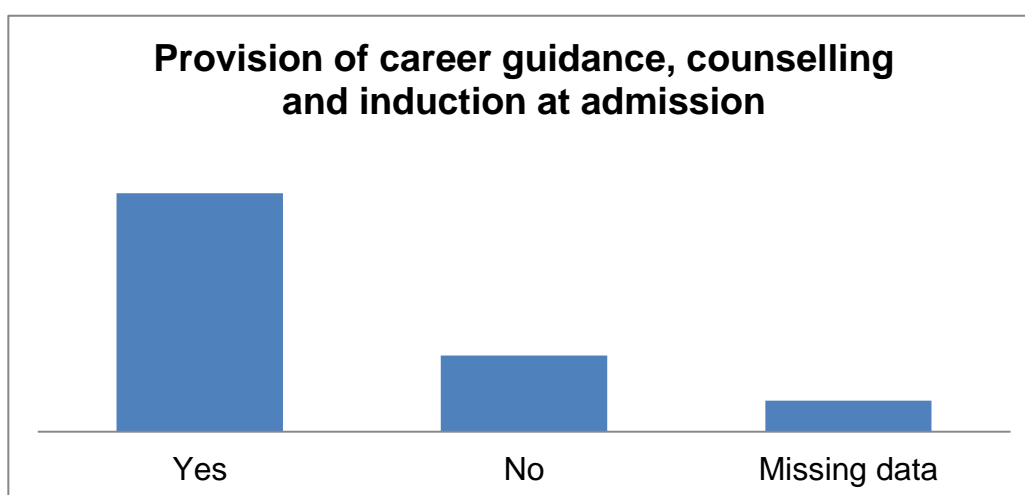
Question 12: *Did you receive career guidance, counselling and induction at the college?*

69% of the respondents attested to having received support on career guidance, counselling and induction into the college; whereas 22% of them indicated that they had received no such support.

Yes		No		Missing data		Total
1	80	2	23	3	4	107
%	69		22		9	100

TABLE 4.27: Response on the receipt of career guidance, counselling and provision of induction at admission into the NC (V) programme

Graph 4.13 shows that 69% of the graduates received career guidance, counselling and induction at various colleges before pursuing NC (V) studies.



Graph 4.13: *Provision of career guidance, counselling and induction at various colleges before pursuing NC (V) studies.*

Summary on support at entry

Majority of graduates (69%) received support on career guidance and counselling at entry to the college.

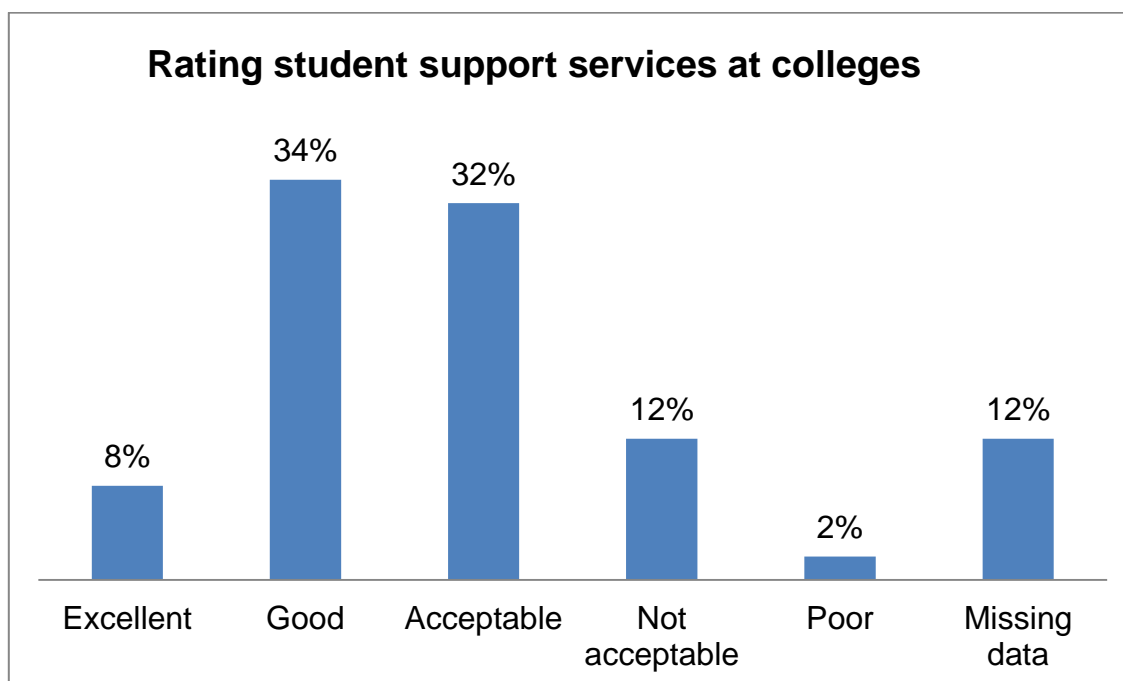
4.5.3.2. Support on course

Question 13: *How would you rate Student Support Services at your college?*

Excellent		Good		Acceptable		Not acceptable		Poor		Total
1	9	2	43	3	39	4	14	5	2	107
%	8		34		32		12		2	100

TABLE 4.28: Perception of respondents about the provision of the students support services

Graph 4.14 shows that 74% of students viewed student support services at the colleges as acceptable to excellent in general, compared to 14% who felt it was not acceptable and of poor standard.



Graph 4.14: Views of respondents on the College student support services

Summary of support on course

Majority of graduates rated support on course such as student support services at the colleges as acceptable to excellent.

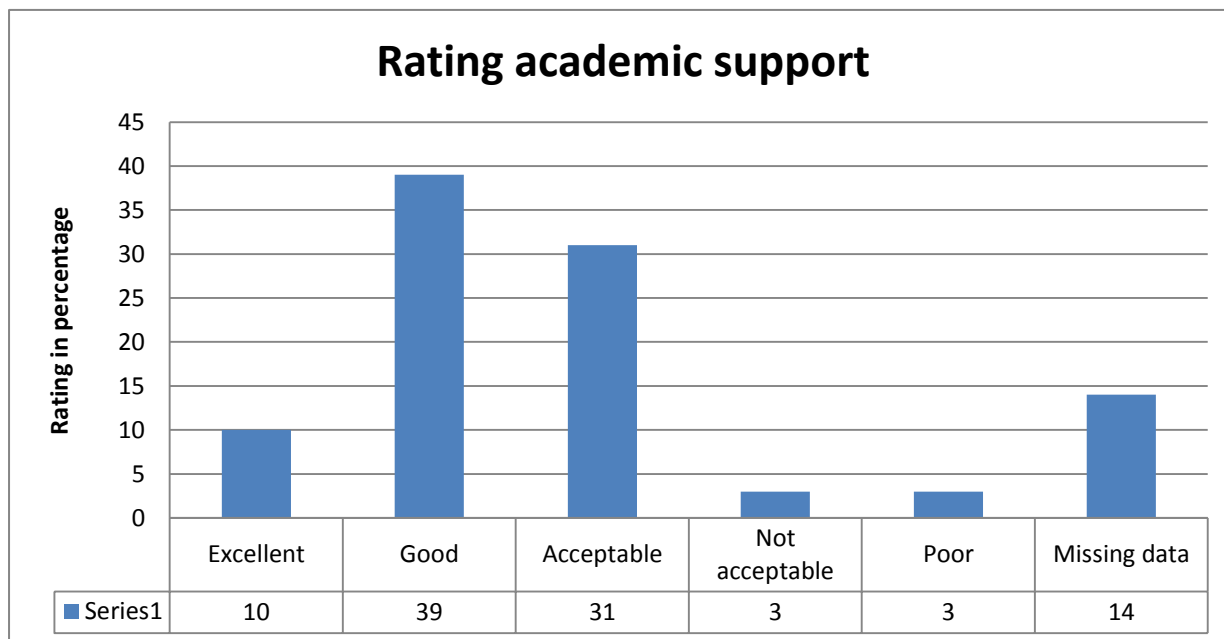
4.5.3.3 Experience variable

Question 14: How would you rate academic support you received during your study at the college?

Excellent		Good		Acceptable		Not acceptable		Poor		Total
1	15	2	49	3	37	4	3	5	3	107
%	10		39		31		3		3	100

TABLE 4.29: Perception of respondents on academic support

Graph 4.15 shows that 70% of students viewed the academic support they received at the colleges as acceptable to excellent whilst 6% of the students rated the service as not acceptable to being of poor quality.



Graph 4.15: Views of respondents on academic support service

Graph 4.15 shows that 10% of the students rated academic services as excellent, 30% as good and 31% as acceptable. This data provided room for improving the service to a level of being good to excellent.

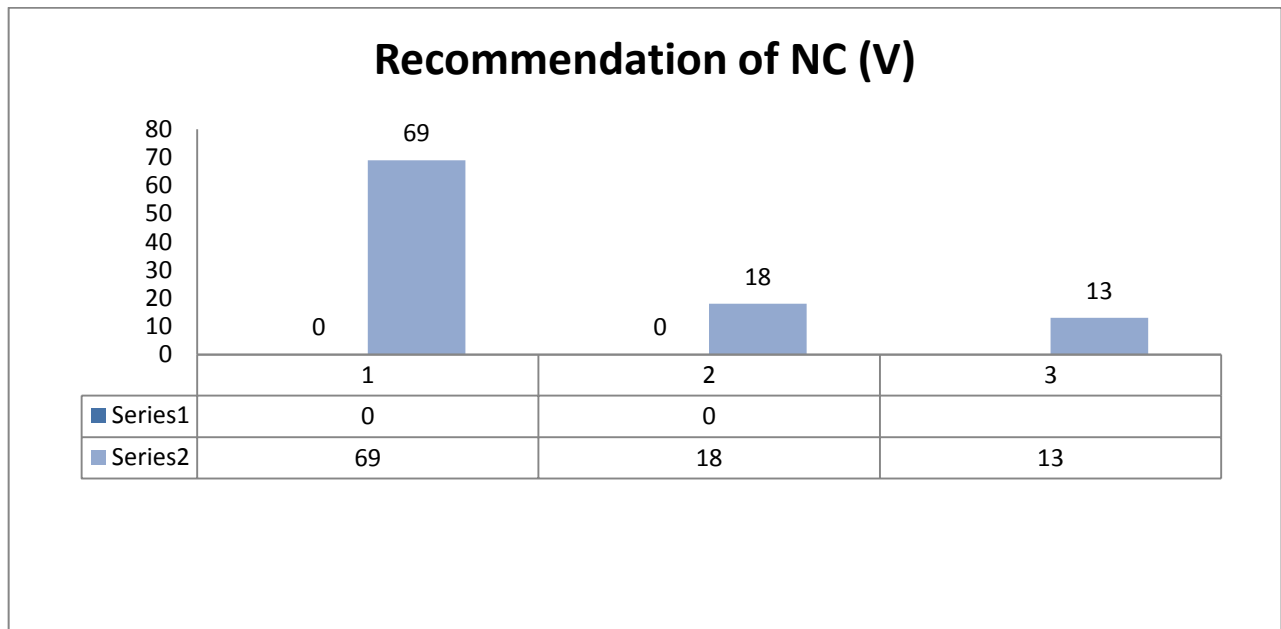
Question 15: Would you recommend NC (V) engineering qualification to anyone?

	Yes	No	Total
1	84	23	107
%	69	18	100

TABLE 4.30: Possible recommendation of NC (V) to prospective students

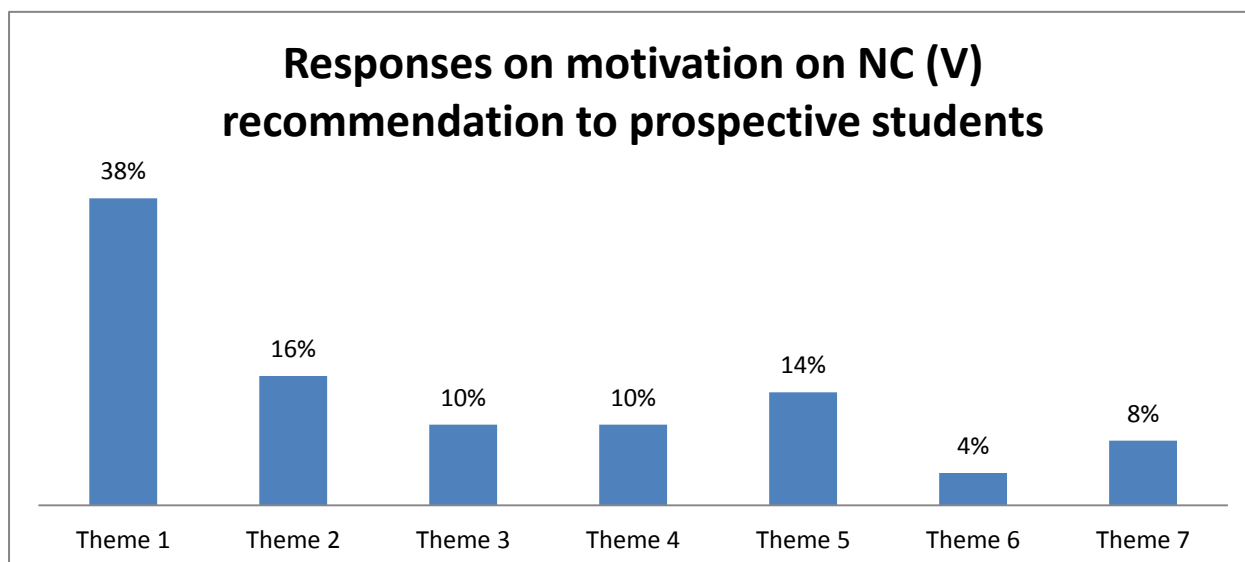
TABLE 4.30 presents data on the responses to question 15 of the questionnaire that solicited the perception of the respondents on whether they would recommend the NC (V) engineering qualification to anyone. Out of the total number of 100 responses, 83 responded positively, 22 said no, while 15 were missing.

Graph 4.16 shows that 69% of students would recommend the NC (V) engineering qualification to other people who intend or aspire to study NC (V) in future compared to 18% that said no.



Graph 4.16: Responses on the recommendation of NC (V) engineering programme to prospective students.

The respondents were further asked to provide motivation for their “Yes” or “No” response. A quantitative summary of the responses is presented in Graph 4.17. Responses were categorised into seven themes.



Graph 4.17: Responses on the motivation/de-motivation for recommendation of NC (V) programme to prospective students

A. If yes, why?

Theme 1: NC (V) programme is an alternative to general schooling and provides a second chance.

The graduates' responses that pointed to the NC (V) programme as an alternative or a second chance route of education were grouped under "*Theme 1*". 38% of the responses as shown in Graph 4.17 indicate that they would recommend NC (V) engineering qualification to aspiring students on the basis that it was an alternative to mainstream schooling; it was seen as a second chance programme that offers both theory and practical knowledge. It was described as a good programme for someone who was not able to complete grade 12. Almost one third of the responses emphasised that the provision of theoretical instruction that was linked to the practical component of the programme was very important.

Theme 2: NC (V) programme leads to self-employment and employability.

16% of the responses showed that the NC (V) would be recommended to anyone aspiring to study the programme because it leads to self-employment and employability. Graduates had better chances of either working in the mines or to become entrepreneurs as indicated by some of the respondents as follows:

"You can work for yourself after completing."

"It will help me have my own construction business."

"It gives you skills on the job environment and the facilities are best equipped."

Theme 3: NC (V) programme opens skills/training opportunities.

Theme 3 shows that 10% of the respondents would recommend NC (V) programme since it links theory and practice, which form a core part of the programme, and as a result opens many skills/training opportunities for its graduates.

"Very interesting programmes and has opportunities."

"There are plenty of opportunities out there and it is an interesting course."

Theme 4: NC (V) programme provides graduates with practical skills.

10% of the respondents would recommend the NC (V) programme because it provided students with practical experience required in workplace.

Theme 5: NC (V) programme will support economic growth and is recognised by employers.

Theme 5 shows that 14% of the respondents would recommend the NC (V) programme because the programme is recognised by most employers and for the fact that acquired skills would boost the national economic growth. As mentioned by one respondent:

"This course is critical to the economy of South Africa, thus, there is a shortage of engineers. "Because of the mining opportunities in North West province."

B. If, no, why?

Theme 6: NC (V) programme is not sufficiently promoted by DHET

Four percent of the responses showed that NC (V) graduates would not recommend the programme to aspiring students because of the lack of promotion and/or awareness and slow (sometimes none) recording of the Integrated Summative Assessment Task result, which then lead to high failure rate. One respondent acknowledged that;

“No, the government is not doing enough to promote NC (V) for now it is a waste of time.

“No, because the system is slow and at times our results pend because other lecturers do not record our ISAT marks which lead to failure.” 968

Theme 7: NC (V) programme is not recognised by most companies and opportunities are few.

Theme 7 with 8% responses showed that most companies have not yet recognised the programme, thus leading to fewer opportunities for NC (V) graduates in the field of engineering.

“Work opportunities are few.”

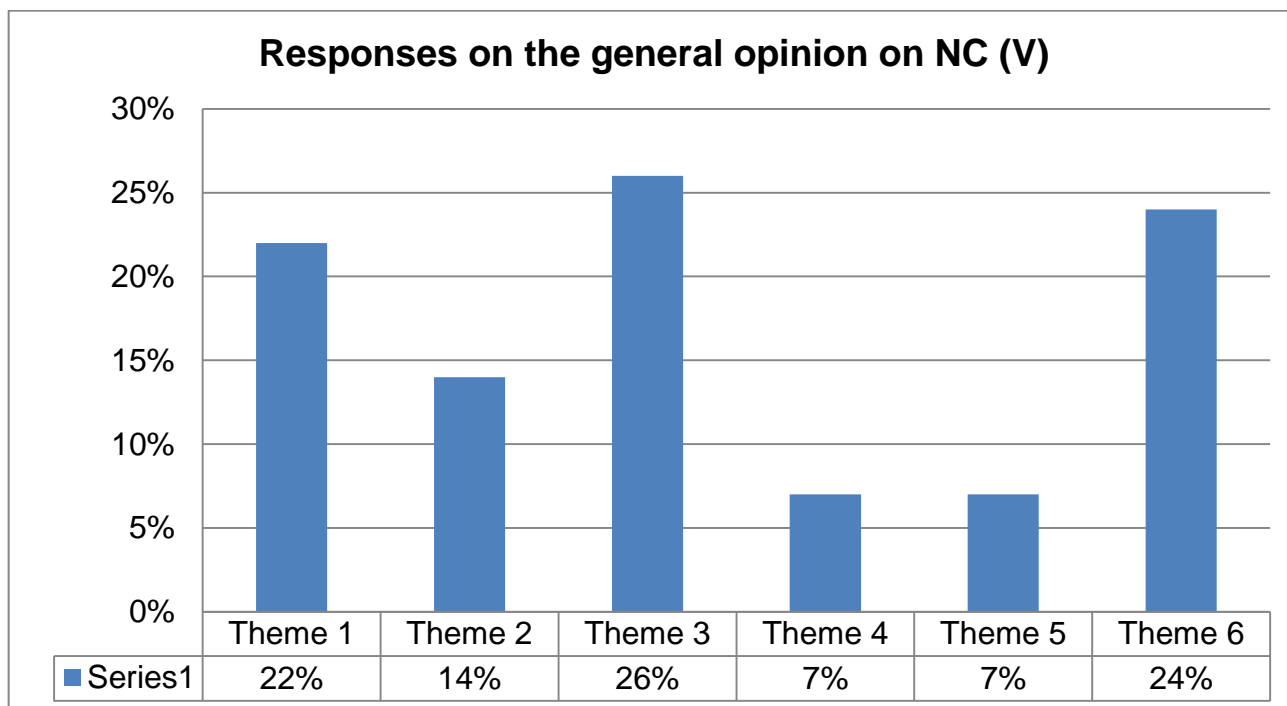
“Companies are not employing.”

“The course is not recognisable by most companies.”

“No, they are not recognised at work field.”

Question 16: What did you like or dislike about the NC (V)?

Six themes emerged from the responses to question 16 that sought respondents' general opinion about the NC (V) programme. Graph 18 represents the responses per theme in percentages.



Graph 4.18: Responses on the general opinion on NC (V) programme.

A. Likes

Theme 1: Provides practical skills, opportunity to occupation and conducive learning environment.

Graph 4.18 shows that 22% of the respondents liked NC (V) as it offered students both theoretical and practical knowledge, and then prepare them for workplace environment. Thus, the duration of the module (yearlong rather than 6 months) makes it more appealing to most students.

"It provided me with occupation opportunity."

"I like the mix of theory and work."

"I liked practical because such made it possible for me to learn workplace techniques while I was still studying."

Theme 2: Exposure to workplace

Graph 4.18 shows that 14% of the respondents liked NC (V) programme because it gave students an exposure to real world of work and workplace training.

"I liked everything about the course especially the practical side of it. I had an opportunity to visit certain companies including Eskom and local mining corporations."

"I liked the NCV programme due to its practical as it gives students experience in the work place and how to conduct them."

Theme 3: It is an alternative to general schooling

Graph 4.18, Theme 3 shows that 26% of NC (V) students liked the programme mainly because it served as an alternative to mainstream school, particularly due to the fact that have the opportunity to study both theory and practical part of the course.

B. Dislikes

Theme 4: Articulation and progression to university

Graph 4.18 shows that 7% of the students disliked NC (V) programme because it was difficult to study further from public TVET through to universities of technology and/or mainstream universities.

"Difficult to go to university"

Theme 5: Promotion of programme to the employers

Theme 5 shows that 7% of the respondents disliked the NC (V) programme because of its lack of recognition from employers who tend to prefer more popular NATED graduates.

"They do not take us serious as the students take NATED students more important than us."

"People do not take NC (V) serious. They always undermine and discriminate us. Even when we are looking for jobs, it is highly impossible for us to get a job."

Theme 6: Relevance of the NC (V) curriculum

Theme 6 shows that 26% of the respondents were concerned with the inclusion of Life Orientation in the NC (V) engineering qualification which would only suit students pursuing Business and Marketing studies. Furthermore, Grade 12 students disliked the idea of sharing the same lecture rooms with Grade 9's and also that the qualification takes three years to complete.

"I find it disturbing to do a module for a year. I personally favour NATED courses because they are less time consuming and somehow well recognised by most big companies"

"Life Orientation - I think it was irrelevant for NC (V) engineering students." Maybe it would be an important curriculum/course for Business or Marketing studies."

"Disliked - Being taught with grade 9's in the same class."

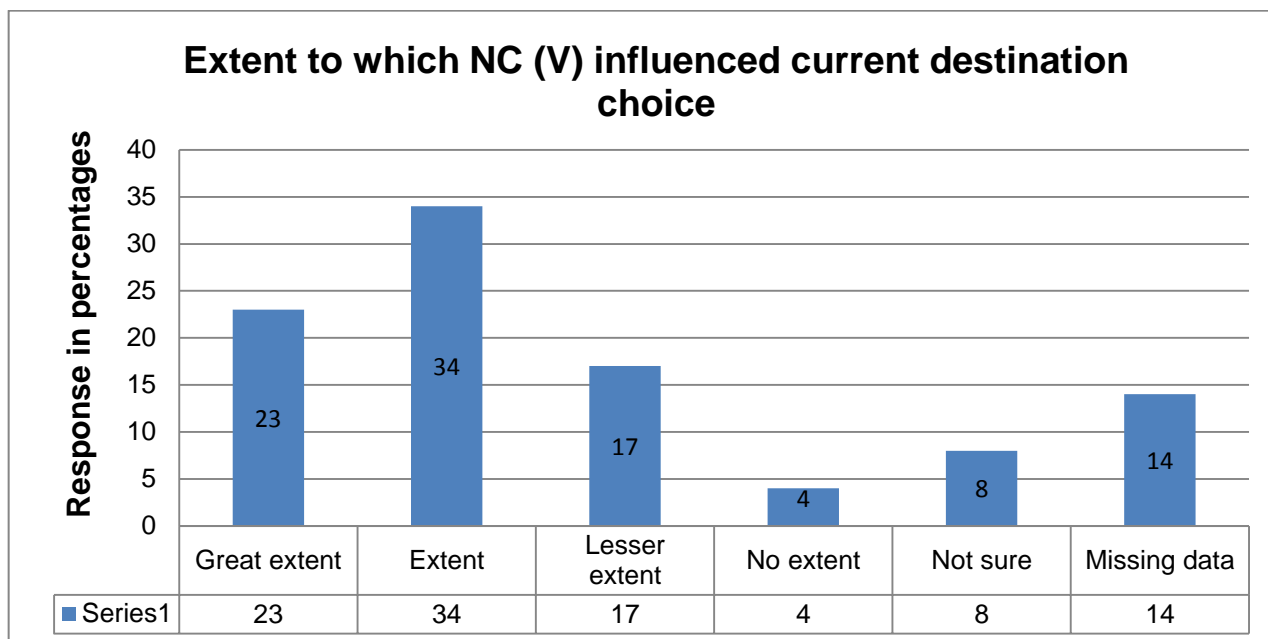
"What I dislike about the NC (V) is that it takes a long duration to complete."

Question 17: *To what extent did the NC (V) qualification influence your current choice of destination (study, work, further training?).*

Great extent		Extent		Lesser extent		No extent		Not sure		Total
1	28	2	46	3	20	4	5	5	8	107
%	23		34		17		4		8	100

TABLE: 4.31: Possible influence to their current choice of study

TABLE 4.31 presents data on the views of the respondents on the extent to which the NC (V) qualification influence their destinations.



Graph 4.19: *The extent to which students regard NC (V) qualification as influential to their current choice of destination.*

Graph 4.19 shows that 57% of the students regard NC (V) qualification as influential to their current choice of destination to an extent and to a greater extent, whilst 29% are indicated less influence to not sure.

4.5.4. SECTION D: Post College experience and destination of graduates

Section C covers the post college experience and destination of graduates recognised as entry requirement for your study, training, work placement, employment.

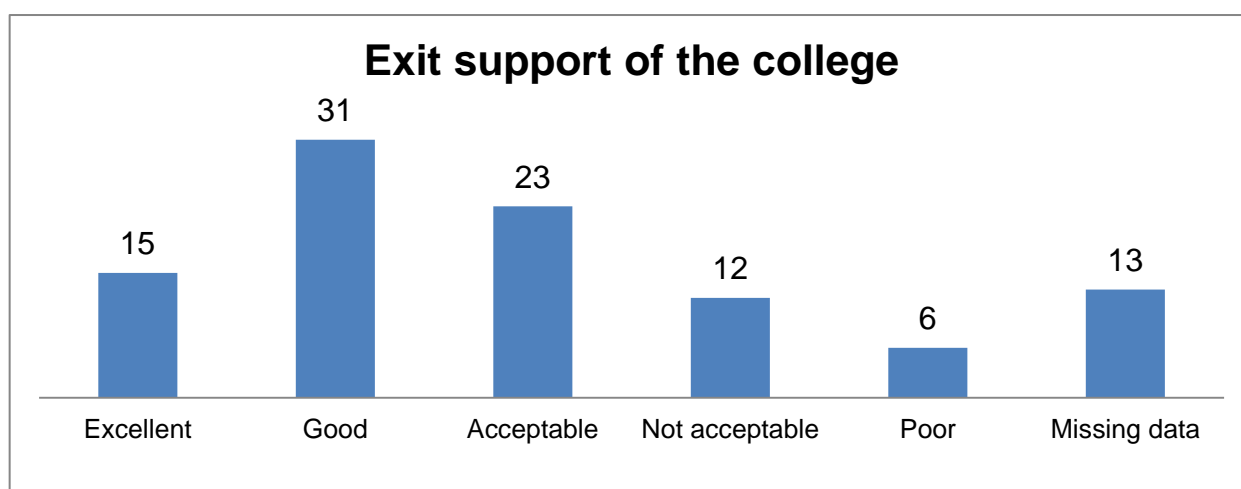
4.5.4.1 Support at Exit

Question 18: *How would you rate the exit support of the college (this includes, placement into workplaces, university, learnerships, apprenticeships, etc.)?*

Excellent		Good		Acceptable		Not acceptable		Poor		Total
1	9	2	37	3	33	4	17	5	11	107
%	15		31		23		12		6	100

TABLE 4.32: Perception of respondents about the exit support to the graduates

Table 4.32 shows that 69% of respondents regard exit support to the graduates by the colleges as acceptable to excellent and 18% rated the exit support as not acceptable to being poor.



Graph 4.20: College exit support to students.

Graph 4.20 provides a graphical display of the responses on how the graduates rated the support received when exiting the college.

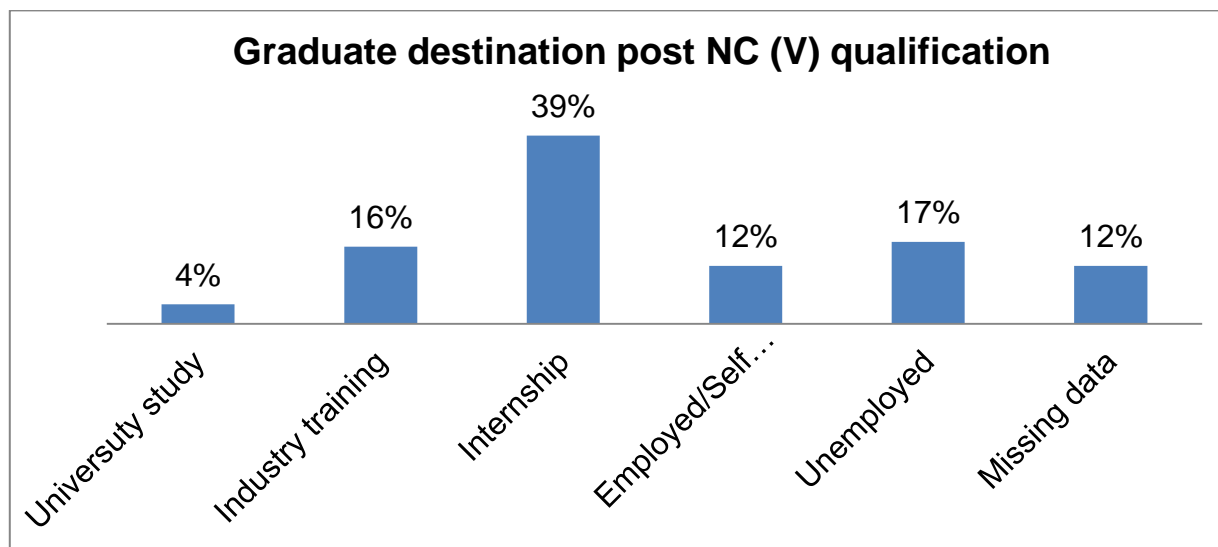
4.5.4.2 Influence and impact on further study and training

Question 19: Where have you been studying/training/employed/unemployed since you graduated from the college?

University study		Industry training		Internship		Employed / Self employed		Unemployment		Total
1	5	2	19	3	48	4	15	5	20	107
%	4		16		39		12		17	100

TABLE 4.33: Destination of Graduates post NC (V) qualification

TABLE 4.33 and Graph 4.21 show that 39%, that was more than a third of NC (V) graduates are doing internship, followed by 17% who were not employed, 16% who were doing further training in industry, 12% who were employed or self-employed and 4% who were pursuing studies at universities. This amounted to 72% graduates who were positively engaged after completing the NC (V) qualification against 17% who were unemployed.



Graph 4.21: Destination of Graduates post NC (V) qualification

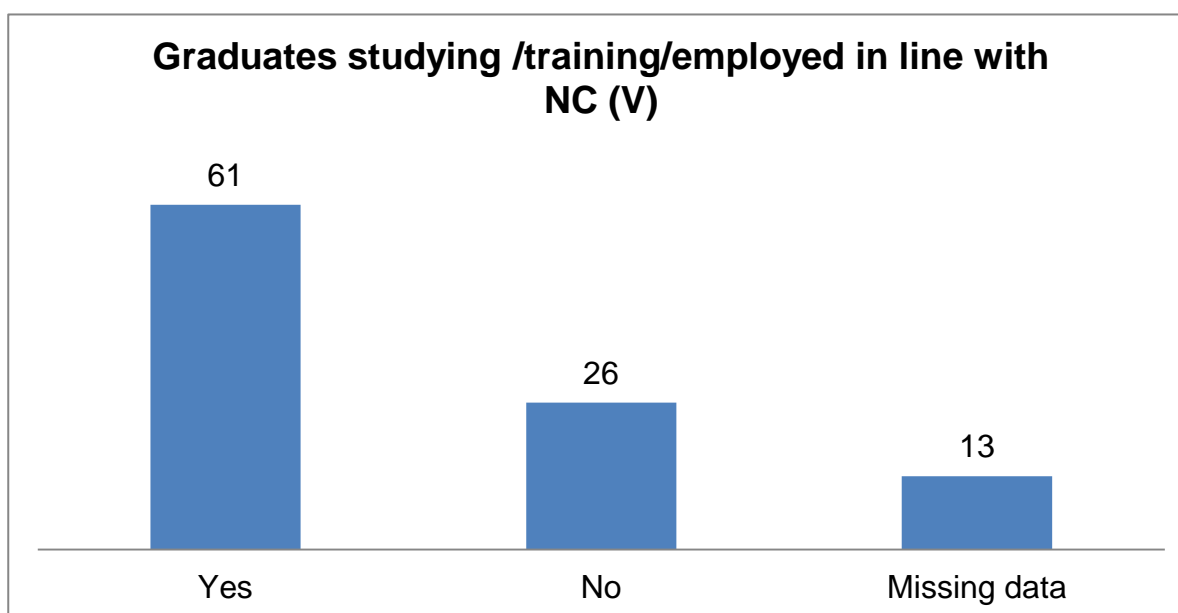
Question 20: Did you/are you studying/training/employed in your line of your NC (V) qualification?

If, Yes, mention your study/training field or employment position and category.

	Yes	No	Total
1	75	2	107
%	61	26	100

TABLE 4.34: Study, training or employment in line with NC (V) qualification

TABLE 4.34 shows that 61% of graduates were studying, training or employed in line with NC (V) qualification.



Graph 4.22: Graduate studying/training/employed in line with NC (V) qualification.

Theme 1: Study

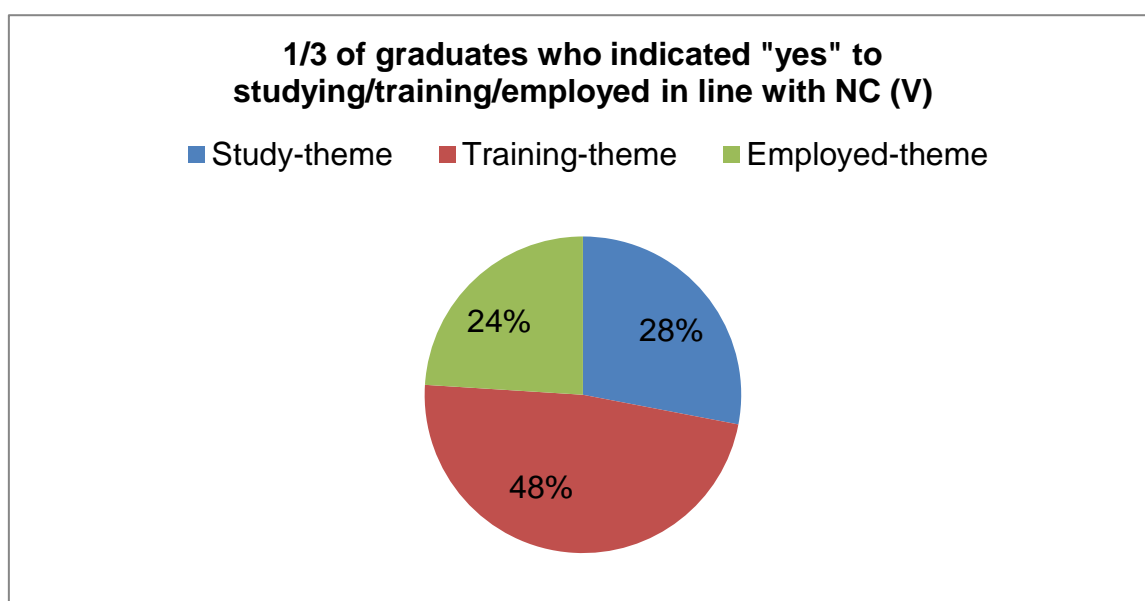
Theme 1 shows that most NC (V) graduates were furthering their studies in fields such as civil engineering, N5 building, and B Tech Management Services; either at the FET colleges, universities of technology or at mainstream universities.

Theme 2: Training

Theme 2 shows that most NC (V) graduates were absorbed in various workplace training programmes such as internships, apprenticeships, learnerships and graduate development.

Theme 3: Employment

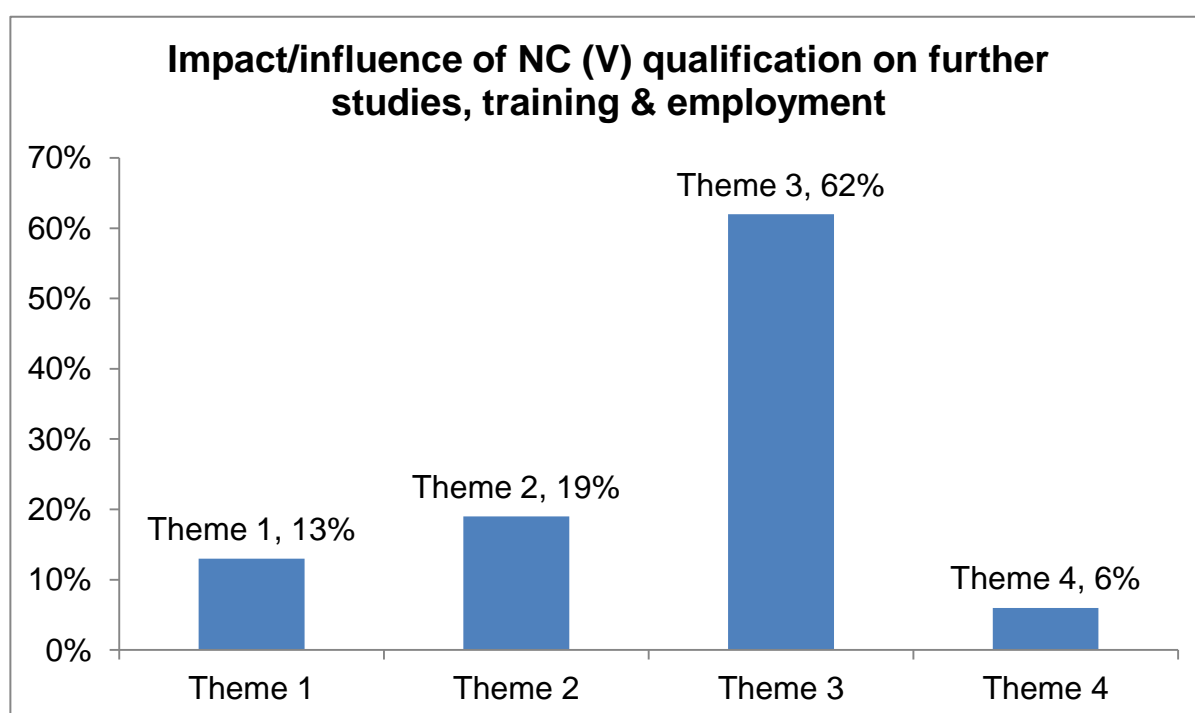
Theme 3 shows that most NC (V) graduates were employed as interns and apprentices at various construction and building companies.



Graph 4.23: Category of graduates' studying/training/employed in line with NC (V) qualification

4.5.4.3 Impact on employment and self-employment.

Question 21: How NC (V) qualification did/does assists(ed) you in your studies or training or employment?



Graph 4.24: Impact of NC (V) qualification of further studies, training and employment.

Theme 1: Sharpened skills

Theme 1 shows that 13% of the respondents stated that NC (V) programme enabled graduates/students to sharpen their skills by providing practice training in the college simulated workshops and also by exposing them to the workplace to a point where graduates were confident to say:

“Sharpened my skills - I know building work - I understand the work.”

“NC (V) assisted me with acquiring skills through practical experience therefore I understand construction more fully.”

Theme 2: Improved entry into further learning

Theme 2 shows that 19% of the respondents stated that NC (V) programme had made it possible for them to further their studies, find employment and also to be absorbed through various learnership programmes. Interesting responses from the graduates were:

“It assisted me to excel at university especially in using ICT. Thus, I had more knowledge of a computer than former grade 12 students.”

“Opened doors for apprentice learning.”

“It is a very good experience that I intend to study further and get higher qualification and also find a job and be a role model about what I have learned about engineering.”

Theme 3: Increased employability

Theme 3 shows that 62% of the respondents regarded practical training that was offered as core part of the NC (V) programme that contributed to the acquiring of critical skills and/or knowledge, which in turn assisted them to adapt or excel in various engineering fields of study. Graph 4.24 displays a normal distribution curve that revealed the programme was positively impacting the careers of the graduates since their employability increased by 62%. Direct words below from the respondents indicate they appreciate the value this programme has added to their lives.

'I can connect what I studied with work – Practical training played an important role in preparing me for the workplace so I do not struggle at all – Practical training assisted me with certain knowledge which is required in the workplace – Practical training helped in preparing me for the workplace - Theoretical studies made it easier to adapt in the workplace.'

"At college I learnt of what is expected of me especially during workshops and company site visits."

"My experience when it comes to NCV was good because now I can do house wiring without anyone assisting me. I am confident of what I am doing because of the knowledge that was passed to me by the lecturers. IT is relevant to a country like South Africa since it is dealing with the development of skill. If companies could realise how relevant this programme is and how much money they would save when it comes to training NCV students then they will be aware that this programme will save them money. Skills shortage must be solved by NC (V)."

Theme 4: No impact

Theme 4 shows that 6% of the respondents regarded NC (V) programme as having no impact in their respective careers, whatsoever; especially since most of the graduates were unemployed.

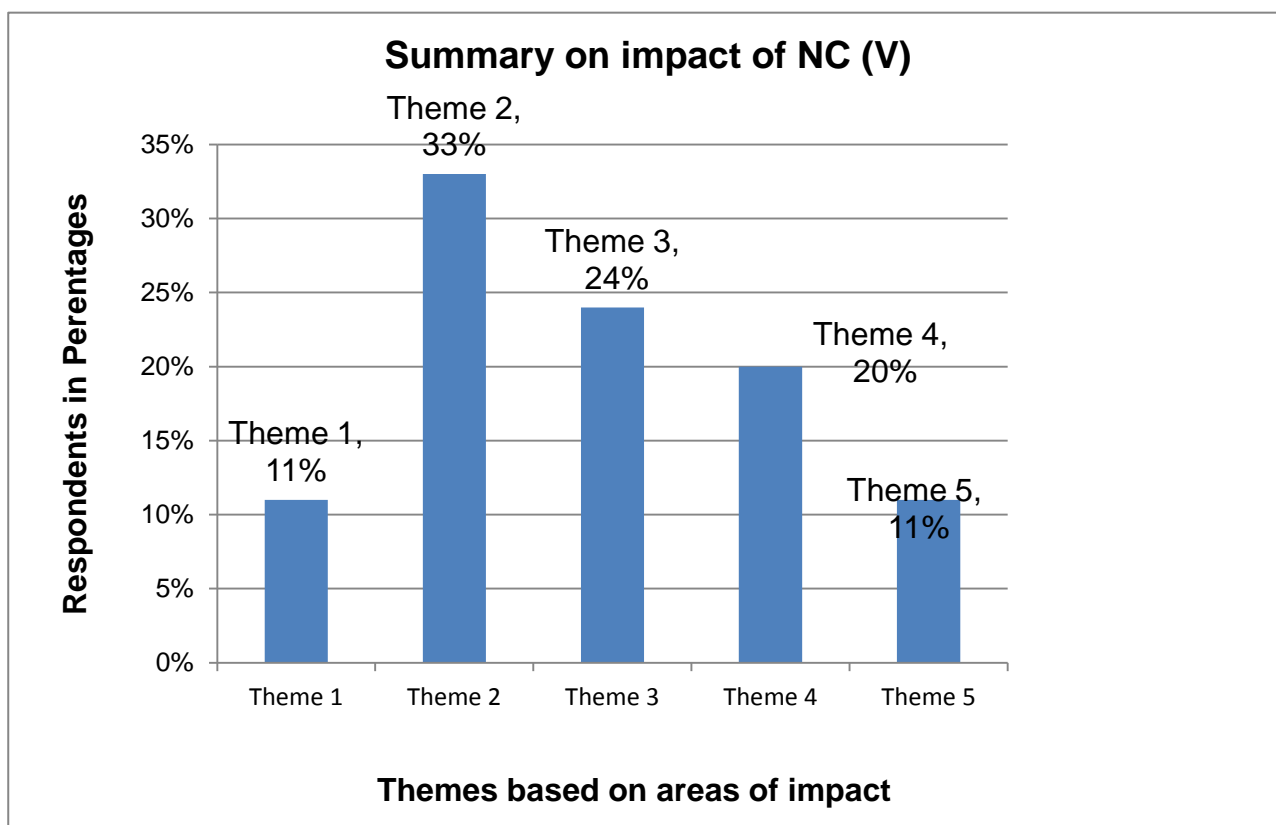
"Not much as other people with no NCV also got appointed."

"I am currently unemployed so I cannot say how it assisted me."

"Experience was good but not challenging."

4.5.4.4 General perception on NC (V) programme

1. How would you summarise your experience, benefits and the relevance of NC (V) qualification in 100 words?



Graph 4.25: Respondents' summary opinion on the impact of the NC (V) programme

The responses were grouped into 5 themes and the opinions were converted into quantitative data. Graph 4.25 displays the responses in all 5 themes.

Theme 1: Perception on pass or failure rate

11% of the respondents regard the NC (V) programme as interesting and challenging simply because practical work forms part of the curricula. There was also an appeal for the colleges to support learners. There was a concern that the failure rate was high and that potential employers did not recognize the NC (V) qualification. One of the comments under this theme is that the duration of 3 years for the course was too long, as reflected by one of the quotes below.

"Too many students fail. College must help learners."

"Most of my experience derives from the supportive role we received from the college."

“The advantage of studying NC (V) is that it provides practical but other than that it was a waste of time and it must be reduced to 6 months, I personally think everything can be covered in 6 months.”

Theme 2: Perceptions of quality of NC (V) qualification

Views on perceptions of the quality of NC (V) qualification as per theme 2 showed that 33% of the respondents were convinced that graduates had positive perceptions towards the programme because a number of them gained workplace experience in the college simulated workshops. Others gained this experience through direct placement in industry and the site visits to various big companies. Furthermore, most graduates were able to apply what they had learned at their colleges in real-life situations by virtue of the knowledge gained at various workshops and during site visits that formed part of their studies. The respondents viewed the quality of the NC (V) qualification in terms of what they were able to do after completing the programme. Some of the views were:

“I did not like NC (V) at the beginning, 1st year because I did not understand the course. However, due to the love (passion) of the course and supportive staff at the college I managed to enjoy the course.”

“The NC (V) programme gave me much knowledge and experiences throughout. IT gave me benefits since I was able to apply the skills knowledge and practical I learned in real life situations as I was able to part time jobs on weekends for myself to earn something. The relevance of it is that it is much relevant to what I want to become after finishing my course and in the career I am pursuing.”

“NC (V) programme is very helpful as it provided a student with both practical and theory, so while I was still a student I used to get part time job through my NCV training and that helped me very much because I was exposed to a real world which still a student, on NC (V) you trained under the specific course which pave you a way to you goal under that division and after NC (V) you can straight away go to the field of work and it is easy to pass NC(V) programme, because practical training and theory contribute equal at the end of your academy year.”

“The NC (V) course helped me to make informed decisions about your qualification choices and to consider progression opportunities available. The NC (V) also makes it easier for you to explain to others what qualifications you hold or studying

for. This becomes very important when you are applying for a job. It is based on standards of knowledge, skill and competence.”

Theme 3: Impact on skills opportunities

Impact on skills opportunities show that 23% of the respondents regarded NC (V) programme as impacting positively on their career prospects mainly because the qualifications enabled them to enter, adapt and excel in the workplace with ease. Both theory and practical experience assisted the students to acquire requisite knowledge for real workplace environment. The responses indicated that as years went by, students developed an increase in passion and interest in the programme and this was demonstrated by the following quotes from the responses:

“Good experience and job opportunity for many people. Excellent course for young persons who want practical knowledge”

Studying civil engineering was a great experience. However, things did not go the way I expected since I was struggling to find a job at the moment, I finished studying. But I still want to pursue the construction career industry and master the field and that is the reason I welcomed CHIETA workplace training with both hands. Hopefully the experience I will gain in this internship will help me lead a permanent job.”

“At first I thought that I was studying a useless course because I heard that many companies do not recognise NC (V). However, doors of opportunities are starting to open up.”

“I enjoy everything about the course and I look forward to an exciting career path when I finish this internship.”

NC (V) programme is very helpful as it provided a student with both practical and theory, so while I was still a student I used to get part time job through my NCV training and that helped me very much because I was exposed to a real world which still a student, on NC (V) you trained under the specific course which pace you a way to you goal under that division and after NC (V) you can straight away go to the field of work and it is easy to pass NC (V) programme, because “practical” and theory contribute equal at the end of your academic year.”

“Studying NC (V) has given me knowledge on how to work with electrical appliance and how to repair them what to do when there is a fault on the circuit, how to wire

electrical circuit like stove, geyser, socket outlet and light. I really enjoy working with my lecturer during practical.”

Theme 4: Views on areas of improvement

Theme 4 shows that 20% of the respondents felt that there were gaps or areas for improvements within the NC (V) programme. One of the areas for improvement was introduction of compulsory workplace component or work integrated learning as a permanent feature of the skills system. The NC (V) qualification was not well known by the employers and this led to non-employability of the graduates. Graduates who entered NC (V) programme with GR 12 qualification complained about repeating similar levels of learning and sharing same classes with Grade 9s, 10s and 11s. Respondents highlighted the following:

“Government and colleges must make the programme simple and after doing it students should be placed in workplace.”

“NC (V) is an opening mind qualification that is better equipped than grade 12 learner especially with regard to computer applications or use. I think NC (V) should be improved especially administration side. I do not have my certificate even though I graduated in 2010. The WIL should be compulsory for all students in order to give them a workplace experience.”

“I find NC (V) very interesting and challenging at the same time. I wish government can do more to promote the NC (V) to employers so that it can be weight at the same level as NATED courses.”

“My experience with regard to finishing matric and repeating grade 10, 11 and 12 works sounded like time wasting for me. I therefore call on the government to make awareness to school learners that they do not need to finish grade 12 in order to enrol for NC (V) courses. Thus, I feel that there has not been enough information out there with regard to NC (V) courses.”

“NC (V) is very good and is vital to our country since well it is said there is a shortage of their matric, because you are able to get a job straight after completing it but it only it can be applied in a good way starting from government to colleges and students, I think government should do more on introducing it to companies”

“My experience with NC (V) is beneficial even though it takes time to complete it because we get to know how to operate machines etc. Sometimes you fail other subjects due to ISAT marks not being allocated to you.”

Theme 5: Impact on employability

Theme 5 on the impact on employability shows that 11% of the respondents emphasised that experience and relevance of NC (V) qualification ensured that graduates were employable and job ready, and equipped with the appropriate knowledge for the job. Some of the comments were:

“It is a good programme for youth. It allows learners to understand industry and it opens chances for future.”

“The most exciting experience was during site visits at various companies where I learned a lot about building material in depth.”

“NC (V) qualification is very important to me as a youth of S.A because it trained me during my period of study to be prepared to enter the workplace environment”

“It makes things easier for you especially when you are looking for a job because of the knowledge we got through studies. I got the qualifications that I needed for the relevant job and the experience that can help me through everything that I want to do.”

Some of the responses indicated the weakness of the system but the shortfall in the course of the delivery of the programme was overcome by good experience.

“Sharing the same class with grade 9’s made me feel like I am under qualified. I also feel that I have wasted three years doing grade 12. Moreover, colleges use obsolete technology while the companies possess the latest and advanced technology. Thus, I struggle using latest versions of machinery. However, I enjoyed the experience.”

4.6. Literature review – findings

The literature review covered opinions, views and experiences of the three African countries and the six international countries outside Africa. The chapter studied the vocational education and training programmes and models of countries that can have direct or indirect influence on the South African TVET System. The premise of the literature review was that NC (V) qualification was better placed to offer graduates educational pathways that promote articulation into opportunities for occupational skills, into the labour market as well as the furtherance of studies at universities. From the literature review study, the following key findings were made.

- Umalusi (2006:24) study on the comparison of the school and college subjects highlighted that developers are ensuring that vocational programmes prepare learners for higher education since that played a role internationally in making such programmes more attractive to learners as well as in raising the standard of the programmes. This study was cognisant of the fact that vocational programmes are supposed to prepare learners for the workplace. However, ascertaining whether or not a learning programme prepares learners for the workplace was complicated, as 'the workplaces' in fact are extremely heterogeneous and different industries and companies have very different requirements. The information gathered from the literature review was used to develop a theoretical framework for the study on the impact of the NC (V) qualification. The framework was meant to explore the extent to which the NC (V) qualification is able to influence the intake of learners into the workplace as well as learner progression to further studies.
- From the literature study it became clear that the NC (V) qualification forms part of the foundational programmes of the South African Skills development Strategy as espoused in the third National Skills Development Strategy (NSDS III, 2011:5).
- The NC (V) qualification offers solid bridges between vocational education, training and skills development, and the world of work makes it more likely that graduates will learn the skills required by the evolving demands of labour markets, enterprises and workplaces in different economic sectors and industries (ILO G20 2011:5)

- Contrary to the Report on the conduct of the National Examinations (2009:5) that outlined that “*the NC (V) programmes are intended to respond directly to the priority skills demands of the modern South African economy by exposing students to high skills and knowledge*”, the SAIVCET Report of 2012 discovered that colleges have battled to sell the NC (V) to industry. The SAIVCET Report indicated that the colleges have not aligned their institution-level delivery of the NC (V) with the needs of local industry and that until very recently; few FET colleges arranged any workplace experience for NC (V) students. As a result, most NC (V) graduates have studied for three years, full-time, without ever setting foot in the industry for which they were supposedly being trained. This has not done much for their employability or for the credibility of the NC (V) programme, not only in South Africa as it is a global problem facing vocational education.

4.7. Findings on selected Countries

- **Ghana:** South African model can learn good practices from the Ghanaian TVET model of strengthening the informal sector by reviewing its vocational programmes and curricula. The Ghanaian Policy on education addresses three forms of education, namely, technical education as education and training that aimed at preparing individuals for middle level positions as technicians, technologists and middle managers; and vocational education as the preparation of skilled personnel for positions below technician level, with emphasis on skill acquisition. From this definition it emerged that Ghana differentiates between technical education (intermediate to high level skills) and vocational education (low to intermediate skills).

For the purpose of comparability, the South African NC (V) qualification equated with the Ghanaian vocational education that was, low to intermediate level skills. General employability skills were included in the preparation of individuals for the world of work and it included work attitudes and habits, job-seeking skills, personal management skills, team work and interpersonal skills, creative thinking and problem solving skills, career development and lifelong learning, and quality consciousness.

- **Denmark and Ireland:** The models of these countries provided for flexible entry and exit points in the vocational and education system, and they also made provision for

government intervention. These models also allowed learners to undergo a preparatory or orientation programme before enrolling in either a vocational or higher academic courses. The other models prioritized the importance of a strong partnership base with industry at various levels of the system.

- **Swaziland:** The aims of the TVETSD system were similar to those of the NC (V) qualification, namely, to respond to formal, informal and non-formal sectors of the economy, and to integrate other contemporary skills that would enhance the employability of the learners. One notices that South Africa and Swaziland do not only share common primary purpose of vocational training such as that of the NC (V), but they also faced similar challenges of articulation and relevance.
- **Australia:** Australia also experienced challenges that were faced by the South African vocational system, which led to the introduction of the NC (V) qualifications. These challenges included nationally developed programmes that failed to address industry-specific needs. The learners were taking longer time to complete the qualification that was not articulating well to institutions of higher learning. Although Australian employers made extensive use of the VET system, both public and private, a number of large industries and employers either opted-out of the recognised VET system or established their own registered training organisations and developed firm-specific training packages that restricted portability.

It should be noted that although the theory of Connectivism was ideal for the effective functioning of the TVET system, frequent disjuncture and fragmentations were at times experienced due to the demands made by employers and the challenges related to the supply. Some of the underlying factors leading to misconnection were the long-time taken by institutions to develop their curriculum, and the training of learners versus the ever changing economic demands that made it impossible for the two to happen simultaneously.

- **Brazil:** Although the vocational education and training system of Brazil indicates high involvement of employers, the setback was in its inability to accommodate high numbers of learners as well as the monopoly of total control of training. In contrast the South African vocational education and training system still promotes an interventionist approach in order to reach its developmental and economic growth goals; the NC (V)

qualification plays an important role in this respect by providing an alternative vocational route with broader prospects to that of general schooling to the youth.

- **Ireland:** The Irish model of organizing TVET has a resemblance to the South African system since learners have an option of choosing their vocational routes. Although previously South Africa had employer demand-driven TVET system, most post college placement challenges reflected a supply-driven approach where the colleges enrolled learners in programmes that might not guarantee future employment. The South African Education and Training System can learn from the strengths of the Irish Education System of promoting seamless progression and articulation of learners from school to vocational education and training colleges; to workplace training opportunities and to university education.
- **Denmark:** The South African TVET system shares similarities with the Danish system in respect of the choice provided to students at the 10th grade. Important to this study was that the Danish vocational education and training qualifications provided access to the labour market as skilled workers or to specific short and medium-cycle higher education programmes at vocational colleges and academies or university colleges. Unlike the uncertainty that exist concerning NC (V) qualification provision of access to bachelor's programme, TVET does not provide direct access to university-based bachelor's programme.
- **Switzerland:** The contrast between the Swiss VET system and the South African model, in particular the NC (V) programmes, was that the former still has to attract meaningful involvement of the stakeholders; whereas the latter is mature in respect of the participation of stakeholders. In summary, the strengths of Switzerland's VET/PET system lied in the fact that it is strongly employer-driven and the partnership works well at each level. In-school education and in-company training are well integrated; in-company training is sufficiently broad and not too company-specific. South Africa should adopt the Switzerland features of strong industry-colleges partnerships that enhance students experiential or work placement opportunities. In the recommendations section of this chapter, the researcher proposed an "Integrated Community of Practice Model" to enhance the college-industry partnership.

- **Germany:** In German there is a wide variety of educational settings available which provide students with real-life experiences during their course of studies, and this is a valuable aspect of their vocational studies. Such a situation prepared learners for the world of work, and also provided a more holistic approach to teaching by taking advantage of the different learning modalities available to learners. German vocational system has a long history of two different processes of combining theoretical and practical learning in a seamless manner. This was where the German vocational education was termed the dual system. Subject-restricted higher education entrance is only possible for vocationally qualified persons after successfully passing final VET examinations and attaining a three-year on-the-job experience. South African system of TVET particularly for the NC (V) programmes, can take a leaf out of the German's book in respect of the integrated education and training system that is coherent and promotes articulation from VET to higher institutions.

- **Botswana:** The Botswana National Vocational Qualifications Framework mainly is based on the achievement of competencies for recognition of progress from one level to the other. The duration for achieving any level of competency is flexible and depends on the ability and pace of each individual learner. The developmental challenges faced by Botswana are comparable with those experienced by South Africa. The current state of vocational education and training and the proposed direction for its future development, still require a policy that has clear and achievable goals, objectives, and strategies, which formed the basis for the integrated system.

4.8. Summary

Chapter 4 dealt with the data presentation, analysis and interpretation that were collected through interviews and questionnaires. The qualitative and quantitative methods were used in the analysis of the data as indicated in chapters 1 and 3. Findings, conclusions and recommendations were presented in Chapter five.

CHAPTER FIVE: SUMMARY OF THE RESEARCH, CONCLUSIONS AND RECOMMENDATIONS

5.1. Introduction

This concluding chapter introduces the reader to the summary, conclusion and recommendations of the study as presented under the following sub-headings: introduction, summary of the chapters, literature review findings, limitations of the study, summary of the quantitative empirical study and its key findings, summary of the qualitative empirical study and its key findings, policy on NC (V) qualification, feedback on the NC (V) graduates, conclusion of the study, recommendations, areas for future study, proposed work placement model for TVET experiential training, and TVET College Integrated Community of Practice Forum Model and Summary.

The previous chapter produced information emanating from the qualitative and quantitative data analyses. Findings in this study focused on responding to the problem statement, the research questions and the aim of the research in relation to the questionnaire and the interviews schedule. Key findings were formulated, and recommendations aimed at improving prospects of the NC (V) graduates, were made. Each chapter and section was evaluated against the initial intentions of the study in order to ensure alignment of processes to the design and the methodology applied. The impact of the NC (V) programme on the graduates was assessed throughout the chapter. The conclusion explicitly pronounced whether the graduates experienced a positive or a negative impact.

5.2. Summary of the Research

In this section the researcher presented a summary of the research by providing a synopsis of each chapter that outlined how the research problem was addressed.

The first chapter of this study began with an introduction to the rationale for the research. The rationale was primarily informed by the research title that sought to investigate the impact of the NC (V) engineering qualification in the North West Province of South Africa.

Chapter one outlined a summary of steps and activities leading to the expected outcomes. These included the problem statement to clarify the focus of the study, background of the Further Education and Training Colleges and their mandate in the scheme of the overall purpose of the Department of Higher Education and Training, the aim and sub-aims of the study that gave effect to the research framework. The key theoretical concepts significant to this study were defined to provide a common understanding of their meaning in the study. The summary of the research methodology and the research design, sampling strategies, the methods of data collection and analysis were discussed. Issues relating to ethical considerations and the delimitations of the study were presented.

Chapter 2 presented perspectives on the understanding of the NC (V) qualification as a newly introduced programme. The perspectives covered the prospects and implications for the NC (V) graduates including educational pathways and articulation. Policy framework on Vocational Education and Training covering the African perspectives of the three selected African countries and the international perspective of the six selected countries, were discussed. The South African model of Vocational Education and Training was discussed in comparison to other nine countries with the purpose of seeing what could be learned from other countries. The importance and relevance of the theory of Connectivism and Community of Practice learning model for the enhancement of the NC (V) programmes were argued. The chapter concluded by discussing related issues of funding for NC (V).

Chapter 3 presented the research design and methodology followed. This chapter outlined the qualitative and the quantitative methods as key to addressing the research problem statement. The two methods complemented each other since the quantitative data was primarily collected from the NC (V) graduates through the questionnaire that employed closed and open-ended questions to ensure the content validity of the information. The researcher made constant follow-ups to the colleges for the usable contact list of the graduates and finally relied on telephonic completion of the questionnaire as only about a quarter of the distributed questionnaires were returned.

Interviews were used in the collection of the qualitative data. Individual face to face interviews were conducted with nine managers of the three colleges and two officials of the DHET. The other individual face to face interviews were conducted with two SETA representatives and the rest of the interviews with the two University representatives, one

SETA representative and the ten employer representatives were conducted telephonically. The average duration of the interviews was twenty minutes and the face to face interviews meetings were on average ten minutes longer than the telephonic ones. This was because the respondents felt relaxed and free to provide introductory remarks in their responses. The researcher also met with the representatives of sections of the DHET who are responsible for the management of student examination records and the placement of the graduates in the workplaces to enquire about student information. Relevant data and reports on examination statistics and student placement records were given to the researcher. This data was used to verify and validate the information collected through the questionnaire and the interviews to ensure the reliability of the study.

In chapter 4 data collected was consolidated, reduced, analysed and interpreted. College level interviews data was in most cases similar and indicating common understanding of the purpose of the NC (V) programme. This was also an indication of similar challenges the colleges experienced during implementation of the NC (V) programme. It was evident that there were different areas of emphasis on the way the three colleges were rolling out the NC (V) programme. The difference was evident in their student support priorities such as the importance of exit support from one college resulting in high student placement rate. Pass rates showed that college 'B' underperformed consistently. Interpretation of the interview data from the universities showed that there was a lack of interest in the NC (V) qualification. The same could have been said about SETAs had it not been the DHET directives that SETA offices be opened in the colleges. Although Higher Education South Africa (HESA) which is an association for principals of the universities was consulted regarding the acknowledgement of the NC (V) qualification as one of the entrance requirements to universities, different universities continue to use different criteria. As a result there is silent university apathy towards the qualification culminating into less than five percent of NC (V) students progressing to university education.

The SETAs had recently started a drive to facilitate the placement of FET College students into industry through experiential training, internships and learnerships. There was little concerted effort in targeting the NC (V) graduates as a fairly new qualification with the aim of monitoring its impact. Most employers were satisfied with the performance of the NC (V) graduates placed within their companies or businesses. They were willing to increase the numbers of the graduates for work-placement purposes provided colleges were prepared to support graduates with funding during experiential training period. Other

important areas that colleges should improve were the establishment of college-industry partnerships and effective communication. Employers recommended that to improve areas such as job readiness, administration skills and self-mastery skills of the graduates, the review of the curriculum had to be considered urgently.

Chapter five presents the summary, the findings, the conclusion and the recommendations of the study. On the basis of the findings and the recommendations, the researcher proposed an integrated community of practice model and an experiential learning model to facilitate and enhance the placement of the NC (V) graduates into the workplaces. The findings pointed out that areas such as the employability and work readiness of graduates needed to be improved. The experiential learning model would enhance communication between the institution and the employer.

5.3. Summary of common findings across the countries studied

- Mobility between vocational education and training and academic education was minimal as many of the vocational training qualifications were not recognised as minimum entry qualification to higher level training within the academic system. The minimal mobility of the TVET graduates to higher institutions was equally the challenge faced by the FET College NC (V) graduates in South Africa.
- South Africa must avoid designing vocational programmes that are not promoting articulation with university education and industry skills development training as espoused in the SADC Strategic Framework for TVET (2011:5) “Articulation with academic education, whether at school or higher education levels tends to be poor across the region”. From the few policies of different countries stated in this section, it was evident that successful economies in the developed world have developed or were developing systems and strategies to support lifelong learning and work-force development. These strategies were built on the success and redress the failures of foundation education in schools and offer flexible access to Higher Education and FET.
- South African system of TVET, particularly for the NC (V) programmes, can learn from other countries how the integrated education and training system works to promote the coherence and articulation from VET to higher institutions

- All of these lessons could be key in reviewing the NC (V) programmes and in supporting the economic inclusive growth path as envisaged by the NSDS III that; “For our country to achieve high levels of economic growth and address our social challenges of poverty and inequality, we must work together to invest in education and training and skills development to achieve our vision of a skilled and capable workforce to support an inclusive growth path” (DHET NSDS III 2011:5).

5.4. Summary of theories of Connectivism and Community of Practice

The impact of the NC (V) qualification in this study centred on the extent to which the theory and practical components learnt at the college were connected to the real life situation that was the destination of the graduates. The theoretical knowledge of the graduates had to be tested when it was applied in the world of work situations, where they were required to demonstrate the skills they had acquired.

From the TVET Models of the countries studied, including the South African one, it had become apparent that efforts to connect learning and practice need to be an on-going consideration of the dynamic economic demand side of the labour market. This need should be equally recognised and shared by the drivers from both the supply and demand sides of skilled workforce of which the NC (V) graduates form part.

This recognition and sharing would be enhanced by the establishment of the Community of Practice that aims to promote relationship among the colleges, industry, the universities, the DHET, and the SETAs that play an intermediary role.

5.5. Summary of the quantitative empirical study and key findings

The Colleges were requested to provide comprehensive contact details of the graduates in the sample for the purpose of collecting data from them through the questionnaire. The student lists provided by the colleges had missing information that made it difficult to contact some of them. A number of follow-up inquiries were made with the purpose of obtaining the required information from the colleges, but that did not help much.

As a result the number of completed questionnaire responses could not reach the expected number, especially from two of the three colleges. Direct quotes of the responses were provided in italics in the previous chapter to validate the findings. The quantitative empirical study conducted addressed the research questions, aims and the problem statement as envisaged.

- **Experience variable**

Majority of the graduates would recommend the NC (V) qualification to other people since they regarded it as an alternative to general schooling, and in addition as leading to self-employment and employability. According to them it also opened skills/training opportunities; it provided graduates with practical skills; it supported economic growth and it is recognised by employers. About one-sixth of the graduates would not recommend the NC (V) qualification because it was not sufficiently promoted by DHET; it was not recognised by most companies and it opened few opportunities. Majority of the graduates liked the NC (V) qualification because it provided practical skills; opportunities to occupations; exposure to workplace and it was a viable alternative to general schooling.

Forty percent of the graduates disliked the NC (V) qualification because according to them the NC (V) curriculum was irrelevant; the promotion of the programme to the employers was poor; and it provided weak articulation and progression to university. Choice of destination of the majority of the graduates was influenced by NC (V) qualification.

- **Post college experience and destination/ impact of NC (V)**

Graduates regarded exit support provided by the colleges as acceptable. Their post college activities were further studies, industry training or employment in line with NC (V) qualification. Internship, apprenticeship, learnership and industry training were the most popular destinations for the NC (V) graduates. They believed the NC (V) qualification had sharpened their skills, improved their chances for admission to further education institutions and increased their chances of finding employment.

- General perceptions on NC (V)

There was an overwhelming positive, overall perception manifested by the graduates that the NC (V) qualification was interesting and challenging. The quality of NC (V) qualification was rated as a positive factor because a number of graduates gained workplace experience in the college simulated workshops, through direct placement in industry and site visits to various big companies. The NC (V) qualification opened up opportunities for them mainly because the qualification enabled them to enter, adapt and excel in the workplace with ease.

There were still areas that need improvement like in the areas of academic support, student support, the entrance requirements, the introduction of compulsory workplace components, and the work integrated learning as permanent feature of the skills system. The NC (V) qualification influenced employability and job readiness of the graduates positively, and equipped them with the appropriate knowledge and skills for the job.

5.6. Summary of the qualitative empirical study and key findings

The interviews were conducted with the representatives of the three FET Colleges, DHET, SETAs, Universities of Technology, and the employers. The responses were honest and transparent from all groupings. The only challenge encountered was the delay in the submission of the reports regarding the pass and throughput rates to the researcher. From the three participating FET Colleges, only one could not provide comprehensive data as required; however this information gap was filled by the examination reports from the DHET. The challenge on the part of DHET was that data was not compiled in the required format and it would have taken a longer time to reorganise the data into the required format.

The colleges had common understanding that the NC (V) qualification prepares individual students for occupational careers. There was no evidence that the NC (V) qualification enhanced graduates chances for articulation and progression to universities. There were uncertainties and a cloud of doubt as to whether the communities and the employers accepted the validity of the NC (V) qualifications of the colleges. Early years of the

programme were characterised by teething problems such as slow commencement, low student intake, and systems that were not fully ready for implementation.

The objectives of the programme had not yet been fully realised, there were however some signs of improvement such as students' enrolment growth, increased pass rate and an increased rate of student placement with workplaces. The positive impact of the NC (V) qualification was hampered primarily by low participation rate of employers in opening up workplaces for graduates and low entry requirement of grade 9. Mixing learners with Grade 10, 11 and 12 in the same class for the same level of NC (V) programme made class management and teaching difficult, and demoralised students with higher entry levels. Comprehensive planning and implementation of the NC (V) programme was impacted negatively by the transitional and the teething problems that included staff shortage, obsolete machinery, weak public-private partnerships and under-qualified and inexperienced lecturers.

5.6.1. Teaching, learning and assessment

There were different perceptions about the value of the NC (V) qualification, based on the lack of recognition by employers; irrelevance to the industry; lack of involvement of the industry and whether its introduction had addressed skill shortages or not. College lecturing staff subtly and openly resisted the introduction of the NC (V) qualification because of fear of change and the feeling of inadequacy or competency to teach the programme. The College lecturing staff was inadequately prepared to teach the NC (V) programme in terms of qualification and the required numbers.

The lecturing staff embraced change because the NC (V) students were recruited by industry. An increase in the pass and throughput rates was an indication of a developing and maturing system.

5.6.2. Objectives of the qualifications

Objectives of the NC (V) qualifications had not yet been realised; the students' pass rate was still low. The Association of University Principals, Higher Education of South Africa (HESA) accepted the NC (V) framework whilst other individual universities still applied rules on deferential basis. Despite consultation with SETAs and Industry, no meaningful

input for a responsive curriculum was provided to develop the programme. The study noted the success and challenges of the South African NC (V) model when determining the employers' intake of the graduates, which encouraged greater employer participation in the design or the review of the programmes as well as in placing graduates in the workplaces.

The North West Colleges performed fairly well in the NC (V) programme except for the college in the Ngaka Modiri-Molema District Municipality. Colleges did not fully optimise the potential and prospects of the NC (V) qualification by not providing programmes that were responsive to their localities. Department of Communication participated in the development of the NC (V) programme in order to make the programme internationally comparable. The pass and the throughput rates were adversely affected by the quality of grade 9 learners. It was noted that the NC (V) programme was currently under review.

5.6.3. Academic and student support services

There was strong focus and attempt to strengthen the student support services especially the academic services as it had the potential to increase the pass rate. Efforts had to be made to ensure that quality assurance systems of the experiential training were effective. College management was aware of the factors causing the negative perceptions of the NC (V) programme and was willing to participate in the improvement process of the programme. The NC (V) programme had the ability to offer students theory and practical work; funding support and work placement by SETAs made the programme appealing to most students as reported. Active involvement of the SETAs in the colleges played a significant role in changing negative perception by industry. The NC (V) alumni bodies were in the establishment phase and exit support system was weak and/or non-existent.

5.7. Policy on NC (V) qualification

The Association of University Principals, Higher Education of South Africa (HESA) had accepted the NC (V) framework whilst other individual universities still applied rules on deferential basis. The pass rate of female students was higher than that of male students in the NC (V) programmes. The North West Province aggregate pass rate was consistently higher than the National pass rate for all the NC (V) programmes. Colleges

experienced gradual improvement in the pass rate for all the programmes between 2007 and 2012.

The pass rate at College 'B' was lower than that of the National level despite its low student intake. More than half of the NC (V) graduates pursued further training in industry in the form of internship, apprenticeship and learnership. The study found that just one in ten of the graduates were employed. One student in every thirty students pursued studies at a university. Seven graduates in every ten graduates were positively engaged after completing the NC (V) qualification. Almost two graduates in ten were unemployed. The study noted that the Minister had announced that he had appointed a Task Team to undertake a review of the National Certificate (Vocational) qualifications. The review would ensure that those qualifications served their intended purpose of delivering high-level conceptual knowledge linked to practical training, either as preparation for entry into the job market or for university entry.

5.8. Feedback on the NC (V) graduates

5.8.1. Universities

Universities did not have full knowledge of the NC (V) qualification and did not recognise it as a fully accredited qualification for the purpose of admission to higher learning institutions. There was no special focus on the tracking of NC (V) graduates; and it was found that they were not given any credit for articulation and progression. Some institutions of Higher Education and Training had initiated working relationships with the FET Colleges to promote articulation and progression of students, including the NC (V) graduates. The quality of experiential training should be improved by developing a workplace learner guide in order to improve tripartite relationship involved in training.

5.8.2. Sector Education Training Authorities (SETAs)

SETAs had limited knowledge of the NC (V) qualification and had not given it a special attention as a fairly new programme. SETAs had increased their drive to support work placement opportunities in the form of internships, learnerships and apprenticeships for the NC (V) students. SETAs acknowledge the need for the DHET and the Colleges to

review the NC (V) programme and to develop a curriculum that should provide an element of entrepreneurship skills, innovation and productivity.

The SETAs will continue to increase and facilitate placement of all graduates in need of work-placement as part of their role and mandate and where entry requirement gap exists; bridging programmes or courses will be provided.

5.8.3. Employers

Employers had limited knowledge about the NC (V) qualification however they provided workplace opportunities for the NC (V) graduates. The employers can avail more work placement opportunities provided they receive funding support, there was effective communication with the institution, and their businesses yield profit. Employers and Industry were willing to accommodate graduates for longer period of time in their work environment.

Employers want to have sound relationship with the colleges, particularly on effective communication. Reviewed NC (V) curriculum should provide graduates with additional skills on communication and administration.

5.9. Conclusion on the research questions of the study

In concluding the research study, it was imperative to state that the Statement of the problem that reads thus, *‘the National Certificate Vocational qualification lacks the necessary rigour and relevance to prepare students for the world of work and the future studies’*, and the research problem that reads *‘What impact does the NC (V) qualification has on the destination of the graduates?’* have been addressed adequately.

The German Council for TVET (BIBB) report attested to the importance of impact of the NC (V) qualification by indicating that *“there is barely any vocational education system that is not undergoing reform efforts in order to improve quality and outcomes, to make qualifications more employment-oriented and more closely aligned with the world of work”*

(BIBB 2011; BWP Special Edition, Editorial, p3). The study tabulated conclusions per the aims and the research questions as follows:

5.9.1. Research questions

5.9.1.1. First sub-aim and First question

The first sub-aim determines the influence of NC (V) qualification on the enrolment of graduates at higher education institutions to further their studies.

First question: To what extent did the NC (V) engineering qualification influence the college graduates to pursue higher education institutions studies?

One student in every thirty students pursued studies at a university. Universities did not have full knowledge of the NC (V) qualification and did not recognise it as a fully accredited qualification for the purpose of admission to higher learning institutions. There was no special focus on the tracking of NC (V) graduates; and it was found that they were not given any subject credit for articulation and progression.

5.9.1.2. Second sub-aim and Second question

The sub-aim determines the influence of NC (V) qualification on further-training of graduates through apprenticeship, learnership, or internship.

Second question: To what extent did the NC (V) engineering qualification influence the college graduates to enrol in occupational training programmes such as apprenticeships, learnerships and internships?

More than half of the NC (V) graduates pursued further training in industry in the form of internship, apprenticeship and learnership. Impact of NC (V) qualification was hampered primarily by the low participation rate of the employers in opening up the workplaces for the graduates and the low entry requirement of Grade 9. The SETAs had increased their drive to support the work placement opportunities in the form of internships, learnerships, apprenticeships for the NC (V) students. The employers provided workplace opportunities for the NC (V) graduates.

5.9.1.3. Third sub-aim and Third question

The sub-aim determines the influence of NC (V) qualification on the graduates' entrance into the labour market as employees, entrepreneurs or as self-employed.

Third question: To what extent did the NC (V) engineering qualification influence the college graduates to enter the labour market as workers or to start own businesses?

The study found that just one in ten of the graduates are employed. Employers and Industry were willing to accommodate graduates for longer period of time in their work environment on condition that their businesses yield profit and there was beneficial partnership with the other role players.

5.10. Recommendations

- There should be better link between the Department of Basic Education (DBE) responsible for general schooling phase and the DHET in order to improve the quality of learners coming out of the schooling system since failure to do so leads to high failure rate at the level of the colleges.
- There should be improved support from the DHET with respect to better administration system and the revision of programme.
- The dilemma with regard to the entrance requirements of Grade 9s and 10s should be reviewed. A fast tracked NC (V) or content bridging programme for the learners accessing the NC (V) at a level higher than the minimum requirement should be developed.
- Work placement or exposure to practical situation of both lecturers and students should be promoted to significantly improve teaching and learning. In essence, the DHET should facilitate the strengthening of the partnership between colleges, the SETAs and the workplace.

- The DHET initiated the establishment of SETAs offices in the college to facilitate student placements in industry. These offices should be adequately capacitated to ensure that the intended objective is realised. Career guidance officers should be appointed at the college SETA offices to provide counselling services to the students and the public.
- Curriculum review should be considered and fast-tracked to strengthen industry participation, experiential learning at the workplace, soft and self-mastery skills including communication proficiency and critical thinking. Curriculum should provide an element of entrepreneurial skills, innovation and productivity.
- The quality of the experiential training should be improved by developing a workplace learner guide in order to improve tripartite relationship involved in training. The graduate responses highlighted that the NC (V) graduates were not well prepared for the workplace environment and found it difficult to cope. Although there were still workplace readiness challenges regarding the graduates, some employers were happy about the performance of the graduates.
- The FET College Community of Practice Forums should be established to facilitate, to enhance and to enrich curriculum development; programme reviews; industry-college partnerships; college-university partnerships; and college-community partnerships. A learning theory model that promotes theory and practice connectedness through the strengthening of the College Community of Practice Forums should be developed.

5.11. Areas for Future study

There were important areas that this study was not able to reach but could be imperative for future study, and these were:

- A study on employment performance of NC (V) students in order to determine the effectiveness and the quality of programme.
- A study on perspective of the Universities on the NC (V) qualification and how NC (V) qualification can promote articulation to higher institutions.

- A study on the enhancement of workplace learning for the NC (V) student.

5.12. TVET College Integrated Community of Practice (ICoP) Forum Model

Lave and Wenger (1991) define a Community of Practice (CoP) as *“a group of people who share a craft and/or a profession. The group can evolve naturally because of the members' common interest in a particular domain or area, or it can be created specifically with the goal of gaining knowledge related to their field. It is through the process of sharing information and experiences with the group that the members learn from each other, and have an opportunity to develop themselves personally and professionally.”* The researcher agreed that the CoP is a group of people who share a craft or common interest and in this study the common interest is the NC (V) programme.

For the purpose of this study, the researcher adapted the concept of CoP to Integrated Community Practice (ICoP) as necessitated by the need to have a diverse group of people with a common objective of producing a suitably qualified college graduates. The DHET and the Colleges should create a conducive environment for the establishment of the College ICoPs. A draft simplified ICoP model should be informed by these integrated elements:

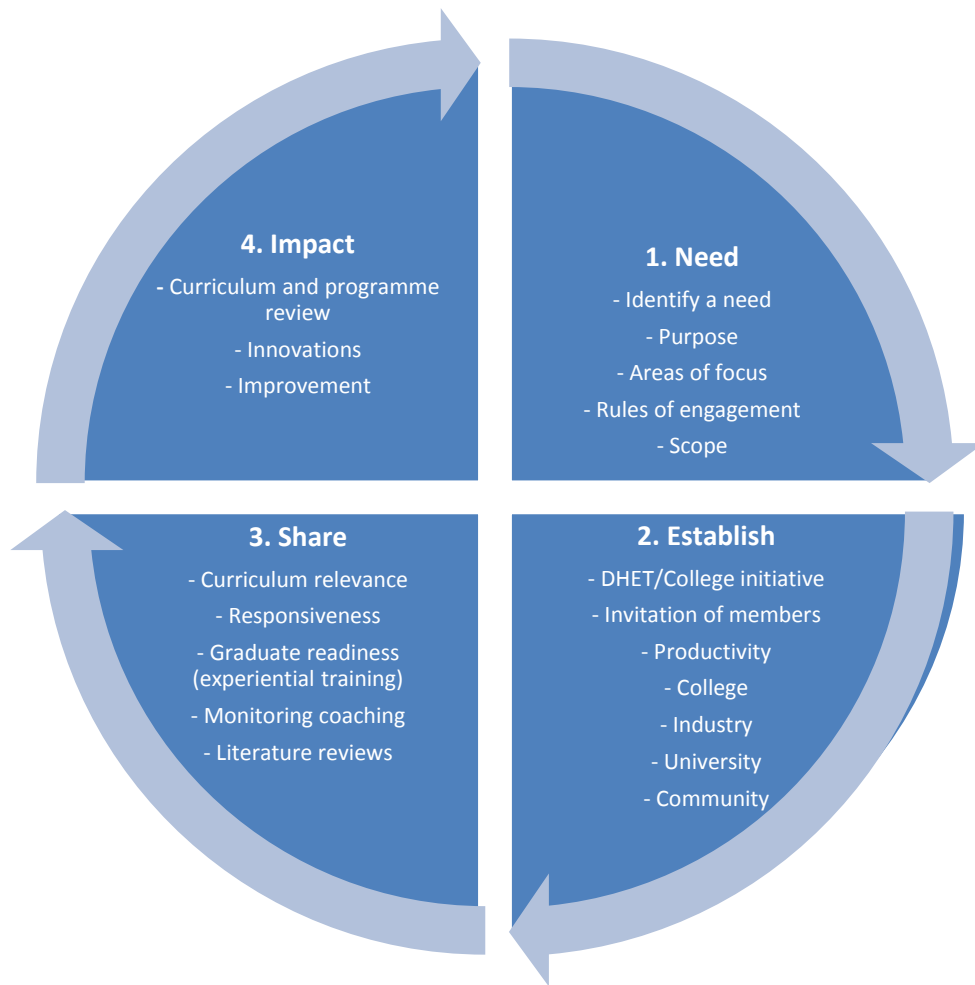


FIGURE 5.1: Elements of an Integrated Community of Practice Model

5.13. Proposed Work placement Model for TVET Experiential Training

Cosser et al. (2011:46) argue that “it is crucial for colleges to keep student exit data as it is a critically important issue in the context not only of colleges’ inability to substantiate claims of employment uptake of their students but of the redesign of their mission statements. There needs to be a far greater focus than hitherto not only on where FET college students have come from but where they go to after leaving the college whether as graduates or non-completers.” They further argue that in the absence of such tracking procedures, generalised claims about the number of young people not in employment, education or training lack the basis.

The countries studied in chapter two identified the cooperation of employers and employer organisations as central to the success of their TVET models. In Brazil and Germany,

employers had a keen interest in ensuring that learners emerged from training programmes with skills relevant to the workplace. It was against this background that the researcher proposed a Work placement Framework Model for TVET.

5.13.1. Template for the TVET Work Integrated Framework Model

A. Problem Statement

The study on the impact of NC (V) engineering qualification in the North West Province revealed that only 1 in 10 graduates found employment and 2 out of 10 are not employed.

B. Purpose

To propose a TVET Work Integrated Learning Model in an attempt to address the weak or non-existent college exit or post college support to students including on course work placement at industry.

C. Background

This study recommended the promotion of work placement and exposure of both the NC (V) students and the lecturers to industry in order to improve learning and teaching. Furthermore, the quality of experiential training should be improved by developing a work place learner guide in order to enhance the tripartite relationship involved in training. The study indicated that the graduates were not adequately prepared for the workplace environment and find it difficult to cope.

The White Paper on Post School Education and Training (WP – PSET, 2013: xii) states that *“emphasis will be given to strengthening partnerships with employers, both at the system level and that of individual colleges. Such partnerships will assist the colleges to locate opportunities for work-integrated learning, to place students when they complete their studies, and to obtain regular workplace exposure for staff so as to keep them abreast of developments in industry.”* Another important matter raised in the WP – PSET (2013, page 8-9) was the reference made to National Skill Accord signed in July 2011 according to which signatories agreed to promote access to training opportunities in the

workplace. It further stated that the combination of both theoretical knowledge and practical experience was important and that practical experience builds applied knowledge and develops self-confidence in someone's ability to act effectively.

D. Scope and limitations

The aim of this framework and model was to highlight key areas in WIL for TVET colleges since the placement of students into the workplaces was randomly done on ad hoc basis. The framework does not claim to cover all important elements of WIL for TVET colleges but provides a baseline model. The design of the model was limited to the findings of this study.

E. Definition and Acronyms

This section addressed the terms and acronyms not already covered in the study.

WIL –Work Integrated Learning – It is an educational approach that aligns academic and workplace practices for the mutual benefit of students and the workplaces (CHE, 2011: 78).

SASCE – The Southern African Society for Cooperative Education

Employability – Blom (2013, vii) states that *“employability is about gaining those attributes that make a young person attractive as an employee, but does not necessarily equate to employment, nor should it create the expectation that it does”*.

F. Work Integrated Learning Modes of delivery

The South African Society for Cooperative Education (SASCE) outlined the modalities for WIL in its Journal Work-based Learning, (Blom, and 2013: 5).

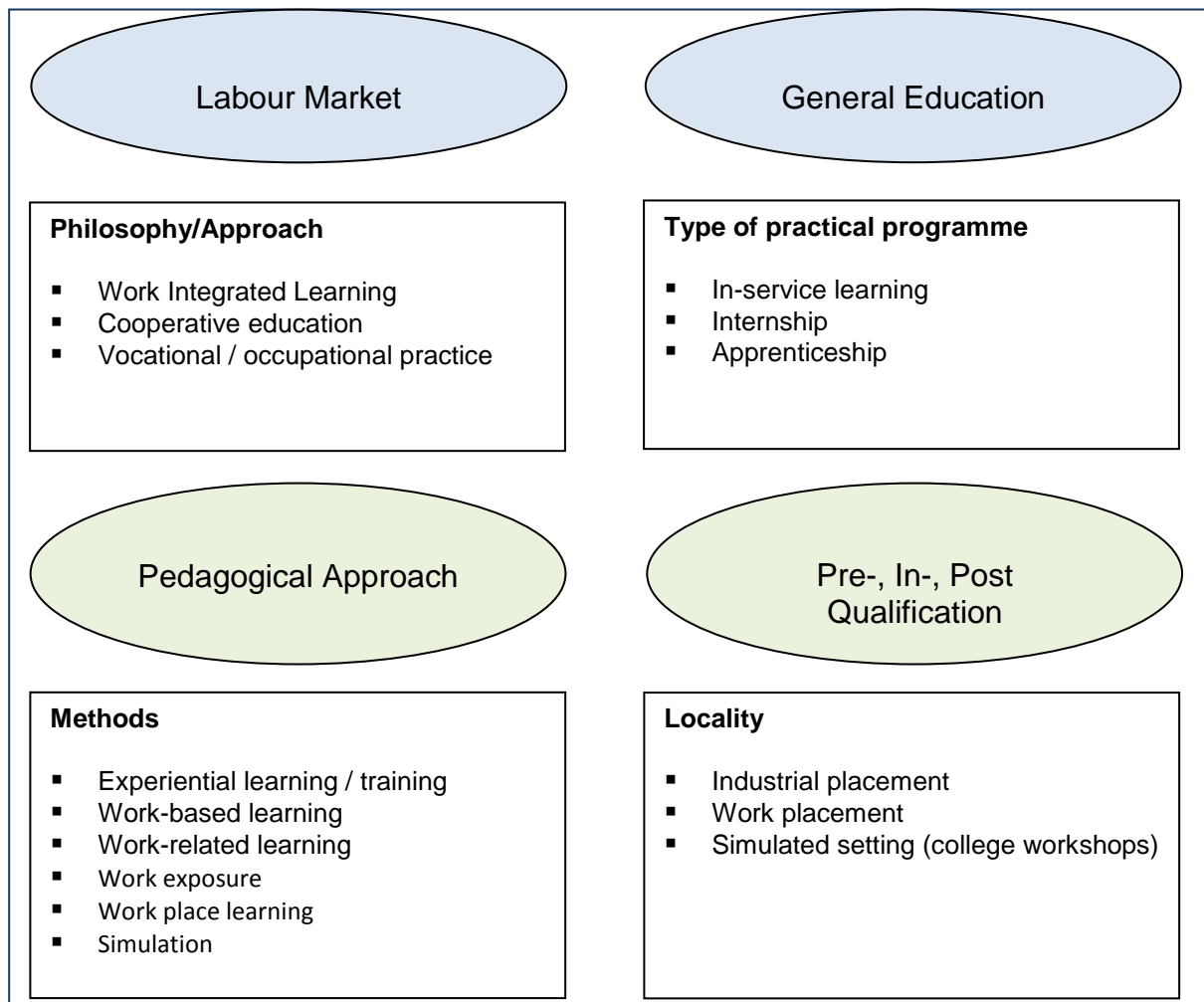


FIGURE 5.2: WIL Modes of delivery

For the purpose of this study the modalities were modified for TVET system.

G. Components for WIL Model

For effective and efficient WIL system, the following components should be accurately executed. (Martin et al., 2011: 6).

TABLE 5.1: Components of a WIL model in FET Colleges

1. Organisation set-up	2. Student preparation	3. Supervision	4. Competencies	5. Pedagogies	6. Assessments
placement requirement and support	pre-requisites and theoretical basis	on campus academic supervision and mentor	self-confidence	scenario based learning and project work	learning contract
placement selection and location	career interview skills and CV prep	workplace employer	communication and people skills	theory lectures and labs	reflective journal
risk management issues	readiness for practice	workplace college staff	teamwork	oral presentation	final report
			professional standards		industry based competency checks
					oral presentation

These components should be implemented in tandem with the implementation phases of WIL as espoused in the SASCE framework (Blom, 2014: 9 -10).

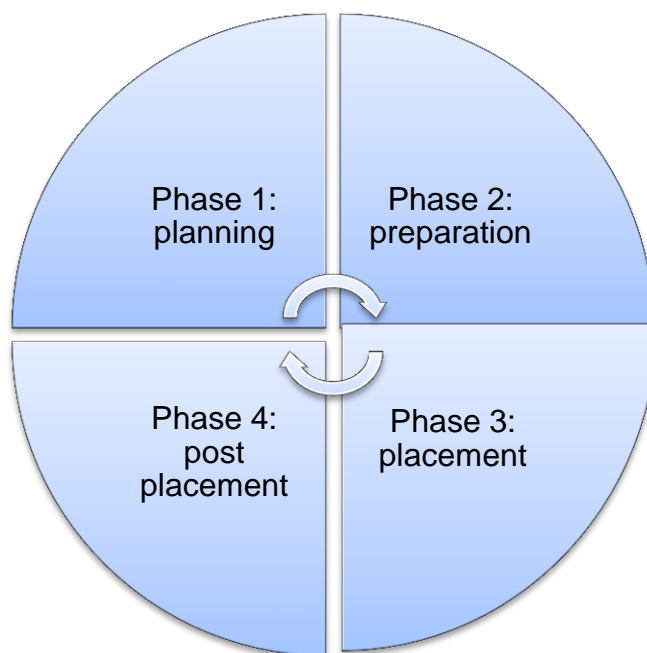


DIAGRAM 5.1: WIL Implementation cycle (adapted from Blom, 2014:8)

TVET WIL System

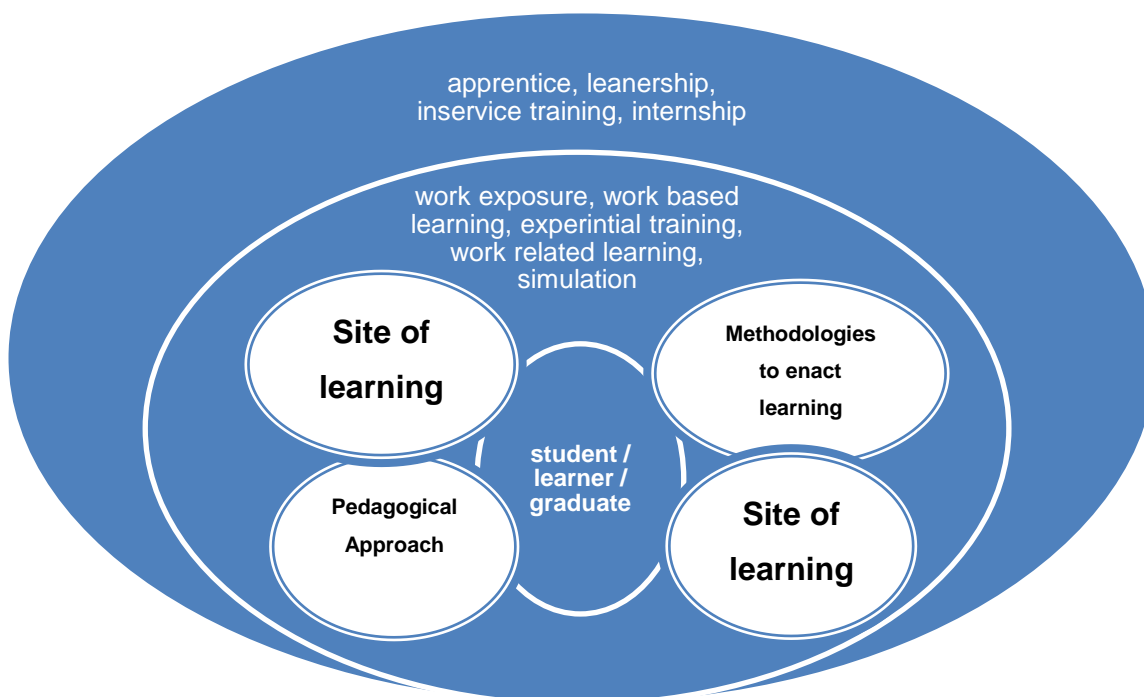


DIAGRAM 5.2: Proposed TVET WIL System depicting ICoP scope

H. Roles of stakeholders in the WIL System

H.1 College/Institution

Has the overall responsibility of the WIL process including planning, managing, monitoring and reporting on WIL.

H.2 Employer

The Employer provides workplace opportunities for the learner and lecturer.

H.3 SETA

Has the responsibility to coordinate, facilitate and stimulate the WIL process.

H.4 QCTO

Has the responsibility to provide workplace quality assurance.

H.5 Student/graduate

To maximise learning at the workplace in compliance with the college, SETA and employer directives

I. TVET STUDENT PLACEMENT TEMPLATE

1. DETAILS ON THE STUDENT

Name of the student:

Field of vocational education:

College (name, address):

Contact person (name, function, e-mail, and tel):
.....

2. DETAILS OF THE EMPLOYER

Receiving organisation (name address):

Contact Person (name, function, e-mail, and tel):
.....

Planned dates of start and end of the placement period:

- Knowledge, skills and competence to be acquired:
- Details of the practical work component:
- Tasks of the trainee:
- Monitoring and Mentoring of the participant:
- Evaluation and Validation of the training placement (QCTO):

3. COMMITMENT OF THE FOUR PARTIES

By signing this document, the participant, the SETA, the College and the receiving organisation confirm that they will abide by the principles of the Learning Contract

STUDENT

Student signature:

Date:

COLLEGE

We confirm that this proposed training programme agreement is approved.

On completion of the training programme the institution will issue a recognition letter to the Student

Coordinator's signature:

..... Date:

ORGANISATION (employer)

We confirm that this proposed training programme is approved. On completion of the training programme the organisation will issue a student performance report

Coordinator's signature:

Date:

THE COLLEGE UNDERTAKES TO:

Define *Placement objectives in terms of the skills and competencies to be developed.*

Select *Participants on the basis of clearly defined and transparent criteria.*

Prepare *participants in collaboration with the SETA for the practical, professional and the organizational culture of the employer*

company

Establish a learning placement contract including a training agreement whose contents are transparent for all parties involved.

Manage transport, accommodation, insurance.

Evaluate With each participant the personal and professional development achieved through participation in the work-placement.

SETA (WHERE APPROPRIATE) UNDERTAKES TO:
--

Select suitable host organisations and ensure that they are able to achieve the placement objectives.

Provide contact details of all parties involved and ensure that final arrangements are in order

COLLEGE AND EMPLOYER JOINTLY UNDERTAKE TO:

Agree monitoring and mentoring arrangements.

Implement agreed validation procedures to ensure recognition of skills and competencies acquired.

Establish appropriate communication channels for all parties including participants.

Evaluate the progress of the placement on an on-going basis and take appropriate action if required.

EMPLOYER UNDERTAKES TO:

<i>Induct</i>	<i>understanding of the organizational culture and work ethics code.</i>
<i>Assign</i>	<i>to student tasks and responsibilities to enhance their knowledge, skills, competencies and training objectives and ensure that appropriate equipment and support is available.</i>
<i>Identify</i>	<i>a tutor to monitor the student's training progress.</i>
<i>Provide</i>	<i>practical support if required.</i>
<i>Check</i>	<i>appropriate insurance cover for each student.</i>

STUDENT UNDERTAKES TO:

<i>Comply</i>	<i>with all arrangements negotiated for his or her placement and to do his or her best to make the placement a success.</i>
<i>Abide</i>	<i>by the rules and regulations of the host organisation, its normal working hours, code of conduct and rules of confidentiality.</i>
<i>Communicate</i>	<i>with college/SETA about any problem or changes regarding the placement.</i>
<i>Submit</i>	<i>a report in the specified format, together with requested supporting documentation in respect of work experiences, at the end of the placement.</i>

J. Key issue

The model framework should be regarded as a guide to the TVET Colleges. There is plenty room to develop other necessary templates such as student work plan log books and guides.

5.14. Summary

The then Department of Education scaled down the provision of the NATED courses with a view to phasing them out completely by 2012. This decision did not go down well with industry, which was, with some justification, sceptical about the value of learnerships, especially in the artisan trades where the level and duration of training required were not easily attained through a series of relatively short inputs like learnerships. Thus, the NC (V) was launched into hostile waters. Green Paper Media Statement (2012:5) argues that the SETAs have a key role to play in strengthening vocational education and skills training, and in promoting and funding partnerships between educational institutions and employers.

The SAIVCET Report indicated that the colleges had not aligned their institution-level delivery of the NC (V) with the needs of local industry and that until very recently few FET colleges arranged any workplace experience for NC (V) students. As a result, most NC (V) graduates have studied for three years, full-time, without ever setting foot in the industry for which they were supposedly being trained. This has not done much to enhance their employability nor for the credibility of the NC (V), not only in South Africa as it is a global challenge facing vocational education. This study therefore concludes by indicating that there is still enough room to make the programme better.

BIBLIOGRAPHY

Addison S. L. 2008. *The Ghana Ministry of Education's Policy and Strategic Plans for the Education Sector (2003) highlights Technical education, Vocational education and Vocational training*. Ghana.

Afonja, K. Sraku-Lartey, S. A. Oni 2005. *Engineering Education for Industrial Development: Case Studies of Nigeria, Ghana and Zimbabwe*. ATPS Working Paper No. 42. Nairobi, Kenya Published by the African Technology Policy Studies Network.

Aggarwal A. and Gasskov V. 2013. *Comparative Analysis of National Skills Development Policies: A guide for policy makers*. Decent Work Technical Support Team for Eastern and Southern Africa, Pretoria, South Africa Skills and Employability Department, Geneva.

Akoojee, S and McGrath, S. 2005. *Post-Basic Education and Training and Poverty Reduction in South Africa - Working Paper Series - N°2: Progress to 2004 and Vision to 2014*. Center for African Studies. University of Edinburg. Edinburg.

Akoojee, Gewer, A. and McGrath, S. (edited). 2005. HSRC Report. *Vocational Education and Training in Southern Africa: A comparative study*. Pretoria: HSRC.

Ary, D; Jacobs, L. C and Sorensen, C. K. 2010. *Introduction to Research in Education* 8th ed. Belmont. (USA): Wadsworth Cengage Learning.

Babbie E. 2007. *The Practice of Social Research*. (11th ed.) Wadsworth. Belmont USA

Babbie, E., Mouton, J. Vorster, P. and Prozesky, B. 1998. *The Practice of Social Research*. Cape Town: Oxford University Press.

Barron, A. E; Orwig G. W; Ivers, K. S and Lilavois, N. 2007. *Technologies for Education: Practical Guide* 4th ed. Greenwood Village (USA): Libraries Unlimited.

BIBB 2011; BWP Special Edition, Editorial, (p3). *“there is barely any vocational education system that is not undergoing reform efforts in order to improve quality and outcomes, to make qualifications more employment-oriented and more closely aligned with the world of work.”* BIBB. Germany

Blom R, 2014. The African Journal for Work-Based Learning *“Towards a Policy Framework for Work Integrated Learning Vol. 2 No 1.* SASCE. Johannesburg.

Brian Knight Peter Mlotkowski, 2009. *An overview of vocational education and training in Australia and its links to the labour market.* National Centre for Vocational Education Research (NCVER). Australia.

Burns N, Grove S.K. (2005). *The Practice of Nursing Research: Conduct, Critique, and Utilization* (5th Ed.). St. Louis, Elsevier Saunders.

Chabane S, 2012. NSA-QCTO International Social Dialogue on Technical and Vocational Education Report. DHET. Pretoria

Cammarota, J. and Fine, M. 2008. *Revolutionising Education: Youth Participatory Action Research in Motion.* New York: Routledge Taylor & Francis Group.

Castello, P.J.M. 2003. *Action Research: Continuum Research Methods.* London: Continuum.

Charles, C. M. 1998. *Introduction to Educational Research (3rd ed.).* New York. (USA): Longman.

Council for Higher Education. *Journal on HE Monitor Volume No.12 August 2011- Work Integrated Learning.* CHE. Pretoria

Cho, J. and Trent, A. 2006. *Validity in qualitative research revisited.* Qualitative research, Vol 6, no 3. SAGE Publications on Line.

City Press Newspaper of the 17th October 2011 by Moyane – *Student funding*

Cohen, L., Manion, L. and Morrison. 2000. *Research methods in education* (5th ed.). London: Routledge Falmer.

Council for General and Further Education and Training Quality Assurance. 2001. *General and Further Education and Training Quality Assurance Act 58*. Pretoria: Government Printers.

Cosser et al. 2011. Further Education and Training Colleges at a glance in 2010. *FET Colleges Audit*. Cape Town. HSRC

Creswell, J.W. 2008. (3rd ed.). *Educational research; Planning, Conducting, and Evaluating Quantitative and Qualitative Research; Pearson International Edition*. New Jersey: Pearson Education.

Daniels R C. 2007. Skills Shortages in South Africa: Key Issues *Issue 7, Page 15 of Policy brief*. Publisher Development Policy Research Unit, UCT. Cape Town.

Department of Education. 1996. *National Education Policy Act no. 27*. Pretoria: Government Printers.

Department of Education. 2006. *Further Education and Training Colleges Act 98*. Pretoria: Government Printers.

DHET. (2012g). *Report of the Task Team Appointed for the Review of National Policy Regarding Further Education and Training Programmes: Approval of Documents, Policy for the National Certificates (Vocational): Qualifications at Levels 2-4 on the National Qualifications Framework*. DHET. Pretoria

DHET. 2011. *National Skills Development Strategy 2011-2016*. Government Printers. Pretoria.

DHET. 2012. *Report of the Ministerial Task Team on the Establishment of a South African Institute for Vocational and Continuing Education and Training (SAIVCET)*. DHET. Pretoria

DHET. 1998 and 2008. *Skills Development Act 97 and Act 37*. Government Printers. Pretoria.

DHET (2012d). *Ministerial Task Team on a National Strategy for the Recognition of Prior Learning (RPL): Final Draft Report incorporating a proposal for the national implementation strategy*; September

DHET (2012e). *Ministerial Task Team on SETA Performance*. Pretoria: DHET.

DHET (2012f). *Report of the Task Team on Community Education and Training Centres*; May. Pretoria: DHET.

DHET (2012). *Green Paper for Post School Education and Training*. Pretoria: Department of Higher Education & Training

DHET (2013). *Draft White Paper on Higher Education and Training*. Pretoria: Department of Higher Education & Training.

DHET 2010, *Statistics on Part-School Education and Training in South Africa for 2010*. Pretoria: DHET

DHET 2011, *Statistics on Part-School Education and Training in South Africa for 2011*. Pretoria: DHET

DHET 2012, *Statistics on Part-School Education and Training in South Africa for 2012*. Pretoria: DHET

DHET (2006). *Further Education and Training (FET) Colleges Act 16 of 2006*. Government Printers. South Africa.

Devlin A S. 2006. *Research Methods: Planning, conducting and presenting research*. Thomson Wadsworth. Australia

DHET (2012f); Report of the Task Team on Community Education and Training Centres; May

DHET 2012, Report of the Task Team on Community Education and Training Centres. Pretoria: Department of Higher Education and Training.

Department of Public Works. 2007. *Skills for infrastructure delivery in South Africa: the challenge of restoring the skills pipeline*. Pretoria: Government Printers.

Dhlamini, J T, 2009. *Thesis on The Role Of Integrated Quality Management System To Measure And Improve Teaching And Learning In South African Further Education And Training Sector*. Promoter - Professor F.J. Pretorius. Pretoria: UNISA.

Dillon, J. T. 2010. *The Basic Question of Education: What to Ask Ourselves when Educating Our Young*. New York: Edwin Mellen Press.

Driscoll, M. (2000). *Psychology of Learning for Instruction*. Needham Heights, MA, Allyn & Bacon.

EDD (2010).National Skills Accord. EDD. Pretoria: Department of Economic Development

EDD (2011).New Growth Path. Pretoria: Department of Economic Development

Elliot, G. 2010. *Report on Technical Vocational Education and Training*. UNESCO

Field S et al 2014. A skills beyond School Review of South Africa. Reviews of Vocational Education and Training. OECD.

Foster (2008:3) that *"The real issue is thus not between 'academic' and 'hands-on' (http://www.journal.kfionline.org/issue-12/the-philosophy-of-vocational-education)."*

Gentry JW 1990. Journal on *"What is Experiential Learning"* Guide to Business Gaming and Experiential Learning.

Government Gazette No. 28677 of 29 March 2006. National Certificate (Vocational): Qualifications at Levels 2 to 4 on the National Qualifications Framework (NQF). Pretoria: Government Printers

Government Gazette No. 28677 of 29 March 2006. *National Certificate (Vocational): Qualifications at Levels 2 to 4 on the National Qualifications Framework (NQF)*. Pretoria: Government Printers.

Gewer, A. 2010. *HRD Report: Choices and Changes; FET colleges and the transition from school to work*. Pretoria: HSRC.

Henning, E., van Rensburg, W. and Smit, B. 2004. *Finding Your Way in Qualitative Research*. Pretoria: Van Schaik Publishers.

Hoeckel, K., Field, S. and Grubb, W. N. 2009. *Learning for Jobs OECD Reviews of Vocational Education and Training*. OECD. Switzerland.

Hoeckel, K., Field, S. and Grubb, W. N. 2009. *Strengths of Switzerland's VET/PET system* (2009:18-19).

Homann, U. 2005 Quantitative Research. University of Plymouth. Warwick. UK

Hopkins, W. G. 2000. *Quantitative Research Design; Perspectives*. Dunedin: University of Otago.

Hopkins, W. G. 2000. *Quantitative Research Design; Perspectives*. Dunedin (New Zealand), University of Otago. Will.hopkins=AT=ortago.ac.nz
Pretoria: HSRC

Illeris, 2004; Ormrod, 1995. How Students Learn._ www.ucd.ie/t4cms/UCDTLT0016.pdf
accessed on November 13, 2014.

Imenda, S. N and Muyengwa, M.M. 2000. *Introduction to research and behavioral sciences*. Umtata: Ernmed Publishers.

ILO.2012. Report on International Policy Benchmarking of National Skills Development Policies. Pretoria

Johnson, B. and Christensen, L. 2004. *Educational research: quantitative, qualitative, and mixed methods approach*. (2nd ed.) .New York. USA. Pearson Education.

Kathrin Hoeckel, Simon Field and W. Norton Grubb, 2009. Learning for Jobs OECD Reviews of Vocational Education and Training OECD. Switzerland

Keogh, H. 2012. *Vocational Education and Training in Ireland*. Department of Education and Skills (DES). Ireland.

Knight, B. and Mlotkowski, P. 2009. *An overview of vocational education and training in Australia and its links to the labour market*. Adelaide: National Centre for Vocational Education Research (NCVER).

Kraak, A. 2012. “*State failure in dealing with NEET in South Africa: What way forward?*” “Research on Post-Compulsory Education, forthcoming in 2012. HSRC. Pretoria

Kraak, A. 2011. “*Cross-sectoral state coordination, TVET policies and economic development: lessons for South Africa from Finland, Ireland, Malaysia.*” Research Report commissioned. Paris: UNESCO.

Landman, R. 2003. *Methods in Comparative Politics: “An Introduction”*. Routledge Publishers. London

LaPorte, J. 1997. *Choosing qualitative research: A Primer for Technology Education Research*. *Journal of Technology Education*, Vol. 9 No. 1, *Electronic Journals of Theses and Dissertations*. Blacksback. Virginia Tech.

Lave, Jean; Wenger, Etienne (1991). *Situated Learning: Legitimate Peripheral Participation*. Cambridge: Cambridge University Press. ISBN 0-521-42374-0.; first published in 1990 as Institute for Research on Learning Report 90-0013

Learning for Jobs, OECD Reviews of Vocational Education and Training Policies, Australia (OECD, 2008) www.oecd.org/edu/learningforjobs

LeCompte, D. M. Preissle, J. and Tesch, R. *Ethnography and qualitative design in educational research*. New York: Academic.

Lesser, E. L. and Storck, J. (2001) 'Communities of practice and organizational performance', IBM Systems Journal 40(4), <http://www.research.ibm.com/journal/sj/404/lesser.html>. Accessed December 30, 2002.

Lewis, I & Munn, P. 1997. *So you want to do research! A guide for beginners on how to formulate research questions*. (2nd eds.). Midlopie, Edinburgh: MacDonald Printers.

Lieberman, M. 1993. *Public Education: An Autopsy*. Library of Congress Cataloguing-in-Publication Data. USA

Martin A. et al, 2011. Work Integrated Learning "A Template for Good Practice: Supervisors Reflections". AKO AOTEAROA Publishers. Wellington. New Zealand

Maree K. 2007. *First Steps in Research* (Revised Ed). Van Schaik Publishers. Pretoria

Ministry of Labour and Ministry of Home Affairs 1997. *A National Policy on the Vocational Education and Training*. Gaborone: Botswana Government.

MoE 2011, Ministry of Education and Training: *The Swaziland Education and Training Sector Policy*. Mbabane .Swaziland

Mouton J. 2001. *How to succeed in your Master's and Doctoral Studies*. A South African Guide and Resource Book. Pretoria: Van Schaik Publishers.

Mutshinyani A. H. 2002. Thesis on the "Proposal to Improve the Implementation of the Development Appraisal System (DAS) in Schools in the Northern Province". Rand Afrikaans University. Johannesburg

National Planning Commission (NPC-South Africa). 2011. *Diagnostic Overview: National Planning Commission*. Pretoria: Government Printers.

National Policy on Vocational Education and Training Ministry of Labour and Home Affairs.1997.Pretoria: Government Printers

National Skills Accord compiled by the Economic Development Department. 2011. Pretoria: Government Printers.

Neuman, W.L. 1997. *Social Research Methods: Qualitative and Quantitative Approaches*. (3rdeds.) University of Wisconsin.

Newspaper Article on Funding (City Press, 17/10/2011 by Heather Moyane page 26)

NMMU 2005. Syllabus Guide “Mechanical Engineering Practice I and II. Port Elizabeth: NMMU.

Onwuegbuzie A J and Leech N L. 2006.*Linking Research Questions to Mixed Methods Data Analysis Procedures*. Tampa (Florida): University of South Florida.

Rasool H and Mahembe E. 2014.FET colleges purpose in the developmental state. HRDC.Pretoria_(www.hrdcsa.org.za/.../FET%20colleges%20purpose%20in%20the%20de)

Rauner, F. 2009. Journal of Vocational Education and Training. Routledge Publishers (<http://www.informaworld.com/smpp/title-content-1716100717>)

Richard K. Johansson, Arvil V. 2004. Adams Skills development in Sub-Saharan Africa. Washington: World Bank.

SADC 2011.Strategic Framework and Programme of Action for Technical and Vocational Education and Training in the Southern African Region. Gaborone Botswana

SAQA, 2012.Bulletin Volume 12 Number 2. Key readings: The South African NQF 1995 - 2011. Pretoria. South Africa Section 3(4) (l) of the National Education Policy Act, 1996

(No. 27 of 1996): The policy document, Formal technical college instructional programmes in the RSA, Report 191 (2001/08)

Shelhamer V C and Latham L R 1986. <http://files.eric.ed.gov/fulltext/ED275911.pdf>. Basic philosophy of Vocational Education

Siemens, G. (2005b). Connectivism: A learning theory for the digital age. Accessed at http://www.itdl.org/journal/jan_05/article01.htm on November 11, 2014

Sondermann, T. 2005. "The German Vocational Training Reform Act of 2005: What is new, what is different?" BWP Special Edition 2005, BIBB journal.

Sooklal S. S. 2005. Thesis: The Structural and Cultural Constraints on Policy reforms South African Qualifications Authority (SAQA). 1995. The South African Qualifications Authority Act 58, Section 3. Pretoria: Government Printers.

Souza Consultores, P. R. 2005. Sector Study for Education in Brazil. JBIC Sector Study Series 2004-No. 2. Japan Bank for International Cooperation. Brazil

SSACI 2011. A Review of FET College Partnerships and Linkages. Pretoria

Stanwick, J, Hargreaves, J. and F. Eddie 2009. Assessing the impact of NCVER's research, Adelaide: National Centre for Vocational Education Research (NCVER).

Student Logbook. Preparation before WBL period. LEONARD DA VINCI

The Botswana National Policy on Vocational Education and Training. 1997. Ministries of Labour and Home Affairs. Botswana

Terre Blanche et.al. 2007. Research in Practice: Applied Methods for the Social Sciences. Cape Town: University of Cape Town Press.

The Swaziland Education and Training Sector Policy (Ministry of Education and Training) Mbabane 2011

The World Bank Report (2009) on Technical, Vocational Education and Training (TVET)

Umalusi 2006. Apples and Oranges “A comparison of school and college subjects.
“Pretoria: Umalusi.

Umalusi 2007.Guidelines and directives for certification: National Certificate (Vocational).
Pretoria: Umalusi.

Vockell, E.L. and Asher, J. W. 1995.Educational Research. New Jersey: Prentice-Hall.

Wacker, J.G. 1998.*A definition of theory: Research guidelines for different theory-building
research methods in operations management*. Ames: Iowa State University.

Welman et al 2005. Research Methods (3ed).Oxford University Press. Cape Town

Welman, J.C. & Kruger, S.J. 1999. Research methodology for the business and
administrative sciences. Oxford: Oxford University Press.

Wenger, Etienne (1998). *Communities of Practice: Learning, Meaning, and Identity*.
Cambridge: Cambridge University Press. ISBN 978-0-521-66363-2

<http://www.nova.edu/ssss/QR/QR11-3/onwuegbuzie.pdf> -*The Qualitative*

Woods P. 2006. *Qualitative Research*. University of Plymouth. Warwick
(<http://www.edu.plymouth.ac.uk>qualrshm>)

<http://www.businessdictionary.com/definition/survey-research.html#ixzz2y2wCYVsi>. *What
is survey research?* Trochim William M.K. 2006.

<http://www.quest.co.za/learnerships>. Advanced Careers Enabling Business Accessed on
10th October 2012.

<http://www.collegesa.co.za/our-accreditation.html>. All about *Accredited Colleges and
Accredited Training Providers, Accredited Courses, and Accredited Learning, and, how
to check for SETA Accreditation*

<http://www.engineeringnews.co.za/article/false-bay-college>. Article on espousing the virtues of SA's vocational training option

<http://www.quest.co.za/learnership>. Learnerships (Accessed on 10 October 2012)

<http://www.nova.edu/ssss/QR/QR11-3/onwuegbuzie.pdf>. *The Qualitative Report*: Volume 11 Number 3 September 2006 474-498

http://www.ehow.com/how_7784383_blend-qualitative-quantitative-research.html#ixzz2yUGp36qe. *How to Blend Qualitative & Quantitative Research* Renata, R.eHow Contributor

http://www.sagepub.com/upmdata/43589_8.pdf. Mason, J. 2002. *Qualitative researching. (What is survey research?)* London: Sage

<http://www.unevoc.unesco.org/printwtdb.php?ct=ZAF&do=print> – UNESCO-UNEVOC TVET Country profile of South Africa

<http://www.journal.kfionline.org/issue-12/the-philosophy-of-vocational-education-> accessed on 21.11.2014

https://us.sagepub.com/sites/default/files/upm-binaries/47648_Symon_and_Cassell1994.pdf- Introduction: The Context of Qualitative Organizational Research

<http://www.businessdictionary.com/definition/survey-research.html#ixzz2y2wCYVsi> (What is survey research)

http://www.ijhssnet.com/journals/Vol_2_No_4_Special_Issue_February_2012/15.pdf *International Journal of Humanities and Social Science Vol. 2 No. 4 [Special Issue – February 2012]* 108 Restructuring Vocational and Technical Education in Ghana: The Role of Leadership Development Christina Boateng, PhD Employment Counselling Unit Saskatoon Open Door Society Saskatoon, Canada

<http://www.infoplease.com/country/denmark.html#ixzz3Cr2qj5n4> – 09 Sep 2014

Denmark: Maps, History, Geography, Government, Culture, Facts, and Guide& Travel/Holidays/Cities |

<https://answers.yahoo.com/question/index?qid=20061123081655AAyVcub> (location of Ireland)

webmaster@ecowas.int. ECOWAS 2007 (accessed On 22/8/2014)

APPENDICES

Appendix A – Structured Interviews Questionnaire

INTERVIEWS SCHEDULE

**Impact of the National Certificate (Vocational) in the field of Engineering in the
North West Province**

**Topic: The Impact of National Certificate (Vocational) on the Continued
Learning Patterns and Destination of the FET Colleges Engineering Graduates
in the Northwest Province**

By

THABO SHADRACK MASHONGOANE

Submitted in accordance with the requirements for the degree of

DOCTOR OF EDUCATION

In the subject

EDUCATION MANAGEMENT

At the

UNIVERSITY OF SOUTH AFRICA

STRUCTURED INTERVIEWS QUESTIONNAIRE

SECTION A: PLANNING, MANAGEMENT AND OBJECTIVES/PURPOSE OF THE NC (V) QUALIFICATION

(Respondent: The Principal/Deputy principal)

Interview with the Principals - Planning, management and objectives/purpose of the NC (V) Qualification

1. In your own understanding, what is the purpose of the NC (V) qualification?
2. Do you think the objectives of NC (V) are realised since inception in 2007?
3. What informed the planning and management of the NC (V) engineering programmes for your college?

SECTION B: TEACHING, LEARNING AND ASSESSMENTS

(Respondent: Academic Programmes Manager)

Interviews with the Academic Manager - Teaching, Learning and Assessments

4. What is your perception and that of the teaching staff about the value of the NC (V) qualification?
5. What is the experience of teaching staff in offering the NC (V) curriculum particularly in the engineering stream?
6. What is the pass rate and throughput rate of NC (V) L4 Engineering Programmes since 2007 to date?
7. What can be done to improve the NC (V) curriculum?

SECTION C: ACADEMIC AND STUDENT SUPPORT SERVICES

(Respondent: Student Support Manager)

Interview with the student support manager

8. What academic and student support service is the college providing for the NC (V) students particularly in the engineering stream?
9. What is the perception of the students about the NC (V) qualification?
10. Does the college have the NC (V) graduates alumni, and how do you get feedback from your previous students?
11. How have the employees, industry and public reacted to the NC (V) qualification?
12. In your opinion, what can be done to profile and promote NC (V) students

SECTION D: POLICY ON THE NC (V) QUALIFICATION

(Respondent: Deputy Director- General for Vocational Education and Training at the National Office of the Department of Higher Education and Training)

Interviews with the Chief Director from the DHET on Section D: Policy on the NC (V) Qualification

13. What is the policy that informed the conceptualization of the NC (V) qualification and its roll-out in 2007?
14. What was the objective of the qualification and according to the National Department have these programmes met the envisaged outcomes, particularly in the engineering field?
15. How did the Department ensure the buy-in and participation of industry, business and the community in the development and implementation of the NC (V) programmes?
16. How has the NW Province Colleges performed with regard to the NC (V) programmes in engineering field?

Interview with the Director for Curriculum Development

17. When will the NC (V) policy be reviewed and which areas will be revised and why?

SECTION E: FEEDBACK ON THE NC (V) GRADUATE

Respondent (s): Employer or University Representative or Sector Education and Training Authority (SETA)

The interview will be conducted through a meeting or done telephonically.

Thank you for making time for this interview. As you already know from my letter of request for this interview, I am undertaking a research study at a doctoral level with UNISA on the impact of NC (V) engineering qualification in the NW Province. The purpose is to determine the extent to which the NC (V) programme is influencing the graduate destinations and their continued learning patterns.

Interviews with Representatives of the Universities

1. What is your knowledge and understanding of the NC (V) qualification particularly in the engineering field?
2. Did you employ/enrol the NC (V) graduates on the basis of their NC (V) qualification and if so what has been your experience with regard to the performance of these graduates?

3. Is your organisation/institution intending to increase the current number of the NC (V) graduates you are having?
4. What will be your advice to the colleges, students and the DHET concerning improvement of NC (V) qualification?

Interviews with the Chief Executive Officer (CEO) and Senior Managers of the SETAs

1. What is your knowledge and understanding of the NC (V) qualification particularly in the engineering field?
2. Did you employ/enrol the NC (V) graduates on the basis of their NC (V) qualification and if so what has been your experience with regard to the performance of these graduates?
3. Is your organisation/institution intending to increase the current number of the NC (V) graduates you are having?
4. What will be your advice to the colleges, students and the DHET concerning improvement of NC (V) qualification?

Interviews responses of the Employers on the NC (V) graduates

1. What is your knowledge and understanding of the NC (V) qualification particularly in the engineering field?
2. Did you employ/enrol the NC (V) graduates on the basis of their NC (V) qualification, and if so, what has been your experience with regard to the performance of these graduates?
3. Is your organisation/institution intending to increase the current number of the NC (V) graduates you are having?
4. What will be your advice to the colleges, students and DHET concerning improvements of the NC (V) qualification?

Appendix B – Survey Questionnaire

QUESTIONNAIRE

**Impact of the National Certificate (Vocational) in the field of Engineering in the
North West Province**

**Topic: The Impact of National Certificate (Vocational) on the Continued
Learning Patterns and Destination of the FET Colleges Engineering Graduates
in the Northwest Province**

By

THABO SHADRACK MASHONGOANE

Submitted in accordance with the requirements for the degree of

DOCTOR OF EDUCATION

In the subject

EDUCATION MANAGEMENT

At the

UNIVERSITY OF SOUTH AFRICA

Impact of the National Certificate (Vocational), NC (V) in the field of Engineering in the North West Province

TARGET AUDIENCE:

To be completed by NC (V) Engineering graduates who completed their studies from the three NW Public FET Colleges between the years 2009 and 2012.

PURPOSE:

This questionnaire is intended to assess the impact of the NC (V) Engineering qualification on the destinations and further studies of the graduates.

The information gathered through the questionnaire may be used to develop a work integrated learning framework. The research is conducted to fulfil the requirements for the degree for Doctorate in Education Management at the University of South Africa.

CONFIDENTIALITY

Please note that the responses you provide will be kept anonymous and confidential. The research outcomes and report will not include reference to any individuals.

NB: Please answer all sections as clearly and honestly as you can.

The questionnaire has three sections, Section A, B and C.

Section “A” focuses on the demographic profile and **Sections B and C** consists of multiple questions and open-ended question.

Demographic Information

1. Age groups in years

Less than 21		21-25		26-30		31-35		35	
1		2		3		4		5	

2. Gender

Male		Female	
1		2	

3. Population group

Black (African)		White		Indian		Coloured		Other	
1		2		3		4		5	

4. College of study

ORBIT		TALETSO		VUSELELA		Other	
1		2		3		4	

5. Level of Education (Tick more than one)

Gr 9		Gr 10		Gr 11		Gr 12		NC (V) Level 4		None of grades	
1		2		3		4		5		6	

6. At what level was your Mathematics and Science when you entered NQF L2?

Gr 9		Gr 10		Gr 11		Gr 12		None of grades	
1		2		3		4		5	

7. How long did it take you to complete NC (V) Level 4?

3 years		4 years		5 years		6 years		6 years +	
1		2		3		4		5	

8. When did you complete NC (V) Level 4?

2009		2010		2011	
1		2		3	

9. Which engineering study field did you complete?

Electrical Infrastructure Construction		Civil and Building Construction		Engineering and Related design		Other	
1		2		3		4	

10. What are you currently doing?

Employed		Self-employed		Student	Unemployed		Other (apprenticeship, learnership / internship)	
1		2		3	4		5	

11. Are you studying or pursuing studies in North West Province?

Bojanala Region		Dr. Kaunda		Ngaka-Modiri		Dr. Mompoti		Other; specify	
1		2		3		4		5	

SECTION B: GRADUATES EXPERIENCE AT THE COLLEGE

Sections B and C consist of multiple choice questions and open-ended questions. Please read the following statements/questions carefully and tick the appropriate space.

12. Did you receive career guidance, counselling and induction at the college?

Yes		No	
1		2	

13. How would you rate Student Support Services at your college?

Excellent		Good		Acceptable		Not acceptable		Poor	
1		2		3		4		5	

14. How would you rate academic support you received during your study at the college?

Excellent		Good		Acceptable		Not acceptable		Poor	
1		2		3		4		5	

15. Would you recommend NC (V) engineering qualification to anyone?

Yes		No	
1		2	

If yes, why?

If no, why?

16. What did you like or dislike about the NC (V)?

17. To what extent did the NC (V) qualification influence your current choice of destination (study, work, further training)?

Great extent		Extent		Lesser extent		No extent		Not sure	
1		2		3		4		5	

SECTION C: POST COLLEGE EXPERIENCE AND DESTINATION OF GRADUATES RECOGNISED AS ENTRY REQUIREMENT FOR YOUR (STUDY, TRAINING, WORK PLACEMENT, EMPLOYMENT)

18. How would you rate the exit support of the college (this includes, placement into workplaces, university, learnerships, apprenticeships, etc.)?

Excellent		Good		Acceptable		Not acceptable		Poor	
1		2		3		4		5	

19. How long have you been studying/training/unemployed since you graduated from the college? (Write number of years/period next to appropriate box)

University study		Industry training		Internship		Employed/self employed		Unemployed	
1		2		3		4		5	

20. Did you/are you studying/training/employed in line with your NC (V) qualification?

Yes		No	
1		2	

If yes, mention your study/training or employment position and category.

21. How did/does NC (V) qualification assist(s) you in your studies / training / employment?

22. How would you summarise your experience, benefits and the relevance of NC (V) qualification in 100 words?

Appendix C - Correspondence



higher education
& training

Department:
Higher Education and Training
REPUBLIC OF SOUTH AFRICA

Private Bag X174, PRETORIA, 0001, 123 Schoeman Street, PRETORIA, 0002, South Africa
Tel: (012) 312 5911, Fax: (012) 321 6770
Private Bag X9192, CAPE TOWN, 8000, 103 Plein Street, CAPE TOWN, 8001, South Africa
Tel: (021) 469 5175, Fax: (021) 461 4761

Mr T S Mashongoane

P O Box 201

LETLHABILE

0264

Dear Mr Mashongoane

RE: PERMISSION TO CONDUCT RESEARCH IN THE THREE NORTH WEST COLLEGES

Your letter requesting permission to conduct research in the three North West Colleges has reference.

The Department takes great pleasure in the fact that you are undertaking research in the topical area and does not only give you consent but also wishes you well in your endeavours.

I trust that your findings will assist in taking the work of the FET College sector forward.

Yours sincerely

Mr G F Qonde

Director- General

Date: 14/08/2012

Higher Education and Training • Hoër Onderwys en Opleiding • Imfundvo Lephakeme Nekuqesha • Ifundo Ephakemeko Nebandulo
IMfundo Ephakeme Nokuqesha • IMfundo ePhakamileyo noQaqesho • Dyondzo ya le Henhla na Vuleteri • Pfunzo ya Ntsha na Vhugudisi
Thuto ya Godimo le Tihahlo • Thuto e Phahameng le Thupelo • Thuto e Kgolwane le Katiso



PO Box 10107
Klerksdorp 2570
Tel: (018) 406 7800
Fax: (018) 406 7810

20 August 2012

ATTENTION: MR TS MASHONGOANE

UNISA Student
P O Box 203
LETLHABILE
0264

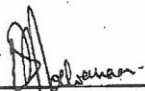
Dear Mr Mashongoane

RE: YOUR APPLICATION TO CONDUCT RESEARCH AT VUSELELA FET COLLEGE

Permission is hereby given to Mr TS Mashongoane to conduct research at Vuselela FET College in the engineering programmes.

This permission is granted with the understanding that the research finding and recommendation will be made available to the college.

Kind regards


DR MD MOCHWANAESI
CHIEF EXECUTIVE OFFICER

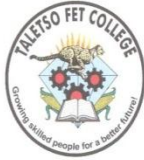
JOURBORTH
Tel: (018) 465 3133
Fax: (018) 465 6507

KLERKSDORP
Tel: (018) 464 0300
Fax: (018) 462 9879

MATLOSANA
Tel: (018) 484 1151
Fax: (018) 484 1200

POTCHEFSTROOM
Tel: (018) 293 0302
Fax: (018) 294 7683

TAUNG
Tel: (053) 995 1376
Fax: (053) 995 1354



TALETSO

FURTHER EDUCATION AND TRAINING COLLEGE

Private Bag X 128, MMABATHO, 2735; Tel: (018)384 2341/4/6/79/50; Fax: (018) 384 7511
Kgona Building, Mafikeng; e-mail: sybilgelderbloem@telkomsa.net



LS 3680

CORPORATE CENTRE

26 September 2012

ATTENTION: MR TS MASHOGOANE

Mr TS Mashogoane
P.O. Box 203
LETLHABILE
0264

Dear Mr Mashogoane

RE: YOUR APPLICATION TO CONDUCT RESEARCH AT TALETSO FET COLLEGE

Permission is hereby given to Mr TS Mashogoane to conduct research at Taletso FET College in the Engineering programme.

This permission is granted with the understanding that the research finding and recommendation will be made available to the College.

Kind regards

MRS SG GELDEERBLOEM
CHIEF EXECUTIVE OFFICER



CENTRAL OFFICE

Tel : (014) 592 7014
Tel : (014) 597 5500
Fax : (014) 592 7013
e-mail: info@orbitcollege.co.za
Fatima Bhayat Street,
RUSTENBURG, 0299

27 September 2012

Mr T Mashongoane
Council Members
ORBIT FET College

Mr Mashongoane

REQUEST TO DO RESEARCH ON NC(V) GRADUATE PERFORMANCE

This communiqué serves to confirm that your request to do research on the NC(V) graduate performance has been received and approved.

You are requested to liaise with Mr J Sengooba, Student Support Services Manager, for any assistance needed.

M. MARAIS (Mrs)
CEO/PRINCIPAL

RUSTENBURG CAMPUS

Tel : (014) 592 8461/2
Tel : (014) 597 5502
Fax : (014) 592 8473
e-mail :
info@rustenburgcampus.co.za
C/o Fatima Bhayat & Bosch Street,
RUSTENBURG, 0299

BRITS CAMPUS

Tel : (012) 252 3788
Fax : (012) 252 7421
e-mail : info@britscampus.co.za
Reitz Street North,
BRITS, 0250

MANKWE CAMPUS

Tel : (014) 555 2900
Fax : (014) 555 2941
e-mail : info@mankwecampus.co.za
Stand 230, Unit 2,
MOGWASE, 0314



A LETTER REQUESTING AN INTERVIEW

...../...../ 2014

The CEO/Principal
VUSELELA FET College
KLERKSDORP

RESEARCH INTERVIEWS ON THE IMPACT OF THE NC (V) QUALIFICATION IN THE ENGINEERING FIELD

Thank you for consenting that your college will participate in the research study that I am undertaking as a UNISA doctoral student in Educational Management.

I would like to make an appointment for the interviews with you or the Deputy Principal Academic Studies and the Academic Programmes Manager as well as with the Student Support Manager. The purpose of this research is to determine the impact of the NC (V) engineering qualification on the destinations and the continued learning patterns of graduates.

The session will be divided into 3 parts that will approximately take 30 minutes each (meeting with the Principal or Deputy will focus on management and planning related to NC (V) programme; meeting with the Academic Programmes Manager will focus on the implementation, monitoring and examination results; and lastly, meeting with the Student Support Manager will focus on the learner support, placement and tracking services.

Your cooperation in this regard will be appreciated.

Yours sincerely



Thabo Mashongoane

Tel: 012 – 312 5420

P O Box 203
LETLHABILE
0264
8 March 2014

Alumni

ORBIT/TALETSO/VUSELELA FET College
NORTH WEST PROVINCE

Dear ALUMNI

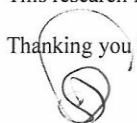
INVITATION TO PARTICIPATE IN THE NC (V) GRADUATES SURVEY STUDY IN THE
THREE NW FET COLLEGES

I am a doctoral student at UNISA in the faculty of Educational Management. I would like to invite you to participate in the research on the impact of the NC (V) qualification in the engineering studies in the three colleges from the North West Province.

A survey of all students who completed L2 – L4 NC (V) in the three engineering programmes, (i.e, Civil and Building Construction, Electrical Infrastructure and the Engineering and Related Trades) will be conducted to determine the destinations of graduates with a view of assessing the impact of the programme. The researcher will treat information provided with the necessary confidentiality required and your anonymity will be observed. You will be under no obligation to participate or even to respond to questions, however, your participation may stand to assist the policy makers in making any necessary adjustment to improve the curriculum in order to benefit future learners and the country. Please respond to the attached questionnaire and send it back to me at your earliest convenience by email or fax. Should you prefer to complete the questionnaire telephonically, please tick the appropriate box and send it to my attention.

This research is for study purposes but could be used for future referencing.

Thanking you in anticipation.



Mashongoane T S

UNISA Student: 0767-106-7

012-312 5420/ 083 775 5748

Mashongoane.t@dhet.gov.za

A LETTER REQUESTING AN INTERVIEW

...../...../2014

The CEO/Principal
TALETSO FET College
MAHIKENG

RESEARCH INTERVIEWS ON THE IMPACT OF THE NC (V) QUALIFICATION IN THE ENGINEERING FIELD

Thank you for consenting that your college will participate in the research study that I am undertaking as a UNISA doctoral student in Educational Management.

I would like to make an appointment for the interviews with you or the Deputy Principal Academic Studies and the Academic Programmes Manager as well as with the Student Support Manager. The purpose of this research is to determine the impact of the NC (V) engineering qualification on the destinations and the continued learning patterns of graduates.

The session will be divided into 3 parts that will approximately take 30 minutes each (meeting with the Principal or Deputy will focus on management and planning related to NC (V) programme; meeting with the Academic Programmes Manager will focus on the implementation, monitoring and examination results; and lastly, meeting with the Student Support Manager will focus on the learner support, placement and tracking services.

Your cooperation in this regard will be appreciated.

Yours sincerely



Thabo Mashongoane

Tel: 012 – 312 5420

A LETTER REQUESTING AN INTERVIEW

...../...../ 2014

The CEO/Principal
ORBIT FET College
RUSTENBURG

RESEARCH INTERVIEWS ON THE IMPACT OF THE NC (V) QUALIFICATION IN THE ENGINEERING FIELD

Thank you for consenting that your college will participate in the research study that I am undertaking as a UNISA doctoral student in Educational Management.

I would like to make an appointment for the interviews with you or the Deputy Principal Academic Studies and the Academic Programmes Manager as well as with the Student Support Manager. The purpose of this research is to determine the impact of the NC (V) engineering qualification on the destinations and the continued learning patterns of graduates.

The session will be divided into 3 parts that will approximately take 30 minutes each (meeting with the Principal or Deputy will focus on management and planning related to NC (V) programme; meeting with the Academic Programmes Manager will focus on the implementation, monitoring and examination results; and lastly, meeting with the Student Support Manager will focus on the learner support, placement and tracking services.

Your cooperation in this regard will be appreciated.

Yours sincerely



Thabo Mashongoane

Tel: 012 – 312 5420

P O Box 203
LETLHABILE
0264
4 July 2014

Delegate/Representative

EMPLOYER/INSTITUTION OF EDUCATION AND TRAINING

Dear Representative

Invitation to participate in the NC (V) Graduates survey study in the three NW FET Colleges

My name is Thabo Mashongoane and I am a doctoral student at UNISA in the faculty of Educational Management. I would like to invite you to participate in the research on *the impact of the NC (V) qualification in the engineering studies in the three colleges from the North West Province*.

The Researcher will conduct interviews with the representatives of the three Colleges, Department of Higher Education and Training, the Employers and the Institutions of further learning and training. The study will also conduct a survey of students who completed L2 – L4 NC (V) in the three engineering programmes, (i.e, Civil and Building Construction, Electrical Infrastructure and the Engineering and Related Trades) to determine the destinations of graduates with a view of assessing the impact of the programme. The identified sample is the cohorts of the NC (V) graduates who completed between 2009 and 2012.

The researcher will treat information provided with the necessary confidentiality required and your anonymity will be observed. You will be under no obligation to participate or even to respond to questions, however, your participation may stand to assist the policy makers in making any necessary adjustment to improve the curriculum in order to benefit future learners and the country.

Please respond to the attached interviews schedule and send it back to me at your earliest convenience by email or fax. Should you prefer to complete the questionnaire telephonically, please tick the appropriate box and send it to my attention?

This research is for study purposes but could be used for future referencing.

Thanking you in anticipation.



Mashongoane T S

UNISA Student: 0767-106-7

012-312 5420/ 083 775 5748

Mashongoane.t@dhet.gov.za

APPENDIX D – Letters to former students

A LETTER TO REQUEST THE PARTICIPATION OF FORMER STUDENTS TO PARTICIPATE IN THE RESEARCH STUDY

...../...../ 2014

Dear former NC (V) Engineering student

My name is Thabo Mashongoane and I am registered with UNISA as a doctoral student for Educational Management. I am conducting a survey study on the Impact of the National Certificate Vocational - NC (V) in the engineering studies in the North West Province.

I learnt that you have studied in one of the Public FET Colleges in the NW and I invite you to participate in this research study by completing the enclosed or attached questionnaire that aims to solicit information on your experience of NC (V) programmes and your perceptions about them. Your input and participation will assist in the on-going improvement of curriculum, teaching and learning of these programmes.

All the data to be collected is confidential within the limitations of the law, your participation is voluntary and you will not be identified in the survey report.

If you have any concerns you may contact the UNISA Ethics Committee on

Sincerely

Thabo Mashongoane
083 775 5748

Consent: I ... hereby willingly participate in this research study.

FOLLOW UP LETTER TO STUDENTS

Date:

Dear former NC (V) Engineering student

Recently, I sent you a questionnaire to help determine the impact of NC (V) qualification on the destinations and continued learning patterns of former students. I have not received your response.

The information you provide is extremely important. Please take a few minutes from your busy schedule to complete and return the questionnaire. Your cooperation is greatly appreciated.

If you have returned the questionnaire, please disregard this notice.

Sincerely

Thabo Mashongoane

083 775 5748

SECOND AND FINAL FOLLOW-UP LETTER TO SELECTED STUDENTS

Date

Dear former NW NC (V) Engineering Student

As you may know, you have been selected to be part of a study to determine the impact of the NC (V) Engineering qualification on the destinations and continued learning patterns. This study is undertaken in the fulfilment of my Educational Management doctoral studies with UNISA. You should have received a letter and questionnaire 6 weeks ago. I have enclosed/attached another copy of the questionnaire in case you misplaced it or did not receive it.

The information obtained from this study will be used to improve NC (V) programmes in South Africa. As a former NC (V) student, you are requested to provide the information needed.

Please take some time from your hectic schedule to complete and return the questionnaire. It will be appreciated if you would return the questionnaire in two weeks' time from the date of receipt.

Sincerely

Thabo Mashongoane
083 775 5748

Consent: I ... hereby willingly participate in this research study.

A LETTER REQUESTING AN INTERVIEW

Date

The CEO/Principal
ORIBIT/TALETSO/VUSELELA FET College

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Your cooperation in this regard will be appreciated.

Yours sincerely

Thabo Mashongoane
083 775 5748

Consent: I ... hereby willingly participate in this research study.

