

**THE CHALLENGES FACING THE TECHNICAL AND VOCATIONAL
EDUCATION AND TRAINING (TVET) CURRICULUM IN
ADDRESSING THE SKILLS SHORTAGE GAP IN THE RURAL
AREAS OF NORTHERN KWA-ZULU NATAL**

by

JACKSON LUTAAYA

Student Number

201974659

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Supervisor: Prof. M.S. Mabusela

DECLARATION

I **JACKSON LUTAAYA** declare that,

- The research done for this thesis, entitled “*Challenges facing the TVET curriculum in addressing the skills shortage gap in the rural areas of Northern Kwa-Zulu Natal,*” is my original work. Any exception is acknowledged.
- This thesis submitted to the University of Zululand for the degree of Doctor of Philosophy, has never been submitted by me for any degree or examination at any other university.
- This thesis does not contain any other person’s diagrams, graphs, writing or other information, unless specifically acknowledged.

Signed by  on the 15 day of March 2021.

DEDICATION

This thesis is dedicated to the God of my Father, the Prophet, Shepherd Bushiri and my Spiritual Mother, Prophetess Mary Bushiri, for their anointing and grace that always kept me going. I am also dedicating this thesis to the students who may think they cannot achieve great academic heights. It is, therefore hoped that the dedication will also serve as an inspiration.

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ABSTRACT

The main aim of the study was to investigate the challenges facing the TVET curriculum in addressing the skills shortage gap in the rural areas of Northern Kwa-Zulu Natal. The objectives of the study were; (a) to explore the TVET curriculum in an attempt to address the skills shortage gap in the rural areas of Northern Kwa-Zulu Natal, (b) to investigate the challenges facing the TVET curriculum in addressing the skills shortage gap in the rural areas of Northern Kwa-Zulu Natal, (c) to determine possible alternative ways for the TVET curriculum to address the skills shortage gap in the rural areas of Northern Kwa-Zulu Natal. Accordingly, this study employed the human capital theory its theoretical framework, while relating the literature to the theory. To achieve the study objectives, the researcher employed post-positivism as well as the relevant paradigms using a convergent parallel mixed-methods design. In addition, quantitative data analysis was used to quantify the phenomena and to analyse patterns and trends. Furthermore, qualitative thematic data analysis was used to group similar themes. These two approaches were used concurrently; hence, this study was a convergent parallel study in which the findings from the two approaches were compared, and the results were related to each other. One hundred and twenty (120) lecturers responded to the questionnaire and six campus senior personnel, in their respective portfolios, participated in the in-depth interviews. The findings identified a lack of trained lecturers, the poor design of the TVET curriculum, curriculum fragmentation, weak institutional structures and poor infrastructure. The findings also noted the poor funding norms, poor policy frameworks, lack of active support by the stakeholders as well as a poor relationship with the TVET partners. Furthermore, poor technological advancement, the nature of the students enrolled, the misappropriation of the curriculum, poor programme design and inadequate student guidance and counselling were also identified in the findings. There is need for the stake holders of the TVET sector to take a centre stage in skills development through education and training via vocational studies.

Key words: *TVET*, Curriculum, skills, skills shortage gap, work-based learning

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ABBREVIATIONS AND ACRONYMS

AA	Affirmative action
ABET	Adult Basic Education and Training
ACE	Adult and Community Education
ADB	Asia Development Bank
AU	African Union
ASTD	American Society for Training and Development
CEDEFOP	European Centre for the Development of Vocational Training
CDE	Centre for Development Enterprises
CETC	Community Education Training Colleges
CIT	Canberra Institute of Technology
COSATU	Confederation of South African Teachers' Union
COTVET	Council for Technical and Vocational Education and Training
DHA	Department of Home Affairs
DHET	Department of Higher Education and Training
DoL	Department of Labour
DTI	Department of Trade and Industry
EC	European Commission
EE	Employment Equity
ESD	Education for Sustainable Development
FET	Further Education and Training
FNE	First National Examinations
FRN	Federal Republic of Nigeria
FSC	Framework School Curricula

FVEP	Framework Vocational Education Plans
GOP	Growth Domestic Product
HIV/AIDS	Human Immune Virus/Acquired Immune Deficiency Syndrome
HLSF	Household Labour Survey Force
HRDC	Human Resources Development Council
HRDS	Human Research Science Council
ILO	International Labour Organisation
ISC	Industry Skills Councils
LFS	Linux From Scratch
MDG	Millennium Development Goals
NACE	National Association of Colleges and Employers
NACI	National Advisory Council on Innovation
NATED	National Accredited Technical Education Diploma
NCV	National Certificate Vocational
NDP	National Development Plan
NGP	New Growth Path
NEETS	Not in Employment, in Education and Training
NGO	Non-governmental organisation
NPC	National Planning Commission
NQC	National Quality Council
NSA	National Skills Authority
NSDP	National Skills Development Plan
NSDS	National Skills Development Strategy
NQF	National Qualification Framework
NSF	National Students' Fund
NSFAS	National Students' Financial Aid Scheme

NSSAE	National Strategy Skills Audit for England
NTIS	National Training Information Services
OECD	Organisation for Economic Co-operation and Development
OHS	Occupational Health and Safety
OLS	Ordinary Least Square
PCM	Pairwise Causality Methodologies
PEF	Poverty Eradication Fund
PSET	Post School Education and Training
PSS	Statistical Package for Social Sciences
QCTO	Quality Council for Trade and Occupation
QLFS	Quarterly Labour Force Survey
SACE	South African Council of Educators
SACCI	Swiss-South African Cooperation Initiative
SADR	South African Development Report
SAIVCET	South African Institute for Vocational and Continuing Education and training
SACPO	South African Colleges Principals' Organisation
SAQA	South African Qualifications Authority
SETA	Sector Educator Education and Training
SNE	Second National Examinations
SRI	Solidarity Research Institute
SSR-TTT	Skills System Review Technical Task Team
STEM	Science Technology Engineering and Mathematics
TVETMIS	Technical and Vocational Education and Training Management Information System
TVET	Technical and Vocational Education and Training
TWG	Technical Working Group

UNDP	United Nations Development Program
UNESCO	United Nations Education Scientific and Cultural Organisation
UNICEF	United Nations International Children's Emergency Fund
VEC	Vector error correction
WBE	Work-based experience
W H O	World Health Organisation
WIL	Work integrated experience
WPHRE	World Programme for Human Rights Education

CHAPTER ONE

ORIENTATION OF THE STUDY

1.1 INTRODUCTION

Skills is a key factor in the development of any country. All nations need to address the acquisition of the necessary skills in order to take a centre stage in development. Unfortunately, there seems to be a skills shortage gap which has to be addressed through education and training through offering relevant, progressive and desired vocational education and training to all prospective students in their diverse backgrounds via Technical and Vocational Education and Training (TVET) Colleges.

The concept of Technical and Vocational Education and Training (TVET) came into effect after the first higher education summit held in Johannesburg in April 2010, during which the government and the Department of Higher Education and Training (DHET) called on all stakeholders in education and training, for example, parastatals, Universities, civil society organisations and businesses, to collaborate and respond to the need for improving mid- to high-level skills development opportunities, job creation and improvement of the poor educational achievement which continue to confront South Africa. The TVET colleges were formerly called Further Education and Training (FET). The government renamed these colleges (TVET colleges) as a way of vocationalising education and training (DHET, 2013b).

Education in rural areas is envisaged with regard to rural development. The African Economic Outlook (2015) holds that rural education and development lags behind that in urban areas. Rural schools and colleges are poorly serviced with a view to the demands of the labour market as reflected in the available college infrastructure.

Mandela (1994) notes that:

“Education is the greatest engine for personal development. It is through education that the daughter of a peasant can become a doctor, that the son of a mine-worker can become the head of a mine. That, a child of a farmworker can become the president of a nation. It is what we make out of

what we have, not what are given, that separates one person from another”.
(RSA, 1994).

This means that, there is a direct relationship between the country’s attitude towards the education of its people and its subsequent development. It further means that education and training produces civilised citizens who communicate at a high level, making it possible to determine their economic and social relationships.

Education and training liberates the social economic and psychological ability of a person to discover his/her identity and potential and fights poverty, ignorance and disease as well as inequality in societies and leads to both employment and self-employment (Harris, 2011). The youth who are newcomers to the employment sector should be given adequate vocational education and training in their formative periods. For this case, vocational training for employability skills should be emphasised in the TVET curriculum.

Vocational training fosters technical and soft skills as competencies for the world of work. Furthermore, this training provides the core skills, knowledge, experience and industrial-based and professional competencies that reflect education for the world of work. The Technical Vocational Education and Training (TVET) curriculum is crucial for achieving economic sustainability regarding the provision of a workforce with the necessary competencies and skills in the Information Society Institution (TISI) report on the E-Skills Summit (2010).

Lack of the necessary skills (skills shortage gap) especially in the rural areas has negatively impacted on the development patterns in those areas leading to massive unemployment, poverty, large number of NEETS, rural urban migration all other kinds of related political, economic and social aspects.

To reverse this situation, the TVET curriculum is tasked to train students in the requisite skills to make them partners in development. The TVET programmes should be designed to assist trainees to work in a specific trade or occupation for the job market that is recognised by the relevant bodies. This affirms the responsibility of the TVET curriculum to prepare students effectively and tap their potential to enable them to join the world of work.

1.2 LITERATURE REVIEW

It is widely believed that the shortage of skills and applied competencies is a critical issue in developing countries, including South Africa. A skills shortage gap exists when the workforce has a lower level of skills necessary to meet the set objectives. It may refer to the lack of proficiency of the current staff or the lack of ability to perform assigned duties. In effect, it entails the difference between the available skills and the demanded skills (OECD, 2015).

On a global perspective, shortage of skills is seen as a major hindrance to economic development (UNESCO, 2015a). South Africa is not exceptional on this challenge of skills shortage hence, the aim of this study is to investigate how the TVET curriculum in South Africa is attempting to address the skills shortage gap

The TVET curriculum is strategically positioned within the post-school arena to address the needs of a broad range of school leavers across many occupations requiring specialised training for the workplace. TVET is seen as an educational system involving the study of technology and the related sciences, the acquisition of practical skills, as well as the understanding and knowledge relating to occupations in the various sectors of the economic and social life (UNESCO, *et al* 2015a).

South Africa emphasises the acquisition of skills and competencies for national economic development through human capital development in a bid to address the skills shortage gap in rural areas. Therefore, it is hoped that South Africa may realise skills development through the TVET curriculum by blending theory and practice. The TVET curriculum has to reflect on the skills needs of the country and the global competition, relevantly so through offering competitive training for employment.

The TVET curriculum is viewed as a remedy to address the skills shortage gap and is built on the assumption that it will equip the unemployed youth with the necessary skills and competencies to challenge the world of work. The curriculum is assumed to be a hands-on job-process for the training and retraining of individuals, while linking the gap between basic and higher education. Accordingly, the curriculum serves as a link between education and employment.

One of the main aims of education and training the world over is to develop the economic social fabric of a country through research and innovations, together with the acquisition of skills for employment. No country in the world can compete effectively in terms of development without properly aligning its educational system with science (UNESCO, 2012a). In essence, addressing the skills shortage gap in South Africa has to stem from education and training through a scientifically-based TVET curriculum. In terms of this curriculum, students are taught the required skills and competencies. In this way, the skills gap will, be addressed in the long run, as the needs of the society are mirrored through its educational system (Gewe, 2010a).

The TVET curriculum can elevate the importance of sustainable development in all the spheres of the industry. To cope with the demands of the necessary national as well as global skills and competencies in rural areas, the TVET curriculum needs to address the skills demanded by the employers. This is regarded as a transformational approach to progressive education. It should be noted that the industry has indicated that the skills shortage gap is related to the education and training provided by the TVET curriculum at present (Papier, 2011). The TVET curriculum should have the ability to close the skills shortage gap through continuing education and the TVET curriculum design should emphasise the development of salient workplace skills and key aspects that the labour market seeks for employability in the industry (Bhorat, Cassim & Tseng, 2016).

Worldwide, skills have been identified as scarce, consequently, human capital development was hampered. Similar to other areas in the world, rural areas in Northern Kwa-Zulu Natal are not exceptional, facing challenges pertaining to the skills shortage gap. The preamble of South Africa's Constitution (RSA, 1996) indicates the need to embrace and free every person's potential with regard to the nations' socio-economic development. Hence, education and training should facilitate and unfold a person's potential. This explains the attempt by the TVET curriculum to address the skills shortage gap. Accordingly, The National Skills Development Plan (NSDP) (RSA, 2011a) advocates adequate, appropriate and high-quality skills that can bring about economic growth, job creation and social development in South Africa.

The Organisation for Economic Co-operation and Development (OECD) report (2016) emphasises the uncertainty that exists in the development of skills by the different stakeholders, including the private sector. The report recommends restructuring of education and training for the unemployed and re-training for the employed as a way to improve employability.

The skills gap entails a deficit between the skills needed and the current skills in an organisation. It is the situation where an organisation may not achieve goals or compete within the industry due to a shortage of skills. Education and training is fundamental for the improvement of skills towards economic development; hence, it should be relevant to the skills needs analysis in artisanal and technical skills. Nzimande (2012) views TVET as consumers with regard to the untrained youth in the sense that the skilled workforce promotes the economic development of an organisation. The concept of skills encompasses technical skills, human relations (soft skills) and the professional ethos linked to vocational education. The realisation of skills has shifted from education and training to production and outcome orientedness due to the impact of globalisation and the increasing dominance of the market-led ideologies in society. Skills play a powerful part in determining economic development, and subsequently, skills underpin the labour market. Gewer (2010b) asserts that TVET colleges equip learners with the necessary skills, competencies and social cohesion to engage successfully in work.

The TVET curriculum is pivotal in addressing the skills shortage gap in South Africa. Any discussion on skills shortages has to consider the prevailing structure of the labour market. DHET (2015a) emphasises that the skills shortage gap has an immense impact on South Africa with regard to global, industrial and technological advancement. Education and training are central to long-term development, in terms of reducing poverty and inequality and building a foundation for an equal society. Importantly, education and training empower people to determine their identity, take control of their lives, raise healthy families, take part in developing a just society, and play an effective role in the politics and government of their communities.

There is a growing number of college-age people who are not in employment or in education and training (NEETS), (DHET, 2018). Accordingly, the TVET curriculum

offers education and training to pre-matric students, matric students as well as post-matric students in both Report 191 and the National Curriculum Vocational (NCV) as well as occupation and specific-skills, part time-qualifications including work-based learning experience in terms of the Continuing Education Act, No. 16 of 2006 as amended (RSA, 2006). The TVET curriculum also offers skills programs and learnerships with a range of SETAs through partnerships and collaborative initiatives.

Vocational education dates back to 1600 after the Dutch traders and early settlers provided training to produce the artisans required to work in their farms. After World War 2, the government introduced the skills system by offering National Technical Education (NATED). The Bantu Education Act of 1953 (RSA, 1953), was later passed, which aimed at the preservation of skills and jobs to white minority against the blacks (Gamble, 2013). The Education Act No.77 of 1955 (RSA, 1955b) was promulgated to regulate the establishment, management, control and maintenance of vocational schools. Technical College education in South Africa was tailored along with the provision of theoretical training alongside practical training in the apprenticeship system.

This explains the notion that the TVET curriculum has to be a combined effort by all the stakeholders to be responsive and contemporaneous, as well as competitive in the global trend for economic growth. This will ascertain the purpose for which the curriculum was designed. The concerted effort should stem right from the inception (ideology), design, development, implementation through assessment and evaluation. Thus, the industry and all the employers have to partake in the TVET curriculum administration and management. In this study, the skills shortage gap will include the absence of qualified labour to fill vacant posts, the mismatches in the labour market due to the lack of skills and qualifications. It will also consider the lack of information regarding how to secure jobs.

In other countries, such as, Australia, the TVET system has been driven by the need to meet the labour market's skills needs. In addressing the skills shortage gap, the TVET curriculum is geared towards producing decentralised competency-based "training in which industry plays a significant role through" training packages (Industry Skills Council, 2010). The curriculum is decentralised to respond to the needs of the industry. According to Canberra Institute of Technology (2010)

the training packages are developed by Industry Skills Councils (ISCs) and endorsed by the National Quality Council (NQC) before they are listed on the National Training Information Service (NTIS), which is an official register.

The training packages also define qualifications, units of competency and assessment guidelines. Another strategy which ensures alignment between skills acquired and skills needed in the Australian industry is the apprenticeship and traineeship system. The TVET curriculum development is shared between the national government and local TVET institutions.

The Ministry of Education provides a list of courses from which vocational schools can develop their own courses based on that list.

TVET is offered at different levels of educational institutions for different provisions, namely;

- Educational institutions, including schools TAFE –Technical and Further Education Colleges, adult and community education (ACE) and universities
- Public and private, non-governmental providers of education and training.
- Industry, In-house and organisation specific training.
- Small business and private training consultants.

The above example implies that the TVET sector in South Africa has to draw inspiration from the Australian TVET system to re-align its institutional frameworks within the demands and aspirations of the industry. Secondly, involving industry in the implementation of the vocational curriculum training is an indication of surety for quality training, employment and partnerships.

TVET in South Africa is faced with a number of challenges with regard to design, development, policy formulation, implementation, assessment, poor infrastructure, personnel problems, and funding (Ammani & Oqunyinka, 2011). TVET is still faced with multiples challenges that make it difficult to address the rural skills shortages in South Africa. This explains the rationale for the researcher undertake this investigation on the TVET curriculum.

The mission of the TVET system is to improve the productivity and competitiveness of the skilled workforce and to raise the income-earning capacities of people, especially women and low-income groups, through the provision of quality-oriented, industry-focused, competency-based and responsive training programmes. The above note underlines the nature of the type of TVET that is demanded and comprehensive-driven. It is for this reason, among others, that, the TVET curriculum should train all students unequivocally with regard to the skills that prepare them for the world of work in the different occupations and trades.

The Government of South Africa has integrated the TVET sector by instituting the Department of Higher Education and Training (DHET), which is responsible for policy formulation, coordination, rationalisation of assessment and certification (DHET, 2013c). The TVET curriculum is integrated in programmes, namely, the National Certificate Vocational (NCV), which was designed in 2006 and implemented in 2007 to address the quality and irrelevance of the National Technical Education (NATED) programmes based on the assumption of the weaknesses in the basic education system and the fundamentals of numeracy and literacy. The NCV also aims at solving the problem of low-quality programmes and the extremely short supply of both cognitive and practical abilities of university graduate students. It may be assumed that the NCV curriculum, in its current form, may be required as long as the basic education system is producing school leavers who do not have an adequate skills-base to enter occupational learning programmes (Gewer, 2010a).

The NCV was designed as a specialised course of study and is not an occupationally specific course of study, but a general course. It is a ministerial vocational qualification from levels 2 to 4 offered to young people blending theory and practicals through the TVET colleges to address the skills shortage. Level 4 marks the exit level (Gewer, 2010c).

The NCV is a comprehensive curriculum with fourteen fields of study including *agriculture, arts and culture, business and commerce, communication and languages*. Other areas include *construction, engineering and manufacturing, health, social services, hospitality and tourism*. The curriculum further includes, *information technology, law and security, conservation, technology, media studies, garment making, transport and logistics*. The learning areas comprise *Business*

Management, Travel and Tourism, Information Technology, Electrical Infrastructure Finance Economics and Accounting. Other learning areas include *Civil Engineering, Engineering and Related Design, Fabrication and Extraction as well as Primary Agriculture and Office Administration* (DHET, 2013a).

On the other hand, the NATED curriculum has two strands, namely. Engineering NATED (N1-N6) designed to produce artisans and Business NATED or Report 191 (N4-N6). In the Engineering Faculty, students study for a trimester for three months and a period of 18 months for the practical component before a trade test can be written to become artisans. In the Business NATED, the programme is administered on a semester basis of six months per semester from N4-N6. Students study for a theoretical period of 18 months, after which they seek an internship or in-service training for another 18 months for practical competency before a National Diploma can be issued (DHET, 2013b).

The third category of the TVET curriculum system is the specific-job related curriculum. In this category, organisations usually in partnership with TVET colleges and/ or SETAs arrange skills training programmes with specifically selected students who may already be in the work environment or who are identified for a specific programme design such as the expansion of the organisation, the phasing out of particular industrial jobs or due to the restructuring of an organisation. Such programmes are part of the TVET curriculum and are implemented through TVET colleges. Students are trained in specific skills as a way of addressing the skills shortage gaps.

1.3 THEORETICAL FRAMEWORK

The researcher investigated the challenges facing the TVET curriculum in addressing the skills shortage gap in South Africa; hence, the theoretical framework worked as the blueprint for the entire dissertation inquiry. In this study, the researcher employed the human capital theory. The study explored the belief that human capital can be increased through higher education and training to promote access to a range of skills and knowledge, while promoting lifelong learning and economic security for communities. The theory has a background in macroeconomic development theory back in the 1950s when the focus fell strongly on land, labour, management and physical capital against peoples' capabilities as

a resource in the production process. The human capital theory has its roots in the industrial revolution and the philosophy of productivism. The human capital theory was promoted by researchers such as by Schultz (1961) and Becker (1976) Houghton and Sheehan (2000) and Laanan (2000), as they believe that human beings are capital in themselves.

Human capital must be trained, educated, developed and maintained within the system of an organisation for the purpose of enhancing the productivity” of the organisation and the expertise of its workforce. Investment in human capital leads to greater economic outputs (Ungar, 2011). According to Todaro and Smith (2015), “Modern economists seem to concur that education and health care are the keys” to improving human capital and, ultimately, to increasing the economic output of the nation. In doing so, the skills shortage is addressed explicitly. Education and training through the knowledge, skills and abilities acquired, improves the employee production and performance of the organisation (Boyer, Edmondson, Artis & Fleming, 2014). According to this approach, the TVET curriculum is perceived to play a fundamental role in providing the necessary human capital required by the industry (Tikly, 2013). Development financial institutions such as World Bank have been advocating for policies to promote the TVET curriculum that invest in human capital as a means for supporting economic growth.

In this case, the government has to develop skills through the TVET curriculum to address the skills shortage in South Africa. The human capital theory focuses on competences, knowledge, and personality attributes of a worker to produce economic gains for the individual and the business. The study will explore the belief that human capital can be increased through higher education and training to promote access to a range of skills and knowledge while promoting lifelong learning and economic security for communities.

1.4 PROBLEM STATEMENT

Global economic trends continue to report skills shortage gaps expressing their dissatisfaction of the TVET college graduates and the skills they possess. The skills development strategy through its national policies, requires every country to strengthen the ability of its workers and to adapt to changing market labour demands.

Strengthening the ability of its workers should be enhanced through vocational education and training through innovations and investment in new science and technology, clean energy, environment, health and infrastructure to acquire the necessary skills.

Skills shortages from the microeconomic perspective, are generated by an excess demand and the inability of employers to switch their demand composition or substitute factors of production in the short term due to asymmetric information on applicants' ability, or due to vested interests in hiring decisions that could lead to risk aversion and, hence, skills shortages. Importantly, the skills gap is a deficiency between the skills needed and the current skills in an organisation. It is the junction where an organisation may not achieve its set goals or compete in the industry due to the shortage of skills with regard to the employees. Therefore, in the UK the skills shortage gap is the deficiency or vacuum that exists between the available skills and the required skills by the labour market (Commission Employer Skills Survey, 2013).

All over the world, growth and development is basically realised through education and training. In economic terms, education and training are seen as a consumer and capital good because of its utility and social transformation. There is a belief that expanding educational opportunities and access promotes economic growth. This is based on the assumption that education is pivotal in enhancing the productivity of a human resource as a priority (United Nations, 2012).

Studies have shown that improvements in education and training accelerate productivity and contribute to the development of technology, thereby, improving human capital. The organisation of Economic Cooperation and Development (OECD, 2016b), claims that, the radical changes to the public and private sectors of the economy “stresses the significance of education and training as the key to participation in the new global economy.” In order to enhance development in the general society, it is necessary to apply the theory of human capital to educational systems through the TVET curriculum. According to Aluko and Aluko (2013), “By such means, productivity is enhanced and sustained based on an increased and diversified, relevant and responsive labour force”. The TVET curriculum that is implemented by the TVET colleges in rural areas should have the determination and ability to address the skills shortage gap.

It is believed that many graduates from the TVET colleges do not possess the required and relevant skills needed in the labour market. Most of them find it difficult to find employment and stay in employment or create their own employment (self-employment). The rural areas of Northern Kwa-Zulu Natal are presumed to have a large skills shortage gap even when the TVET colleges in those areas still produce graduates. Graduates find themselves among the unemployed, not in education and not in training (NEETS). This explains the need to transform the TVET sector to address the skills shortage gap for rural areas through education and training. The CHE (2013) notes that, "The contribution of education to economic growth and development occurs through its ability to increase the productivity of an existing labour force in various ways."

Therefore, the economic appraisal of educational investment should be taken into account. The National Development Plan outlines the need to focus on skills development as one of its goals (NDP, 2012). The World Bank (2013) refers to the fact that Countries such as Hong Kong, Korea, Singapore, and Taiwan have achieved unprecedented rates of economic growth while making large investments in education and training through TVET.

The considerable skills shortage gap (deficiency in competencies in the labour market and industry) is the ultimate objective for institutionalising the TVET curriculum in South Africa. The rationale for the introduction of the TVET curriculum is to equip prospective students with specific trade skills, competencies, attitudes and characters in the job market (DHET, 2012a). However, the TVET curriculum faces many challenges in addressing the skills shortage gap for the rural areas of Northern Kwa-Zulu Natal in terms of modernity, relevance, responsiveness, applicability, competitiveness, poor facilities, curriculum fragmentation, poor co-ordination, poor delivery and poorly trained personnel. Other challenges are poor funding, a shortage of instructional materials, poor programme design that lacks market orientedness, negative perceptions, a lack of competitiveness, poor facilities, inadequate funding, and outdated facilities, among others (Dasmani, 2011).

The main research question

This study addressed the following research question: How does the TVET curriculum attempt to address the skills shortage gap in the rural areas of Northern Kwa-Zulu Natal?

Sub-questions

1.4.1. What challenges face the TVET curriculum in attempting to address the skills shortage gap in the rural areas of Northern Kwa-Zulu Natal?

1.4.2. What are the possible ways for the TVET curriculum address the skills shortage gap in the rural areas of Northern Kwa-Zulu Natal?

1.5 AIM AND OBJECTIVES OF THE STUDY

This study aimed at investigating the challenges facing the TVET curriculum in addressing the skills shortage gap in the rural areas of Northern Kwa-Zulu Natal.

The objectives of the study are as follows:

1.5.1. To explore the TVET curriculum in an attempt to address the skills shortage gap in the rural areas of Northern Kwa-Zulu Natal.

1.5.2. To investigate the challenges facing the TVET curriculum in addressing the skills shortage gap in the rural areas of Northern Kwa-Zulu Natal.

1.5.3. To determine possible alternative ways for the TVET curriculum to address the skills shortage gap in the rural areas of Northern Kwa-Zulu Natal.

1.6 INTENDED CONTRIBUTION TO THE BODY OF KNOWLEDGE

The study may try to explore the skills shortage gap, trace and identify the historical causes and analyse the impact of the skills shortage gap in the social and economic development terms.

In view of the above perspective, the study can generate a debate on the critical skills needed for development in rural areas such as, animal husbandry, crop science, poultry, construction, civil engineering, business management, tourism, accounting and finance, catering, communication science, information technology and electronics.

The study may attempt to bring all stakeholders in a general and specific debate on how to build partnerships in the TVET sector (curriculum) to address the skills shortage gap while proposing ways regarding how education and training can blend theory and practice.

At the same time, modalities on how to address the skills shortage gap through education and training for rural areas has been suggested. From the data collected, the study compiled and displayed figures to present the skills shortage gap.

The study has proposed ways for the transformation of the TVET sector and to propose alternative ways of making the curriculum function effectively for the purposes for which it was founded. A comparative analysis of the TVET sector with different nations was displayed for deriving lessons and good practice by the South African TVET sector to identify their strengths and weaknesses, thereby, creating the ground for education and training improvement in addressing skills development for rural areas through the TVET curriculum.

In general, the study may open the eyes of the government, the DHET, the SETAs, the industry and the business world in taking a step forward in the TVET curriculum system. The study may initiate collaborative efforts between the Department of Higher Education and Training (DHET), the Department of Labour (DoL) the Department of Trade and Industry, SETAs, civil society, NGOs and other key stakeholders in partnerships.

Based on the findings, the study has suggested a review of the TVET curriculum and proposed a more comprehensive and practical study for the skills demanded by the employers in a competitive labour market (Tikly, 2013).

Finally, the study has made relevant conclusions and recommendations for an ideal TVET system that can address the skills shortage gap, especially for rural areas.

1.7 RESEARCH METHODOLOGY

This section discussed the methodological approach that will be used in this study. The methods that will be used, justifications for their usage, the sample population and the tools for research will be briefly discussed.

1.7.1 Research paradigm

The philosophical paradigm employed in this study is post-positivism. Post-positivism is a paradigm which balances both positivist and interpretivist approaches. The paradigm incorporates approaches to knowledge growth that are rejected by positivism. The paradigm is seen as an extension of positivism, since it represents the school of thought after positivism, challenging the traditional notion of the absolute and objective truth of knowledge in the social sciences. The emergence of post-positivism in the social sciences can be traced back to the works of Max Weber, in the late 19th and 20th century, offering to meet the requirements other paradigms could not meet in social research (Corry, 2019). Thus, post-positivism is a justification as an alternative paradigm.

Post-positivism is a useful paradigm for researchers who maintain an interest in some aspects of positivism such as quantification and, yet, wish to incorporate interpretive concerns around subjectivity and is a combination of qualitative and quantitative methods. Post-positivism focuses on researching issues in the context of involving experiences of the majority and announcing the results of what the majority says is acceptable (Hameed, Shah & Ali, 2017). The purpose of post-positivism is to examine the facts as much as possible to help people solve practical life problems. Post-positivism is seen as a scientific methodology that aims to understand the social phenomena as holistically as possible. Therefore, it accepts the complexity of any social phenomenon. According to the post-positivist approach, to study a complex phenomenon, the possibilities, multiple points-of-view and perspectives, and different variables that may affect the proceeding of the whole, have to be emphasised.

This paradigm assumes that the objects of study are engaged in an ongoing project involving producing the social world themselves, and, therefore, their efforts to make sense of this social world that must become part of the subject-matter of social science, ruling a simplistic limitation of study out to social facts, and accepting the context-specificity of knowledge. *Secondly*, it recognises that the tools of study in social sciences are human beings' own capacities as interpreters of the world. As such, these instruments work employing exactly the same processes of intersubjective meaning that social scientists seek to study.

This study decided to adopt this paradigm because it promotes the triangulation of qualitative and quantitative methods that explore the diversity of facts researchable through various kinds of investigations. This involves the use of the five senses of touch, seeing, tasting, hearing and feeling to quantify or measure and record knowledge. This indicates that people's perceptions or opinions and attitudes cannot be used as evidence of knowledge. In terms of this theory, knowledge has to be verified and experienced empirically. Post-positivism is biased with quantitative data approaches. Hence, this study adopted both quantitative and qualitative data analysis and interpretation.

The researcher attempted to dig deeply into a subjective interpretation of the challenges facing the TVET curriculum in addressing the skills shortage gap in South Africa. This was done by acknowledging the reasons, explanations, motivations, interests, beliefs and values attached by the respondents. The researcher studied the transcripts, conversations and videotapes to understand the interpretations given in context. Accordingly, the knowledge and meanings are the results of interpretations through human thinking and critical reasoning.

1.7.2 Research design

A research design is underpinned by knowledge claims and the theoretical perspectives that are added to the research process. Accordingly, a research design addresses the aims, purposes, intentions, plans, and rationale considering the research delimitations, for example, time, resources and funds (Creswell, 2014). The researcher decided to use a qualitative and quantitative research design. In this study, a mixed-methods or parallel design was used. A convergent parallel mixed-methods study design was as the appropriate design to collect, analyse and interpret quantitative and qualitative data (Tashakkori & Teddlie, 2010). The purpose of a convergent parallel or concurrent mixed methods design is to collect both quantitative and qualitative data concurrently, merge the data, and use the results to understand a research problem better. Mixed-methods employ the strength of quantitative and qualitative methods to give a comprehensive perception of the topic under investigation, while combining the properties of quantitative and qualitative methods in data collection data analysis and data interpretation (Scammon *et al* 2013). Mixed-methods is a pragmatic approach used to investigate and answer research questions for complex issues

(Glogowska, 2011). Mixed-methods combine the elements of quantitative and qualitative methods, for example, viewpoints, data collection and analysis (Johnson & Christensen 2010). They complement each other. The ultimate goal of mixed-methods research, is to expand and strengthen conclusions and, subsequently, add to the research validity.

Nevertheless, while using mixed-methods, a researcher has to remind himself or herself continuously of the rationale for using mixed-methods by reflecting on the research questions (Lavelle, Vuk & Barber, 2013). The choice and justification for using mixed- methods should balance the necessary skills to manipulate this approach. Advanced research skills are necessary for employing mixed-methods.

In general, mixed methods research represents research that involves collecting, analysing, and interpreting quantitative and qualitative data in a single study or in a series of studies that investigate the same underlying phenomenon. Plowright (2011) uses the terms “narrative” and the “numerical blending of quantitative and qualitative research as mixed-methods” as a way of promoting a more flexible mixed-methods design.

1.7.3 Sampling procedures

A sample is a section of research variables to be studied in a large population to acquire knowledge about the entire population and is the selection of predetermined research variables. In turn, a population entails a large number of persons or objects or items that will not be feasible to manage. For the purpose of this study, two TVET college campuses in the northern part of KwaZulu–Natal were selected as the target population. Instead of studying the whole spectrum, the researcher selects representative variables of the target population in order to simplify the study; save time and cut costs. After studying the sample, the researcher then generalises the results to describe the properties of the whole population. Sampling is the process during which a representative part of a population is selected for the purpose of determining the parameters or characteristics of the whole population.

Furthermore, sampling entails making a selection from the sampling frame to identify the people or issues to be included in the study. Random sampling was used in this study to select participants who were going to respond to the

questionnaire. Accordingly, random sampling is the method of survey research that gives each person in the sampling frame “*an equal chance of being included in the study*” (Terrell, 2011). Accordingly, Brink, Van der Walt and Van Rensburg (2012) indicate that the characteristics of a simple random sampling involve a one-stage selection process, in which each participant has equal and independent chances of being drawn, and the study population needs to be identified and listed. For the purpose of this research, a part of the population was selected. It is simple to work with a smaller number of the population. Purposive sampling was used for the participants who were going to be interviewed using semi-structured interview questions. Mills and Gay (2016) state that there are various techniques that can be used to select respondents randomly. For the purpose of this research, a computer-generated selection of random sampling was used to select the representative variables of the target population to simplify the study; save time and cut costs.

The researcher designed a sample framework of the participants based on the possession of the characteristics being sought to satisfy the study needs (Cohen, Manion & Morrison, 2011). The objective of the sample was to identify the relevant respondents who provided the necessary information sought. A sample based on experience or knowledge of the group was selected to enable the researcher identify and choose participants that would satisfy the aim and objectives of the research the best. These participants were selected purposively to represent the participants that were the most involved directly in the TVET curriculum. The participants were to be selected on the basis of willingness through word-of-mouth, formal requests, posters and notices.

The participants from the TVET college campuses were: One College Principal, Two Campus Managers, One Assistant Director, Two Curriculum Specialists, and 120 Lecturers. Based on the researcher’s knowledge of the sample population, a judgment was made of the participants in the sample regarding who would be relevant and resourceful (MacMillan & Schumacher, 2010). The lecturers responded by means of questionnaires as well as semi-structured interviews; while other respondents were interviewed. The sessions lasted for one hour. Accordingly, the population sample constituted the major stakeholders involved in the TVET curriculum management and administration, implementation and

assessment.

A convenient sample triangulates with regard to the accessibility, proximity, availability affordability, expediency and ability of the participants. The entire population in this sample was assumed to possess the above characteristics by virtue of the nature of their work. Most importantly, they were readily available and interactive with the TVET curriculum.

Sampling frame

Below is an example of who was going to participate in the study.

- One College Principal
- Two Campus Managers
- One Assistant Director
- Two Curriculum Specialists
- 120 lecturers

1.7.4. Data collection

Primary and secondary data were collected. Primary data are the data collected directly from the respondents and are first-hand information collected directly by the researcher. This included the views, behaviour, response and opinions as well as perceptions of the research participants on the topic under investigation. Primary data were collected from lecturers, students and other selected respondents as designed in the sample framework. In other words, primary data pertain to information that a researcher gathers because no one has collected and published it previously; hence, it is not accessible to the public. With regard to primary data, reliability is assumed to be high because it is collected by a reliable party.

Secondary data refer to the information collected by earlier researchers in the past. It may be data not directly related to the current study, but data that are relevant to be explored and used to affirm the reliability, validity and authenticity of the study. Secondary data are used to give an initial insight into the research problem and have already been collected and are available data in an electronic form to which the current researcher can refer. These are data that have already been analysed and organised. The researcher explores secondary data because they

are cheap in terms of availability and accessibility and also help the researcher to access the works of other researchers in the same field for theory building and comparison as well as critiquing. Furthermore, secondary data provide a frame of reference to the researcher, while using secondary data saves time, effort and money. Secondary data in the form of books and periodicals manuals, magazines, journals, dissertations, reports, articles, books, papers and theses. In this regard, secondary data were collected by conducting an extensive literature study, focusing on the TVET curriculum and the economic environment responsiveness. Data collection was carried out by means of a questionnaire, focus groups and semi-structured interviews.

1.7.5 Data analysis

The word “data” points to information that is collected in a systematic way and organised and recorded to enable the reader to interpret it correctly. A data analysis can be described as the process of making sense of the views and opinions of research participants, corresponding patterns, themes, categories and regular similarities. Data analysis entails a search for general statements about relationships among categories of data. In effect, data collection and data analysis are inseparable because of their intimate relationship with regard to building a coherent interpretation (Babbie & Mouton, 2010). Accordingly, data analysis involves reducing the high volumes of information, sorting the significant from the insignificant as well as the relevant from the irrelevant, identifying patterns and trends and constructing a framework of communication for the purpose of research. Data collection and analysis happen simultaneously, as the study progresses. In this process, data are transformed into findings, by bringing order, structure and meaning to the mass of the collected data.

The data collection process entailed recording, transcribing, obtaining an overview, coding, and evaluating of relevancy, the listing of the categories, identifying thematic patterns and nuances and re-transcribing. During this process, the data captured from all the completed questionnaires were coded, and the statistical package for social sciences (SPSS) for analysis was used in this regard. In addition, descriptive statistical techniques were used to analyse the data. A descriptive statistics approach employs measures such as frequency distributions, measures of central tendency, dispersion or variability and measures

of relationship (Creswell, 2014). This researcher organised all the data collected in themes, the categorisation as well as coding for a description of the various aspects of the study, the participants, the purpose of the activities examined, the views and opinions of the participants, as well as the effects of any activities.

1.8: DEFINITION OF CONCEPTS

This section is composed of key words or concepts and terminologies that will be regularly used in the study. The section will give specific meaning to those concepts as conceptualised by the researcher in this study.

1.8.1 The term “Technical and Vocational Education and Training” (TVET)

The term “TVET” is used to refer to the outline, written plan of learning skills, experiences, knowledge, abilities and competencies for vocational studies.

1.8.2 Curriculum

A curriculum is defined as the written plan incorporating aspects of time instigation, content, and the process aligned to the standards and assessment. It will be looked at as the interaction of purposeful plans created by the DHET and lecturers to benefit the TVET students.

1.8.3 Technical and Vocational Education and Training (TVET)

In this study, the concept of ‘TVET’ refers to the vocationilised training offered to students in TVET colleges for both soft and hard (technical) skills in different trades and occupations preparing them for the world of work. This includes the NCV, NATED and the specific-skills programmes organised by SETAs. It refers to education and training aimed at preparing students for the acquisition of skills, knowledge, applied competencies and attitudes necessary for employment.

1.8.4 Skill

The concept of a ‘skill’ refers to the knowledge, abilities and competencies both technical and soft skills possessed by a TVET college graduate to perform a given task in a workplace environment using the training obtained in a given occupation or trade as an area of specialisation.

1.8.5 Skills shortage

The term of a “skills denote a gap between the skills or competencies needed and the current shortage of available skills in the labour market.

1.8.6 Skills shortage gap

A skills shortage gap refers to the vacuum between the available skills possessed by the worker and the skills demanded by the employer. It also refers to a lack of proficiency of the current staff or the lack of ability to perform the assigned duties. It is conceptualised as the difference between the available skills and the skills demanded

1.9 CONCLUSION

In chapter one, the researcher presented the introduction and the background of the study in detail. This chapter identified the research gap (the rationale), the problem statement, the aim and objectives, the intended contribution and scope. In Chapter two, the discussion on the available related literature will be presented.

CHAPTER TWO

LITERATURE REVIEW

2.1 INTRODUCTION

According to Creswell (2014), a literature review equips the researcher with credible knowledge about the topic of the study in relation to other researchers in the same discipline. In addition, a literature review helps the researcher to assess the phenomenon comparatively in terms of the results in other studies. Furthermore, a literature review portrays the interconnectedness between the findings and the existing literature, helping the researcher to weigh the viability up of the research topic (De Vos & Strydom, 2011).

Leech and Onwuegbuzie (2010) believe that a literature review provides an academic background, theories and relationships with the regard to the documents reviewed to ground the framework for research, to orientate the researcher with the works of other researchers, to identify the research gaps and shortfalls in the reviewed works and to explore the linkages, nuances, relationships through a comparative analysis. It is also used to identify variables, definitions, highlight the differences or advantages and disadvantages of the variables.

In this study, primary and secondary sources were reviewed to collect data. These included *books, dissertations, theses, journals, conference proceedings, magazines, articles, periodicals, reports, newspapers, presentations, policies, acts, curriculum documents, gazettes, general notices, bills, subject guidelines and assessment guidelines*.

The literature on the development of skills knowledge, abilities and applied competencies has been presented by many researchers without a critical focus on the challenges facing skills development in education and training. This has created a research gap as there are many systematic, political, economic, social, national, local and global challenges in the world of work (Powell, 2012).

2.2. CONCEPTUALISATION OF TECHNICAL AND VOCATIONAL EDUCATION AND TRAINING (TVET)

“TVET” is a term used to refer to post-school education institutions (UNESCO, 2012a). It is a comprehensive term used to refer to those aspects of the “education

process involving in addition to general education the study of technologies” and sciences and the acquisition of practical skills, attitudes, understanding and knowledge relating to occupations in various sectors of the economic and social life (UNESCO, 2015b).

The second International Congress on TVET held in Seoul in 1999 adopted the comprehensive title of TVET as any education, training and learning activity leading to the acquisition of the knowledge, skills and understanding that are relevant for employment or self-employment. Importantly, “TVET” serves as an overarching term to describe all kinds of formal, non-formal and informal training and learning provided by or in all the different institutions, providers and learning locations (UNESCO, 2015c).

The name. Technical Vocational Education and Training (TVET). came into being after the first ever Higher Education Summit held in April 2010 during which the government and the Department of Higher Education and Training (DHET) called on all stakeholders in education and training, such as, parastatals, universities, civil societies and business, sector education and training authorities (SETAs) to collaborate and work together. They were called upon to respond to the need to improve mid- to high-level skills development opportunities, job creation and improvement of the poor educational achievement that continues to confront South Africa in the rural areas. It is important to note that TVET colleges were formerly part of Further Education and Training (FET). The government renamed them as a way of vocationalising education and training (Tickly, 2013).

TVET is part of the educational system that provides courses and training programmes “related to employment with a view to enable the transition from secondary education to work for young trainees” and supply the labour market with competent apprentices (ILO, 2010b). Furthermore, TVET is underpinned by educational approaches to contribute to the economic growth in any economy through the providing of skills. These are the middle-level skills needed by artisans. TVET is also believed to be a vehicle for poverty eradication and inequality reduction through availing the learning opportunities to every citizen (McGrath & Powell, 2013).

UNESCO (2012a) asserts that, many terms are given to TVET by different countries and academicians, for example career and technical education (CTE), vocational education and training (VET), apprenticeship training, workforce education, the industrial arts, technical education and occupational education. The term “TVET” was adapted by the UNESCO international conference on TVET held in Seoul in South Korea (United Nations, 2015c).

TVET is an aspect of continuing or lifelong learning and preparation for responsible citizenry and is an investment in promoting environmentally sound and sustainable development. In addition, it is viewed as an integral part of general education and a means of preparing for occupational fields for effective participation in the world of work (UNESCO, 2012a). Therefore, TVET is believed to provide a link between education and the economy and is a method of facilitating poverty and inequality reduction. The social and economic trends predict the need for a new development pattern which holds a culture of economically, environmentally and socially sustainable development as its central figures (UN, 2015a). With regard to its attitudes, values, policies and practices, TVET should be seen as an institution that plays an important role in sustainable development (UNESCO, 2012b). Baatjes, Baduza and Sibiyi (2014) refer to vocational education as education that embraces social justice, economic equality and sustainable development. This means that education should be available to everyone, to enjoy and to fulfil or to enhance responsible citizenry.

UNESCO (2013) contends that TVET is a key part in general education, aimed at preparing students for occupational fields and effective participation in the world of work. It is an aspect of lifelong learning and preparation for responsible citizenship and is an instrument for fostering environmentally sound sustainable development as well as a method of facilitating poverty alleviation. Afeti (2013) documents that, TVET is the key factor for the development of a skilled workforce that is needed to meet the challenges of rapid changes in technological development. However, there is a shift in the focus on the conceptualisation of TVET in the African context. In countries such as, Tanzania, Malawi, Mozambique, and Zambia the TVET emphasis is on self-employment, self-reliance and entrepreneurship (UNESCO, 2010a)

Within the TVET provisioning, UNESCO (2012a) lists three categories of skills necessary for the rural youth namely:

- Foundational skills (literature, numeracy and arithmetic).
- Transferable skills (soft skills) including decision-making, interpersonal relationships, communication skills among others.
- Technical skills (specific skills and expertise, such as, occupations and trades.

All the above categories of skills are imperative for every employee to secure employment, maintain it and improve him or herself, while in a workplace. The TVET curriculum should address the need to provide various skills for a competitive labour force. It is important to note that TVET is an investment within the human capital parameters embedded with big returns in the form of skills, productivity, efficiency, effectiveness, competition leading to economic growth. Furthermore, openness, inclusiveness, transparency and harmony should be created within TVET that can lead to positive TVET policies, adequate funding, and developing positive attitudes towards TVE (Gewe, 2010).

In some circles of the globe, marketability and publicity of TVET education are underestimated based on the current circumstances that have not enabled the TVET curriculum to come into its own right. *Secondly*, this underrating dates back to the historical perspectives of TVET education that was conceived as education and training for the academically poor students or those who failed to qualify for university education. *Thirdly*, the underestimation goes back to the effects of apartheid with its related Bantu Education Act, the lack of basic knowledge and information about the TVET and the perception that there are few opportunities in the TVET sector (Sulaiman *et al*, 2015).

Unlike other countries, such as, Austria, Taiwan and Germany, where all students choose TVET education, South Africa demonstrates the opposite trend. Students tend to prefer University education to TVET education due to the negative perceptions of students, communities, employers, and parents have towards TVET education (Ismail & Abiddin, 2014). Vision 2030 envisages promoting economic transformation through increased productivity and competencies. Importantly, the TVET initiative is driving the economy through this vision. South Africa needs to evolve around the good practice of other countries that seem advanced in TVET

education. The economy is believed to grow fast through the knowledge, skills and competencies of its people in their professional work (OECD, 2015).

TVET not only trains students in technical or hard skills, but also in soft skills for social transformation and civilisation linking education and training with regard to the prevailing social needs and social improvement. TVET should produce creative and innovative graduates that can contribute to the economic development and prosperity of the nation in various ways (Bakar, 2011). To be meaningful, efficient and effective, TVET students need to be versatile, vigilant and holistic in terms of the knowledge and skills acquired with the necessary competencies. Students need to be more progressive, adaptable, and visionary in their thinking and reasoning skills, logical skills, and should be critical thinkers, creative thinkers, problem solvers, and should be fully developed in terms of the mastery of the labour market adjustment and performance skills (Amiruddin, Ngadiman, Abdul Kadir & Saidy, 2016). Critical thinking entails the set of skills required to solve a complex problem. The economic development of a country is determined by its human resources equipped with optimum mental strengths and not just physical skills (National Advisory Council on Innovation (RSA, 2013b). Nevertheless, there are questions about the soft skills of the TVET graduates.

TVET is presented as all forms and aspects of education that are technical and vocational in nature and are provided either by educational institutions or under their authority by public authorities, the private sector or through other forms or organised education, formal or non-formal aiming to ensure that all members of the community have access to the pathways of lifelong learning.

Accordingly, the objectives of TVET are:

to provide trained manpower in applied science, technology and commerce particular at sub-professional level, provide technical knowledge and vocational skills necessary for Agriculture, industry, commercial and economic development, provide people who can apply scientific knowledge to the improvement and solution of environmental problems for the use and convenience of man, and to give an introduction to professional students in *Engineering and other technologies, giving training and imparting the necessary skills leading to the production of craftsmen, technicians, and*

other skilled personnel who will be enterprising and self-reliant., enable young men and women to have an intelligent understanding of the complexity of technology” (Federal Republic of Nigeria (FRN), 2013, p.113).

Summarily, this is a comprehensive explanation of the role, aim and objectives of the TVET sector in any nation. This excerpt details all the skills, applied competencies, knowledge, attitudes and experiences that TVET training should offer to students. Agrawal (2013) regards TVET as education and training programmes designed for a particular job or category of a career. This means that, TVET is a planned programme of courses and learning experiences that begin with an exploration of career options, support basic academic and life skills and enable the achievement of high academic standards, leadership and preparation for industry defined work.

Kombe (2010) opines that learning in TVET is centred on applied competencies as opposed to academic, practical as opposed to theoretical, skills as opposed to knowledge, unfortunately, employers in the labour market seem to complain about the lack of competent skills by the TVET graduates for employability in the 21st century. Employers look at TVET as a scientific programme of technological advancement, training technological skills to students for accuracy, competency, effectiveness under the coaching and supervision from highly skilled personnel with the 21st century skills.

2.3 VOCATIONAL EDUCATION AND TRAINING

TVET comprises all fields of initial and continuing education covering all kinds and levels offered or to be offered. TVET education was established in 1995 operating under the Continuing Education and Training Act 16 of 2006 (RSA, 2006). In 2015, TVET colleges were migrated to national functions under the Department of Higher Education and Training (DHET). A total number of 152 technical colleges were merged into 50 TVET colleges with 264 campuses across South Africa purposely to combine smaller and weaker colleges into stronger institutions, to create large economies of scale, to enrol and teach more students, to offer a wider range of progress, to position colleges in meeting the social and economic demands of the nation and to make them a central feature in government strategy to tackle skills shortages, job creation and economic growth (DHET, 2013c).

2.3.1 Objectives of vocational education

The objectives of vocational education are categorised into general and specific objectives. South Africa is committed to the attainment of the Millennium Development Goals (MDGs) of reducing poverty, unemployment, inequality, disease, ignorance and illiteracy in rural areas (United Nations, 2015b). This can be achieved by addressing the skills shortage gap through the provision of the TVET curriculum. Hence, there is a need to have a comprehensive TVET model that will emphasise sustainability, quality training, relevance and responsiveness to all the needs of the sector.

The ultimate objective for the TVET curriculum is to provide the economy with skilled and competitive workforce rigorously trained to participate in sustainable growth and to achieve the goals of democratisation and social, cultural and economic development, the empowerment of people to contribute to environmentally sound sustainable development programmes.

The specific objectives of TVET comprise of providing theoretical and practical training in all sectors, matching the needs of the economy and the global needs and producing a sufficient number of graduates that are well-trained with regard to the necessary skills as well as providing graduates with employability skills (Akoojee, 2010).

Other objectives include developing the work value and attitudes of individuals towards professionalism expressed in quality, efficiency, creativity, adaptability, commitment, responsibility and accountability, the spirit of service and sincere appreciation for a job well done and offering guidance and counselling, planning, coordination, monitoring and evaluation of TVET activities (IAG-TVET, 2017).

2.3.2 Aims for TVET in South Africa

TVET dates back to the era of apartheid, when TVET was offered to respond to the skills needs in the mining sector. The training was extended to black people against the oral and practical racial tradition based on gender, race and colour. TVET has always been characterised by apartheid education located within a salvation paradigm for the poor whites, African and coloured urban workers. This means that in rural areas, TVET was provided to prevent rural urban migration and its associated social evils and challenges. TVET offered a different programme for

different races and gender. It can be argued here that during apartheid, TVET was disrespectful, dividing, inferior, inappropriate and unresponsive (Wedekind & Watson, 2012).

In the democratic transition from 1994, the vocational landscape was revitalised to become inclusive, comprehensive, qualitative and all-embracing, democratic and non-sexist. The focus was shifted to the acquisition of skills and applied competencies for poverty, inequality, underemployment, unemployment reduction through training and job-creation (HRDCSA, 2014; HRDC, 2010). The DHET (2010) asserts that colleges were viewed as contributing factors to economic growth to alleviate the skills shortage (Sheppard & Sheppard, 2012).

Historically, TVET colleges were established as a response by education and training to the labour market demands. The DHET and all other skills development projects should aspire to the realisation of responsiveness, relevancy and labour market economic needs, both locally, nationally and globally competitively in the process of skills development as a way of addressing the skills shortage gap in the rural areas. In South Africa, TVET was previously known as FET. TVET forms part of the post-school provisioning system, which falls under the DHET. This sector comprises three bands of education and training provision for those who have not completed matric, those who have completed matric and post-matric students.

Firstly, TVET aims at producing vocationally and technically oriented education and training and equipping students “with the knowledge and skills that will enable their meaningful participation” to benefit society. *Secondly*, TVET provides the basis for continuing learning in higher education and training, enabling learners to be productive and responsive in the workplace for the development of the economy (DHET *et al*, 2013b).

Another aim of the TVET sector in South Africa is to expand access, improve quality and increased diversity in education provisioning, while building a stronger and cooperative relationship between education and training institutions and the workplace, for example, work-based experience (WBE) and work-integrated learning (WIL), simulations and practical training and on-the-job training. The sector aims to create a PSET system that is responsive to the needs of individual

citizens in both the public and private sectors to broaden the society and development objectives (DHET, 2015a).

2.3.3 The role of the TVET curriculum

In her address delivered at the Second National Board for Further Education and Training (NBFET) at the Birchwood Conference Centre on 11 August 2005, the Minister of Education Naledi Pandor, stated that:

In the past, FET Colleges were treated like special schools with no recognition for the potential they had to contribute to skills development, or achieving the national goals of access to lifelong learning and widening education and training opportunities (RSA, 2013a).

This indicates that the main objectives of the TET curriculum are to position TVET colleges to train students in modern intermediate skills, to promote learning in the age group of 16 to 24 and to focus on development and employment needs and creating opportunities. McGrath and Powell (2016) propound that human capital is largely framed within the TVET curriculum; however, we need a broader perspective which explains human development. The major aim of any form of education is to nurture and develop a child or an individual to be a responsible and useful person contributing to the nation's growth. In many cases, a country's economic and social development status has been proven by its general education and vocational education, in particular.

Austria, Germany, China, Taiwan and, to some extent, Nigeria, have a developed TVET system with a large core of skilled manpower from colleges. This means that TVET is a valid and reliable alternative for empowering the youth through unemployment and poverty alleviation and the government is compelled to pay a great deal of attention to the anticipated consequences and tasks ahead for sustainable development (Wilson, 2013). Johnston (2016) states that a number of developing countries are currently promoting vocational education and training as a way of building human capital and strengthening economic growth and reducing the economic stress of unemployment. This means that the graduates of TVET institutions are regarded as empowered youths and can be skilled entrepreneurs.

According to UNESCO (2011a), in 2016, the global number of out of school youth was 263 million people from primary age, lower secondary age and upper secondary age. The TVET curriculum is aimed at preparing students more effectively for the workplace, which means that the acquisition of competencies and skills should take the requirement of companies and industries into account that are affected by modern technology. The government and all other stakeholders have to be clear about the goals, vision, mission, objectives and purpose of the curriculum, including whether the purpose of education is to promote employment.

The industry is seen as a key player in curriculum design, development and implementation through work-based experience for graduates. The Centre for Specialisation at the North Link TVET College is an example of work-based experience and partnerships with the industry, the DHET and colleges. The Centre aims at developing 13 trades (North Link TVET College, 2016). The TVET curriculum should be linked to three levels of development to become credible for addressing the skills shortage gap in rural areas, namely, the general education, provision and supply-side dimension of human capital resources development through education and training and the demand-side dimension with regard to the employer, industry and business world, based on research innovation.

The TVET curriculum should decide on those components of its curriculum, whether low, intermediate or high skills to strengthen both the practice and the theory (Gamble, 2013). This will promote the employability of graduates in the labour market. Vocational education is regarded as a form of education designed to prepare students for the world of work in a commercial or technical field to enable graduates to enter the labour force (Ntallima, 2014). Importantly, vocational education advocates self-reliance for the disadvantaged and minority people of a country due its creativity, diversity, relevancy and adaptability in both formal and informal settings. Policymakers should take heed of the positive legislation that fosters vocational education in order to eradicate the unemployable youths.

Accordingly, all categories of people in a country should be equipped with the skills, knowledge and attributes needed for lifelong occupations. By equipping all people with the necessary skills, vocational education helps build a civilised, harmonious society of people from many different backgrounds, races, colours, genders and ages so that they can live together, thereby preventing the social and societal tensions related to survival, self-reliance and development. Vocational education works as a social cohesion agent.

Vocational education embraces inclusiveness, the unlimitedness of courses and programmes, the mode of delivery and its coverage of all sectors of socio-economic activities in a country. Bagale (2015) believes vocational education can play an instrumental role in developing a new generation of individuals who will be competent and willing to face those challenges in order to achieve socio-economic development.

CEDEFOP (2012) believes that apart from the economic value of education, social scientists started to observe that individuals with higher levels of education, live together, are healthier, commit less crime and are more actively involved in society than individuals with lower levels of education. This means that a society can achieve progress and economic growth if it has managed to implement sustainable and lifelong education.

2.3.3.1 Structure of the TVET curriculum

TVET colleges have been challenged with regard to the world of skills development and occupation (DHET, 2010). The TVET curriculum is double streamed in the National Certificate Vocational (NCV); designed in 2006 and implemented in 2007 and it was aimed at addressing quality and relevancy based on the assumption of the weaknesses in the basic education system of the mainstream and the fundamentals of numeracy and literacy in the NATED programmes. The TVET curriculum has to merge the articulation of occupational level and access to further education (DHET, 2013a).

2.3.3.2 The National Certificate Vocational (NCV)

The NCV aims to address the poor quality and low relevance of the NATED programmes and the dire short supply of both cognitive and practical skills of University graduates. It is assumed that the NCV curriculum in its current form may

be required as long as the basic education system is producing school leavers who do not have the appropriate skills -base to enter occupational learning programmes (DoE, 2007b).

The NCV is a comprehensive curriculum with fourteen fields of study, namely: *Agriculture, Arts and Culture, Business and Commerce, Communications and Language. Other learning areas include, Construction, Engineering and Manufacturing, Health, Social Services, Hospitality and Tourism. The curriculum further includes, Information Technology, Transport and Logistics, Business Management, Conservation, Technology, Media Studies, Garment Making, Travel and Tourism, Electrical Infrastructure, Finance, Economics and Accounting, Engineering and Related Design, Fabrication and Extraction as well as Primary Agriculture and Office Administration* (DoE, 2007a).

The NCV was designed as a specialised course of study. It is not an occupationally specific course, but a general course. More specifically, it is a ministerial vocational qualification from levels 2 to level 4, offered to young people blending theory and practice in TVET colleges in collaboration with the Department of Higher Education and Training (DHET) to address the skills shortage gap in South Africa. Level 4 marks the exit level (Gamble, 2013). The NCV curriculum was introduced by DHET in 2007 to solve the problems of poor quality and low relevance of the previous vocational educational” programmes which were offered (NATED), to alleviate the chronic short supply of work placements available for students and to address the low technical and cognitive skills of graduates (DoE, 2007a). Cohen (2011) expresses concern regarding the fact that, at the inception of the National Curriculum Vocational (NCV) programme in 2007, there seemed to be a glimmer of hope for skills development. The programme attracted many learners through marketing and publicity, especially those who did not do well in the mainstream.

Gewer (2010c) claims that since the transformation of the TVET colleges, not enough has been done to address their fundamental challenges, the curricula they offer or the roles they are envisaged to play. Therefore, TVET colleges must forge their individual identities on their ability, location and environment. According to (Gewer *et al*, 2010c) it is quite clear that, there is little articulation between the layers of structures of management, administration, lecturing staff and students which evidently adds to the instructional challenge.

The NCV programme was instituted as a parallel track for the outdated NATED programme at the time. Unfortunately, it does not address the artisanal demands as expected, hence, the need for a NATED programme (DoE, 2007b).

2.3.3.3 The National Accredited Technical Education (NATED)

The NATED curriculum is subdivided into Engineering and Report 191 Business. Engineering NATED (N1-N6) was designed to produce artisans. In the engineering programmes, students study for trimester programmes, after which they are meant to undergo practical components in the world of work for 18 months, before a trade test can be written to become artisans. In Report 191 (Business-N4-N6), the programme is administered on a semester basis for six months per semester. The theoretical part takes 18 months after which a student is meant to be placed in the workplace for experiential learning for 18 months before a National Diploma can be issued (DHET, 2021).

Chabane (2011) reports that the National Skills Authority (NSA) and the Quality Council for Trade and Occupation (QCTO), under the auspices of the DHET, do not articulate the DHET curriculum. This undertaking was aimed at channelling students to vocational courses. Accordingly, all the administrative and cooperative service functions in the colleges should support the process of learning and teaching jointly (Wedekind & Buthelezi, 2016).

2.3.3.4 The specific-job training programme

These are short term training programs to satisfy the needs “of those who want to join it just to get the basic know-how of training skills in the technology of choice (RSA, 2018a). This category of the curriculum is largely funded by the SETAs within the TVET curriculum provisioning. Training programmes are instituted after a needs analysis is undertaken by the SETAs with regard to the development needs within a particular society or segment of students, adults or employed people and that is aimed at improving their skills as required by the employer or the labour market or to curb the unemployment rate.

This segment of the curriculum is in line with the objective of addressing the skills shortages. Sometimes these programmes are initiated by the employer and facilitated by the TVET College. The purpose is to develop a particular skill in the students. The next section highlights the evolution of TVETs in South Africa.

2.4 THE EVOLUTION OF TVET IN SOUTH AFRICA

Initially, all institutions offering technical education and vocational education were referred to as FET institutions established under the FET Act of 1998. However, the name was changed to TVET as a way of vocationalising education and training purposely to align the system with international perspectives (DHET, 2012c). TVET evolved mainly in response to the growing needs of the railway and mining industry for the need for trained and skilled artisans. This sector extends over 100 years of history in South Africa found in both the white colonial and apartheid education systems (Gewe, 2013).

Historically, TVET was provided separately to offer both theoretical and practical training in line with the apprenticeships Act No 55 of 1992 (1992). This education system that grew to provide training to those engaged in practical on the job-training in apprenticeships was re-enforced by a series of legislations. Racially, the TVET system excluded blacks and was aimed at reserving jobs for Whites. Accordingly, it was extremely difficult for a black person to become an apprentice (DHET, 2011).

Consequently, the majority of South Africans were disadvantaged and denied access to an apprenticeship system that would have prepared them to become responsible citizens equipped with the skills, knowledge and understanding “to contribute positively to the development of the economy” and the country (European Centre for the Development of Vocational Training (CEDEFOP), 2014). The promulgation of the Manpower Training Act (RSA, 1981) opened the door for inclusive racial participation in education and training to become artisans and apprentices. McGrath (2011) asserts that the evolution of technical education in South Africa was a beacon for Blacks.

The TVET system has begun to be offered in schools and technical colleges in the fields of bricklaying, carpentry and woodwork, for example. Nevertheless, the sector developed within the ambits of political and racial challenges ranging from policy, finance and the quality of training provided. The mandate of TVET is to offer vocational education and training in both intermediate and mid-level skills towards economic growth and development. As a post-school education system, a student is envisaged to acquire training for certain specific skills towards employment (DHET, 2011). This is assumed to be possible because the courses are

vocationally-oriented. *Secondly*, TVET provides education for business development and management in the informal sector that opens the way for further learning (DHET, 2017).

Given the above discussion, there was a void in the vocational and technical education and training in South Africa that needed to be filled in order to equip the pre-employed, unemployed and employed with the necessary skills for the world of work. The study aims at investigating the challenges facing the TVET curriculum in addressing the skills shortage gaps in the rural areas of Northern Kwa-Zulu Natal.

In the end, TVETs help individuals to acquire the skills that contribute collectively to the national economic growth and development. Accordingly, the TVET curriculum should address the skills shortage gaps despite the existing challenges in the country with a special focus on the rural areas of Northern Kwa-Zulu Natal that is the aim of this research. The TVET curriculum needs to be flexible in terms of the courses offered ranging from short-term, mid-term and long-term (DHET, 2013b). These programmes involve NCV, NATED and specific courses that fall under the SETAs. This is in line with Powell's (2012) pronouncement that the TVET curriculum empowers students with general education as compulsory education, higher education and the world of work training.

2.5 THE TRANSFORMATION OF TVET IN SOUTH AFRICA

The process of transformation for TVET ensued from the ministerial committee Northern Council for Further Education (NCFE) (2010) that aimed at renewing education and training in South Africa in relation to skills development. This led to the promulgation of the Skills Development Act (Act 97 of 1998), FET Act (Act 98 of 1998), and the National Skills Development Levies Act (1999) (Gewe, 2014). The FET Act was fundamental in that, it shaped and formed the bedrock for the TVET system in South Africa. Other landscape developments included the New Institutional Landscape for FET Colleges that recommended the merger of all technical colleges for proper funding, governance, administration and management (Gewe, 2010c).

Consequently, this led to the merger of 152 technical colleges into 50 colleges with 264 campuses across the country. The adoption of the new name symbolised an attempt to cast off any prevailing negative perceptions and to highlight the importance of introducing educational values and relevance to the marketplace. Furthermore, it was an attempt to pursue the efficiency and effectiveness of the TVET College sector (Gamble, 2013). The period of 2003 to 2009 witnessed sudden development and progress where the government committed itself to making TVET colleges the highest priority in addressing the mid-level skills deficit in the country (Matea, 2014). This is the period that saw the introduction of the National Certificate Vocational (NCV) from level 2 to level 4 as gazetted in 2006 (Akoojee, 2010). The NCV programmes were designed to meet the skills needs of commerce and industry.

From 2009 to 2011, the formation of the Department of Higher Education and Training (DHET) was aimed expressly at improving the status, quality and skills provisioning in the TVET sector in accordance with the needs of the employer and, subsequently, addressing the skills shortage gaps in the economy and remedying the lack of co-ordination in the PSET institutions under a single umbrella or department (Allais, 2011). For any study to be effective, it needs to consider all the assumptions that inspire the paradigmatic and epistemological approaches applied. This is important for policymaking (Powell, 2013). This research will try to close the gap identified by investigating the challenges that the TVET curriculum faces in addressing the skills shortage gap in the rural areas of Northern Kwa-Zulu Natal. Against this background, one may conclude that TVET is unable to meet its obligations due to the prevalent challenges faced. This assumption was reviewed in this study, investigating the challenges facing the TVET curriculum in addressing the skills shortage gap in the rural areas of Northern Kwa-Zulu Natal.

2. 6 TVET LEGISLATION IN SOUTH AFRICA

The Constitution of the Republic of South Africa (RSA, 1996a) states that anyone has the right to further education which the state, through reasonable measures, must make progressively available and accessible. The supreme aim of the state, therefore, is to emphasise further education for all citizens.

There are various pieces of legislation that facilitate the provision, management and administration of the TVET sector; namely:

- SAQA (Act No. 58 of 1995 (RSA, 1995). This develops and implements the NQF and the establishment of SAQA.
- National Education Policy Act No. 27 of 1996 (RSA, 1996b) which regulates the relationship between the provincial and national education authorities.
- Higher Education Act No. 101 of 1997 (RSA, 1997) which established the Council for Higher Education.
- Further Education and Training Act No.98 of 1998 (DHET, 1998) governs and controls the TVET colleges' funding.
- Skills Development Act No, 9 of 1999 (RSA, 1999), which created the National Skills Authority, Quality Council for Trade and Occupations for regulation skills development apprenticeship and learner ships.
- General and Further Education and Training Quality Assurance Act, No. 58 of (2001) which established Umalusi as the quality assurer for TVET colleges.
- Further Education and Training (FET) Act No 16 of 2006 (RSA, 2006), which regulated FET, Human Resources Management and registration of private FET Colleges.
- National Qualifications Framework (NQF) Act No. 67 of 2008 which manages qualifications and quality assurance.

Despite the above legislation aimed at skills development, there is still a skills shortage gap. This indicates that there are challenges within the legislative frameworks to be addressed.

In the next section, I will explore the different TVET provisioning in the selected countries. Lastly, a general comparison will be made to the South African context.

2.7 THE CONCEPT OF 'SKILLS

A skill is the learned ability to achieve a set of objectives with minimum supervision, energy, time and administrative support. Contextually, a skill is related to experience and the way it is applied (OECD, 2016a). In turn, a skills shortage refers to the lack of available skilled people, which results in recruitment difficulties. Accordingly, skills shortages arise in a situation in which employers face difficulties in recruiting staff with the needed skills.

The preamble to the South African Constitution indicates that, the need to embrace and free every person's potential with regard to the nation's socio-economic development is through education and training.

Hence, education and training should facilitate the development of a person's potential. This explains the attempt by the TVET curriculum to address the skills shortage gap in the rural areas of Northern Kwa-Zulu Natal. CEDEFOP (2014) holds that the prosperity of a country depends on the number of persons educated and employed and how productive they are at work. This underlines the importance of having good primary schools, good high schools and good vocational institutions with relevant TVET education and training for skills acquisition and development to prepare the youths and adults of the country for their productive responsibility.

Training provides both core and soft skills, general knowledge, industry-based and professional competencies that reflect education to the world of work as will be explained further. The education system delivered affects the skills phenomenon and the aspirations of the future of a country's young generation (Coughlan, 2014). The OECD (2017) also emphasises the uncertainty that exists in the development of skills by the different stakeholders, including the private sector. The report recommends the restructuring of the education and training for the unemployed youths in the rural areas, and the re-training of the employed as a way of improving employability.

The concept of 'skills' encompasses technical skills, human relations and professional ethos linking to vocational education. The realisation of skills has shifted from education and training to the production and outcome orientedness due to the impact of globalisation and the increasing dominance of the market-led ideologies in the society (McGrath, 2012). There is no consensus among social scientists on the definition of skills. The term is synonymous with ability, competencies, talent, human or cultural capital. In the critical skills list by the Department of Home Affairs (DHA), the department has encouraged the inclusion in the employment of foreign nationals who fall into the critical skills category (RSA, 2011b).

This explains the severity of the skills shortage gap that has to be addressed by the TVET curriculum amidst all the anticipated challenges the TVET curriculum faces, which is the aim of the investigation for this study. To deliver vision 2030 (RSA, 2011d), it relies heavily on the capacity of the TVET curriculum to empower graduates. The students should be inculcated into certain life values as well as technical values for easy employability in the labour market. Skills play a powerful part in determining economic development and subsequently, therefore, skills underpin the labour market. British Council (2012) maintains that skills can be difficult to define and measure at an aggregate level.

In practical terms, skills can be measured through competence, qualifications, efficiency, effectiveness, abilities and experience. "A skill is a learned ability to achieve" the set objectives with minimum supervision, energy, time and administrative support. Contextually, a skill is related to experience and the way it is applied (Sahay, 2015). Young people and adults need to be prepared to face life challenges through acquiring both informal and formal knowledge, skills, attitudes and competencies and values that place them at the centre of preparedness. The learning of skills is crucially important at the point where training is obtained for higher education and training institutions (TVET colleges).

According to the OECD (2016), a skill is a broad concept that is defined as the capacity for carrying out complex and well-organised patterns of thinking (in the case of a cognitive or behavioural skills) to achieve a particular goal. This means that a skill is a practical application that empowers people. Furthermore, it is the capacity to function, and is a tool that gives people the power to manipulate their environment (Kautz, 2014). They it is the expertise needed to translate knowledge and attitudes into actions; knowledge is a body of information, attitudes, the mind-set and belief about an object. Life skills are taught alongside technical skills including decision-making, critical thinking, communication, interpersonal relationships, empathy, self-awareness, coping with emotions and stress, creativity, and problem-solving. It is different from competency in the sense that competence is not transferable to another situation.

Communication skills are needed to foster TVET students to be able to communicate effectively in the workplace, logical thinking, creativity, problem-solving, teamwork, group work, relationship at work, personality, fluency in the

English language. Plobete-Ruiz (2015) proposes four approaches to teaching soft skills, namely, integration with other subjects, conducting seminars and workshops during weekends and holidays, devoting the first two weeks of the academic year to teaching soft skills and setting up different subjects for each soft skill in the curriculum.

Soft skills can be integrated with hard skills because the learning process for soft skills is dynamic and can evolve and develop over time. Over (83%) of Kenyan, TVET graduates gained skills in self-awareness (Yoke & Ngang, 2017). In the TVET curriculum, soft skills are communicated to students through the life orientation (life skills) subject, the English language where communication, reading, language in practice, tenses and grammar, writing and listening skills are taught. In addition, there is mathematical literacy where numeracy, arithmetic and functional mathematics are taught (DoE, 2007b).

The youths in rural areas need to have the required skills in those areas to be accommodated in the competitive world of work. Globally, the type of skills needed is changing constantly, calling for a change in terms of its relevance in education and training. The aim of this study is to investigate the challenges facing the vocational curriculum in addressing the skills shortage gap in the rural areas of Northern Kwa-Zulu Natal. The challenges investigated will be expounded, discussed, analysed, interpreted and presented within the realm of recommendations to address them.

Economic transformation in South Africa as well as the structural and technological advancement brings about new business opportunities with the demand for new skills. A new approach is needed in skills development to address the skills shortage in rural areas of Northern Kwa-Zulu Natal as a result of new emerging trends to increase productivity in rural areas, job creation and employability.

2.7.1 Life/soft skills

The training and development of skills to the rural youth prepares them for the future challenges for their productive lives, endowing them with the skills that will also enable them to engage in continued lifelong learning (ILO, 2010a). This is the driving engine for the 2030 Agenda for sustainable development (UNESCO, 2012c). Soft skills are given different names by different people. To some, it is social skills, interpersonal skills, intelligence quotient, social skills, people skills etc. It is commonly agreed that they are personal traits that characterise relationships with other people in the workplace. Soft skills enhance hard skills, job performance and career prospects. Soft skills to maintain a job are tied to individual personalities more than education and training like a sense of humour, integrity, optimism, empathy, and sociability towards a given task's performance. They are not related to a particular task but are important for communication. They facilitate hard skills and afford adaptability, flexibility and change. They make a person accountable (Kingsley, 2015). Teaching soft skills is important in the TVET curriculum because they aid a person to acquire skills to find a job and maintain a job (Hautamaki, 2015).

Life skills involve the abilities for adaptive behaviour that enable individuals to keep up with the rising demands and challenges of their daily lives. UNESCO (2016) defines life skills as a behavioural development approach designed to achieve a balance among knowledge, attitudes and skills. The World Health Organisation (2003) maintains that life skills are a combination of different skills comprising critical thinking, self-understanding, the emotional quotient, effective communication skills, interpersonal skills, stress management, empathy, creative thinking, decision-making and problem-solving skills. According to UNESCO 2012b), life skills are the combination of skills (what one has), knowledge (what one knows) and attitudes (what one believes and values) that constitute a set of competencies (what one can do) that enable the youth to adapt to, function and thrive in this society.

Some studies, like that of Rumberger (2011), that have been carried out on this phenomenon, attest that communication, leadership, problem-solving and strategic thinking skills, among other skills, affect the labour market in terms of positioning, employability and employment. The surveys demonstrate that the

skills gap in employability exists mainly because of the concerns over soft skills rather than hard skills. This gap expresses the inconsistency between the human resources looking for a job and the requirements of the enterprises to hire the employees for the available positions. Many positions in companies are not filled due to a skills shortage gap in the soft skills, such as, punctuality, professionalism, and ethics (Cinque, 2015). Life skills are categorised into three areas: *thinking skills* which deal with the logic of the brain, for example, creative thinking, problem-solving and decision-making, *social skills* which include communication skills, relationship skills, team-working, team-building and networking, *emotional skills*, which include understanding oneself and being able to have a high emotional quotient.

Soft skills denote a deliberate intervention to bring about” learning which would make people more relevant and productive in designated areas of economic and technological activities” (Ciappei, 2015). The acquisition of skills for the workplace is viewed as a powerful strategy to achieve economic development. These skills involve soft skills, intermediate skills and high skills. It is, however, important to give a detailed account of what these skills prescribe in the delivery of the TVET curriculum and the subsequent challenges facing the TVET curriculum in addressing the skills shortage gap in South Africa. The aim of TVET is to provide the trainees with the necessary skills for national development and to change their thinking attitudes from looking at being employed to employment creation.

Practising soft skills leads to self-esteem, sociability tolerance good decision-making free-will, competence and self-management. All students require self-appraisal, communication and self-management skills to enable them to cope at institutions of high learning. The life skills training thus involves reflection, increasing self-awareness, being informed, and taking personal responsibility and developing a strategy to get where one wants to be, stress management, interpersonal relationship skills, should be encapsulated within the TVET curriculum. The main objectives of life skills are to assist and enhance the academic and personal wellbeing of each individual student. Life skills provide a combination of cognitive personal and interpersonal abilities that help the trainees to understand themselves, analyse their challenges and be able to arrive at informed decisions (Ciappei *et al*, 2015).

Life skills is also instrumental in enhancing communication skills and building interpersonal relationships which are of value in creating networks. Furthermore, life skills aim to provide students with strategies to make better choices that contribute to a meaningful life. With life skills, a person is able to deal with their daily challenges creatively and cope within the environment in which they find themselves. Soft skills play an important role not only with helping a person get a job, but to flourish as human beings. They are important not only in the labour market but for complete human beings in order to achieve happiness in life (Cinque *et al*, 2015). Soft skills help reduce educational labour market and social disparities.

This means that the primary aim should not be to make students economically productive but rather to think critically and become knowledgeable and emphatic citizens. Soft skills are built within a person to compliment technical skills. They help to create a healthy and collaborative working relationship in the workplace. They aid production in an organisation by establishing good customer service and customer care. Soft skills help create a good company image and presentation and are built into human capital. They are the personal competencies not related to particular tasks necessary for communication among all stakeholders of the organisation (Cinque, 2015).

Soft skills are modern 'concept' that is trending in the modern labour market and entails those personal attributes within the social realm, social attributes, language and communication skills, the approachability of a person, relationships, friendliness, team-working and team-building, networking, between and among people in an organisation. Linking networks means to develop communication, to cultivate relationships and to foster collaboration (Sirolli, 2014). Soft (life) skills complement technical skills by creating a healthy relationship within an individual, society and workplace, customer relationships, company image and representation.

Life skills enable an individual to translate knowledge, skills and attitudes into specific behaviours to cope with, navigate, or transfer life challenges in the social economic and political challenges of the 21st century skills, create and peruse economic opportunities for individual and society development.

Soft skills help a person to be accountable and responsible for his activities in the workplace, for example, decision-making, which affect the whole organisation (Kingsley, 2015). They are indicated as generic competencies (Poblete-Ruiz, 2015). Soft skills aim to train, develop and increase competencies as an ability to take advantage of an extensive network of relationships, the know-how, know-whom competencies implying reactivity in terms of knowledge and employability improving skills (Guglielmi, 2015).

Furthermore, soft skills facilitate hard skills to develop and remain up-to-date in changing conditions. They absorb the pressure on hard skills. In effect, soft skills are a relevant cross-disciplinary aspect in the labour market. Soft skills operate in the direction that is rather separate from the individual and go beyond the strict demands of the profession (Grisi, 2014). Moral virtues are connected to soft skills, with regard to transparency, justice, prudence, and courage. These are all the traits required for the development of transversal competencies (Ciappei, 2015).

The European Commission (2010) notes that the implementation of key competencies in schools and training institutions is a complex and demanding process and the presence of strong political commitment is not enough to achieve the goal of effective core skills development.

TVET provides the future generation with both core and technical skills that enable them to engage in continuous learning (ILO, 2010b). This can be done effectively through the provision of quality and demands-driven TVET system and skills development programs within the TVET curriculum. Furthermore, (ILO, 2010b) recommends that key principles for successful TVET curriculum and skills development programmes should include; relevance to the labour market, strong involvement of the private sector, good access to trainees, high-quality delivery of the curriculum, good funding and inclusion of core skills in the curriculum. UNESCO (2015a) express concern that the TVET curriculum may not sufficiently support the development of core skills as yet.

UNESCO (2014a) contends that, there is a lack of a departmental/ faculty in universities and inclusion in the TVET curriculum to carry out research in TVET colleges to determine the relevance of those skills to the national context. CEDEFOP (2015) acknowledges that the importance allocated to key

competencies varies between different occupations, groups and job functions. Undoubtedly, teaching soft skills is important in education and training. The educational programme should try to pay attention to soft skills because they educate young people in training on finding and maintaining a job (Hautamaki, 2015). Furthermore, educational institutions must focus on embedding soft skills in the curriculum to help students develop transversal competencies that will be useful for them in the workplace.

With regard to the TVET curriculum dissemination and implementation, as knowledge is transmitted to students, the curriculum should serve the society as a whole and train a student in a holistic way to cope with the labour market demands and experiences. The cultural, social and economic aspects of the society require a considerable investment in continuing education, in particular (Morandin, 2015).

However, in all European countries, key competencies are part of the TVET curriculum, whether as discrete subject areas, as underlying principles or learning outcomes across a range of subject areas or as integral elements of vocational subjects.

2.7.2 The skills shortage gap

It is widely believed that the shortage of skills is a critical issue in developing countries, including South Africa. Hence, the introduction of the TVET curriculum is viewed as a remedy to address the skills shortage gap.

In South Africa there is a strong need for skilled workers, unfortunately, the TVET system lacks effectiveness and relevance to the reality of the workplace. Even in these occupations that indicate a high demand such as technology, “TVET graduates remain unemployed because they have not acquired the practical hands-on competencies” (RSA, 2018c). In essence, addressing the skills shortage gap in the rural areas of Northern Kwa-Zulu Natal has to stem from a TVET curriculum that is reflective of the rural needs and aspirations of the rural societies in their diversities as well. It should be a scientifically-based curriculum through which the required skills and competencies are trained. Accordingly, the skills that will be addressed and that will provide in the needs of a society, are mirrored through its educational system.

DHET (2012c) believes that unemployment in South Africa may be addressed through offering TVET education and training in lieu of skills development. Unfortunately, many employers express doubt and complain about the quality of TVET graduates who seem to lack practical work experience and the readiness to work (Eliot, 2010). This means that the TVET curriculum has not met the standards to address the skills shortage gap. Importantly, TVET is instrumental in providing employees who constitute an important workforce in the industry; hence, they need to have all-round training. Thus, the TVET curriculum must ensure that students are not highly skilled in their technical fields alone, but also regard themselves as responsible young adults.

Throughout the world, there is an increase in the demand for skilled labour (Sondergaard & Murthi, 2012). The skills gap exists internally in the company or the nation's existing workforce. It describes both the qualitative and quantitative skills deficiencies in the external and internal labour markets (Schwalje, 2011). A skills shortage entails a situation where a job vacancy is difficult to fill because of the lack of applicants with the needed skills. Furthermore, a skills gap occurs when an employee's competency to do the job is called into question by the manager. The UK Commission Employer Skill Survey (2013) defines a skills shortage as an expressed difficulty in recruiting individuals from the external labour market under current market conditions with particular skills set due to a low number of applicants caused by the lack of the required skills, the lack of work experience a company demands or the lack of qualifications, in accordance with the demands of the company.

In addition, the skills gap is a deficiency between the skills needed and the current skills in the organisation. It is the junction where an organisation may not achieve its goals or compete in the industry due to the shortage of skills of the employees. The NSDS (2011b) holds that education and training is fundamental to the improvement of skills with regard to economic development, hence, education and training should be relevant to the skills needs in artisanal and technical skills. A skills shortage gap exists when the workforce has a lower level of skills necessary to meet the set objectives. It may also refer to the lack of proficiency of the current staff or the lack of ability to perform the assigned duties (Sipengane, 2014). It is the difference between the available skills and the demanded skills.

The skills gap exists not because the TVET curriculum and vocational education and training are not producing graduates largely without the right attributes and skills, but because the traditional lower level and mid-level jobs are declining in terms of relevance (UNESCO (2015b) and OECD (2015). The rural TVET curriculum should disseminate those values, and skills to students in a holistic way to enable them cope with labour market demands and experiences of the rural set up. In his study, Papier (2011) reports that employers and lecturers were concerned about the type of education offered in colleges. Both groups advocated a syllabus that is aligned with the needs of the industry. This could be done by emphasising the practical component of the TVET curriculum, partnerships employability skills, workplace experience and training, and interventions through policy formulation by the government.

It is evident that the South Africa TVET curriculum has several issues to address for a realistic TVET curriculum delivery. In order to address the skills shortage gap in the economy. Any discussion on a skills shortage has to consider the prevailing structure of the labour market (Ngcwangu & Balwanz, 2014). The NSDS 111 (2011-2016) emphasises the skills shortage gap as saliently impacting on South Africa in the global industrial and technological advancement. Global economic trends continue to report a skills shortage, simultaneously, expressing their dissatisfaction with the college graduates and the skills they possess.

The skills mismatch refers to the imbalance between the skills offered and the skills needed in the world of work. According to Papier (2015), “A structural mismatch between labour demand and supply” is the most significant type in the South African context in that the economy and labour market demand highly skilled workers with a surplus of low skilled workers. Accordingly, the importance of integrating the different environmental factors into the TVET curriculum must be emphasised. The concept of ‘skills’ has been an issue of debate the world over including South Africa. The debate rests on the assumption of many questions poised within the framework of skills development, such as; *do learning institutions impart the necessary and relevant skills into the TVET graduate? Are the skills imparted into the graduates, reflective and responsive to the labour market conditions and demands? Are the candidates responsible, honest, critical thinkers, problem-solvers, able to communicate, read, write and speak and relate to the*

world of work? Lastly, do the candidates possess the competence, skills, applied competencies that are competitive and challenging in the local, national and global labour market? (Mansor *et al*, 2012).

If the answers are “no” to the above questions, then there is a skills shortage gap that confirms the need for this study, which is to investigate the challenges facing the TVET curriculum in addressing the skills shortage gap in the rural areas of Northern Kwa-Zulu Natal.

2.7.3 Demand for skills

The labour market periodically shifts for both local and international markets, hence, the TVET curriculum needs to adopt programmes which reflect those shifts determining the direction of the change in the demand and supply of skills that will impact on the type and quality of training. Only recently, have generic skills received explicit attention in all forms of education and on an international scale. In addition, recently employers have found that occupational specific skills only cannot meet the needs of the labour market (OECD, 2017). In a survey carried out, most employers indicated that they could not find the skilled entry-level workers they needed (Papier, 2015).

The quality of human resources is hypothesised as a major contribution to economic development. It does not only rely on intellect but also on the character of the worker. The human capital should therefore be outstanding with regard to a personality that is holistic in nature where the individual worker is knowledgeable, confident, adheres to good and high moral values, is ethical, well-mannered, polite, disciplined, dynamic, innovative, creative, inventive, healthy, patriotic, fair, progressive, courageous, motivated, and competitive (Othman & Amiruddin, 2010).

The poor integration of core skills in the classroom and syllabus is due to the work overload of lecturers and the uncertainty of the right approach. TVET education and training is underrated in South Africa against the backdrop of apartheid and the prevailing perception of the TVET curriculum as being implemented for students who are regarded as academically disadvantaged and underachievers. Hence, many students enrol at TVETs as a second-choice educational system. While many students in the developed world, such as, Germany, China, Austria

and Taiwan choose TVET education to prepare for their careers, in South Africa and Africa in general, students repudiate TVET. This negative perception is due to the limited knowledge and information available about TVET perceived to be inferior and the fact that there are low employment and further learning opportunities (Gamble, 2013).

Vocational colleges should be recognised with regard to the fact that they do not function to train and transfer skills in various fields of technical expertise only but also to link the educational system to the social needs and social improvement. The lack of skills that are valued in global and local economies constrain economic growth, jobs and income. Accordingly, a good demands-driven TVET system is potentially one of the most important tools for developing young people's skills.

Historically, vocational education dates back to the 1960s after the Dutch traders, and early White settlers provided training to produce the artisans required to work on their farms. After the 2nd World War, the government introduced the skills system by offering National Technical Education (NATED). The Bantu Education Act of 1953 (RSA, 1953) was later passed to preserve the skills and jobs for the White minority (Gamble, 2013). The Education Act, No. 77 of 1995 (RSA, 1995b) was promulgated to regulate the establishment, management control and maintenance of vocational schools. Education was geared towards the provision of theoretical training alongside a practical apprenticeships system. Uwaifo (2010) spells out that, TVET trains technical personnel who are in the lead to initiate, facilitate and implement the technological development. According to Needham and Papier (2011) the goal of the TVET curriculum is quite plausible in the sense that it equips people not only with technical and vocational skills but with a wide range of awareness that are obligatory for meaningful participation in working and daily life.

The two critical roles that have to be played by the TVET curriculum in the national economic sustainability development plan are to provide training opportunities and career advancement avenues for the increased school learners and also to provide skills for the workforce that are needed at all levels of the country leading to self-reliance, self-employment and enhance industrialisation. Although many countries have adopted TVET as a way of promoting human resource development; its importance and significance have been left at a peripheral level without really being

embraced. The TVET curriculum is a system aimed at closing teaching and learning gaps. Thus, the curriculum has to close the educational gaps and incompetency created by the past through inculcation of the required skills and responsive programmes to actualise the graduate employment, self-employment and further education. Furthermore, the TVET curriculum should be able to close the skills shortage through continuing education (Krantz, 2014). The TVET curriculum design should emphasise the development of salient skills for the workplace and key aspects that the labour market seeks for employability.

Vocational education is defined as a mid-level education that facilitates the empowering of learners by imparting knowledge and skills for learners to enter into the economy; while occupational education refers to education programmes that are focused on the preparation for specific occupations as well as ongoing professional development and training in the workplace (USAID, 2014). This prepositions the TVET curriculum in the human capital development theory and economic productionism.

The United Nations Development Programme (2015) identifies the TVET curriculum as pivotal in addressing the skills shortage gap in South Africa. It is believed that education and training are central to long term development, reducing poverty, reducing inequality and building a foundation for an equal society. Principally, the TVET curriculum offers education and training to pre-matric students, post-matric as well as adults in their academic diversities for different skills courses. The DHET curriculum compromises Report 191 in both Business and Engineering programmes and the National Certificate Vocational (NCV) as well as the occupations and part-time qualifications including work-based learning experience administered in terms of the Continuing Education Act, no 16 of 2006 (RSA, 2006) as amended.

The TVET curriculum offers mainstream programs through the NATED (Report 191) from N1-N6 and the National Certificate Vocational (NCV) alongside specific skills programs and learner ships through SETAs (RSA, 2018). This explains how collaborative stakeholders in the skills development programme should afford the TVET curriculum a chance to address the skills shortage gap in the rural areas of Northern Kwa-Zulu Natal.

Programmes need to be relevant and specific to the societal setting and the level of development as well as the prevailing economic development in consideration with the wave of globalisation. Right from the beginning of the planning, the design, development, implementation through assessment and evaluation, collaboration should prevail on the part of all the stakeholders. The industry and employers should play a pivotal role in the curriculum administration, and management as well as supervision, facilitation and assessment, for they are the consumers of the TVET graduates. In turn, the stakeholders (industry) will play a vital role in the placement of students to acquire experiential learning as well as employment-based on a shared responsibility.

The TVET curriculum is envisaged to produce human capital for economic growth through education and training (Powell, 2013). The labour market for young people is challenged by the failure to facilitate the progression of learners from school to other learning or employment programmes (Kraak, 2011). The Technical Vocational Education and Training (TVET) curriculum is a key factor in achieving economic sustainability regarding the provision of the workforce with the necessary skills. The TVET curriculum is positioned strategically within the post-school arena to allow them to address the needs of a broad range of occupations requiring further specialised training in the workplace.

The curriculum is built on the assumption that it will equip the uneducated, unemployed and adults with the necessary skills to face and challenge the world of work. The curriculum is premised on a hands-on job process for the training and re-training of individuals while linking the gap between basic and higher education serving as a link between education and employment. This is basically so because the rural youth need the acquisition of skills for national economic growth and development through human capital development. It is hoped that rural areas may realise the skills development through the TVET curriculum by blending theory and practice. Hence, the TVET curriculum has to position itself within the skills needs of the country and the global competition relevantly, through offering lifelong learning for employment (Gewe, 2014).

In order for South Africa to cope with the demands of the global skills, the TVET curriculum needs to address the skills demanded by the employers. This is believed to be a transformational approach in progressive education. It should be

noted that the industry has indicated that the skills shortage gap is related to the education and training provided by the TVET curriculum at present. In order for the TVET curriculum to be effective, it should provide different curricula for different areas and people. For rural students which is the focal point of this research, the embedded knowledge and skills should be reflective of their livelihoods in order to shape their society. This should be the ultimate objective of the TVET curriculum system's lifelong learning for sustainable development as viewed in the rural context (Gewe & Akoobhai, 2013).

Achieving education and training changes in accordance with the local needs. The curriculum needs to be designed at different levels of national development. It should be individualised and localised to meet the economic and social needs of the areas upon which it is implemented. The TVET curriculum should adopt a paradigm shift to focus on the individual area needs in providing skills development. The TVET curriculum is presented as a focal point for the 2030 Agenda which is the realisation of the Millennium Development Goals (MDGs), one, four, eight and sixteen respectively by 2030, to end poverty in all its forms everywhere. Furthermore, it aims to ensure inclusive and equitable quality education and promote lifelong learning opportunities for all, to promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all and to promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels (UNDP, 2000).

This emphasises the role the TVET curriculum is destined to play in addressing the skills shortage gap in rural areas, in this case in the northern Kwa-Zulu Natal. This requires the TVET curriculum to be adjustable and flexible to respond and be aligned with the global approach to reduce poverty, unemployment, create employment and respect diversity in development.

2.7.4 Skills needed in the workplace

All nations the world over are seeking avenues to address the dominant social and economic challenges of unemployment, inequality, poverty, ignorance, skills shortages and diseases, among others. Central to all these is the shortage of skills that is envisaged to be addressed through the TVET curriculum where both soft and technical skills are gained, namely, knowledge, values and attitudes, abilities

and other applied competencies. To find a job and sustain him or herself, a youth needs technical and soft skills (employability skills). There are few materials for teaching, learning, practices and guidance of policymakers on how to integrate core skills into education and training systems (Brewer, 2010).

The quality of human resources is regarded as a major contribution to economic development. It does not rely on the intellect only, but also on the character of the worker. Therefore, human capital should be outstanding with regard to the personality that is holistic in nature where the individual worker is knowledgeable, confident, adheres to good and high moral values, ethical, well mannered, and polite, disciplined, dynamic, innovative, creative, inventive, healthy, patriotic, fair, progressive, courageous, motivated, and competitive (Othman & Amiruddin, 2010).

The poor integration of core skills in the classroom and syllabus is due to the work overload of lecturers and the uncertainty of the right approach (Ayonmike, 2013). TVET education and training is underrated in South Africa against the backdrop of apartheid and the prevailing perception of the TVET curriculum being implemented for students who are conceived as academically challenged and underachievers. Hence, many students enrol for TVET as a second-choice educational system.

In the next section, the TVET provisioning will be discussed in the selected countries. Lastly, a general comparative view will be discussed for the TVET curriculum in South Africa.

2.7.5 The concept of 'NEETS'

Not in Employment, in Education and Training (NEETS) refers to a number of people who are not employed and are not in education and training. The term was adopted after the Centre for High Education Transformation (CHET) report. It is believed that over three million youths are NEETS (HRDCSA, 2015). This has largely increased shortage of skills in rural areas of Northern Kwa-Zulu Natal and subsequent unemployment. Despite the challenges faced by the TVET curriculum in addressing the skills shortage in the country, the mandate for TVET curriculum speaks volumes and volumes for diversification of approaches which will be discussed in the findings and recommendation section of this study.

DHET (2012a) estimates over a million South Africans under the age of 24 are neither employed nor in education, comprising about (54%) of the total South Africans population. The term used to refer to these people is the number of people who are not in employment and not in education (NEETS. as mentioned above/ Unemployment, inequality and poverty are the serious socio-economic problems that the country is trying to address through a number of ways. In this research, however, the study tried to investigate and explore the TVET curriculum as one of the ways of addressing the skills shortage gap as one of the problems facing the country focusing on the rural areas of Northern K-Zulu Natal.

It is argued that many graduates, even those with qualifications in the scarce and critical skills band, are among the NEETS. Unemployment is believed to be above (26.7%) (StatsSA, 2015). The TVET curriculum is tasked with addressing unemployment in rural areas by offering relevant education and training by imparting the necessary skills to the students that will have an impact in those areas. Some academics hold that young people/rural students are responsible for their unemployment and employability for they take the wrong career paths. Bhorat and Tian, (2014) support Sharp (2012) on the grounds that, the youths fail to obtain employment and work-based experience due to a shortage of skills as a consequence of inadequate and unfavourable government policies.

The National Treasury reports that the youth unemployment figure stands at three million (StatSA, 2011). At this point it is important to note that the issue of unemployment is related to skills shortage problems if compared to the job availability and the demands of the labour market as well as the skills mismatch (Biavaschi *et al* (2012). This confirms that graduates are not really prepared for the world of work because they lack employability skills. The TVET curriculum should set out to close these gaps by offering qualitative training for graduates to meet the work requirements as set by the world of work. The TVET curriculum is viewed as a cardinal supplier of skilled human capital for economic growth. Across the globe, the TVET system is fundamentally shaped by its effectiveness to articulate itself with the world of work as well as the extent to which it grants meaningful access to further education. Accordingly, the TVET curriculum should make sure that graduates do not lose touch with the labour market.

Biavaschi *et al* (2013) argue that the South African/ rural economy has experienced jobless growth with capital rather than labour-intensive forms of economic growth. However, employees do not believe that unemployment in the rural areas of South Africa is solely due to the scarcity of jobs, instead they believe that it is due to the poor and inadequate and fragmented training presented by TVET colleges and, together with the concomitant skills mismatch, employers are unable to find people to fill the available jobs simply because people with the required skills are not available in sufficient numbers (Belt, 2010).

Students believe that a lack of experience is the cause of employment. Students are offered training and leave colleges without any work-based experience, hence they find it difficult to get a job. According to Kraak (2016) unemployment remains one of the major societal and macro-economic problems facing the rural areas of Northern Kwa-Zulu Natal, hence the TVET curriculum needs a holistic, transformative approach to skills development.

In turn, COSATU (2012) believes that the transformation and expansion of the TVET system will reduce the number of NEETS to acquire skills through training and jobs, subsequently. Cloete and Butler-Adam (2012) confirm that (45%) of young people are NEETS. This calls for an urgent intervention by the TVET curriculum as a renewed focus to address NEETS through the provision of quality education and training (Perold, 2012). DHET (2012e) affirms that the NEETS aspects have increased poverty levels in rural areas. Accordingly, the TVET curriculum is seen as a way of empowering students to determine their social and economic destinies by improving their lives. This is supported by the assumption that the higher the level of education and training, the higher the chances of getting and staying in employment.

Therefore, the aim of this study was to investigate the challenges facing the TVET curriculum in addressing the skills shortage gap in the rural areas of Northern Kwa-Zulu Natal. The rationale for study is the realisation of the skills shortage gap in rural areas in different trades and occupations and the understanding of the fact that rural areas need artisans as they forge their way to economic development. The TVET curriculum in this perspective has been regarded as a high priority for skills development in the artisanry field to support economic growth, thereby addressing the skills shortage gap.

2. 8 TVET PROVISIONING IN SELECTED COUNTRIES

Australia, China, Germany, Taiwan and to some extent, Nigeria, have been discussed in this study as modal countries for TVET provisioning with the aim of making a comparative analysis with the South African TVET curriculum. Adequate funding has been a key factor in the strength of TVET in countries such as Germany and Australia. It is important to note that hands-on practice and experiential learning in the industry has been proven to work for these countries. Furthermore, the establishment of a good relationship with both trade and industry as well as with employers, has made the TVET system credible. Curriculum assessment is largely supervised by employers who send supervisors to assist lecturers in teaching and learning. In addition, the placement of students is done in collaboration with the industry.

Given the above perspective, the TVET (colleges) curriculum should address the skills shortage gap through collaboration and partnerships with the stakeholders, especially the industry and employers. This helps the TVET/ DHET to design the relevant courses for the demanded skills in the economy. Secondly, placement can help students gain experience, which is demanded in the workplace. Thirdly, experiential learning can expose students to the work environment as well as equipment and machinery.

In addressing the skills shortage gap, TVET colleges impart the necessary skills (both soft and technical) and applied competencies to students that will empower them to control their environment for sustainable development and lifelong learning. Training at the colleges coupled with experiential learning can empower the students by equipping them with the necessary skills required in the world of work to ensure meaningful employment, self-employment and a fulfilling work life.

Australia, China, Germany and Taiwan have addressed the skills shortage gaps by making the TVET system the first choice education and training system. It is indeed interesting to note that students are motivated to enrol for TVET education. Accordingly, substantial investment is done in the TVET sector, together with research and development, training, assessment and placement. Importantly, the International approach to TVET education is presented as a shift in focus from education and learning that takes place once only, to lifelong learning, in addition, there is a shift from the supply to demand, from what the teacher knows to what

the student wants, from just in case, to just in time, from teaching students the job they are going to do, to employability skills and from specificity to the integration of education and training.

Germany is regarded as the best example of TVE worldwide, although many challenges still exist in the system. TVET is seen as a key factor in addressing the skills challenges gap as well as unemployment and skills development, especially for young people. The USAID (2014) notes that TVET in Europe has been promoted by an improvement in the training to improve labour market economies. It entails a dual apprenticeship system focusing on centre-based training and enterprise-based training and involves one day per week of theoretical training at vocational centres; while four days of practical training are provided by the enterprise. Years of apprenticeship training are offered under the supervision of a certified master with an employment contract where apprentices earn an allowance during the agreement and where a diploma is awarded after training. Furthermore, there are close partnerships among unions, employers, associations, and the public administration and that is supported by all the social sectors.

Germany

In Germany, the TVET curriculum represents responsiveness to the local needs in a local area. The German vocational system is a dualist system. Importantly, the development and delivery of the curriculum is the responsibility of vocational institutions (Deissinger, 2015). “Schools assist firms in the development of the curriculum” where training takes place in a company in the form of apprenticeships

The German model is divided into three categories, namely, pre-primary, where students make a choice from different types of secondary schools depending on their abilities and interests. Students who are good in art and science enter academically-oriented middle schools, and the ones who are strong in practical areas enter the main secondary schools, while those who are in between, enter the practical secondary schools.

The over-pass-like system helps students in this band to acquire higher education for further study after graduation with entry to the universities after completion of the vocational or technical secondary schools. Those in vocational high schools can enter university after two years of full-time theoretical study. These are the

clear pathways for vocational education, which is premised by any TVET system in any country. Students from specialised college-oriented high schools can go to polytechnic universities after a one-year practical course.

Further education is intended for graduates from vocational schools of the dual system. After two or five years of work experience, students become technicians by accepting scientific continuing education.

Vocational schools of the “dual system” type adopt a model that combines school work with practical experience in companies. Students spend (70%) of practical work in companies with (30%) in vocational schools. This has increased the Germany vocational skills-based making her the model of TVET the world over. After three years, full-time students in companies get jobs. Vocational education has received praises as a well-established vocational education system. Students with a strong practical base receive vocational education.

Germany's role as a world leader in the TVET education system is due to a willingness to test different training models that have to be adopted by other countries in developing countries. German teachers are either trained as vocational schools' teachers or as practical teachers from the industry. Graduates with secondary education with higher entrance qualifications and vocational training go to universities for four to five years, pass the First National Examinations (FNE), and complete a two-year internship, then they write the Second National Examinations (SNE) to complete their TVET education. This helps to create a qualified vocational teacher base (Deissinger *et al* 2015).

The Framework Vocational Education Plans and Framework School Curricula prescribe the development of the learning materials at the localised level at the same time determining the field of learning, learning outcomes, time frames and content. This is intended for standardisation and coordination and is similar to the Australian Training Package system.

Australia

In Australia, the TVET system has been driven by the need to meet the skills needs of the labour market. Meeting the employers' needs has been the key driver for the TVET policy in Australia. The curriculum is geared towards producing decentralised competency-based training in which the industry plays a significant

role through training packages. The curriculum is decentralised to respond to the needs of the area and the industry (Dang, 2016, Karmel, 2014). The vision of the Australian vocational training programme is to develop lifelong learners who are able to enter new learning environments throughout their lives so that they can develop specialised skills after vocational education and training levels to meet the industry needs through the partnerships between the TVET institutions and the industry.

In Australia, the Canberra Institute of Technology (CIT) supports the TVET system. Training is strategically linked to the market needs. The TVET is characterised by good partnerships and the collaboration of all stakeholders with a common vocational skills vision and strategy. Developed TVET institutions with skilled workforce capabilities help the industry to predict the skills needs of the future and skills shortages. The government provides incentives to partnerships to enhance their viability. The designing, development and implementation of the TVET curriculum is a collective effort.

Workforce development is the responsibility of the industry. The CIT has increased its ability to explore the role of training as part of the workforce development with individual enterprises. Partnerships conduct skills analyses with the industry to recommend better approaches to skills development and utilisation with regard to the workplace skills gap for specialised areas. Importantly, the government offers incentives to those partnerships to train and make placements for workplace experience to produce people with competitive skills. Furthermore, the government and partners have also realised that teacher training is imperative. Apprenticeships are strengthened in recognition of the TVET qualification of graduates. To sum up, there is sufficient support for the TVET system by the employers and the industry.

The training packages are developed by the Industry Skills Councils (ISCs) and endorsed by the National Quality Council (NQC) before they are listed on the National Training Information Services (NTISs) as an official register. The purpose of the training packages is to define the qualifications and units of competency and assessment guidelines. Australia also employs apprenticeships and the traineeship system to ensure the alignment between the skills acquired, and the skills needed. The development of the TVET curriculum is shared between the national government and the local TVET institutions. The role of the government

is to propose courses from which vocational schools can develop their own courses based on the list provided (Aenis & Lixia, 2016).

The Canberra Institute of Technology (CIT) supports the TVET system. In this regard, training is strategically linked to the market needs, and there are good partnerships and collaboration of all stakeholders with a common vocational skills vision and strategy.

Malaysia

The TVET in Malaysia is seen as an important vehicle to drive economic development because the curriculum is relevant with regard to the global trends (Agrawal *et al*, 2013.). Accordingly, the TVET Colleges curriculum offers training to enhance soft skills, for example, problem-solving, critical thinking, and formulation of questions, searching for relevant information, making informed judgements, the efficient use of information conducting observations, investigations, inventing and creating new things. Other training in soft skills offered in analysing data communicatively, oral and written expressions, as well as cognitive competencies such as self-reflection, self-evaluation, responsibility, self-efficacy, independence, flexibility, social, competencies, affective dispositions, internal motivation and initiative.

China

The TVET curriculum in China is believed to be the largest in the whole world (Stewart, 2015). The system has the strongest partnership with the industry and employers. The cooperation places industry at the core of teaching and learning and entails four types, namely, the mutual cooperation between enterprises and school model training, the training by order model, the combined school-factory model and the international cooperation model. The development of the curriculum is shared between the national government and local TVET institutions.

The ministry of education provides a list of programmes from which vocational schools can develop their own based on the local industry needs (localism). Skills are placed into three categories. Firstly, there is the Ministry of Education category, nationally, in terms of the relevant occupations or trades, locally in terms of the schools in accordance with the intermediate and lower level skills needs of the labour market (Kuczera & Field, 2010).

Ethiopia

In Ethiopia, the main purpose of the TVET curriculum is to reduce poverty. The curriculum is decentralised and outcomes-based. According to Mekoenen (2012), “The curriculum responsibilities are delegated to the TVET institutions” to ensure that the local labour market is linked to the delivery of the curriculum. “The ministry of education provides training on the methods of curriculum design and implementation. Curriculum development is done in accordance with the ministry of education guidelines and standards” so that it is aligned to the local labour needs (Mekoenen *et al* 2012).

In Ethiopia, TVET provides training to students with the technical skills applicable to a particular occupation as well as different programmes categorised as: pre-employment aimed at preparing the youths to enter employment, upgrading training, aimed at the re-training of employees for skills improvement and retraining, providing training to those individuals who have lost their jobs with newly Other added training is provided with regard to adding skills to switch to other careers, remedial training and training to individuals who are out of the mainstream of the labour force (Mekoenen *et al* 2012).

Agrawal (2013) argues that TVET is regarded as an educational system for the poor and educationally backward sections of society who are not eligible to obtain admission to higher education. Undoubtedly, failure to secure a job after completing a TVET course is a significant challenge. With regard to employment, employers prefer high school graduates to those from higher educational institutions than those from TVET.

In terms of teachers’ compensation, there is no credible notch or salary scale for the TVET graduates, remuneration is based on expediency. Regarding the curriculum, employers do not understand the relationship of the TVET curriculum to the available jobs.

For South Africa to implement a TVET system that works, good practices from those countries should be adopted. Strong partnerships and collaborative links with the industry and other stakeholders need to be built and maintained. Furthermore, South Africa needs to consult employers on the development and delivery of the vocational curriculum.

This will help the TVET system to design appropriate programmes that are responsive and labour market intensive and relevant for the students with whom it is implemented. This can address the skills shortage gap that will lead to employment and self-employment, sustainable development and lifelong learning.

2.9 TVET AND THE LABOUR MARKET

All people are destined to partake in education everywhere and from every background for sustainable development as advocated by the Constitution of the republic (RSA, 1996a). All the personnel involved in the implementation of a vocational curriculum should be trained to acquire the professional vocational skills and competencies through the TVET curriculum to be able to deliver a vocational curriculum.

Wolf (2015) believes that awarding organisations should require that students are taught by properly qualified staff with industry experience, supported by appropriate and relevant industry resources and that students achieve the proper standard. This denotes that the machinery, equipment, workshops, laboratory, library, funding, and career guidance/career choice should be effective.

The content of the TVET curriculum, training, approaches to work to based experience (WBE) and work-integrated learning (WIL), curriculum design development and implementation, training manuals and industry supervision should be enhanced to deliver a vocational curriculum. The embodiment of both technical and non-cognitive skills should be a priority in terms of employability skills for the 21st century.

With regard to the human capital approach, TVET education and training had its inception during the industrial revolution (Tikly, 2013). Maclean and Pavlova (2013) contend that the purposes of the TVET should mainly be economic productivity, with a focus on skills development for employability by preparing graduates to meet the labour force requirements. The human capital approach has been broadened to include the role of education and training to alleviate poverty and promote social welfare as a basis for promoting growth and human security (World Bank, 2010).

UNESCO (2012a), assumes that TVET can help to overcome the disadvantages, achieve social justice as well as economic goals through positive teaching and

learning that brings about cohesion as well as the adaptation of cultural skills that respect and value indigenous knowledge, and support sustainable livelihoods. This can be achieved through strong linkages between TVET policies and social policies.

The human capital approach is based on the assumption that the realisation of human capabilities and well-being rather than the pursuit of wealth, underpins development (Tikly, 2013). This was realised on the basis that there are many challenges facing the global economy in general and the TVET curriculum in particular, namely, globalisation and the increasing skills shortage gap. Accordingly, the aim of this study is to investigate the challenges facing the TVET curriculum in addressing the skills shortage gap in the rural areas of Northern Kwa-Zulu Natal. McGrath (2012) urges that the current TVET system should be located within the view that is narrowly economic and productivity, while envisaged in a broader development vision.

At its Shanghai Conference, UNESCO (2012b) reported that TVET supports favourable outcomes for learners in the world of work, hence, for TVET to meet the labour market demands for skills, it should meet the economic demands, be responsive, to local, national and global market demands and should attract prospective learners in their respective areas.

Furthermore, TVET should be inclusive to all, including marginalised groups such as women, youths, disabled, females; hence, the legislation should facilitate access and inclusion positively, in both the informal and non-formal learning sectors, whether in the structured world of work or in everyday life. Therefore, TVET should be a lifelong learning activity and other sustainable development learning options. It should open doors for future learning to meet the future demands of skills and support innovation (Maclean & Pavlova, 2013).

As economies of the world are restructuring and moving from labour intensive to capital intensive and capital intensive to knowledge intensive economies, the TVET system should respond to ensure that the workforce has the relevant skills and values. The educational system and training should be reviewed, upgraded and remodelled to be relevant and responsive to the needs of school leavers, industry and country. UNESCO *et al* (2012) express the view that the TVET

curriculum is facing many challenges as few students are unable to develop skills for the current market demands in terms of the poorly delivered curriculum that may not reflect the current and future labour demands, hence, the low contribution of the TVET curriculum to economic development that fell below the expectations.

TVET is an instrument for producing a skilled workforce for the nation, thereby creating jobs for the citizens to improve the economy of the nation. However, this mission has not yielded great returns, especially in rural areas, due to a number of reasons/challenges as envisaged in the construction of the study aim.

It is presupposed that TVET improves graduate access to social and economically rewarding jobs, reduces poverty, redresses social income inequality, promotes decent work, re-trains retrenched workers, inculcates good citizenship, and encourages entrepreneurship. TVET also develops small business and secures college into work transitions for NEETS and drop-outs, develops skills for the poor, vulnerable and historically disadvantaged and marginalised students. With regard to sustainable livelihoods, TVET is a development option for nations to build and develop their economies (MDG, 2000).

Furthermore, TVET provides education and training to the poor rural youth through free education to all as funded by the government through DHET. In his speech, Dr Blade Nzimande was quoted as saying:

In 2011, the government took a bold decision to further increase the FET bursary allocation fourfold from R318 million in 2010 to R1.235billion in 2011. This is the single largest ever increase in government funding for FET Colleges. In 2012, this bursary has increased to R1.7 billion, thus making FET Colleges for poor students free” (Dr Blade Nzimande, 4 June 2012).

This explains that increased funding may boost skills training in TVET colleges. However, rural areas in Kwa-Zulu Natal still face a number of challenges from the mass youth unemployment, poverty, insecurity, historical perspectives, and poor infrastructure. The government of South Africa consolidated the Department of Labour and the Department of Education into the DHET to meet the present and future skills needs as developed and updated by the NSDSIII (RSA, 2011b). In the next section, the focus will be on the challenges facing the TVET curriculum.

2.10 THE CONCEPT OF RURAL AREAS

Education and training are crucial for achieving the 2030 Agenda and the Millennium Development Goals (MDGS). Millennium development goal four states “ensuring inclusive and equitable quality education and to promote lifelong learning opportunities for all.” This denotes the importance of the TVET curriculum and the skills needed for employment (UN, 2015b). In this regard, TVET is expected to address the skills of the NEETS youth for social cohesion and economic contribution as well as good livelihoods.

Like many other concepts, ‘rural areas’ is one of the complex phenomena that need to be defined or explained, for it is given different descriptions by different scholars and researchers. For the purpose of this study, the term ‘rural areas’ will refer to remote areas that do not experience an urban lifestyle. Accordingly, it is easier to present rural areas in terms of their characteristics.

‘Rural’ is a fluid and elusive concept to define; however, it may be defined based on the shifts of the sector composition of local communities, location, specific population densities and political-legal policies bearing on spatial boundaries. The ability to define an area as rural is problematic, but the general characteristics of a rural area include distances from metropolitan areas, and other large towns, population density, the extent of service delivery, the type and quality of livelihoods, resources and infrastructure. Rural areas are sparsely populated areas where people farm or depend on natural resources, including the villages and small towns that are dispersed throughout these areas. In addition, they include the former homelands created by the apartheid removals, which depend on migratory labour and remittances for their survival.

Rural areas are agriculturally dominated, they have a sparse and scattered population consisting of villages and homesteads and they are poorly serviced by many social amenities, for example, health, education, transport, infrastructure with a low level of industrialisation. In rural areas, development is scarcely visible and is slowly dominated by subsistence development projects due to the lack of skills, innovation and information to the external world. This explains that rural areas are largely inhabited by uneducated and unemployed people.

We need to obtain a conceptual understanding of the development of rural skills supply and demand. According to (RSA, 2013b) “Rural skills are traditionally associated with workplace and occupational profiles in natural resources, dependent sectors, especially farming systems or primary agriculture”. Despite the dominance of agriculture as the major economic activity in rural areas, other sectors are expanding, resulting in a variety of occupations for self-employment, artisanal work, tourism, manufacturing, processing and engineering that demand specific skills (Buchanan, 2010).

In South Africa, rural areas emanate from the apartheid regime which created black homelands in gazetted areas and cut them off from the social and economic development patterns, such as, crop farming, animal keeping, with greater social cohesion and interdependence. Livelihood in rural areas means survival for the next day. Education and training are poorly provided with insufficient funding, communication, poor facilities and outdated equipment as well as implementing outdated or inappropriate and irresponsible and irrelevant curricula in rural areas. Rural people may not be able to challenge all this because they lack information and skills to help themselves; hence the government and all the stakeholders for the TVET curriculum are asked to collaborate to transform the TVET curriculum provisioning in the rural areas so that the curriculum should be able to address the skills shortage gap in the rural areas and, for this study, in the areas of Northern Kwa-Zulu Natal (Cloete & Butler-Adam, 2012).

The lack of capacity and the inability to consider the practical integration of local economic activities into the broader nation compromises skills development (ILO, 2013). The skills demand is basically a function of the economic performance and technological requirements of industries or economic sectors. Bhorat (2016) explains that rural skills development forms an integral part of a broader system which includes, economic, social and political factors (Many TVET Colleges and skills centres should be located in rural areas to balance the unequal, spatial spread of the skills supply institutions with the improved infrastructure. The participants must transition into further skills development programmes to enable them to find appropriate jobs in the formal labour market or build their own enterprises (RSA, 2011c). Quite often, the development of rural areas is done by external contractors; hence, workplace skills are not developed and transferred to

local areas. The TVET curriculum should be aimed at sustainable development or livelihoods. Neo-liberal assumptions hold that training leads to productivity that, in turn, leads to economic growth.

Other assumptions are that skills lead to employability that leads to jobs, employment and self-employment. Education and training that are necessary skills would be equally vital to achieving progress and successful implementation of the action plans for rural areas. The legacy of segregation forced removals and the dumping of large numbers of people in marginal and remote areas in the former homelands. This calls for the exceptional training of rural youths through the TVET curriculum (Netshitenzhe, 2011). Akooje and Nkomo (2010) clearly states that success with skills development is linked intricately to the success of a development state. COSATU (2012) is also of the opinion that education and training with regard to the developmental paradigm of the state acts as a strong intervention in the PSET system.

The NDP (RSA, 2012) holds that a capable state with capable institutions should raise and manage human resources as well as the capacity to deliver human development and ensure equity, sustainability and peace effectively and efficiently. According to RSA (2012, p.89), “A rural spatial approach to skills development, holds vital lessons for policymakers,” but this approach is far more complex than a straightforward sector-based assessment of skills demand, supply, shortages and mismatches. The NSDS III (RSA, 2011b) aims to improve the placement of learners and graduates with a particular emphasis on skills development in support of the state’s rural development goals and objectives. Studies on skills demands start with an assessment of the skills needs of an enterprise, locality and region (Buchanan *et al.*, 2010).

The skills supply in rural areas needs to be addressed specifically. There is also a need to identify the skills required and requested by the rural population and the reasons for the demand for certain skills (DHET, 2010). Turok (2011) urges that the diversity of rural people requires different skills, such as, commercial, agriculture and small-scale farming. Developing such activities will require new technology and management skills to increase the overall productivity and competitiveness will necessitate new resources and skills for technology as well as finance. Thus, improved formal education and training in rural areas will be

important to enable rural people to adopt and use new skills and technology optimally.

Skills are central to improving employability and livelihoods “opportunities, reduce poverty, enhance productivity and promote environmentally sustainable development. Coordinated efforts are needed to develop an integrated skills” approach that improves access to the relevant high-quality education and training to all rural youth.

There are growing concerns about the skills shortage. It is argued that the current national skills system may struggle to challenge economic growth and societal upgrades. Unemployment and poverty still remain the most challenging socio-economic problems. Through education and training with partnerships and collaboration with relevant stakeholders, the government can address the skills shortage gap to create employment, reduce poverty, and create entrepreneurship to develop the economy. It is a fact that people with skills are necessary to offer labour (StaSA, 2016).

Note should be taken that the South African labour market is characterised by low levels of technical and soft skills that are mainly needed by employers. Furthermore, employers are still deliberating on the type of skills possessed by TVET graduates. There are many NEETS, especially among the disadvantaged races in the disadvantaged rural areas. However, the rural youth find it hard to acquire high quality skills education and training. This has created a large number of NEETS of over 3.2 million and 3.5 billion between the ages of 18 and 24; accordingly, the unemployment rate is between (50%) and (60%), hence opening a huge gate to the skills shortage in the rural areas. Undoubtedly, youth unemployment is a big problem in rural areas.

StatSA (2013a) puts unemployment in South Africa at 4.6 million people with other literature predicting over 6 million people inclusive of those who have given up on employment (discouraged workers). Poverty continues to affect rural areas with (79%) of the population in South Africa. Furthermore, around 735 million people globally are presently living in poverty. The number of rural poor youth is about 580 million people. Considering the poor services and access to education and training and poor essential services, the rurality of poverty is estimated at 83.5%.

In addition, Africa remains the most world's rural region with (60%) of its population living in rural areas.

It is important to note that poverty is concentrated in sub-Saharan Africa, where over 413 million people live within (41%) of the poverty line compared to other areas with (33%). It is urged that under the prevailing conditions of education and training, living in rural areas is considered to be characterised by an increase in the probability of suffering from poverty, unemployment and deprivation. This fact is supported by the global poverty rate of (17.2%) in rural areas in comparison with (5.3%) in urban areas. The causes of rural poverty are divided into social, economic and environment categories (StatSA, 2015).

2.10.1 Skills development by the TVET curriculum in rural areas

Employability refers to the competencies and abilities that “the graduates need to enhance employment opportunities in the labour market as well as the social development of the country” (RSA, 2010). The concept of ‘employability’ is subjective and fortified individually by the concepts of ‘identity’ and ‘practice’. Davies (2011) concurs that employability skills are important variables in the development of an economy. Employers believe that graduates do not have the employability skills required of them.

Education and training are important for freeing the economic and social development demands of a knowledge economy (Phago & Thwala, 2015). Education and training also offer an opportunity to marginalised communities to enter the labour market. Chinyamurindi (2012) looks at general efforts for funding higher education regarding a skills development strategy as a way of supporting excluded communities that are the consequence of apartheid and social class formations as well as background, customs, and traditional cultures. Furthermore, education and training for rural black students is affected by inadequate schooling systems (Rogan & Reynolds, 2016).

Over (70%) of South African people live in rural areas and are far from the centre of political decisions. They live in circumstances that bind them for most of their lives and rely on livelihoods, instead of employment, resorting to different strategies to survive. Furthermore, rural areas are characterised by poor educational facilities, unemployment opportunities, a lack of basic information, a

lack of good health services and a lack of decision-making opportunities (StatSA, 2012). Furthermore, it is urged that rural areas face a challenge of poor investment in rural skills development by the government with regard to rural infrastructure as well as a lack of infrastructure for skills development opportunities for rural people.

There is no fixed specification for the youth, however, they do fall into the adolescent period between 15 and 24 years. It is significant to note that this age group is characterised by energy, ambition, innovations, dreams, resourcefulness, adaption and resilience (Karmel, 2014). However, the youth lack qualifications and skills, with an unemployment figure for standing at (73%). (ILO, 2013). ILO *et al*, (2013) indicate that (85%) of young people live in developing countries. Furthermore, the youth contribute to (18%) of the world population (Filmer & Fox, 2014). This means that young people face many challenges, such as early marriages, the threat of HIV/AIDS, and, more importantly, accessing education and training and employment. There is little support for the youth to find their destiny, especially in rural areas where their capacity is lacking to deal with the pressures from the school to work and from youth to adulthood.

Young people, aged 15 to 24, are three times more likely than adults to be unemployed (ILO. 2012). This is largely caused by a skills mismatch between the supply and demand for the skills. The skills mismatch is coupled with a lack of cognitive, non-cognitive and technical skills that employers need and require and, therefore, do not get hired. Early parenthood, shrinking economies with low production and a lack of work experience are further challenges facing the youth.

The TVET curriculum should be used to fill the skills shortage gap in rural areas by preparing the youth for this transition by skills training and development. The youth are vulnerable to all the challenges in rural areas caused by limited access to high-quality and relevant vocational education and training and, thus, find it difficult to find employment because of the malfunctioning of the labour market, the shrinkage of the economy and the lack of support to access resources to participate in economic development. There are many assumptions and a great deal of praise for the TVET curriculum worldwide as a pivotal approach to bring about economic transformation and the development of nations and their roles in the new knowledge for sustainable development, lifelong learning, the reduction of poverty and the creation of employment, for example (ILO, 2015a).

The lack of basic foundation skills in arithmetic, numeracy and literacy, the lack of information on employment opportunities, the location of job seekers, most of whom are located in rural areas that are poorly serviced, the lack of entrepreneurial skills to start a business or create jobs and too few jobs that are flooded with skilled people, are other hurdles the youth have to face. (ILO *et al*, 2012), Poor investment in education and other sectors of the economy leads to a failure to create employment opportunities, together with a poor economic investment climate due to policies and regulations that deter investors from investing and who could, otherwise, have stimulated economic growth, social transformation, security and the curbing of inflation, for example. Accordingly, youth unemployment should be tackled through the TVET curriculum. A quality curriculum is seen as imperative in addressing the skills shortage gap. Hence, the TVET system has to be prepared and aligned to address the skills mismatch in the labour market (ILO, 2015b).

The educational level of the youth in rural areas is presented as 0.5 (9%), in primary schools, 2.9 (51%), who have not completed secondary school, 1.9 (33%) who have completed matric and 0.4 (7%) who have a tertiary qualification. The majority (93%) of the unemployed need to acquire skills through the TVET curriculum. This is so because only 30% qualify for university entrance. Thus, the (70%) should be absorbed by the TVET sector (StatSA, 2015).

However, all these needs have not been filled by the TVET system with regard to providing well qualified skilled labour to drive the economies of developing countries. Many studies have been carried out to this effect on the TVET curriculum for their role in the economy (Afeti, 2013). However, this study will try to fill the gaps left after identifying the challenges that face the requirement for the curriculum to address the skills issue in rural areas.

In contrast, some countries with a fully developed TVET system, for example, Germany, Austria, Taiwan, have been successful in keeping youth unemployment at a low level (Biavaschi, 2012). Accordingly, TVET is seen as an integral part of education, as a means of preparing for occupational fields and effective participation in the world of work, as an aspect of lifelong learning and as a preparation for responsible citizenship, as an instrument for promoting environmentally sound sustainable development and a method of facilitating poverty reduction (UNESCO, 2012b).

Learning institutions need to do more for students, and not focus only on preparing them for academic tests or on improving their scores. Historically, schools need to equip young people with the tools they need to become engaged thinkers, resilient and resourceful learners, creative problem-solvers and active members in their communities. Importantly, a combination of both technical and soft skills is important for students while they are in school.

The 21st century skills required include core/technical skills, life and career skills, information, media and technology. These should be aligned with the curriculum subjects in the TVET curriculum to reflect the projected skills. According to Schwab (2017), this industrial revolution is fundamentally different from the previous revolutions as “it is characterised by a range of new technologies that are fusing the physical, digital and biological worlds” impacting on all disciplines, economies and industries.

This is a strong message of convergence with a clear focus on the pervasiveness of digital technologies that impact on education and training. Every country has to be prepared for this revolution to avert grave consequences for their economies with regard to the lack of skills. This is relevant for the TVET curriculum. Accordingly, jobs and employment are given priority by training students to acquire advanced skills (WEF, 2017).

The industrial revolution will bring important developments in new advanced technology, business and new models of production, lifestyles, all of which require advanced skilled learning, collaboration, partnerships, by the different social, economic actors, policies, strategies for skills development and the overhauling of the education systems and curriculum development. The role of the government with regard to the fourth Industrial Revolution (4IR) is to overhaul the education system with a specific emphasis on the TVET curriculum. This can prepare students building an awareness through communication and information technology, establishing incentives to partnerships, creating robust positive legal frameworks and policies, expanding partnerships and global connectivity (WEF, 2018a).

The government should train and refrain the current emphasis to fill the skills gap to accommodate the changes for the jobs that may be lost or created (Schultz,

2018). The government needs to capitalise on advanced manufacturing opportunities and mitigate risks and challenges as well as being resilient for future unknown challenges. This can be done through the TVET curriculum.

The NSDP (RSA, 2011a) states that improvement in education and training in skills levels is a fundamental prerequisite for achieving many of the goals in this path. General education should equip all people to participate in the economy through higher education and training. The role of education and training as a major contribution to economic growth has gained credible attention. Quality education is an important right that plays a vital role with regard to persons, health, quality of life, self-esteem and the ability of citizens to be actively involved and empowered.

Furthermore, the NSDS 111 (RSA, 2011b), suggests an improvement in education and training, especially in the historically, marginalised communities and locations. Training should be relevant to meet the employability skills demand. The NSDS 111, draws on the NSP that aims to put the skills framework in place where we build the capabilities for our citizens to make our future work, and notes that:

Several challenges require attention including a critical shortage of skills, a complex intergovernmental system, high levels of corruption, weak lines of accountability, inadequate legislation, oversight and a long history of blurring the lines between party and state. There are difficult issues, requiring honest reflection, careful planning and decisive leadership (OECD, 2017, p.169-172).

In turn, the NSDS (2011b) aims to provide a better understanding of the skills demand and supply, provide a better understanding of the skills set of the unemployed to embed these data in skills planning and training. This strategy further seeks to support the government economic development strategy and target resources for education and training for skills development. Furthermore, it aims to provide data to the government for re-channelling resources to those skills areas where people are likely to obtain employment and improve South Africa's economic competitiveness and contribute to poverty eradication.

McGrath (2012) opines that, amidst all these efforts to address the skills shortage gap in rural areas, TVET colleges and the curriculum need to be given due attention in terms of capabilities to allow a wider vocational training approach by

empowering them to play their roles effectively. “While changes in human capital and labour quality matter,” it is the level of human development that determines a nation’s sustainable growth path (Diebolt & Michael, 2014). Skills and knowledge are the most significant elements in the social development of any nation and, thus, play a vital role in the economic growth of a country.

Education has been identified as an important ingredient in the national economic growth. Higher levels of education in a country create a skilled workforce, and a skilled workforce creates high productivity through the worker’s competence, experience, knowledge, and expertise, efficiency and effectiveness (UNESCO, 2015a). This promotes growth and a good social and economic standard of living.

The TVET curriculum is mandated to fulfil three roles, namely, social, economic and environmental development. Socially, the curriculum should train and offer career options for the increased number of school leavers, adults and unemployed as well as for further learning. Economically, the curriculum should provide the skills and workforce training that is needed in rural areas and the country in general at all levels of the economy, leading to self-reliance and enhancing economic growth (Gewer, 2010c).

TVET colleges provide learning programs that are responsive to the individual and community needs to contribute to the development of the country’s human resources base. Accordingly, TVET education promotes the development of human resources talents and abilities and the redress of past educational injustices.

CEDEFOP (2013) holds that the prosperity of a country depends on the number of persons educated and employed and how productive they are at work. This underlines the importance of having good primary schools, good high schools and good vocational institutions with relevant TVET education and training for skills acquisition and development to prepare the youths and adults of the country for their productive responsibility.

The youths should be given early training during their growth period and continued lifelong learning to foster individual, skills and professional competencies as the world of work requirements change. Training provides both core and soft skills,

general knowledge, industrial-based and professional competencies that reflect education in the world of work as will be explained further.

There is a direct relationship between the country's attitude towards the education of its people and the subsequent development of the people and the whole nation. Education and training produce civilised citizens who transmit signals among themselves at an intelligent level, making it possible to discern their economic and social relationships. Nevertheless, there are many challenges that the government may have to address, for example, the planning, facilitation and formulation of enabling policies (UNESCO, 2015b).

One of the aims of education and training is to develop the economic social and political fabrics of a country through research and innovations and the acquisition of skills for employment. No country in the world can compete effectively in terms of development without aligning its educational system properly with science and technology. Education and training empower people to identify and determine their destiny, take control of their lives, raise healthy families and take part in developing a just society.

The value of education is created in global competitiveness by the labour market conditions, which can generate value through innovation and information with the ability to reconstruct itself through the occupational skills.

2.10.2 Skills shortage as prescribed in terms of TVET education for sustainable development

Sustainable development is the process of change in which the exploitation of resources (both physical and human) direct investment in education and training for skills development and creation of employment as well as fostering economic, social investment, the orientation of technological development and institutional change are part of one vision to promote the current and future generation labour market as well as human needs and aspirations. It is a process that fulfils present human needs without endangering the opportunities of future generations to fulfil their needs. The fulfilling of human needs and aspirations is one of the most important goals for all development efforts around the world, especially the fulfilment of the basic needs and a better quality of life (UNESCO, 2016).

TVET for sustainable development is a newly conceived area of skills training and development that recognises that people are crucial for the development process (Afeti, 2013). It is looked at as a process that fulfils present human needs without compromising the needs of the future. Education is seen as a tool to fulfil human needs; thus, education should embed itself in the aspects of sustainable development to preserve resources for future needs. This can be attained by acquiring the skills to manage the process through education and training.

Sustainable development is an improvement of economic efficiency, the protection and restoration of the environment and the enhancement of the social well-being of people. It embeds the concern of both social justice and ecological health and offers hope to those who are concerned about the increasing poverty and inequality in the world. Sustainable development calls for the improvement of the quality of life for people without exhausting the world's resources. It is a self-initiated and self-sustained development based on the needs and resources of the community to restore individual identity and dignity and to promote people's life (UNDP, 2013).

The role of sustainable development is to empower individuals through the acquisition of skills, the renewal of skills, and maintenance of those skills and the development of those skills for the transformation of the world of work for better livelihoods. Accordingly, education and training in rural areas should be focused on developing strategies and responsibilities to address rural skills development, the sustainability of national resources, as well as its management and poverty reduction.

In their study, Jayaram *et al* (2017) report that there are three basic skills that are required for sustainable development in Africa namely;

- Communication and learning to learn (cognitive skills)
- Citizenship and technical skills
- Life and non-cognitive skills

The concept of 'sustainable development' has been conceptualised in many ways; however, there is a common understanding derived from all definitions that the concept means creating a generation without the ability to compromise the aspirations of the future generation. The concept seeks to meet the needs of the

present without compromising the future. It shows respect for the human needs as well as non-human natural resources integrating social issues such as poverty reduction, gender equality, human rights, education for all, health, human security and intercultural dialogue (USAID, 2014).

Education for sustainable development seeks to strike a balance between the present and future skills supply and demand (Bhuwanee, 2012). Therefore, it focuses on the three pillars of sustainable development, namely, environment protection, social justice and economic growth, while addressing methods to improve livelihoods, how to meet the demands of the present and the future, how to maintain our environment and how to generate wealth.

Education supports and strengthens the national planning and national goals to be sustained. Education is an investment to achieve sustainable development. This is the case because, it entails the processes, structures, learned concepts, steps, procedures, modules, approaches, mechanisms and methods to foster the development of the individual to contribute singly or collectively towards development in a sustained way in various dimensions.

The potential role that the TVET curriculum can play in education and training is becoming increasingly imperative as witnessed by the Millennium Development Goals (MDGS) (UNDP, 2000). UNESCO (2010c) maintains that, the concept of 'Education for Sustainable Development' (ESD) is linked to the key issues of poverty reduction, sustainable livelihoods, climate change, human rights, gender equality, cooperate social responsibility and protection of indigenous cultures. It is holistic, making it a tool for the achievement of Millennium Development Goals (MDGS) and education for all.

Education plays a significant role in achieving and sustaining the economic development by providing training to the youth with regard to skills, knowledge and the competencies necessary to sustain the current and future generation needs.

However, the Commonwealth Secretariat (2013) notes that ESD does not only consist of the relevant and necessary content but also emphasises "pedagogical approaches and educative experiences that contribute to the development of learners as citizens who think and act in a sustainable way." The vision of the TVET policy is to develop human potential while adhering to the concept of equal

accessibility to the necessary competencies. Mindful of the conditions for sustainable economic, environmental and social development, TVET allows people to use present and future opportunities for development as individuals, enterprises, society, and a nation.

The TVET curriculum should provide skills through education and training while embedding sustainable development. Furthermore, it should be inclusive based on the values, principles and practices that respond to current and future labour market needs. Education for sustainable development promotes work values and ethics.

The assignment given to the TVET curriculum, especially in rural areas, is to empower the rural youth with regard to sustainability through designated skills acquisition. In this case, the rural youth will need those skills and applied competencies. The aim of this study is to investigate the challenges facing the TVET curriculum in addressing the skills shortage gap in the rural areas of Northern Kwa-Zulu Natal. This study explored those challenges and suggested recommendations for an improved TVET system that can realise sustainable development.

2.10.3 Education and development

Undoubtedly, education is one of the fundamental contributors to development and it drives economic development through labour productivity, poverty, trade, technology, health, income distribution and family structure. Furthermore, it lays the foundation for development, upon which economic and social wellbeing are structured. Education shapes development through the provision of skills and knowledge and the responsiveness to the needs of the economy to employ educated labour (World Bank, 2012)

The high rates of income inequality in South Africa widen the poverty gap due to the inability to access human capital development. This explains the importance of highlighting education as a strategy to address the skills shortage gap by promulgating structural policies. It needs to be pointed out that TVET education and training present many challenges to policymakers. Secondly, the relationship between quality and quantity needs to be addressed. Thirdly, producing graduates that are relevant and responsive to the labour market and national development

needs is still a challenge. Accordingly, the role of technical and vocational education and training is key to the development of rural areas (UNESCO, 2014b)

Bhorat, Cassim and Tseng (2016) emphasise that TVET graduates are likely to be employed as school leavers without tertiary qualifications. This indicates that TVET colleges contribute to economic growth through skills development. This further explains that the high unemployment rates are caused by two factors namely, an oversupply of the labour market by graduates with low levels of education, in addition, the nature of schooling and education is poor, thereby, hampering productive employment in an economy that requires advanced technical skills. This is a case of education inflation on the part of employers who prefer highly educated graduates because they are cost-effective in training.

2.10.4 Education and training for sustainability

Education and training for sustainability help people to pursue sustainable livelihoods, lifelong learning, and further education and to contribute to their communities' sustainably. It fosters an environmental awareness as well as an awareness of how to use the available resources to achieve success while maintaining the future generation. Furthermore, it improves the quality of life through the preservation of resources, skills and knowledge acquired for better current and future use (World Bank, 2011). The human capability theory builds on pre-existing theories and is based on the assumption that the realisation of human capabilities and wellbeing rather than the pursuit of wealth, underpins development. This approach is the result of the growing skills shortage gap globally based on social effects, for example, wealth, background, race, colour, income, proximity. Given that rural areas in South Africa face many skills challenges as a result of the current TVET curriculum being implemented, this study argues that the TVET curriculum challenges have to be addressed to create economic growth in rural areas (McGrath, 2012).

The theory posits that the role of TVET is to prepare learners for sustainable livelihoods. This concept encompasses lifelong learning, sustainable economies in the context of the information age and the knowledge economy education for all and education for human security. Tikly (2013) comments that the disadvantage of this theory is that sustainable development is vague. It appears to be all things for all.

An oriented, rural, skilled, relevant and responsive TVET curriculum can address the skills shortage gap both locally and globally using economic, equity and transformative lenses (USAID, 2014). It should be a curriculum for the development state with a strong representation and correlation between itself and the country's economic development, while creating holistic learners with knowledge of sustainable development.

Education and training for sustainability brings both innovations and creativity regarding the future through the productive future skills demand by creating and facilitating the development of an educated workforce that is diversified in terms of skills according to the labour market needs. Education and training for sustainability assists all the people to do jobs by reducing environmental degradation while creating a just and equitable workforce. It reduces poverty in rural areas through information, skills and job creation, while promoting lifelong learning, which is flexible and adjustable to new changes.

Education and training for sustainability reduce social inequality through inclusive education and sustainable development. It assists the youth with making skills career choices in education and training to face the labour market challenges. Accordingly, the youth are able to develop the required skills to analyse local/rural issues and devise solutions.

For the TVET system to address the skills challenges for sustainable development in rural areas, stakeholders need to identify knowledge, skills, issues, perspectives and values central to sustainable development in the dimension of economics, sociology and politics as well as the environment and integrate them into the TVET curriculum. Sustainable development addresses the skills mismatch and economic needs by embracing the actual activities that a country needs for economic development and job creation. It helps to identify the necessary critical skills that have been identified and are thus considered during skills training and development (UN, 2012).

Through sustainable development, graduates perform certain functions relevant to their qualifications and the labour market needs by aligning the TVET training to adapt to changes taking place in the economy. Sustainable development supports creativity and innovations as learners discover new ways of doing things. It is an

investment in human capital development and a human resource development strategy.

2.11 CHALLENGES FACING THE TVET CURRICULUM

The turnaround strategy for FET Colleges (DHET, 2012c) seeks to address key challenges associated with dysfunction in TVET colleges systematically to ensure sustainable improvement in the quality of teaching and learning. This study aimed to investigate the challenges facing the TVET curriculum in addressing the skills shortage gap in the rural areas of Northern Kwa-Zulu Natal. The challenges will be discussed with regard to the historical, institutional and technical domains respectively.

2.11.1 Historical paradigm

The first challenge facing the TVET curriculum in addressing the skills shortage gap case of historical events. The history is reflected in racial disintegration and poor service provision in rural areas. Since 1994 there have been many challenges in the education sector. When it became evident that there is a need for a more skilled force and that learners leave school without any proper plans for their future, FET colleges became the new focus of the Department of Education (Gewe, 2010b).

Rural learning institutions are poorly equipped to offer high quality learning. Secondly, there is a long distance between them as a result of historical events. This compromises any efforts by the TVET curriculum to offer convenient training to rural students to address the skills shortage gap.

2.11.2 Institutional paradigm

TVET colleges are believed to be poorly managed and administered with regard to the mandate for skills development in the country. They appear to have a surfeit of unqualified lectures together with an uncertain curriculum with regard to its objectives.

Furthermore, the college management is believed to be incapable of undertaking strategic planning. Accordingly, there seems to be a management and administrative vacuum. *Secondly*, the TVET curriculum is prescribed by the DHET making TVET managers passive and inactive non-participants in the decision-making process. Colleges and campuses are at the receiving end of a one-way

communication system. It is important to note that the management of the TVET curriculum is centralised, resulting in delayed and poor communication within the TVET sector. Therefore, the central office is the closest of the management functions.

2.11.3 Unqualified TVET lecturers

TVET lies within the human capital framework with the notion that the contribution of different kinds of skills can promote economic growth (World Bank, 2011). Lecturers have a major role to play in determining the implementation of the curriculum. Since they are both curriculum interpreters and implementers, they ought to have a sound knowledge and understanding of the curriculum as well as the skills to interpret and deliver the curriculum. In addition, lecturers play a vital role in building the characters of learners. Hence, they must have the right attitudes regarding the subjects and the programmes they offer to the learners. Importantly, attitude is a construction that changes across time and situations and is an evaluative judgment that an individual possesses directly towards an object.

Gichuru and Ongus (2016) contend that facilitators should be well educated in the first place. They must have mastered the concepts both in theory and practice. Furthermore, effective facilitators impart the knowledge and skills with which they are acquainted.

The majority of TVET lecturers are not trained in vocational skills, and therefore they are not ready for the vocational curriculum. In addition, they lack progressive learning and teaching methods resulting in the poor delivery of the curriculum. Unfortunately, the students have realised that their lecturers are incompetent, resulting in boredom and consequently, the dropping out of the TVET college. The DHET and the colleges have failed to offer training to the lecturers to achieve the expected results. Over (60%) of the TVET lecturers are not professional, hence, they lack both knowledge of pedagogical approaches as well as experience (Gewe, 2010c).

In their study of the first-year teachers' service, Yosuff and Soyeni (2012) found out that 50% of teachers leave teaching within the first five years. Furthermore, many do not have industrial experience and many are detached from their teaching and the practical reflection of the TVET curriculum. It needs to be noted that TVET

colleges do not have money to train the lecturers in those necessary vocational skills. There are few or no continuous professional development courses for lecturers and few or no refresher courses. This means that lecturers deliver a skills-driven curriculum with old-fashioned skills.

TVET lecturers lack the skills and training in pre-service, in-service and continuing professional development with regard both the principles and practice of the pedagogical approaches of curriculum implementation (Olatoye, 2011). This approach discourages the critical practice of vocational education with inappropriate lecturer qualifications. (HRDCSA, 2013). Accordingly, the issue of recruitment needs to be addressed if the TVET college lecturers are to do their jobs as expected.

2.11.4 Inadequate lecturers' experience

Another problem is that lecturers lack the lecturing skills in a vocational curriculum that attracts many students with different academic abilities, thus requiring an untrained lecturer to unpack the vocational curriculum to different cohorts of students in the same classroom (DHET, 2012e). Appropriate working experience helps lecturers to teach TVET students with the required command of both the knowledge and the content. In his study on TVET education in Kenya, Ferej, Kitainge and Ooko (2012) learnt that a large number of TVET lecturers possess inadequate work experience, including the TVET managers.

Umalusi, the national education quality assurance body in South Africa, concluded that the majority of lecturers are ill-equipped to cope with the academic and social demands of vocational teaching (Umalusi, 2013a). Furthermore, the lack of subject expertise and inability to meet the administrative requirements to undertake practical work is concerning. Hattie (2012) states that learning is premised on the understanding of what the student begins with, then acquires knowledge and subsequently developing a deep understanding and finally be able to take more control over his/her learning.

2.11.5 Poor motivation

TVET lecturers seem unmotivated in a number of ways. This is revealed by their work attitudes as well as their lack of commitment. They seem to be negative about the curriculum as well as the students they teach. This is also indicated by the low

levels of continuous professional development in their careers, coupled with low pay and benefits. This view is supported by Dasmani (2011) who alleges that the low motivation of lecturers and the negative perceptions of TVET institutions are creating barriers to the TVET curriculum. This has a negative effect on the implementation of the TVET curriculum.

2.11.6 Poor remuneration

To ensure the quality and boost the morale of lecturers, the salaries, and other benefits for TVET should be upgraded. DHET should take it upon itself to recognise the role of TVET lecturers as a vocational role and remunerate them better. Dasmani *et al.* (2011) contend that, poor work and service conditions demotivate TVET lecturers. They appear frustrated by a number of matters including poor remuneration and the shortage of facilities in TVET colleges, among others. This impacts on their delivery of the curriculum.

2.26.7 Work overload

TVET lecturers are overloaded with classwork with many expectations since the decline of the training of artisans. The expectations are that colleges should be all things to all possible learners because there are too few alternatives. When a lecturer relocates, gets another job or dies, no one is replaced, instead the work is shared among the available lecturers. It should also be noted that assessment in the TVET sector is extensive with a great deal of paperwork in the form of the Portfolio of Assessment (POA) and the Portfolio of Evidence (POE) (DHET, 2007b).

TVET colleges are expected to train skills, create employment and self-employment, fight poverty, bring about economic growth, and foster lifelong learning and sustainable development. All these expectations are built on the fragile and weak institutional foundation of the TVET curriculum.

2.11.8 Inadequate curriculum training and delivery

TVET is accused of training students to work with their hands, not with their heads and to think critically and not conceptually (Baatjes, Baduza. & Sibiya, 2014). Conceptualisation of the dynamics of the world of work is imperative to promote innovation, inventiveness and creativity.

The real challenge facing the TVET curriculum is to provide access to a high quality technical vocational education for all without losing sight of the TVET's special relationship with the world of work (McGrath, 2012). There seems to be poor training in TVET colleges that leads to the demotivation of trainees, resulting in the dropping out of students, thereby, creating a skills shortage gap and the scarcity of a highly skilled workforce in the economy.

2.11.9 Misappropriation of the TVET curriculum

Students in rural areas get inappropriate skills that are not aligned with the skills they need for their local community and the local industries. The training is too short to close the emergent skills gap for sustainable development. DHET (2013d) asserts that even those who have skills training, have skills that are outdated because of the lack of experience in the world of work.

Apparently, the TVET curriculum that was implemented is not compatible with rural needs and training and is not commensurate with rural skills development strategies for rurality. Accordingly, the sole aim of this study is to investigate the challenges facing the TVET curriculum in addressing the skills shortage gap in the rural areas of Northern Kwa-Zulu Natal. Different cohorts of students are enrolled in the TVET colleges where some have been out of school for a long time, while others have been out of work for quite long, and others have never been tested in skills training.

2.11.10: TVET qualifications, throughput and certification

The programmes and qualifications in TVET Colleges are currently regarded as difficult to administer, difficult to understand and are often poorly quality-assured. Furthermore, there is inadequate articulation between qualifications and programmes that span more than one sub-qualification framework, which leads to a dead-end for the students.

At the inception of the NCV system, it was believed that a level 4 certificate for the NCV would be equivalent to matric. However, the NCV graduates cannot use their certificate to apply at universities, and employers do not understand this qualification. This has forced many NCV graduates who do not have a national certificate to write or re-write matric. It is suggested that re-alignment of the TVET qualifications with the traditional system is necessary.

Kruss *et al*, (2012) affirms that many of the youths enter TVET colleges after completing a matric level qualification believed to be zig-zagged rather than a linear education trajectory. This affects the certification and throughput in the TVET Colleges considered to be negative statistics. Figures 2.1, 2.2 and 2, 3 below show the certification for Report 191 engineering for 2013, Certification for Report 191 Business programmes, 2013 and Certification for NCV, 2013 respectively.

Table 2.1: Certification for Report 191 Engineering, 2013

Certificate rate			Drop-out rate			Throughput rate			
N1	N2	N3	N1	N2	N3	N1	N2	N3	N1-N3
50%	47%	45%	4%	2%	2%	48%	46%	44%	9,7%

Source: DNA Economics, 2015, p, 15, based on DHET examinations results in 2013.

Table 2.2: Certification for Report 191 Business Programmes, 2013

Certificate rate			Drop-out rate			Throughput rate			
N4	N5	N6	N4	N5	N6	N4	N5	N6	N4-N6
34%	33%	27%	5%	4%	4%	32%	32%	26%	2.7%

Source: DNA Economics, 2015, p, 15-16, based on DHET examinations results in 2013

Table 2.3: Certification for NCV, 2013

Certificate rate			Drop-out rate			Throughput rate			
L2	L3	L4	L2	L3	L4	L2	L3	L4	L2-L4

33%	30%	37%	28%	13%	10%	23%	26%	33%	2.0%
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Source: DNA Economics, 2015, p, 15, based on DHET examinations results of 2013

2.11.11 Poor policy formulation

Another challenge identified with regard to the TVET curriculum is window-dressing policies other than strategic long-term policies and reforms. Many skills strategies have been institutionalised, such as, NSDS III, NSF and NSDP after consultation with some partners, however, the challenge remains that, the TVET curriculum lacks the necessary capacity, relevant exposure and funding at institutional level.

The primary objective for the government in education and training is to develop policies, set norms and standards including designing, developing the curriculum, staffing, funding, and to enforce policy implementation. UNESCO (2014b) maintains that the government can influence policies in a number of ways. NSDS111, is a key policy document that aims at promoting TVET, however, it is not a strategic plan.

The challenges faced with the policies stem from the formulation, approaches, and the lack of a skills development strategy for rural areas specifically where the curriculum is implemented. *Secondly*, these policies lack funding and a skilled workforce, the will and the infrastructure for implementation to address the skills shortage gap.

2.11.12 Poor technological advancement

The TVET curriculum is believed to lack technological advancement to provide quality education and training despite the efforts made so far. ILO (2016a) agrees that providing equal access to quality TVET curriculum and skills development that is relevant to current and future job needs is essential to achieve inclusive social and economic growth. This means that the current TVET curriculum faces technological challenges with regard to addressing the skills shortage gap generally.

Rural areas are faced with the challenge regarding information technology like telecommunications, which could provide basic information for development

options. Furthermore, rural TVET colleges lack the necessary infrastructure in terms of workshops, laboratories, and library and simulation facilities. Even the little infrastructure that may be available contains outdated facilities with few lecturers having the technical expertise to implement them. Hence, most of the learning and teaching focuses on theory. McGrath (2012) remarks that the TVET system is grounded in an outdated model of development.

It is argued that the TVET curriculum is far from achieving its set goals and objectives. This is attributed to poor technological advancement, among other challenges. In turn, the skills shortage gap has indeed widened, and unemployment and poverty have increased. In that regard, Gamble (2013) asserts that the deliverables of the TVET (employability, poverty reduction and industrial growth) are compromised by low levels of technological development.

2.11.13 Unclear TVET pathways

Pathways are avenues that open the way for long-life learning, sustainable development and further learning. Unfortunately, there seems to be a dead-end of pathways from a formal school. HRDCSA (2015) believes that specific challenges for the TVET curriculum are the lack of clarity regarding the existing pathways in respect of the entry and exit routes, whether they are employment, self-employment or further education, this is the challenge TVET colleges face (HRDCSA, 2014). TVET Colleges now offer pathways to work and learning due to external factors such as the recession, geographical location, demographic factors, systematic issues as well as internal factors like poor linkages, poor learner progression, poor collaboration and partnerships.

Wolf (2011) notes that the aspiration for higher-level study is extremely widespread. He confirms the need for openness of the pathways so that students' learning does not come to a dead-end (DHET, 2013b). Studies like the HRDCSA (2010–2030) and the Afeti (2013) do not provide a full picture of the TVET pathways into trade and occupations. In turn, the World Bank (2015) maintains that TVET employment programmes need to target locally self-identified livelihoods opportunities rather than being universal.

The UN Joint Programme of Youth Employment and the ILO (2013) undertook a study of labour market characteristics that impact vocational skills and provide

insights into the labour market dynamics as they pertain to the current study of labour imperatives. The findings indicated that there should be three pathways for the TVET curriculum, namely, general education, vocational education and further education. Therefore, the government should ensure that the opportunities for entry and progression with higher learning education are not limited in ways that reinforce patterns of inequality by developing a policy that increases access to elite higher education.

2.11.14 High drop-out rates

Another challenge facing the TVET curriculum in addressing the skills shortage gap is student dropouts. Dropouts do not attend classes on a regular basis and eventually do not return to the college. Dropping out means quitting a course or a programme without receiving a certificate.

Klaus (2016) categorises dropouts into two groups, namely, persisters and non-persisters. Those who drop out of college are non-persisters. He believes institutional factors, academic goals and financial factors cause dropouts. Dropping out of college is determined by institutional factors, personal factors, family factors, a lack of qualitative student support services and environmental factors. Pocock (2012) avers that students in higher institutions of learning need academic support programs like peer tutoring to facilitate their performance. Shakizah (2016) argues that dropping out of college is attributed to inadequate learning and teaching facilities, a shortage of instructional materials, a lack of accommodation, unfavourable learning conditions, insufficient learning support, a lack of motivational activities like extra-mural activities and negative students' attitude towards studies.

According to Moodley (2015), poor selection and scarce funding are also causes of dropouts. Pillay and Ngcobo (2010) maintain that a shortage of finance and financial constraints, among other factors, cause the dropping out of college. The failure of the TVET curriculum to direct students towards courses of study that are likely to maximise their natural talents is one of the myriad complex systematic, social, economic and personal reasons for the high drop-out rates.

Dropping out has detrimental effects on the skills development, affects students' confidence, personality as well as potential and inclusive community participation

in economic development and the wastage of resources, time and space. Dropping out of a TVET college is believed to have contributed to a large number of NEETS, hence, widening the skills shortage gap to over 3.4 million youths.

Field, Musset and Alvarez-Galvan (2014) contend that dropping out is a challenge in the South African education system, creating a large number of unemployed, uneducated youth (NEETS). Lamb, Markussen, Tesse, Sandberg and Polesel (2011) hold that the causes of dropouts are categorised into three areas, namely, family, institutional and community factors.

2.11.15 Individual factors

Low-self-esteem that makes a student feel that he/she has achieved nothing, makes him/her drop out as a sign of an unwillingness to learn. Rumberger (2011) asserts that dropping out is likely to be associated with emotions such as personal inadequacy, and a lack of self-development and belongingness. Polat (2014) believes that sometimes students who have no definition of their goals and purpose in life prefer short courses for a “quick fix” and if it does not work for them, they drop out of school.

The main reason for dropping out is absenteeism and student violence during the first semester, is also a cause for dropping out. Muzenda (2014) suggests that the reasons for this are drug abuse, negative peer pressure and engagement in violent activities, leading to low lesson attendance, poor performance, and subsequently dropping out. Another cause of dropping out under the category of individual factors is the low achievement. This suggests that the student is incapable of learning, hence, dropping out. Heublein (2014) suggests that institutional factors include boring and unmotivated learning programmes which cause students to drop out of school for they spend over (80%) of their time at a learning institution. The personality of the lecturers without skills, time, commitment, interest, desire, skills, attitude, motivation and training, for example, engenders the dissatisfaction of college students leading to absenteeism and later their dropping out (Dasmani, 2011). The HRDCSA (2014) postulates that the lack of clarity on pathways demotivates students leading them to drop out of TVET colleges.

Given the above discussion, it is advised that, students should be exposed to challenging academic studies that keep them busy and involved throughout their

studies. This speaks to the nature of the TVET curriculum that should be provided. The TVETMIS system should be strengthened as a data capturing system both during and after the course. This will help in tracking dropouts, absenteeism, employment, self-employment and further studies, and eventually enable the TVET curriculum to address the skills shortage gap.

2.11.16 Absenteeism

The concept of *absenteeism* is defined differently by different scholars. In this study, absenteeism will be defined as a situation involving a student not reporting to the college. Cook and Ezenne (2010) define absenteeism as the continuous behaviour of a student where he/she does not report to the college. In terms of practical lessons, absenteeism refers to absence from attending practical learning. Absenteeism affects the TVET curriculum in the sense that a student may not receive adequate learning since he is not present at the college. This translates into the poor performance of the student, which may lead to failure of examinations or missing practical lessons. The result determines the certification and throughput of the TVET curriculum and its attendant role of addressing the skills shortage gap. In order to avert and control absenteeism in TVET colleges, the DHET enacted an absentee policy which aims at controlling students' absenteeism in colleges (DHET, 2012b).

The causes of students' absenteeism are: student-related causes, college-related factors, home-related causes, as well as socio-economic factors. Muzenda (2014) asserts that students absent themselves from colleges due to lateness, sickness and group influence. Some students go to bed late because of an unconducive home environment, accordingly, they wake up too late to go to college. Climatic seasons like winter also make students reach college late due to the cold (Otto, 2016).

Another cause of students' absenteeism is sickness. Some students have chronic diseases which prevent them from attending regularly. Students have to go to medical centres to collect their medication; hence, they will be absent because of their sickness, and when they attempt to go to college after collecting their medication, they will be late. Peer group influence also causes students' absenteeism because of the negative behaviour that may develop within the group (Wadasango & Machingambi, 2011). Clubbing with students who are negative

about their studies will contribute to absenteeism. Parents play a key role in the study of their children. When parents do not seem to be actively involved in the studies of their children, children always resort to absenteeism themselves (Sahin, Arseven & Kiliç, 2016).

According to Otto (2016), parents need to monitor their children closely. The parents' lack of interest in the studies of their children will lead to them seeking diversion in many activities, such as, parties, shopping, weddings and bazaars (Wadesango & Machingambi, 2011). The children of parents who work far away from them or only return home over weekends, will have a high incidence of absenteeism.

Another cause of students' absenteeism in colleges is a lack of family support (Otto, 2016), therefore, parents need to support their children in their academic activities (Sahin, 2016). This explains why many orphans who lack the guidance of their parents may be absent from school. Students who lack guidance, have a tendency to place less value on things valued by their parents (Wadesango & Machingambi, 2011).

The stability of the family plays a pivotal role in the progress of a student through enforcing regular attendance (Sahin, 2016). Violence in the home, the fighting of parents, and the loss of communication, separation and divorce contribute to negative attitudes towards school; hence, absenteeism. Another cause for student's absenteeism is the death of a family member when a student becomes an orphan who may not be able to attend school regularly due to a lack of adequate support, guidance and parental love (Mboweni, 2014).

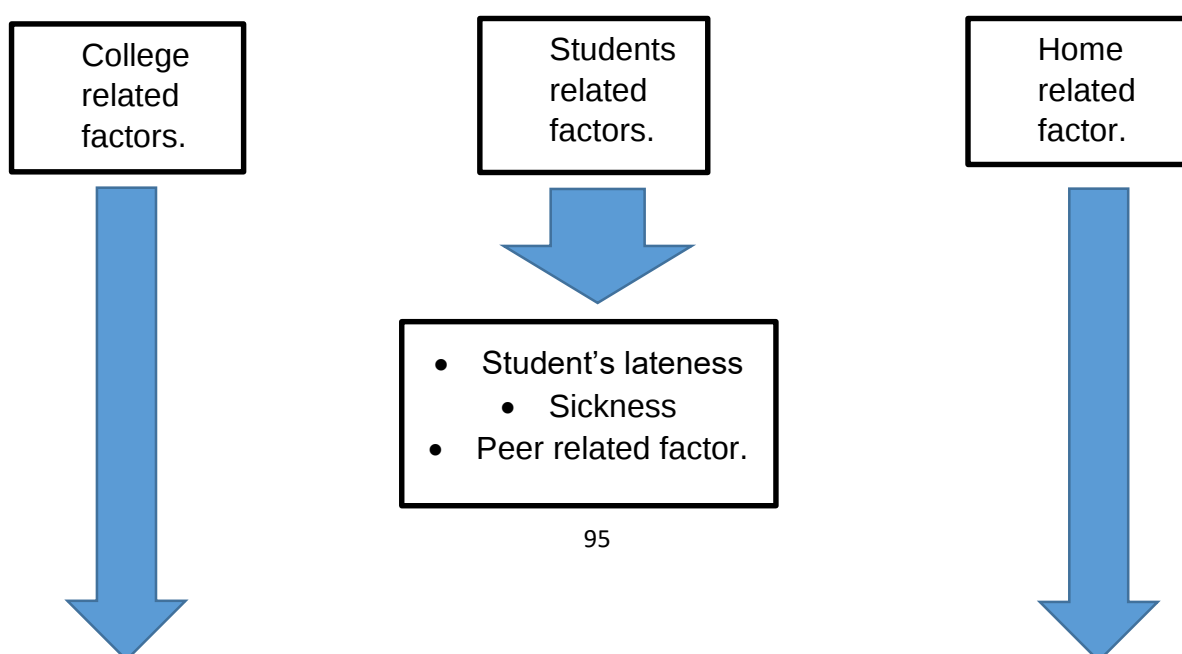
Another category of causes of students' absenteeism is college-related factors. The relationship between lecturers and students should be positive and enabling (Sahin, 2016). According to Wadesango and Machingambi (2011), lecturers need to treat their students with respect and honour as their responsibility as their second parents in a learning and teaching environment. This will encourage students to attend lessons due to the warm relationship between the facilitator and the student.

The poor infrastructure in TVET colleges does not promote effective skills training (Otto, 2016). TVET Colleges lack the necessary facilities to encourage the

students to attend classes. Simelane (2013) asserts that offering practical learning serves to motivate students. Furthermore, some students do not attend college classes because they have a negative attitude towards the individual lecturer, or they do not cope well with the demands of the subject (Mboweni, 2014). This may be attributed to the way the lecturer delivers the subject content, his or her personality or due to a lack of skills and experience in the subject or due to a lack of subject content (Edge Hill University, 2012).

Another reason why some do not attend classes is because they failed to finish the project work or practicals or assignments given to them (Sahin, 2016). In addition, it can be stated that poverty is the key contributor to absenteeism. Students that come from poor families find themselves unable to secure the facilities for college learning, personal care, transport fare, clothing, stationery and lunch (Simelane, 2013). Working part-time as well as studying, can also cause a student to be absent from college, especially students who come from poor, impoverished families or who are orphans (Sahin, 2016). A further reason for not attending classes is that the high cost of education and the inability to pay tuition leads to absenteeism (Simelane, 2013).

Figure 2.1 below outlines the conceptual framework of indicators for TVET students' absenteeism. These indicators include factors causing students' absenteeism and which are categorised as college factors, students related factors, home-related factors, lecturers –student factors, the learning environment, and family factors, social and economic factors as well as policy factors (Mboweni, 2014).



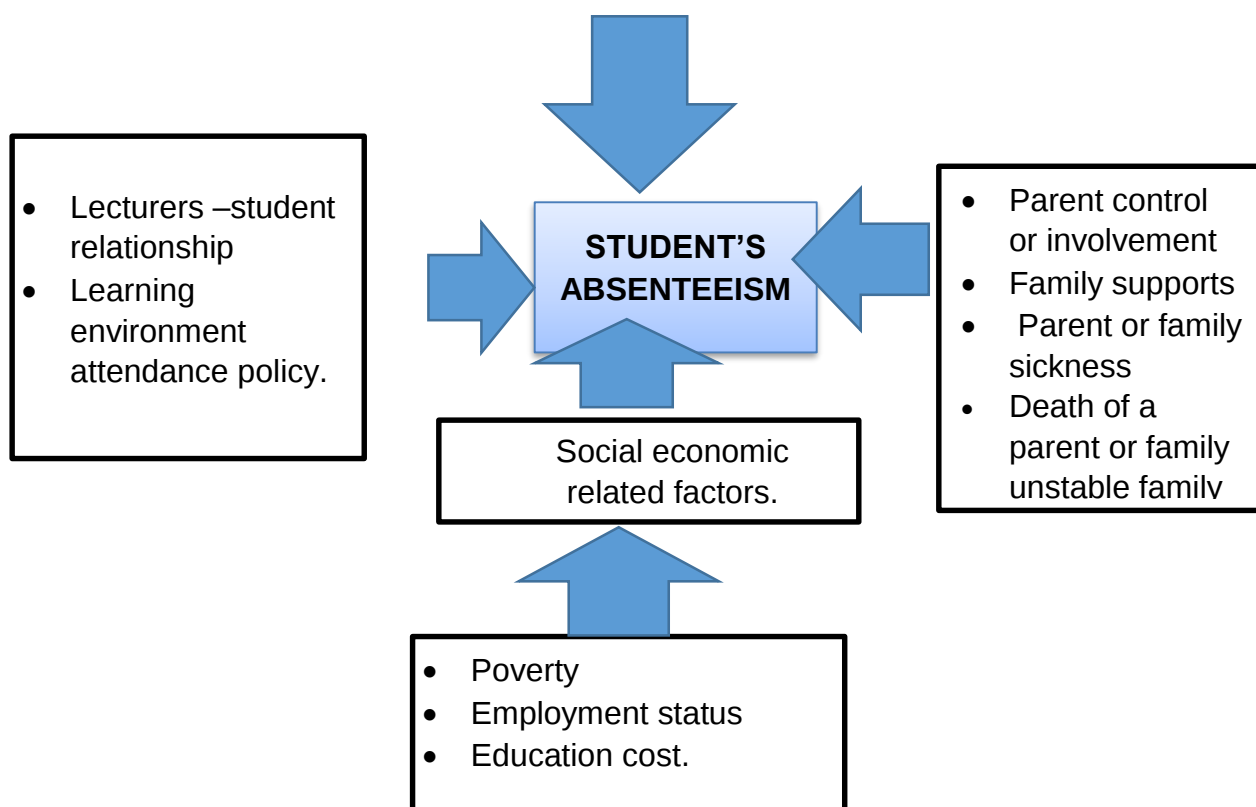


Figure 2.1: Conceptual framework of indicators for TVET students' absenteeism
(Source: Adapted from Simelane, 2013, p.32)

2.12 IMPORTANCE OF STUDENTS' ATTENDANCE AT A TVET COLLEGE

The DHET (2012b) emphasises the need for TVET colleges to keep attendance registers as a monitoring approach to students' learning. Attendance promotes students' learning of concepts for skills acquisition to pave the way for employment, self-employment and further learning (Durborow, 2017). Kelly (2018) asserts that, a class register works as a cautionary tool for the students and is a disciplinary strategy for a student to observe college rules (Modise, 2016). This emphasises that, absence from college should be sanctioned with a penalty for unauthorised absence.

Khalid and Mehmoud (2017) assert that, it is imperative for TVET colleges to devise effective and user-friendly approaches to address students' absenteeism. They are supported by Thobakgale (2013) who alludes to the fact that class attendance is paramount to the success of a student as it affects the academic performance of a student. In turn, Spradlin *et al* (2012) contend that, attendance

also improves the certification and throughput of the college. Regular attendance also helps a student to catch up with college work such as, assignments, practicals, projects and research work,

Colleges should always be vigilant and identify students' absenteeism early enough to be able to control it. Punishment should be attached to absenteeism to counteract the habit of absenteeism. Legislation should be sought for absenteeism for legal reference to the habit in learning institutions and colleges need to involve the parents in the affairs of their children's learning (John Gardner Center, 2016).

2.13 THE NATURE OF SKILLS TRAINING

This is another challenge facing the TVET curriculum, namely that the TVET sector is considered to be uncoordinated and characterised by low-quality training. According to UNESCO (2016), the nature of training is attributed to institutional factors, such as, historical background, low initiatives, and a low level of industrialisation, irresponsiveness, cultural beliefs, norms and traditions that have derailed labour market economies.

The report further advances poor funding, poor communication between training and the labour market, the inability of training to foster self-employment and poor career guidance as other negative factors affecting the ability of an institution to deliver a high-quality service. The principle of TVET responsiveness to the needs of the rural areas entails balancing the labour market demands for specific skills that TVET is unable to offer. The TVET curriculum is believed to be demanding and intensive, hence, pressure is experienced because of the poor timetable scheduling, inadequate and poorly furnished workshops and the lack of industrially trained and experienced TVET lecturers. Although access to universities and TVET colleges has improved, the quality of the teaching and training remains elusive, leading to low progression in terms of certification and the throughput (Blom, 2016).

2.13.1 Training for employment

There is also the perception that the TVET curriculum offering re-regressive training which does not translate itself into employment; hence, trainees find it difficult to get the job for which they were trained. TVET graduates should be able to obtain a good job in line with the training and skills acquired. ILO (2012) defines

a good job as employment that occurs under a set of conditions that include freedom, equity, security and dignity. Furthermore, it is work that falls within the framework that protects the rights of workers who are remunerated accurately and covered by social provisions concerning the distribution of other benefits beyond one's income, such as health, education and welfare benefits respectively. Many TVET graduates are among the NEETS because the training acquired is not commensurate with the required rural skills. This means that the graduates do not possess the requisite employability skills. *Secondly*, the type of training appears to be theoretical in a vocational curriculum. Accordingly, it is a challenge for the curriculum to produce adequately trained students who can easily compete with in the world of employment.

2.13.2 Few industries in rural areas

Many TVET campuses are surrounded by large numbers of unemployed people with few employment opportunities. This is due to the existence of the few industries in rural areas. Some graduates possess skills, but the types of skills possessed are suspect in the eyes of the available employers within those particular localities. A few industries only provide a few opportunities for experiential training, as well as a few chances for experiential learning. Consequently, there are only a few chances of obtaining employability skills, leading to a lack of employability skills that results in a few chances of employment. (ILO, 2016b).

This has compromised the TVET curriculum mandate with regard to addressing the skills shortage gap. There are few industries in rural areas to host students to absorb the TVET curriculum graduates. Many graduates find themselves unemployed due to the shortage of employment opportunities in the rural areas or due to the lack of information on employment opportunities or because of the lack of information. Figure 2.5 below, shows the South African youth employment and unemployment rate between the ages of 15 to 34. The figure shows the total number of employed, unemployed, discouraged and other students who are not yet economically active for April to June 2008 and April to June 2016 respectively. The information in the figure shows a progressive increase in unemployment from April to June 2016. This explains that the TVET curriculum has a responsibility to correct this situation through the training of skills.

Table 2.4: South African youth employment and unemployment, 15-34 years

Labour market category	April-June 2008	April-June 2016
Employed	6517000	6053000
Unemployed	3076000	3636000
Discouraged	756000	1648000
Others not economically active	7907000	8598000
Total	18256000	19936000

Source: South Africa 2016b: Quarterly Labour Force Survey, Quarter 2, 2016, April-June 2016.

2.13.3 Shortage of learnerships and apprenticeships

Learnerships are extremely important to address the skills shortage gap and are short courses with hands-on skills. However, the Department of Higher Education and Training (DHET), Sector Education and Training Authorities (SETAs) and the Department of Labour (DOL) lack a common plan to provide learnerships in an effective way (Gewe & Akoobhai, 2013). Some learnerships provided by SETAs are disjointed and they are not planned effectively in line with the comprehensive TVET curricula, although the SETAs use the facilities and TVET lecturers to facilitate those programmes. As a result, no planned employment and follow-up are achieved. This challenges the TVET curriculum to make a concerted effort to address the skills shortage gap.

2.14 LACK OF WORKPLACE TRAINING

This is believed to be one of the main challenges for the TVET curriculum. Due to poor partnerships and collaboration between TVET colleges and the industry, TVET graduates find it difficult to obtain workplace training during and after training. Needham and Papier (2011) support the notion of the importance of workplace training by noting that practical skills should underpin the training of artisans at a TVET college either through funding by the government, company, partnerships or SETAs. CEDEFOP (2011) defines workplace training as a form of training that takes place in the workplace, usually on the job, under normal operational conditions based on learning by doing and includes a demonstration by a more experienced employee under supervision and coaching, job rotation and

participation in specific projects. It is associated with informal, formal and incidental learning.

Gewer (2010c) asserts that TVET colleges should be connected to the industry for workplace training for a credible skill training programme. For that reason, Magnus *et al* (2013) remarks that all TVET students should be exposed to workplace training through a comprehensive national plan. Workplace training within the TVET sector is administered by two programmes, namely; *work-based experience (WBE)* and *the work integrated learning (WIL)*.

2.14.1 Work integrated learning (WIL)

The purpose of WIL is to:

- Align the TVET programmes closer to the needs of the industry and to assist TVET colleges in establishing college-industry-partnerships.
- Improve and strengthen the TVET students' experience in real work, while studying, presenting them with the opportunity to enrich their learning by linking theory to practice (DHET, 2015b).

Work integrated learning (WIL) is implemented by the Swiss-South African Cooperation Initiative (SACCI) in collaboration with the DHET. Through WIL, lecturers are exposed to new technology and work processes in the industry to enhance their knowledge impacting on teaching and learning. The assessment is prepared to align and comply with industry standards and processes.

2.14.2 Work-based experience (WBE)

The success of a business relies on the ability to secure the services of a skilled workforce. The TVET curriculum should aim at addressing the skills gaps and challenges identified by producing equitable skills. This is assumed to be done by blending both theory and practice through the work-based experience (WBE) scheme. Work-based experience (WBE) is a structure with the DHET and TVET sector which deals with the placement of students in the work environment in different occupations and trades. Students are sent to gain work experience and to learn about practical work ethics, work procedures and are able to relate and subsequently adjust to the workspace in the outside world (DHET, *et al*, 2015b).

This is an extension of work integrated learning (WIL). The aim is to experience the real world of work in a particular profession or industry. During this period,

students are taken through the job-work experience. All the parties in this programme have different roles to play to make the training a success. In other words, the WBE programme works as a laboratory or workshop where students test their acquired skills and abilities under the supervision of an assigned company supervisor. The role of the supervisor is to guide and offer support, train, counsel, assess, award and certify the trainee to generate data on the trainee's achievement.

It is universally recognised that higher levels of educational attainment are associated with better health and well-being, higher employment rates, better opportunities and higher earnings in the skills supply and demand (RSA, 2015b). It should be noted that, most of the TVET lecturers do not have the vocational training to unpack a vocational curriculum as they lack the vocational skills themselves to train students for vocational skills. Accordingly, there is a call for the increased workplace training of workers already in employment in order to improve productivity as well as the overall growth and development of an organisation or a country.

The work-based experience (WBE) proposed in the above excerpt could be used to discuss the career paths of the TVET students. This will help them, gain insight to make informed decisions on their course and programme choices bearing in mind the prevailing labour market demands and the necessity for employability skills. Scott (2015) agrees with the work-based experience aspects by proposing that the transition elements from the classroom to work in any occupation are collaborative partnerships, integrated curriculum, technological advancement, adaptable friendly workers, comprehensive career guidance, work-based learning and a step- by- step approach. The work-based experience offers a student hands-on the-job training for between two to three weeks. Given the above, it is imperative to note here that the TVET curriculum should strive to develop skills in the students based on what is needed in the specific occupations and trades and industries. It is also important to note here that many students who attended Work-Based Experience end up getting jobs in the same companies (Needham, 2017).

CEDEFOP (2015) has found that work-based experience is understood increasingly as a way of acquiring skills. It is argued that, with regard to the 21st century skills, the government, policymakers and employers need to take centre

stage and support initiatives concerning work-based experience and development opportunities for lecturers and other staff so that, they are aware of the needed skills, industry equipment, requirements and technologies. Work-based experience is supported explicitly by various policies, including;

The Skills Development Authority (1998c), National Skills Development Strategy 111(RSA, 2011b), National Development Plan (RSA, 2012), New Growth Path (RSA, 2010) Sector Education Training Authority (RSA, 2018b), The White Paper on Post-School Education and Training: Policy Perspectives (DHET, 2015f), Learning Programmes Agreement and Regulations (DHET, 2015e), New Growth Path, National Skills *Accord* (RSA, 2011c), the Youth Development Accord (RSA, 2013e), the National Youth Policy (RSA, 2014c), (the Strategic Infrastructure Projects (SIPS) (RSA, 2020).

Other policies which speak to this include:

The Draft Turning the Sector into Training Space Strategy (RSA, 2018d), the Decade of Artisans (RSA, 2013c), the National Skills Fund (RSA, 1999b), the Public Services Human Resources Development Strategy Framework (RSA, 2015a), and the Draft DHET Workplace Based Learning Policy (DHET, 2015e), the Skills Levies Act (RSA, 1999a), National Skills Authority (RSA, 2019a) and the National Skills Development Plan (RSA, 2019b).

This entails that industries may send experts who can offer training to the students in TVET colleges, develop training manuals to be incorporated, supervise the training as well as carry out the funding and facilitating in terms of the infrastructure and training centres. Importantly, through a comprehensive national plan, all learners should be exposed to workplace training for practical skills that should underpin the training of artisans at a TVET college either through funding by the government, company, partnerships or SETAs. Accordingly, gaining workplace training and experience increases the learners' employability skills.

2.15 SKILLS MISMATCH

Another challenge facing the TVET curriculum in addressing the skills shortage gap in rural areas, is the skills mismatch that exists between the training and the labour market skills demands. The type of education and training offered in TVET colleges is not commensurate with the labour market demands. What is studied is

different from what is done in the industry. Dasmani (2011) opines that the skills mismatch is the result of the failure of the TVET sector to build strong partnerships and collaborative links between colleges and the industry to upgrade and standardise skills training.

The TVET curriculum largely produces skills that are not aligned with those needed in the industry. This widens the skills shortage gap because the rural youth may have the skills, but the skills they possess may not be compatible with those needed by the industry and are thus not demanded. This is a wastage of both TVET resources and time, creating unemployment and increasing poverty among the rural youth (Magnus, 2013). The TVET sector needs to revise its training manuals so that they are aligned with the aspirations of the industry, and the skills required as prescribed by technological advancement. Furthermore, lecturers need to be exposed to industrial experience in the new technology to have a positive impact on skills training in the TVET colleges. In addition, the students also need to acquire work-based experience during training to get the experience needed in the place of work. South Africa has a greater skills demand than the supply of labour, this is coupled with a skills-mismatch that has slowed the economy growth down.

2.16 POOR FUNDING NORMS

Another challenge advanced against the TVET curriculum is funding. As noted above, TVET is flooded largely by students from poor families, hence, they cannot afford to finance their education themselves. It is recommended that the government should fund students through NSFAS. The White Paper on PSET (DHET, 2013e) is an escalation of the Green Paper (RSA, 2012d) whose aim is to improve the quality of skills training in the TVET sector through appropriate programmes, capacity building, continuous professional development, good governance, improved learner support, information technology systems, partnerships with major stakeholders, and improved funding.

Poor funding results in low-quality training, poor infrastructure, poor staffing, poor equipment and machinery, translated into poor curriculum development. Thus, TVET graduates do not acquire adequate training due to the lack of facilities brought about by the poor funding norms. However, the government has invested 2.5 billion Rand to recapitalise and revamp the TVET system, but still, it is not

enough. This money is designated for accommodation, meals, transport and tuition for students. The African Union Report (2012) notes that, despite all this, TVET has failed to offer the necessary skills training to the students to fight the skills shortage, unemployment, poverty and inequality in Africa.

The above discussion above identifies funding as a major challenge to the TVET curriculum in attempting to address the skills shortage gap. Consequently, it is recommended that the funding of DHET funding norms be reviewed. Figure 2, 6 below shows the sources of funds for the TVET curriculum for the year 2013. Figure 2.6 also indicates that the sources of funding are categorised as NSFAS (20%), directly from the DHET (60%) and other sources (15%) possibly from the partners and NGOs and NSFAS billing (5%).

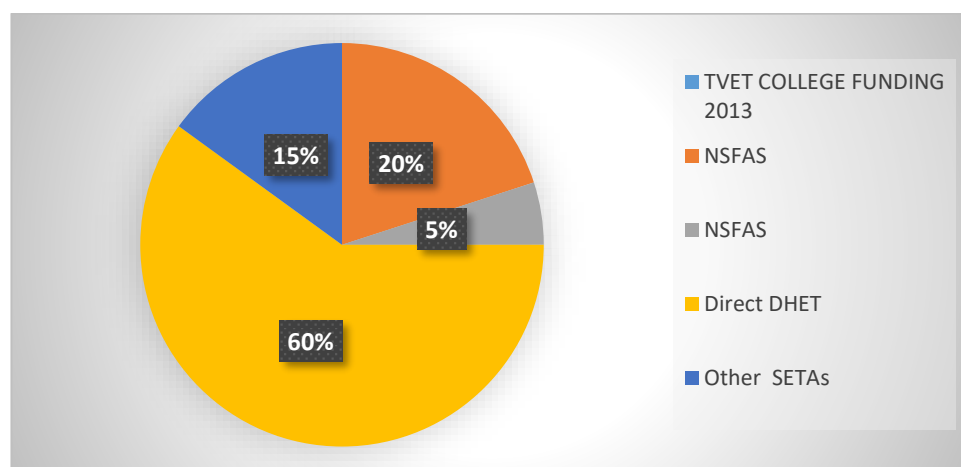


Figure 2.2: TVET College funding, for the year 2013

Source: DNA Economics, 2015, p, 11 from National Treasury 2015

The following diagram shows the expenditure estimates for post-school education and training for the period of 2014/2015.

Table 2.5: State post-school education and training expenditure estimates: 2014/2015

Government source	Amount in Rands	Percentage
NSFAS	8961429	22%
DHET Transfers to TVET Colleges	5827173	14%
DHET Transfers to Universities	24155093	59.%
Community Colleges	1731890	4%
PSET Institutions 9incl.) DHET	426536	15
Total	41102121	
State PSET expenditure as % of total PSET expenditures	55.56%	
% of the total of tax revenue	4.17%	

Source: DNA Economics (2016, p. 5) based on various sources of information

2.17 SHORTAGE OF RESOURCES

Many of the TVET colleges lack adequate resources for teaching and learning, such as, libraries, computer laboratories and workshops that are stocked moderately with outdated resources/ facilities. The Global Monitoring Report, UNESCO (2010a) identifies learning resources as an important dimension for quality in the learning process. The poor performance of the skills system is partly because of the result of the general failure to improve vocational education and training with regard to the resources, capacity and quality. Most importantly, the stakeholders (employers) do not seem to offer to support the TVET curriculum training. This is based on the assumption that TVET colleges do not have the capacity regarding facilities, infrastructure and resources to offer competitive and high-quality skills training in the employment world.

Resources are classified as intangible and tangible resources that include training manuals, materials, training equipment and the facilitator's materials. Intangible resources include the lesson time, the facilitator's skills, knowledge and experience. Moreover, resources facilitate the memory, interest, concentration,

participation, motivation and the activeness of students during the learning process. Importantly, the skills training in the TVET curriculum should harness the information in the learners' domain from the community, internet and imagination to help students internalise the learnt concepts (UNESCO, 2010a).

UNESCO (2010b) argues that the availability of a wide range of teaching materials, equipment, supplies and various forms of printed media for lecturers and learners is critical to facilitate learning. Resources are significant tools that can be enhanced in the teaching process. Thus, learning resources are extremely important in the implementation of the TVET curriculum.

2.18. POOR INFRASTRUCTURE

Infrastructure is a wide spectrum involving tangible and intangible items. In this case it refers to workshops, library, equipment, machinery, systems, research and development. It also refers to personnel, consumables and other variables within the TVET band. It has been found that the infrastructure in the TVET sector is not viable for facilitating the objectives for the TVET curriculum. It is assumed that the infrastructure is inadequate, outdated, and irrelevant with regard to skills training within the curriculum, is not commensurate with the work requirements in the employment world. Accordingly, Lolwana (2010) concurs that the challenges facing the TVET curriculum in addressing the skills shortage gap include poor infrastructure and poor throughput rates.

Therefore, the TVET curriculum needs to provide, improve and modernise its infrastructure to comply with the standards of the employers. The DHET (2012b) agrees that TVET colleges need to address the social and cultural legacies of apartheid. Furthermore, the DHET (2013a) asserts that the tools, machinery, equipment, the shortage of workshops, and the nature of training within the TVET Colleges should be addressed.

In the same perspective, Afeti (2013) notes that efforts need to be made to coordinate and manage TVET better in order to realise its position in the economy. This remark indicates that attention must be paid to the infrastructure for credible and effective skills training within the TVET curriculum.

2.19 POOR PARTNERSHIP AND COLLABORATION

In the education system, successful skills development requires teaching to be dispersed in accordance with high standards and must also be responsive to the needs of employers and must offer student flexibility in line with the new requirements. This indicates that firms that train their workers are able to articulate to the education system with the skills they need. With regard to the labour market, successful skills development requires institutional and regulatory bodies to ensure that skills are rewarded in the labour market. This implies that for any effective development, stakeholders have to work together. Accordingly, TVET colleges are destined to play an important role in developing middle-level skills with regard to the youths. Therefore, partners within the TVET curriculum ought to play a collaborative role in partnerships for high-quality skills training.

The HRDCSA (2014) advances poor partnership as a challenge facing the TVET curriculum in addressing the skills shortage gap. This is revealed by the unclear pathways for employment, self-employment or further learning. The NSDS111 (RSA, 2011b), recommends the need for TVET partnerships with all the stakeholders cognisant of the fact that a well-functioning skills development system requires timely coordination and collaboration by all the key stakeholders.

In the same way UNESCO (2012a), believes in sustainable local and international relationships or partnerships within the TVET sector to adopt good practices for ensuring successful labour market outcomes and quick employment for graduates. In supporting the argument, the RSA (2012) also stresses the building of partnerships between TVET colleges and industry to ensure the quick absorption of college graduates in jobs.

This implies that all stakeholders have to organise themselves to provide an input regarding which skills are needed and how to develop their standards and curricula. If this is not done, then education cannot be blamed for producing incompetent workers who are irresponsive to the labour market. The education system has a key role to play in leading the reform through dialogue for better skills development and partnerships.

2.20 POVERTY IN RURAL AREAS

The significance of the TVET curriculum lies in the fact that its aim should be to provide the programmes intended to produce trained personnel in specific rural skills requirements to become contributors to development in their designated rural areas. Rural students are so poor that they cannot afford transport to the colleges because of the distance they have to travel. Furthermore, many students cannot afford the tuition fees, especially those who do not qualify for NSFAS.

Poverty prevents students from accessing high-quality education and subsequently, high-quality skills training. It also manifests itself in absenteeism, dropping out, poor academic performance, and the inability to afford tuition and transport to the colleges, especially those students who may not qualify for NSFAS. In general, poverty affects attempts by the TVET curriculum to address the skills shortage gap.

ILO (2013) affirms that, worldwide, the rural population experience, poverty, unemployment, unhealthy, malnourishment, marginalisation and oppression, a lack of information, poor services, and inequality, among others. Poverty is assumed to be caused by acquiring inappropriate skills training, high rates of unemployment, few of industries in rural areas to offer employment to TVET graduates, the lack of information on employment opportunities and the lack of connections. Historically, poverty in rural areas was exacerbated by apartheid through the rigid land tenure system, designated settlements and unfavourable labour policies. It is believed that any meaningful national skills development plan should address rural development by setting clear rural development strategies and policies where education and training are pivotal.

Aliyu (2013) argues that, economic growth does not necessarily lead to poverty eradication. ILO (2010b) agrees with Aliyu (2013) that many countries have attained economic growth despite the pervading incidence of poverty and unemployment. The TVET curriculum needs to provide high-quality and relevant education and training regarding the development of skills and knowledge that meets the different needs of all the people to foster employment and subsequently, fight poverty. Importantly, South Africa is committed to the Millennium Development Goals (MDGs) to address poverty and unemployment through TVET education and training.

A rural skills development strategy should therefore be designed through the TVET curriculum to address poverty through education and training to bridge the gap between the so-called first and second economies where the former is living in extreme wealth and the latter in abject poverty. Despite all the efforts to address the skills shortage gap, northern Kwa-Zulu Natal remains challenged, hence, the aim of this research was to investigate the challenges facing the TVET curriculum in addressing the skills shortage gap in Northern Kwa-Zulu Natal.

2.21 LACK OF ADEQUATE STUDENT ACCOMMODATION

Most TVET colleges have no dormitories for students. Even those colleges that have dormitories, they are poorly furnished for study purposes. Furthermore, dormitories have no shutters, tables and chairs, comfortable beds, good ventilation, or sufficient capacity to accommodate the students. This is a challenge as students from distant areas cannot access these dormitories. *Secondly*, colleges set up a qualification criterion for accommodation that excludes some students as only NSFAS funded students can access dormitories. Accordingly, dormitories are a challenge for the TVET curriculum in that students who do not qualify and do not have money to secure off-campus accommodation in terms of rental accommodation or students who come from far are not catered for. This challenge leads to absenteeism and dropping out because of poor academic performance that subsequently, has a negative impact on the certification and throughput.

Another challenge identified for the TVET curriculum is the low level of involvement by students in college activities, such as co-curriculum activities and general learning. As discussed above, students seem to be bored and pretend to be busy with other things when it comes to participation in extra-mural activities. It is interesting to note that research findings indicate a strong correlation between participation in extra-mural activities and academic performance. Ng'ethe (2010) indicated that, students' active participation promotes academic competence. Participation motivates students and keeps them occupied in the learning environment. Accordingly, the lack of participation creates uncertainty among students and, ultimately, this causes anxiety that can present challenges for students that are not fully engaged in their learning processes.

2.22 NATURE OF ENROLLED STUDENTS

TVET is considered to be a second choice education programme due to the historical education landscape in South Africa, as well as its weakness and fragmentation. In this regard, TVET students are regarded as second-class learners, and they are widely believed to be drop-outs, who have failed to succeed academically. Enrolment is believed to be dominated by academically poor students who failed to gain admission to universities (Gewe 2014). Ayonmike (2013) asserts that some universities in Nigeria set a low entry mark for university education to provide the majority with an opportunity to receive a university education. Consequently, those who enter TVET education have failed completely to attain even the lowest marks. Therefore, the enrolment policies and programmes should be change.

The DHET (2017) posits that (90%) of the 650419 students enrolled at TVET colleges are poorly performing Blacks that mostly come from disadvantaged schools. Criteria such as performance, race, gender, income and background should be abolished and replaced by accessibility and inclusive participation in post-secondary education. There are a variety of students that come from different academic backgrounds, different abilities and different cognitive levels and life experiences for the same study materials and lecturers. This compromises the standards and approaches to skills training on the same level.

2.23 LACK OF BASIC INFORMATION

There is no well-functioning labour market structure to provide detailed data on the skills demand and supply with regard to the TVET system. Accordingly, TVET colleges are required to ensure that students have access to information about the up-to-date labour market trends in the job market. Wilson (2013) mentions that the skills training offered by TVET is not backed up by information on how graduates can access employment after completing their education and training. There is little linkage between the providers, the industry and the training itself. According to Freiburg (2010), the lack of basic information creates a gap for TVET to attain its objectives. Therefore, the Department of Higher Education and Training (DHET), the government and other partners should work closely to develop a labour market information service to help meet these requirements. The TVET curriculum ought

to meet the skills needs of the industry by taking centre stage in information technology.

2.24 POOR MANAGEMENT OF STUDENT SUPPORT SERVICES (SSS)

The Student Support Services (SSS) is one of the highlighted challenges with regard to the TVET curriculum. In effect, the Student Support Services (SSS) should be conceptualised to be at the centre rather than the peripheral margins of the TVET core business of learning and teaching (Hendricks, 2011). Student Support Services (SSS) works as an ecological perspective which helps students to fulfil their academic desires.

Upon entry into a TVET college, Student Support Services (SSS) should offer comprehensive induction to new entrants covering the whole TVET college system. Apparently, the induction offered lacks the integration of salient topics, including effective career choice. Young people are required to make well-informed choices regarding their investment in education. A career choice that will make job satisfaction relevant to the labour market and their aspirations. Career choices are imperative for students because they determine their future lives

The quality of higher education depends on the Student Support Services (SSS). If a college or university cannot provide high-quality Student Support Services (SSS) to its students, teaching and learning become malfunctional. It is also important for the students themselves to become aware of their rights and responsibilities, and what could hamper their learning ability and performance. The DHET (2018), explains that the Student Support Services (SSS) was created to empower and manage students' affairs, needs and aspirations, career guidance, career choice and counselling to students to be able to achieve their predetermined goals into college life.

The Student Support Services (SSS) comprise a cluster of facilities and activities that are provided to make the process of learning and teaching easier and more interesting, motivating, personally diversified and gratifying for every individual college or university student. This structure serves as an interface between the learner and the college and the conceptualisation of the Student Support Services (SSS) is to make higher education learning "*student centred*." It is important to note that the Student Support Services (SSS) comprises functions that support

students in higher education to enhance their academic and personal growth as well as their holistic development. The components of the Student Support Services (SSS) include academic services, admissions, enrolments, induction, and examination assistance, bursary funding (NSFSA), alumni, orientation, students' unions, movements, clubs, associations and career guidance. Other components are counselling, recreation, health and wellness. For example, on HIV/AIDS, drug abuse, hygiene and sanitation, disability support and inclusion, sports, residence, life skills like entrepreneurship skills, computer assistance, study forum and personal assistance. Students' Support Services (SSS) are specialised functions that are not typically related to education systems. They are non-educational services needed to improve the quality and effectiveness of teaching and learning activities through guidance and counselling on a personal and academic level (Steyn, 2014).

The Student Support Services (SSS) strive to provide all the necessary support and development to ensure that the students' time spent at college is fulfilling and gratifying. In addition, the Student Support Services (SSS) foster inclusive education and training, access, affordability and bursary funding through the National Student Financial Aid Scheme (NSFAS) (Motheo TVET College Prospectus, 2015).

The Student Support Services (SSS) should be a comprehensive function within the TVET curriculum to provide assistance with regard to the overall needs of all students to produce a holistic learner. The Services of Student Support Services (SSS) in a TVET sector is divided into three domains, namely, selection, learning and employment, which are below:

- The domain of selection deals with the placement of students in appropriate programmes. It consists of students' induction programmes regarding the structural, academic, and procedural functions of the TVET sector. During this period, students are issued with a code of conduct and other related literature on students' concerns.
- The second domain is learning. This is the active level of a TVET student involving offering personal guidance on academic matters, personal issues including tutorial systems, learning support, library use, monitoring, feedback, job readiness and orientation. Guidance is also given on links with the industry

and employers, life skills, guidance and counselling, and in the form of offering education on health issues such as drug abuse, sex, hygiene and wellness and the administration of bursary funding (NSFAS).

- The last domain is after the college life of a TVET student. It is urged that, Services of Student Support Services (SSS) are obliged to monitor the student up until employment, self-employment or further learning.

TVET colleges are obliged to facilitate work-based experience (WBE) for graduates to gain practical experience of what they have learnt in the college as well as securing employment for them by making links with the partners, employers and government. Unfortunately, the logistics do not warrant the structures to do so due to a number of challenges as discussed in this study.

Upon the students' entry into a TVET college, Student Support Services (SSS) should offer comprehensive induction to new entrants covering the whole TVET college system. Apparently, the induction offered lacks the integration of salient topics, including effective career choices. Young people are required to make well-informed choices regarding their investment in education. A career choice must be made that will bring job satisfaction and that is also relevant to the labour market and students' aspirations. Career choices are imperative to students because they determine the futures of students.

Firstly, TVET students do not appear to have a clear conception of what it means to take a vocational course. *Secondly*, there are a large number of students enrolled amidst poorly staffed Student Support Services (SSS) office. *Thirdly*, a large number of topics have to be covered within a short time. *Fourthly*, some Student Support Services (SSS) officers are not well trained. *Fifthly*, induction is believed to be a sham and window-dressed. *Lastly*, there is inadequate funding for the office of Student Support Services (SSS) to outsource service providers. All these aspects impact on the ability of the TVET curriculum to address the skills shortage gap as an immense vacuum is created that has to be filled with regard to the psychological, personal and academic domains of an individual student.

2.25 POOR CAREER GUIDANCE

Career guidance and support services provide information on learning programmes, education and training providers, qualifications and job

opportunities. One of the most important milestones involves making a career choice because the choices made will have a lasting impact on someone's life as well as his/her professional life.

DHET (2011) highlights "that, academic achievement by students is likely to take place in an environment where there is support in terms of correct programme choices," proper orientation and academic support. For this reason, the skills development system should dedicate massive resources to support career guidance in vocational training. On the other hand, Chabane (2011) indicates that career guidance was useful for assisting students in making informed career choices. Regarding international perspectives, some countries such as, Denmark, have legalised career guidance by defining the need, context, scope and content for career guidance.

Gewer (2010a) notes that the problem of students' readiness is caused by a lack of proper career guidance and student support services and the composition of classes. In their study, Carrey-Butler and Myrick-Harris (2014) found that students' decisions to continue or withdraw from colleges depend on their successful academic integration within the class. Gamble (2013). avers that "Teaching requires much more than knowledge and the desire to teach," but also requires a solid grasp of motivation techniques, leadership and conflict resolution skills, human psychology and the ability to think on one's feet (Gamble, 2013, p. 226-227). Mwamwenda (2014) posits that counselling may be given, but the final decision has to be taken by the student. Importantly, career guidance helps students to find out which career choices to make that will complement their personal vision in life, their career options, their potential occupational field and employment.

2.26 PERSISTENT UNEMPLOYMENT

Another challenge facing the TVET curriculum in addressing the skills shortage gap is the extensive unemployment of TVET college graduates. Unemployment among the rural youth was higher in 2014 than before the financial global crisis affecting many young people, especially women (ILO, 2015a). There are few industries in rural areas coupled with inappropriate skills acquired from the TVET College amidst the confusion of the qualification and curriculum content in the eyes of the employers. There is also a lack of information on employment opportunities

and lack of experiential learning. The supply is in surplus against the minimising technological and experienced labour demands available (Yates, 2011).

Rural areas experience high levels of unemployment, and this is a major threat at personal, social and economic level of a country. The high levels of unemployment increase inequalities. The challenges are how new jobs will be created to absorb unemployment. Over two-thirds of the total population of rural youths under the age of 35 are unemployed (ILO, 2013). Vally and Motala (2014) argue that there are many jobs available if the needed skills and applied competencies are available. In turn, Cosser (2010) alleges that, 2/3 of the TVET graduates are unemployed or economically inactive. Gewer and Akoobhai (2013) believe that, being a college graduate does not guarantee employment because employers prefer high achievers and are not amenable to hiring TVET graduates. *Secondly*, there is no structure that administers the demand and supply data for skills. *Thirdly*, the pathways for the TVET curriculum are not critically clear (HSRCSA, 2010).

Álvarez-Galván (2014) argues that the challenge of unemployment among the youths in rural areas must be resolved by implementing effective vocational training programmes to increase the likelihood of a career. This can be fostered through linkages and partnerships by training the youths in the necessary knowledge and skills for employment. In his study, Mncayi (2016) highlights, among other factors the fact that TVET graduates lack the dynamics of the labour market knowledge and self-confidence resulting in unemployment. He elaborated that many of the TVET students live in rural areas where there are few or no employment opportunities. The Council for Higher Education (2016) supports this assertion by Mncayi *et al* (2016) and that the lack of connections to employment opportunities creates unemployment.

The NSDS III (RSA, 2011b) notes that, there is currently no institutional mechanism that provides credible information and analysis with regard to the supply and demand for skills. Chabane (2011) holds that the lack of hard data in South Africa on the TVET system makes it difficult to understand which skills are required for employment, the most promising practices that prepare the youths to become productive citizens and employees and how to identify those programmes, is a challenge. The significance of the TVET curriculum should be to provide

programs intended to produce trained personnel in specific rural skills requirements to become contributors to development in their designated rural areas. Table 2.2 below reveals the unemployment rates in Kwa-Zulu Natal, where most of the district is comprised of poor rural areas where communities and prospective students experience various socio-economic challenges.

Table 2.6 Unemployment rates in Kwa-Zulu Natal

Province/District/ Municipality	Labour market		Labour market	
	Unemployment rate		Youth unemployment rate (Population aged 15-34)	
	2001	2011	2001	2011
Amajuba	55.3	39.1	65.4	50.3
Ilembe	48.0	30.6	55.8	37.2
Ethekwini	43.0	30.2	53.1	39.0
King Cetshwayo	50.3	34.7	59.4	44.4
Ugu	52.3	35.2	61.8	45.1
Umgungundlovu	46.3	30.4	55.6	39.5
Umkhanyakude	62.8	42.8	69.9	51.2
Umzinyathi	62.5	36.6	70.6	45.6
Uthukela	58.8	39.6	67.7	49.3
Sisonke	56.9	30.6	65.7	44.4
Zululand	60.8	41.1	69.2	51.2
Kwa-Zulu Natal	49.0	33.0	58.4	42.1
South Africa	41.6	29.8	51.1	48.9

The constraints with regard to skills development in rural areas, can be traced to the creation of the homelands in rural areas preceding the enactment of certain unfavourable laws. *Secondly*, structural unemployment has affected the economy whereby some people lost their jobs, and they are now busy looking for jobs in other sectors, for which they do not have the requisite skills. Technological advancement, as a result of the emergence of the knowledge economy and the

effects of globalisation require new skills. This has to be considered against the backdrop of the poor quality of the training with regard to TVET programmes and the skills mismatch (The National Advisory Council on Innovation (NACI), 2014).

Rural areas are dominated by agricultural activities that affect the planning of other development activities. All the plans, research and strategies seem to be tailored towards agriculture: disregarding the existence of other industries, such as, mining, fishing, clothing and textiles, manufacturing and tourism and hospitality (StatsSA, 2011).

2.27 POSSIBLE WAYS OF ADDRESSING THE SHORTAGE OF SKILLS IN RURAL AREAS

Education and training are imperative for addressing the challenges of the past through the TVET curriculum by empowering the rural youth with the necessary skills to create employment. It is believed that 43% of the people in South Africa as well as three -quarters of the population in developing countries, live in rural areas (StatsSA, 2012).

Rural development encompasses poverty reduction, job creation, increasing productivity, improving basic services empowering rural people, developing the infrastructure, engaging in constructive and focused planning, discovering the potential of the rural people and rural areas to make them active contributors to economic growth and development (Gewer, 2014). This can be attained by providing rural areas with strategic alternative education and training through a transformed TVET curriculum. Accordingly, the rural development strategy can transform the social, economic and technological fabric of rural people. A rural development strategy entails the growth, evolution and advancement of rural areas and rural people.

In any development strategy, individuals need the knowledge and skills to be able to adjust to changes, hence, education and training play an important role in this regard. Considering the above characteristics of rural areas, the partners of the TVET curriculum have to address these challenges by developing a rural skills development strategy through education and training as partners in economic development. A great deal of potential has been identified in rural areas regarding the available resources in the form of manpower, minerals, tourism, land,

entrepreneurship and industrialisation as well as human capital (youths). In other words, rural development is an integrated approach to rural areas and their people through the optimal development, the utilisation of local physical, biological and human resources to bring about institutional, structural and attitudinal changes.

As a process, rural development uplifts the rural people through education and training via the TVET curriculum, and by empowering them with the necessary skills to be able to face the challenges of earning a livelihood in their areas. It should be noted that the historical misfortunes that have befallen rural areas of Northern Kwa-Zulu Natal, are attributed to the apartheid regime which created a first-class capitalistic class. Rural areas are plagued by a shortage of skills, abject poverty and unemployment, which can only be addressed through education and training.

Once these challenges are addressed, rural areas are poised to play an important role in the national economic development in the 21st century development state as they encompass a vast pool of resources. At the same time, transformation can help to heal the scars left and to bring new hope. Shaw (2011) comments that the rural area development focuses on people in the community and the impact on their society and environment. Economic development is seen as an imperative that determines the transformation of people's lives and education and training must take place through the TVET curriculum. The question to ask here is, what kinds of skills are needed for rural people to succeed in life, transform the rural areas and for the people to be transformed? Specifically, which skills (curriculum) should TVET colleges offer to rural people in rural areas?

It is important to note that, since 1994, the government of South Africa has attempted to develop rural areas through many declarations, visions, policies and frameworks, which states that, "rural development is every one's business" but little progress has been made in this regard (RSA, 1997). The TVET curriculum is also faced with a number of challenges that limit its attempt to address the skills shortage gap. Accordingly, the aim of this study is to investigate those challenges and to propose new possibilities for the TVET curriculum to fulfil its purposes better. This will be done through the conclusions that are reached as well as the recommendations based on them for all the partners of the TVET sector with a special focus on the DHET and the government

2.28 CONCLUSION

The TVET curriculum is placed at the fulcrum of skills development. The need to skill the youths who are unskilled, uneducated and unemployed (NEETS) is based on the aim of integrating them into the inclusive civil and economic society. Accordingly, a TVET development model and strategy must be designed to produce skilled workers for the development of the rural areas.

The TVET sector needs to address many challenges that include the poor infrastructure that needs rehabilitation and reconstruction, such as buildings, as well as the lack of modern workshops, rooms, equipment and facilities, inadequate funding, ineffective policies and legislative frameworks. Other challenges to address are the nature of the curriculum content, the lack of trained vocational lecturers, inadequate teaching materials, inadequate and poorly facilitated dormitories for students, transport problems for students who come from far, the inadequate TVET curriculum and poor institutional linkages between the TVET and the rest of the partners (Baatjes, 2014).

In this chapter, the researcher has discussed the main concepts of the study with special reference to the skills shortage gap and the challenges facing the TVET curriculum. In the next chapter, the theoretical framework underpinning this study will be presented.

CHAPTER THREE

THEORETICAL FRAMEWORK

3.1 INTRODUCTION

In Chapter two, the related literature regarding the TVET system, skills shortages, skills shortage gaps, skills development and the challenges facing the TVET curriculum were discussed in detail. The literature also conceptualised and contextualised the TVET curriculum, education and training, education for sustainable development and rurality. In addition, the literature focused on how they are related to addressing the skills shortage gap in the rural areas with an emphasis on Northern Kwa-Zulu Natal. In this chapter, the theoretical framework underpinning this study, namely the human capital theory will be discussed.

The purpose of a theoretical framework is to guide research decisions. A theory propounds itself as the orientation for collecting data based on the assumption that the elements of a theory are logically interrelated, hence, a theoretical framework serves as a lens to formulate theories that guide the study as conceived by the researcher. Just as the house has a structural design, the theoretical framework serves as a research design for observations and interpretations of concepts as well as definitions. In effect, a theoretical framework is used to pre-empt the ideological position of the study results, within the framework of the discussion, thereby, impacting on the research methodology as well as on the interaction of the researcher with the research respondents (Van Zyl, 2011). The theoretical framework, therefore, discloses the methodology, theoretical perspectives and epistemology underpinning the research and provides the organisation of the study and maps up the interpretations of the results.

Importantly, a theoretical framework is used to provide an understanding of or give meaning to the interconnectedness among the variables that may impact on the outcomes specified emanating from the research focus, design, structure, presentation and publication (Eckardt, Skaggs & Lepak, 2018). Thus, the importance of the theory depends on the degree of research based on the evidence and the level of its development. The theory should therefore be appropriate and should be interpreted logically, with a clear understanding, and should be aligned to the critical research questions (De Vos, Strydom, Fouchè, & Delport, 2011). As a researcher investigates the topic of the study through different

methods, a theoretical framework works as a blueprint for the entire dissertation inquiry providing the description of the philosophical, epistemological, methodological, and analytical aspects of the study, at the same time providing the organisation of the study and mapping up the interpretations of results. The study adopted the theory of Human capital referring to Schlutz (1961) and Becker (1975) as the main theorists.

The theory of human capital was adopted in this study as an impetus to describing human beings in their nature as a resource like other factors of production like land, water and finance. *Secondly*, it is believed that, human capital controls all other factors in the production process. *Thirdly*, human capital is renewable, adjustable, transformable, trainable, adoptive, developmental and dominant.

The genesis of human capital theory dates back to neo-classical economies and which was later developed into a scientific theory. Classical proponents of the human capital theory hold the argument that human capital is an important factor for national economic growth (Becker, 1993). Schultz (1961) conceptualised human capital as “*something akin to property*” arguing that human capital transcends all other factors of production such as, land, machinery, equipment. According to Schultz., Gott, Blaylock and Zuazua (2018), skills and knowledge are embedded in an individual as stock or piles of intangible wealth to produce economic benefits. To realise economic gains, education and training is a key factor that can be attained through learning institutions.

3.2 BACKGROUND

The researcher investigated the challenges facing the TVET curriculum in addressing the skills shortage gaps with regard to TVET graduates in rural areas in Northern Kwa-Zulu Natal, hence, the theoretical framework served as the blueprint for the entire dissertation inquiry. In this study the researcher employed the *human capital theory*. The study explored the belief that, *human capital* can be increased through higher education and training to promote access to a range of skills and knowledge, while promoting lifelong learning and economic security for communities.

The theory was grounded in macroeconomic development theory back in the 1950s when the focus fell on land, labour, management and physical capital against peoples’ capabilities as a resource in the production process. Importantly,

the human capital theory has its roots in the industrial revolution and the philosophy of productivism and was promoted by researchers like Becker and Schultz.

Accordingly, the human capital theory posits that, an educated nation boosts economic growth, hence, a country ought to invest intensively in human capital development by investing in its educational system. In this regard, the national and educational policies have to facilitate education and training, because a civilised populace is a developed nation. Besides skills and competencies, ideas, values, attributes and aspirations, are transmitted through education and training. Borjas (2013) asserts that the most important asset in development is the investment in human capital development through education and experience.

Human capital (people) must be trained, educated, developed and maintained within the system of an organisation for the purpose of enhancing productivity and the expertise of its workforce. Significantly, investment in human capital leads to greater economic outputs. Therefore, Modern economists seem to concur that, education and health care are the keys to improving human capital and ultimately increasing the economic output of the nation. In so doing, the skills shortage gap is explicitly addressed (DHET, 2012a).

Through the acquisition of knowledge, skills and abilities, education and training improve the employee production and performance of the organisation. According to this approach, the TVET curriculum is perceived to play a fundamental role in providing the necessary human capital required by the industry (Tikly, 2013). Development financial institutions such as the World Bank have been advocating policies to promote a TVET curriculum that invests in human capital as a means of supporting economic growth (World Bank, 2015).

In this case, the government has to develop skills through the TVET curriculum to address the skills shortages gap in rural areas. The human capital theory focuses on competences, knowledge, and personality attributes of a worker to produce economic gains for the individual and the business (NSDS 111) (RSA, 2011b). Powell and McGrath (2014) propound that human capital is largely framed within the TVET curriculum. However, we need a broader perspective that explains human development. Powell (2013) contends that there is no single clear definition

for TVET. His contention is supported by the fact that TVET is an amalgamation of many different people with different aspirations, educational backgrounds, ages, and races.

TVET involves private and public as well as secondary high schools that offer vocational training. In this study, the researcher limited himself to public TVETs in the public domain that prepare students for employment and self-employment and helps them to become productive in different occupations and trades (DHET, 2012d). With the growing number of youths and their demands, the capacity for delivering a demand-driven training service in the TVET curriculum remains a challenge with regard to supplying a large enough skilled workforce with technical abilities and professional skills (Maclean & Pavlova, 2013).

The role of TVET dates back to the historical imperatives of the labour and skills structures of South Africa, in conjunction with the post-apartheid era effects as set out in major policies such as:

- The RSA (1994), Growth Employment and Re-distribution (Michie & Padayachee, 1998), National Development Plan (RSA, 2012), New Growth Path (2011c), Industrial Policy Action Plan (RSA, 2011e), HRDCSA for South Africa 2010-2030 (2009), the National Skills Accord (RSA, 2011c), National Skills Development Strategy 111 (RSA, 2011b), DHET (2012d), DHET (2012a) and DHET (2013d).

The role of the TVET sector with regard to rural areas is to provide education and training to rural students to acquire specific skills, knowledge and applied competencies in line with rural development (NSDS 111), (RSA, 2011b).

For a long time, TVET has been aligned to industrialisation and economic development, thus, many policies have been dominated by economic representation. However, UNESCO (2012a) holds that the current situation, tools and policy approaches to TVET are not effective in addressing the present and future skills shortage challenges in the rural areas.

Efforts have to be made to investigate the TVET curriculum and assess how relevant, responsive and diversified it is for the skills shortage challenges of the world of work. Consideration has to be given to sustainable development, education for sustainability, equality, accessibility transformation and

comprehensiveness with regard to the skills supply and demand of the 21st century and the industrial revolution.

Accordingly, the government and all the stakeholders need to make concerted efforts to re-align the TVET curriculum for rural areas to reflect the prevailing conditions and circumstance for rural areas. In this way, education and training for the rural youth has to be designed in accordance with their societal setting. In effect, the rural youth should be trained in skills that reflect the economic traditions of rural areas considering the impact of globalisation on accommodating the global competitive influence on the labour market with regard to the 21st century skills. Conceptualisation of the challenges will add value to an understanding of the challenges faced in providing the necessary vocational skills to the rural youth within the description of their social and economic settings (McGrath, 2012). This is affirmed by Edighji (2010) who stresses that the TVET curriculum is pivotal in addressing the skills shortage gap in the rural areas.

This explanation focuses on the role played by education and training in addressing the skills shortage gap. Education imparts skills and knowledge, values, attitudes to people to be able to change their environment with their manipulative abilities (McGrath, 2011). The skills acquired open the gates for economic growth and development for both the individual, company and nation. Hence, the economic assumption that any country that needs to stimulate economic growth, needs to invest in its citizens to acquire the necessary skills through education and training (Akooje, 2010).

The state plays a key role in the development of human capital by enacting positive policies and systems to enable the education and training for all its citizens without any social, economic or political obstructions as prescribed in the Constitution of South Africa (RSA, 1996a). This indicates that human capital development has shifted from the racial, fragmented and apartheid ideology to a non-racial and inclusive education and training system that creates equal opportunities for learning and employment (DHET, 2015b). This implies that education and training for skills development need to cut through all areas including the rural areas where the majority of the people live. To achieve this, education and training barriers have to be removed to all to have an inclusive economic life. Furthermore, education and training play a significant role in human capital development by producing a

trained and competent workforce to create wealth. Access to education and training is vital to achieving economic growth and sustainable development and investment as imperative of the human capital theory (Oluwatobi & Ogunrinola, 2011).

In the new knowledge economy of global technological development, education plays a role in improving productivity and also increasing the value of human capital and economic growth. Literate individuals embed human capital in themselves; hence, investing in human capital is a key to economic growth in the modern economy (Oluwatobi, 2016). The returns of education entail private benefit considering the costs involved for an individual to receive that education and the benefits likely to accrue from it. The social benefit pertains to the costs of the government expenditure on education, research and development leading to reduced crime, employment, poverty reduction, participation in the economy growth and high levels of skills stock.

Oluwatobi *et al* (2016) affirm that access to education and training improves the human capital development in a country because human beings are converted into machinery to drive the economy for production. Deductively, one can say that through the TVET curriculum education and training empowers human capital in the rural areas with the different kinds of skills and knowledge as well as qualifications to become productive in society. In the economic sense, human capital development is premised to be “the acquisition of human capital and its investment in the improvement of the economy” (Todaro & Smith, 2015). Below, different definitions are explored to provide a conceptualisation of the theory of human capital.

3.3 PURPOSE OF THEORETICAL FRAMEWORK

This study is framed within the ambit of human capital theory. The purpose of the theoretical framework depends on the degree of the study based on the evidence and the level of its development. The theoretical framework should be appropriate and should be interpreted logically, with a clear understanding, of and in alignment with the critical research question.

The theoretical framework creates a frame that identifies and explains the elements, variables and constructs for research. Creating the structure of the study is imperative as it will function as a basis for developing data collecting tools.

Firstly, the theoretical framework is important to this study because it will help the readers to evaluate the theoretical assumptions. *Secondly*, the theoretical framework connects the readers to existing knowledge critically and gives a basis for the hypothesis and research methodology. *Thirdly*, the theoretical framework helps to address the questions of *why* and *how* and lead to the intellectual transition from simply describing a phenomenon that a researcher has observed to generating various aspects of that phenomenon.

Fourthly, the theoretical framework helps to identify the limits of the generalisation, while, at the same time, it helps to specify which variables influence a phenomenon of interest. *Fifthly*, the theoretical framework highlights the need to examine how those key variables may differ and under what circumstances. *Sixth*, the theoretical framework limits the scope of relevant data by focusing on specific variables and defining the specific viewpoints that the researcher will assume.

Today education is seen as a tool for improving human resources for innovativeness and is aimed at promoting technical progress and technological advancement to increase productivity and economic growth. New knowledge must be adopted to the current needs and possibilities of economies in a creative way. Schlutz (1971) emphasises that, investment in education contributes to economic growth because economic growth cannot be explained by physical capital and technological advancement, but through the evolution of human capital, humans are the apex of human capital, hence, investing in this resource is the main avenue for economic growth in the modern economy.

3.4: DEFINING THE HUMAN CAPITAL THEORY

As is the case with some other concepts in the social sciences, various definitions are given to human capital. The concept is too broad to be described in terms of a single view of scientific inquiry and understanding of its nature, status and role. However, in this study, the concept will refer to the combination of characteristics that are relevant to an economic activity. Accordingly, it will be presented as the combined competencies, innovations of the company's individual employees to meet the tasks at hand (Truitt, 2011). Human capital implies that education and

training imparts skills to a human resource to be able to manipulate other intangible and tangible assets. Through human capital, we create intellectual capital to promote other types of capital that lead to investment.

Human capital is regarded as the knowledge, abilities, values, attitudes and competencies endowed and trained within a single individual person involved in the production process of an organisation. It involves both technical and soft skills for the progress of both the individual, society, company and the nation. The theory is relevant for it can highlight the shortfall, potential and the strength of the TVET curriculum to contribute to skills development as demanded by industries (UNDP, 2018).

Ployhart *et al.* (2014) defines human capital as individual or unit level (collective) capacities based on the individual knowledge, skills, abilities and competencies that are accessible with relevant purposes and best practices. Individuals who invest in education and training will increase their skills level and be more productive than those who are less skilled. Human capital is viewed as a resource. This explains the rationale for the government through the Department of Higher Education and Training (DHET) to provide TVET system to the rural youth of Northern Kwa-Zulu Natal. Ployhart and Moliterno (2011) opine that the human capital are the people, their performance and their potential in the organisation. This implies that employees can develop and improve their skills and abilities with time through the TVET system as they provide practical training with the incorporation of work-based learning that enhances the theory learnt.

Becker (1993) regards human capital as the knowledge, information, ideas, and skills and health of individuals. Johnson (2011) concurs that the human factor in an organisation is a combination of intelligence, skills and expertise that give the organisations a distinct character. The relationship between education and the returns as a result of acquired skills through education and training, can be regarded as considerable with regard to capital development. The knowledge economy requires both high technical and soft skills through research and training. Similarly, the community, and the labour market needs employability skills and the improvement of the ability to match skills with the demands of the 21st century that are to be attained through educational provisioning. In the early years of the development of the human capital theory, human capital was defined as a key

aspect in improving a firm's assets and employees in order to increase productivity as well as sustaining its competitive advantage.

Schlutz et al (2018) portrays human capital as a process that relates to education and training "and other professional initiatives in order to increase the levels of knowledge, skills, abilities, values and social" and economic assets of an employee that will lead to employee satisfaction, productivity, motivation, performance and eventually the entire firm's performance.

The above explanation summarises the human capital theory as those attributes of an individual (innate and acquired), skills, abilities, knowledge, experience and competencies that facilitate the moulding and creating of people's personal, socio-economic well-being. "The knowledge, expertise, and skills one accumulates through education and training" is an asset in human resource to be used for production of goods and services (Schlutz, 1963). The development of human capital is largely influenced by the educational level of the employee and the overall satisfaction. This implies that, the government has to provide education and training through the TVET system as a way for all to acquire skills especially in the challenge regarding the skills shortage gap in the rural areas of Northern Kwa-Zulu Natal. Below is a discussion of the purposes of a theoretical framework.

3.5: CONCEPTUALISATION OF HUMAN CAPITAL THEORY

The human capital theory has its roots in the industrial revolution and the philosophy of productionism. Its contenders propose that the purpose of education and training is economic productivity (Pavlova, 2014). This points to the fact that the purpose of the TVET curriculum, according to this study, should focus on skills development for employability by preparing learners for the demands and needs of the labour market as proposed by Schlutz (1961) namely) that human capital is composed of knowledge, skills and abilities of the people employed in an organisation.

This explains that human capital comprises the knowledge, skills, and abilities of the people who can use those acquired competencies, in turn, to affect their environment as prescribed in the TVET curriculum. Accordingly, the TVET curriculum should strive to build and empower students to acquire the necessary knowledge to address the skills shortage gap.

Furthermore, the concept of 'human capital' may be traced to the old economic age school of thought in 1776 that was later transformed into a scientific theory. Human capital was regarded as an important factor in economic growth by Schlutz *et al* (1961) who define the concept as a stockpile of productive knowledge and skills within a worker. Accordingly, human capital is the embedded knowledge, competencies, attitude, behaviour and skills in an individual. The concept human capital encompasses all the accumulated knowledge, experience and skills over a time through education and training.

According to Opatha (2010), human capital development is viewed as the use of human resource management to promote production in the workplace. Nyberg *et al* (2014) asserts that, among the resources that add value to production, is human capital propelled by education and training for the acquisition of skills.

In this study, the concept of 'human capital' is used explicitly to refer to education, training, adaptability, work behaviour, empowerment and intelligence as well as knowledge and the skills obtained to address the skills shortage gap and to contribute to economic development.

With regard to this conceptualisation, the attention should be shifted to the government and all the other stakeholders in development such as employers, and SETAs to assume a positive role to enable the TVET curriculum to achieve its objective for developing human capital as a way of addressing the skills shortage gap in the rural areas. The emphasis of the human capital theory is on the fact that there is a relationship between human capital and economic growth as a result of an investment in human resource development. This implies that education improves the skills of an individual and has the power to enable the employee to be able to adapt to various work circumstances differently. This is an aspect that focuses on the acquisition of soft skills through education and training (Lyria, 2013).

A country's competitiveness is strongly linked to the quality of human capital. In this regard, capital refers to the factors used to create goods and services while humans take charge of all the economic activities. Thus, human capital is a key element that adds value to the production process. It is the stock of the productive knowledge and skills possessed by an individual and is a fundamental source of

economic productivity. Importantly, it “is an amalgamation of factors” such as education, training, experience, intelligence, energy, work-habits, trustworthiness and initiative that affect the value of a worker’s marginal product and views schooling as an investment in skills and competencies (Kucharcikova, 2011). Conceptually, the production factors include land, capital, water and labour that are renewable and are organised by human capital or intellectual capital so that they are functional. However, the modern economy requires comprehensive skills; hence, it has shifted from a product-based economy to a knowledge economy which requires intellectual abilities.

Knowledge management requires a commitment to creating new, task-related knowledge, disseminating and embodying it in products, services and systems. Human capital transcends all other production factors because of its ability to organise and function with adjustability and adaptability (Koster, De Grip & Fourage, 2011). This emphasises the need for offering relevant and responsive education and training to students in different locations in view of the level of development in such locations.

The knowledge-based society requires more and more expertise and skills, improvement in science and research for continuous self-education and improvement of the quality of work-life skills and habits to bring a positive economic performance and growth. Economic growth can be related to an increase in the investment in education and training to bring changes in the development of society.

Human capital as a theory embeds lifelong learning for a civilised society to create good citizenry through empowering the citizens with the skills, knowledge, competencies, abilities and experiences both needed and competed for in the prevailing labour market with a focus on meeting the changing labour economic demands. Skills even entail the technical and soft skills attained through education and training. This study aims at investigating the challenges facing the TVET curriculum in addressing the skills shortage gap in the rural areas of Kwa-Zulu Natal. The human capital theory has influenced many education systems worldwide, assuming that by investing in education and training, the skills shortage

gap of the country will be addressed. Below the assumptions proposed by the theory of human capital are discussed (Earl, 2010).

3.6: ASSUMPTIONS OF THE HUMAN CAPITAL THEORY

This section explores the human capital theory that assumes that an investment in education and training increases productivity, lifelong learning and economic growth. The theory presupposes that the higher the level of education, the higher the productivity, efficiency, effectiveness, employment possibility and the higher the tendency to stay in employment. Human capital rests on the assumption that individuals and society derive economic benefits from an investment in people.

Secondly, the theory assumes that human beings are a factor in production similar to other factors that can be put to use in the production process. This underlines the need for acquiring skills through the TVET curriculum. *Thirdly*, human capital assumes that investment in education leads to an improvement in the human capital factor. *Fourthly*, it assumes that investment and improvement in education lead to economic growth. *Fifthly*, education and training improves the lives of the people and offers a good standard of living.

Lastly, human capital views education as private goods that are tradeable in the marketplace for money or status. The private return on the human capital investment in education provides an incentive to progress to further education. Thus, education should be oriented towards the supply and demand with regard to the labour market translated into higher productivity which results in higher earnings (Ungar, 2011).

It is assumed that, investing in education and training through the TVET provisioning promotes productivity, performance and boosts economic growth and development, while fostering employability and employment at the same time. The human capital theory too assumes that education and training should focus on skills development and sustainable development for better livelihoods through the TVET curriculum (Pavlova & Mirnova, 2014). Human capital is equated with other production factors and assets, equipment and machinery that are used to increase production. This implies that education and training may increase the value of human capital through specific training through the investments made to merge

the artisanal skills (trained) with the intangible elements of the social fabric in the wealth of an individual or the nation.

Human capital is a product of neo-classical economics with the assumption based on rationality, individualism, perfect knowledge, productivity, high performance, private property rights and market economy competition. Job seekers with higher education qualifications, irrespective of the knowledge content of their training, are regarded as more productive and abler. Secondly those with high education stand better employment chances (Keep & James, 2010).

The cost of education is regarded as a major investment in human productivity. This indicates that parents should pay the school fees and regard the education of their children as an investment. For them, this could create an increase in the earnings *per capita*. This means that the investment in scarce skills could pay off. Human capital theory is not new, as most scholars tend to believe. It seems there was some literature on this theory even before the current scholars wrote about it (Acaroglu & Ada, 2014).

The human capital premises that proper learning capabilities are of comparable value to other resources involved in the production of goods and services. It is suggested that increased amounts of schooling are associated with higher wages, higher productivity, and higher rates of civic participation, low crime rates, and better health outcomes (UNESCO, 2014b). It is upon these assumptions, among others, that this study explored the explicit literature of human capital theory to relate it to this study as a justification and contribution to build a theoretical framework in a bid to addressing the challenges facing the TVET curriculum. Building human capital needs a considerable investment in education and training as is discussed in the following section.

3.7 HUMAN CAPITAL INVESTMENT

This section discusses the rationale for investment in the production of human capital. Investment at all levels of education, namely, primary, secondary, college, university and other forms of skills development, is critical for the development of human capital. Investment in human capital is done by the state, private sector and individuals through educational institutions, such as, schools, TVETs and/or universities (Keep & Mayhew, 2010).

To Ungar (2011), human capital represents an investment in education and training in terms of skills and entrepreneurial provisioning in both tangible and intangible resources. Human resources contribute to the ultimate basis for the wealth of a nation. Accordingly, the wealth and development of a country depend on the development of its human resources as reflected in their potential, ability, commitment and talents.

The training of human capital improves the skills and behaviour of the employee by empowering them for a particular job performance. The aim of training is to improve the employee performance at work, ensure that required the standards are met and to empower employers to fill the vacant posts available in an organisation as well as increasing the profit margin and service levels of an organisation (Swanepoel, Erasmus & Schenk, 2012).

TVET offers an opportunity for such training that is accompanied by the acquisition of practical skills and experience while learning through work-based experience. Importantly, education improves the learner's intellect and quality of life. The most important aspect in labour economies is the concept of 'the demanded skills' by the employers, "which can be acquired through education and training" (Pease, 2015). It was found that an investment in human capital brings productivity through the equipment of improved knowledge and skills for sustainable development (World Bank, 2015).

Investment in human capital is seen as the individualistic stock of knowledge for personal gains by increasing individual productivity hence, individual with high levels of human capital is likely to earn more (Sankay, 2010). According to (ILO, 2013), "Human resources are a critical variable in the growth process of a nation." They are not just the means to development, but also the end to achieving economic growth. In effect, they are the active agents that manipulate all other factors of production through the accumulation of capital to exploit the natural resources and build political and socio-economic organisations. Without investing in the development of human capital, economic development, and growth would be a mystery (UNESCO, 2015c).

Human investment is seen as a deliberate and continuous process of acquiring the requisite knowledge, skills and experiences that are applied to produce

economic value for driving sustainable development. Accordingly, human capital investment is any activity that improves the quality (production) of the worker. Hence, the education and training of a person is seen as human capital investment. Human capital contributes to the abilities and skills of human resources of a country or a firm (World Economic Forum, 2013).

This means that human capital development underlines the acquisition and increasing of the number of persons explicitly with the relevant labour market skills in any society, which is a key factor in a country's political and social economic transformation. This indicates that the government has to invest on a large scale in education and training for the acquisition of those important skills for an inclusive society participation.

The World Economic Forum (2017) asserts that, human capital investment is an increase in "the number of persons who have the skills, education and experience that are critical for economic growth and development of a country's economy." It is only human capital that is capable of learning and adapting to change, innovations, creativity, rather than other production factors.

According to Diebolt and Michael (2014), human capital embeds the notion that investment in people through education and training increases individual productivity. The World Economic Forum (2018b) maintains that education and training is the most important investment in human capital development. Through education and training, human capital development frees the potential of a person with regard to economic growth and productivity using the acquired skills and knowledge.

This supports the rationale for providing education and training in present-day schools, colleges and universities where training in relevant and responsive skills and knowledge based on the appropriate curriculum to address the skills shortage gap in modern economies, is provisioned. Training through the TVET curriculum is premised on developing a better life and economic benefits. Ployhart and Moliterno (2011) argue that investment in education, accounts for economic growth. The principle here is that education, as an investment in human beings, is not different from an investment in machinery, equipment, land capital and labour.

Becker (2011) opines that investment in human capital is based on three arguments namely:

1. The new generation must be given the appropriate parts of the knowledge which has already been accumulated by previous generations.
2. The new generation should be taught new existing knowledge to be used to develop new products to introduce new processes and production methods and social services.
3. The people must be encouraged to develop entirely new ideas, products, processes and methods through creative approaches.

Dauda (2010) stresses that, the difference in the level of socio-economic development across the nations is attributed not only to the natural resources, for example, land, air, water, minerals, but also on the quality and quantity of its human resources as they manipulate the mentioned resources through their skills and knowledge for the benefit of the country.

Without a developed human capital resource, a country may be unable to develop the skills and knowledge of its people and to utilise them effectively in national development and to compete in global economic structures. Employee training enhances problem-solving through cognitive skills and abilities while helping to boost a worker's absorption in the work. This is regarded as the ability to assimilate, transform and apply valuable external knowledge. This implies that employee training facilitates the acquisition of knowledge to create a generation of capabilities of both innate and acquired skills. Jones and Schneider, (2006) opines that one's education plays a major role in one's performance and productivity. Accordingly, employee training brings high earnings, high productivity, high performance good employee turnover, changes positive employee attitudes, and results in employee empowerment, team work and commitment (Bapna *et al* 2013).

This supports the use of the human capital theory in skills development to bring about the comprehensive organisational and individual change of the human resource. Developing human capital brings benefits at the personal, organisational and national levels, thus, the following section discuss those benefits.

3.8 BENEFITS OF THE HUMAN CAPITAL DEVELOPMENT THEORY

This study aims at investigating the challenges facing the TVET curriculum in addressing the skills shortage gap in the rural areas of Northern Kwa-Zulu Natal. Like any other aspect of development, human capital is presumed to be beneficial for economic development. It is alleged that, to enter the skills arena, one has to employ the human capital theory. The objective of any country is to attain economic stability, material prosperity, peace and social justice. Nevertheless, all this is hampered by inadequate human development.

Human resources is a critical variable in the growth process and wealth development. It is not just a means but an end as the wealth and development of a nation depend on the development of its human beings as reflected in their potential, ability, commitment and talents (Bapna *et al* 2013).

Human resources is the active agent that manipulates all the other production factors through the accumulation of capital exploited from natural resources and the building of political and socio-economic organisations (Sankay, Ismail. & Shaari, 2010). Human capital development is, therefore, seen as the deliberate and continuous process of acquiring the knowledge, skills and experience that are applied to produce economic value for driving sustainable development.

Without investing in the development of human capital, economic development, and growth would be a mystery. “A country that is unable to develop the skills and knowledge of its people” and to utilise them effectively in national development may find it hard to develop and compete globally (ILO *et al* 2013).

The development of human capital is greatly influenced by the level of education of employees and their overall satisfaction (Armstrong, 2011). Importantly, human capital empowers citizens with the skills, knowledge, abilities and competencies needed to challenge the labour market through education and training. In addition, the human capital theory promotes a high and effective performance, enhances loyalty, commitment and the retention of top-quality staff preparing employees for promotion, while fostering a continuous learning culture that stimulates the re-investment of organisations in human capital in a competitive environment (Kraak, 2010).

Secondly, in terms of human capital theory, updates are given on new skills to keep employees updated about new global technical advancements and skills innovations. *Thirdly*, trained employees are believed to achieve greater returns that help them to satisfy their personal growth needs as well as the needs of the organisation (Armstrong, 2011). A trained human capital attains higher productivity, is high performing and links his/her skills to the business benefits by creating a positive environment for growth and organisational development, while minimising the cost of production. This helps to improve the corporate image of the company as well as organisational culture and climate (Erasmus *et al* 2013).

Based on the above excerpt, stakeholders in the development of skills need to strive for facilitating education and training to realise growth and development, which is premised to be achievable through the TVET curriculum. The next discussion will feature on the approaches to human capital.

3.9 APPROACHES TO HUMAN CAPITAL

This study employs the theory of human capital as a theoretical framework. The human capital theory focuses on the economic gains obtained through training and the impression that individuals will have an increase in earnings with additional wages. The most significant part of individual human stocks is accumulated through educational attainment and work experience (Fagerberg & Srholec, 2017).

The theory implies that earnings are proportionate to the investment made in human capital through education and training; hence, workers with a high level of training will be more productive and vice-versa. Education, training and experience serve as a signal for productivity, ability and earning.

Two approaches emerge with regard to human capital, namely, the *micro-economic* and *macro-economic approaches*. With regard to the micro-economic approach, human capital is presented as a factor of production like other factors, namely land or machinery. On a macro-economic level, Kucharcikova (2012) asserts that, improved economic growth is one of the governments objectives defined as the increase of a nation's income.

The quality of labour depends on school education, TVET and in-service training. It is also determined by the level of technology of the country and the ability of human capital (Mankiw & Taylor, 2011). It is seen as an asset, like other assets in

an organisation, while maintaining a competitive advantage. In other words, human capital can be seen as a resource or asset with a market value in an organisation. Ultimately, it is regarded as the most valuable resource regardless of the executed duties, hence, the human capital must be equipped with the necessary tools in terms of skills to do the task at hand to stimulate innovation, inventiveness and creativity.

Jones and Schneider (2012) view human capital on a management approach “as an intangible asset of a company that forms part of the intellectual capital and market value.” It is regarded as one of the factors of production which embeds in itself, the skills that can be used for development.

This explains the need for organisations and countries to develop skills development strategies as an approach to address the skills shortage gap, as discussed in the following section.

3.10 DEVELOPMENT OF SKILLS

A skilled workforce plays a critical role in labour market competition. Skills development is the process of empowering employees in the workforce through education and training. Swanepoel *et al* (2012) define skills development as the process through which individuals participate in the activities provided at the workplace to enable them to learn, apply, and create knowledge through a positive attitude as well as the willingness and desire. Skills are used to empower the efficiency of the employee in the productivity of a business (The Presidency, 2014).

The quality and quantity of capital are determined by the level of technology the country has attained as well as the ability of human capital. Employees need to adopt to the new technological age as determined by globalisation, the 21st skills century and the fourth industrial revolution. Employees need skills to perform their tasks, hence, they need training to acquire and improve those skills.

Newly recruited and promoted employees need training to learn and understand the organisational systems and operations as demanded by the changes in technological advancements (Mankiw & Taylor, 2011). This implies that there is a close relationship between education and training because education offers knowledge, while training offers skills to manipulate systems and equipment.

Barker (2015) reveals that the global market economy demands a competitive workforce. It is for this reason, among others, that the government of South Africa introduced the National Qualification Framework (NQF) system and the subsequent legal frameworks for the development of skills in the country such as:

- South African Qualifications Authority Act No. 58 of 1995 (RSA, 1995c), the Skills Development Act, No. 97 of 1998 (RSA, 1998b), The Skills Levies Act, No. 9 of 1999 (RSA (1999a), The Skills Development Authority (1998c), The National Skills Fund (RSA, 1999b), The National Skills Development Strategy, (RSA, 2011b) the Skills Development Plan (RSA, 2011d), SETAs as well, as learnerships and the other skills-based programmes.

Education and training is a successive aspect of continuing professional development (CPD) supported by re-training. This can be regarded as a human capital investment towards economic development as needs are based on providing the required employability skills. Continuing professional development (CPD) fosters effective performance, addresses low productivity, poor service delivery, absenteeism, boredom, job dissatisfaction and inefficiency. Undoubtedly, rural areas are faced with many challenges causing the skills shortage gap as it will be presented in the research findings and analysis later.

The role of the TVET curriculum is to address these challenges to command and direct economic development. Rural people need the skills and applied competencies to promote development. Skills are viewed as a vehicle for fostering development. The TVET curriculum is tasked to ease the skills shortage gap through vocational training that is relevant and responsive to societal, national and global needs.

DHET (2012a) maintains that skills development is a priority for the many unemployed, uneducated and untrained youth and adults (NEETS). This means that the DHET, through TVET colleges, should provide education and training that will empower students in terms of the necessary skills.

Training promotes employment equity as provided for by the employment equity act for all vulnerable people from disadvantaged groups, such as, blacks, women and people with disabilities to be given the opportunity to access education, training and employment. Akooje (2012) holds that training promotes employability

through specific programmes that will enable trainees enter the labour market or self-employment.

This is the key role that is supposed to be played by the TVET curriculum and in this way, skills will be acquired, developed and improved leading to employment and self-employment in a bid to address the skills shortage gap. Throughout the categories and stages, importance was placed on land and machinery and other factors for economic development. Economists elude that, the long-term factor to generate economic growth is the investment in human capital through education and training alongside other factors. Both the extensive and intensive growth of a country depend on its readiness to adopt and use new innovations, especially in information and communication (Essop & Yu, 2008).

Three categories of resources are imperative in the management of an industrial revolutions in their various categories and stages, importance was accorded to land and machinery and other factors for economic development. Economists allude to the fact that a long-term factor that generates economic growth is the investment in human capital through education and training alongside other factors. Extensive and intensive growth of a country depends on its readiness to adopt and use new innovations especially in information and communication (Essop & Yu, 2008).

Three categories of resources are essential for the management of an organisation, namely, *human resources*, *finance* and *materials*. Nevertheless, human resources is the most important of all because it is human capital and adaptable to all circumstances. Accordingly, the human capital development theory emphasises the process of improving workers' efficiency in the workplace to fulfil their potential by improving their capabilities by empowering them and enabling them to participate actively in national development (Aluko & Aluko, 2013). This underlines the need for the TVET curriculum to take centre stage to address the skills shortage gap. Positive and enabling policies are imperative for addressing the challenges that prevent the TVET curriculum from fulfilling its obligation.

Human resources is presented as the sum of the available human capital base in the production of goods and services. Therefore, it is important to stress that

workers are the most valuable resources in the organisation. Thus, human capital is an indispensable asset for development. Accordingly, there is a need to build and develop these resources to acquire the right skills that all employees require to perform their jobs through training and experience. Modern skills acquired through modern training make an employee relevant in the world of work (Manda, 2013). In this regard, Armstrong (2011) posits that there are various ways in which skills can be acquired by the employee, such as, learning institutions, workplace learning, and self-directed learning, e-learning, mentoring, and coaching. Ultimately, skills and abilities help create personal, social and economic wellbeing and result in a labour force that is committed and effective and works with confidence. In effect, nations that do not emphasise human capital development are destined to fail in terms of economic growth. In short, human capital improves values, teamwork, consciousness among individual employees and the overall collective performance (Ndinguri, Prieto. & Machtmes, 2012).

This means that organisations and nations have to invest in the upliftment of skills within individual labour to benefit and increase their performance. In terms of human capital, the concept of 'health,' refers to the up-to-date functioning of the country without labour limitations based on performance skills and abilities.

This entails that nations can be unhealthy if labour does not possess the appropriate skills. Hence, countries need to invest in the development of skills to address the skills shortage gap. This can be done through the education and training provided by the TVET curriculum. Accordingly, human capital plays a vital role in labour market sustainability (World Bank, 2013). This is so because of the unique skills that labour adds to the production activity. The knowledge, expertise, experience and skills are accumulated over time through education and training as well as work experience (Borjas, 2014).

It can be said that skilled workers with high levels of human capital are considered more productive. Hence, well-functioning educational institutions are extremely important to link education and training, the labour market and the distribution of political power (Nakabashi, Pereira & Sachsida, 2013).

This implies that the government has to take steps in facilitating learning institutions to increase their capacity to offer quality training to address the skills

gap. This can be done through funding and the enactment of enabling policies within the TVET band. This propounds the essence of human capital as a process of training through “education and other professional initiatives in order to increase the levels of knowledge, skills, abilities, values and social assets of an employee which will lead” to employee job satisfaction and performance (Pavlova, 2014).

Stakeholders need to adopt the theory of human capital as a tool for addressing the skills shortage gap both directly and indirectly. This is necessary for the economic competition among firms regarding the labour market, the emergency of the successive social and economic problems, such as, unemployment, poverty, inequality, diseases, ignorance, and illiteracy, among others, as well as having a comprehensive national and global approach towards skills development.

It is believed that, for firms to prosper, compete and make profits, they have to invest in the training of their employees (human resources) as a weapon to boost economic development (Eckardt, Skaggs. & Lepak, 2018). This is attainable through education and training that the TVET curriculum is tasked to offer in addressing the skills shortage gap in the economy. Accordingly, the system has to address the challenges that hinder the development of skills.

3.11 HUMAN CAPITAL THEORY VIEWED FROM THE PERSPECTIVE OF EDUCATION AND TRAINING

Human capital theory is one of the most used approaches to economic growth and policy making in education. Early application of the theory focused primarily on the relationship between the “amounts of education and economic social returns but recent developments” in the theory suggests that the quality of education and time spent in education investment, such as, early childhood, secondary and tertiary education are critical in the process of human capital formations (Economic Review, 2012). Mahoney and Kor (2015) emphasise that, the 20th century has witnessed a paradigm shift from the production economy to the knowledge-based economy where assets, such as, buildings, machinery and equipment are no longer viewed in the physical sense only, but also with regard to the intelligence quotient of workers. The knowledge-based economy assumes that intangible abilities and skills (innate and acquired) can contribute to the knowledge capital of an organisation. It is a fact that organisations rely on their workforce to realise their optimum objectives.

The concepts of 'human capital' and 'education and training' are used interchangeably and are intertwined. According to Todaro and Smith (2015) human capital is used by economists to refer to education, health and other capabilities that foster production once they have been improved.

It is important to note that education plays an important role in accelerating economic growth and poverty reduction in all the sectors especially in rural areas. The World Bank (2015) believes that education promotes the improvement and distribution of income among social classes. At the same time, education plays a role in encapsulating a country's economic goals as well as the strategic and operational functions of a business. This is propelled by the global knowledge-based economy that advocates increasing the skills base for all employees as the primary objective of the TVET curriculum. As mentioned above, rural areas have lagged behind in the form of development including educational provisioning. To change and transform those areas, the TVET curriculum is supposed to play a leading role in the training of rural people in varied for economic development.

Human capital is conceptualised as a developmental approach in preparing a firm's assets and employees in order to increase production as well as sustaining its competitive advantage. The theory focuses on the economic benefits obtained through education and training and the impression that individuals will have an increase in earning and productivity. However, there are recent developments in human capital theory as envisaged in the TVET curriculum to alleviate poverty in rural areas and the promotion of social welfare as a basis for promoting growth and human security (McGrath & Powell, 2015). Human capital facilitates social capital and the sharing of knowledge and ideas through internal relationships and job responsibilities towards common purposes as defined by an organisation (HRDCSA, 2010).

The theory of human capital complements a firm's structural and innovative capital to create new and unique knowledge (Mahoney & Kor, 2015). This implies that, there is a relationship that demonstrates the development of human capital and performance at both the individual and the organisational level (Crocker & Eckardt, 2014). All these developments need skills acquisition that may be developed by the TVET curriculum.

Human capital is a key element that adds value to the production of knowledge and skills processed by an individual and is an amalgamation of factors such as education, training, experience, intelligence, energy, work-habits, trustworthiness, and initiatives that affect the value of the worker's marginal product. Importantly, human capital views schooling as an investment and a fundamental source of economic productivity (World Bank, 2015). Ejere (2011) postulates that skills, education and experience are critical for economic growth and the development of a country's economy. In a critical analysis sense, human capital is the only production factor that is capable of learning and adapting to the changing innovativeness and creativeness rather than other factors.

The objective of any country is to attain economic stability, material, prosperity, peace and social progress. This means that, to enter the skills arena preparedly, rural areas in South Africa have to employ the theory of human capital as a pre-requisite for the economic evolution of the 21st century that is characterised by skills and a knowledge-base. For this case, human capital is receiving considerable recognition from both the developed and developing countries as a skills development theory regarding economic growth (Van der Merwe, 2010).

The theory appears to be capturing the attention of many developing theorists as a key approach to tackling the skills shortage gap both nationally and internationally. Organisations, firms and governments seem to be adopting an approach to human capital theory that promotes development and sustainability, by investing extensively in the development of skills in its people or employees to increase productivity and performance. Human capital is a key factor in a country's political and socio-economic transformation. This implies that, the difference in the level of socio-economic development across nations is attributed not so much to natural resources, the endowments and the physical capital, but to the quality and quantity of human resources (Dauda, 2010).

The empirical results show that human capital has a positive impact on the output level, implying that human capital development is indispensable in realising sustainable development and economic growth. The government, policymakers and partners should strive to give human capital a chance through positive policies and the funding of educational institutions to create a climate of sincerity and trust to capacitate human capital through education and training. As Schultz (1993)

notes, “Education and training is a single important factor in realising sustainable development.”

This implies that without the education and training guidelines in the TVET curriculum, economic growth and development would be a mystery. Undoubtedly, it is through education and training that people acquire, develop and improve their skills. The economic competition among nations, countries and firms in the labour market and the successive emergence of social and economic challenges, such as, unemployment, poverty, disease, ignorance, inequality, illiteracy among others have compelled the trial of human capital theory in a way to address skills shortages (Nuryakin, Aryanto & Setiawan, 2018).

It is believed that, for nations and firms to compete favourably in the labour market, they have to train their employees and citizens in the skills required currently. The labour force in the form of human beings, has to be improved through education and training. This underlines the key role to be played by the TVET curriculum as an investment for a realistic, national, skilled future in addressing the skills shortage gap. Furthermore, value has to be added to human capital by acquiring those needed skills through education and training. This means that education leads to the upgrading of skills to accelerate economic growth (Van der Merwe, 2010). The labour market has immensely changed; hence, innovations, preferences, styles, tastes are drastically changing the working conditions. All this leads to the emergence of quality, relevant and responsive education and training for creativity, innovation, communication and co-operation.

Without investing in the development of human capital, economic growth, and development would be a mystery for any country. In this regard, human capital is seen as a deliberate and continuous process of acquiring the knowledge, skills and experience that are applied to produce economic value for driving sustainable development. The theory of human capital addresses the relationship between higher education and that of the labour market outcomes. It posits that, investment in education and training leads to returns in private and social benefits (Tan, 2014). Social benefits include producing a skilled labour force for economic development, and private benefits include higher individual earnings. Therefore, higher education is viewed as shared by the government and the individual for the economic good.

TVET colleges are expected to produce employable graduates. However, it is not clear what constitutes employability, employability attitudes, the motives of the students in obtaining employment, student employability and how students link skills acquisition to employment and how they feel about using those skills and knowledge. However, employers do feel graduates do not have what it takes in terms of skills with regard to the high skills demands and expectations of students and what they can offer to employers (World Bank, 2013). In the knowledge economy it is the intangible skills and abilities of the work force and the knowledge inherent in the organisation structure, routines, systems and processes that can contribute to the knowledge capital of an organisation (Mahoney & Kor, 2015). The United Nations Development Programme (UNDP) (2016) believes that education that is one of the aspects needed to grow and sustain the economy, is viewed as an intentional and organised way of acquiring and imparting skills, knowledge and values comprising those generic and core skills (Erasmus *et al* 2013).

3.12 STUDIES ON THE HUMAN CAPITAL THEORY

Several studies have been carried out on the human capital theory to confirm the justification of the theory for this study such as, Sankay Ismail and Shaari, (2010), Kraak (2010), Fugar, Ashiboe-Mensah and Adiyara (2013), Altbeker and Storme (2013), Muthethwa (2013), Bushra and Muhammad (2014) and Biyase & Zwane (2015). Sankey, Ismail and Shaari (2010), investigated the impact of human capital on economic growth. The results indicated that human capital development has a significant impact on economic growth. The impact referred to here is the overall contribution of development as a result of the employment and self-employment turnover from an inclusive economic participation in the national economic growth. Importantly, skills increase the production, efficiency and effectiveness of an individual employee. Thus, the education and training of people with regard to the relevant skills is imperative through a vocational system.

A study carried out on the relationship between the standard of knowledge, transferable skills and the skills needs of dislocated workers in Northeast Iowa regarding the knowledge and skills needs of the areas in business in order to outline and develop a skills model for equipping the Iowa workforce for a knowledge-based economy and to provide a paradigm for assessment and training. The results revealed that there was a need for more investment in

education and training as well as a need for the community and learning institutions to develop career pathways for different occupations. Accordingly, the increased investment in knowledge and skills is recommended through formal education to improve the skills capacity of a nation. This is an area which has to develop by the TVET curriculum system, especially for the rural areas.

Furthermore, Fugar, Ashiboe-Mensah and Adiyara (2013) carried out a study on the existing literature on the effects of human capital development on the growth, profitability and competitive success of the organisations. They defined training as the knowledge attained and the training undergone by the employee to increase the individual performance. The findings showed that the training of employees is paramount in human capital development as it imparts skills to the trainees, thereby, empowering them to be adaptive for the efficient and effective production increase. This means that for countries to harvest economic development, they have to train their citizens as a production factor to discover, acquire, develop and improve skills through vocational education and training.

Bushra and Mohamad (2014) studied the role of human capital formulations in economic growth in Pakistan using annual data from the World Bank economic data survey and indicators of world development in the period 1999 to 2010. The findings indicated that there is a relationship between human capital and economic growth. They called for the prioritising of social funding in education and health, so that it can be provided and accessed by all the citizens from different backgrounds for improved and inclusive economic growth. This means that the funding norms by the government have to be in touch with the aspirations and expectation costs of the delivery, implementation and evaluation of the TVET curriculum. This will help generate a large skills-base of workers who are empowered to contribute to the national economic growth.

In turn, Biyase and Zwane (2015) studied the effects of an additional year of school using the question: *Does education pay in South Africa?* The National Income Dynamics (NID) data set was used to examine the potential influence of education levels on wages in South Africa from 2008 to 2012. The findings indicated that there is a strong relationship between the levels of education achievement and earnings. The study noticed a difference in the wages between the different levels of education. This implies that education and training for the TVET curriculum has

to be designed in a way that reflects and accommodates the training aspirations of the employers. Note should be made here that many employers have complained about the type of education and training provided by the TVET curriculum and the skills acquired through it.

Employers seem to find a skills gap in the TVET graduates as revealed by their performance. This means that the course content, the period and course design should be commensurate within the training manuals of the employers. Accordingly, the government, together with DHET, have to consult the employers with regard to developing the TVET curriculum that should be reflective and relevant for the labour market and the workplace for the TVET graduates. “A study on tertiary education, skills and productivity in New Zealand” was carried out using the Household Labour Survey Force (HLSF) from statistics New Zealand for the period, 1992 to 2008 (Brian & Will, 2010).

The results of the study indicated that there is an expansion in the number of New Zealanders with tertiary qualifications with an increased level of graduate employment. TVET provisioning is aimed at developing and increasing the skills–base for the national economic growth. The TVET study achievements include certificates and diplomas for the NEETS, which will multiply the number of qualified and skills people manifold with open access and the inclusion of all people. This will address the skills shortage and promote self-employment and employment.

In addition, Muthethwa (2013) conducted a study for the Department of Labour about job opportunities and unemployment in the South African labour market in the provinces of South Africa. He used data from various newspapers, the Quarterly Labour Force Survey (QLFS) from the Department of Labour, for the period 2012- 2013. He studied the number of job vacancies advertised by occupations from April 2012 to March 2013.

He found that there was an increase in the demand for managers and other professionals against a decrease in the employment of low-level workers. The findings showed that there was a decrease in the employment of employees with lower levels of education. This implies that there is a significant need for higher levels of individual education. A tertiary qualification is necessary for the labour market to access worthwhile employment and reasonable earnings. Accordingly,

the task of the TVET curriculum is to offer training to all people to acquire a skills qualification as a means of addressing the skills shortage gap. As a result, the skills acquired can foster economic growth through engagement in the production process.

The Solidarity Research Institute (SRI) (2011) carried out a study between 2011 and 2015 on the South African labour market and the matriculants using data from the Department of Basic Education from Statistics SA. The findings indicated that, unemployment is high regardless of passing matric. A matric certificate may be important, but it is no longer a gate pass for employment. Matriculants, therefore, need to further their education for better-paying jobs through vocational education and training via the TVET curriculum. In this regard, Kraak (2016) conducted research on graduate employment in South Africa from 1995 to 2005, comparing the 1995 Occupational Health and Safety (OHS) and Occupational Health and Safety 2005 (OHS) data. The results of the study showed that there was a problem with graduate unemployment and a shift in the economy from low to high skilled occupations.

This implies that the economic shift leads to a change in graduate unemployment despite the skills shortage gap. This means that the TVET curriculum provisioning needs to address the challenge of graduate unemployment through relevant, responsive and rigorous training, while improving on the graduate level in terms of skills and qualifications.

Altbeker and Storme (2013) conducted a study through the Centre for Development Enterprises (CDE), where they analysed data by examining trends in graduate unemployment in South Africa since 1995 using a large-scale sample of data of about 30 000 households per quarter, the Occupational Health and Safety (OHS) *from 1995 to 1999, the Quarterly Labour Force Survey (QLFS)* for 2000-2007 as well as the Quarterly Labour Force Survey (QLFS) for 2000 to 2011 from Statistics SA. The study was related to that of Van der Berg and Van Broekhuizen (2012) from the Department of Economics at the Stellenbosch University using the same variables and proxies.

The findings revealed lower levels of unemployment in graduates than their counterparts that had only completed secondary school education. Accordingly,

the findings showed that the unemployment levels of graduates were lower than those of secondary schools' graduates. The above findings explain the rationale for the TVET curriculum provisioning. Secondary level education is nothing but a stepping-stone towards skills training. Therefore, secondary school leavers should, -aspire to get training in the TVET system for employability skills. This will reduce the unemployment levels and boost both the production and economic growth.

In their study on the changes in the South African labour market for the period 1995 to 2013, Festas, Kasongo, Moses and Yu (2015) used Occupational Health and Safety (OHS) for 1995, the Linux from Scratch (LFS) for September 2004 and the Quarterly Labour Force Survey (QLFS) for 2013 from the quarter 1 data.

Their findings indicated that both unemployment and employment had increased for the same time. In addition, the findings showed that many poor people and those with low levels of education, were the most affected with regard to unemployment. This suggests higher levels of education and training to acquire higher level skills for employability. The people who are not in education, not in training and not in employment (NEETS) should strive to acquire training to increase their chances of employment.

In addition, Bhorat, Cassim and Tseng (2016) carried out a study to gain an overview of unemployment and the sectoral education mix in the economy using the projections on the labour force, education by population size and the sizes of employed people in the economy. They formed a micro-productive analysis of labour inputs by making 39 observations, six annual Occupational Health and Safety (OHS) reports from 1994 to 1999, 16 bi-annual Linux from Scratch (LFS) reports from 2000 to 2007 and 17 Quarterly Labour Force Surveys (QLFS) from quarter 1 of 2008 to quarter 1 of 2012. The results indicated that there is a close relationship between the different levels of education and employment. The study indicated that the labour market preferred employees with a tertiary qualification above those with a matric qualification. Importantly, the study found that the labour market is skills-based. This confirms the necessity for improved skills and qualifications for the world of work that can be obtained through education and training.

Using the human capital model of indigenous growth (Dauda, 2010) examined the role of human capital development using the physical capital investment proxied by real gross domestic capital formation and human capital formation, proxied by enrolment from educational institutions and economic growth. Data from human capital stocks from the investment figures for education and training was used against the data from the economic contribution of human capital (Gross Domestic Product-GDP). The study found that the more the investment in human capital development, the greater the economic output with regard to economic growth. This means that the government should place a high priority on human capital development through education and training in the TVET curriculum by enacting enabling funding norms to promote economic growth.

Amassoma and Nwosa (2011) studied the relationship of human capital investment and economic growth for sustainable development in Africa using the vector error correction (VEC) and pairwise causality methodologies (PCM). The findings indicated that there was no causality between human capital developments and economic growth. Accordingly, the implication can be made that vocational education and training should be emphasised through positive legislation, publicity and funding to bring about economic growth. In turn, Johnson (2011) evaluated human capital development and economic growth by developing a conceptual analytical framework that employs the theoretical and Ordinary Least Square (OLS) to analyse the relationship using GDP as a “proxy for economic growth, total government expenditure on education and health and the enrolment patterns” of tertiary, secondary and primary schools as a proxy for human capital.

The study compared capital investment in education with the economic total output. It was found that the overall contribution to economic growth (GDP) by qualified and skilled people was worth the investment in education and training. The results indicated that there is a strong bond between human capital development and economic growth. This underlines the role that stakeholders for education and training have to play in developing a pragmatic approach in developing human capital capabilities. *Secondly*, proper institutional frameworks need to be put in place to look into the workforce needs of the various sectors and formulate policies to enable economic growth.

Furthermore, Oluwatobi and Ogunrinola (2011) examined the relationship between the human capital development efforts of the government and economic growth to determine the impact of funding in education and the impact on economic growth using expenditure and output variables data from secondary schools. The results indicated that there is a relationship between government expenditure on human capital development and the levels of real output. This confirms the need for increased government expenditure on education for economic growth.

3.13 JUSTIFICATION OF THE HUMAN CAPITAL THEORY

The study was framed within the theory of human capital for the following justifications. It is believed that other skills development theories have failed to cope with the skills challenges and shortage gaps worldwide, hence, the human capital theory ranks high with regard to this dimension. Human capital enhances the productivity of an individual, firm and country discovering the potentialities within an individual. In this way, the innate values of an individual are developed to enhance the firm's performance through the effectiveness, efficiency, innovativeness and creativity of individual labour to promote organisational sustainability (Kucharcikova, 2011).

Human capital plays an important role in strategic planning on how to create a competitive advantage with regard to global competition in the labour market; thus, it promotes the innovativeness and creativity of labour. In return, the financial accountability of a firm is increased through increased production and sales (Nyberg, 2014). Because human capital is flexible and adaptable it can lead to the development of organisational competencies by increasing the individual employability through teamwork and the networking of employees from different backgrounds. These characteristics have a positive impact on performances through increased communication, the sharing, of knowledge, awareness, appreciation and acceptance of an individual worker (Opatha, 2010). As is the case with any other aspect of development, some factors affect the development of human capital.

3.14 STRENGTHS OF THE HUMAN CAPITAL THEORY

The human capital theory helps policymakers and researchers to evaluate the relationship between education and training inputs and economic social outputs. Policymakers use the human capital theory to understand the amount and

characteristics of the high-quality education and training needed to achieve the desired goals of economic growth. Accordingly, the human capital framework provides a useful framework for comprehension regarding how policies can be developed to motivate individual investments in their own education studies involving costs, time and space. McGrath (2011) holds that understanding these essentials of education can help policymakers to develop strategies to facilitate education and training such as loans and NSFAS.

There is growing evidence that demonstrates a positive linkage between the development of human capital and performance at both individual and firm levels (Crook, 2011). The human capital theory answers the questions about the optimal levels of investment in education, the kinds and quality of investments that are most productive as well as the issue of cost benefits related to individual investment in education in order to bring about interventions (UNDP, 2015).

Despite the benefits and justifications for the human capital theory discussed above, the theory faces some criticism.

3.15 CRITICISM OF THE HUMAN CAPITAL THEORY

The human capital theory propounds that higher levels of education and training lead to improved productivity, higher performance and higher earnings. This conclusion has received many criticisms from Kucharcikova (2011) who notes that the theory offers a simplistic, narrow and linear understanding of the relationship between skills, employability, employment and economic growth based on the assumption that, *one size fits all principle* to education and skills.

The theory is also criticised for not addressing inequality, social justice and social marginalisation (Tikly, 2013). Despite the contribution made by the theory, it is criticised for ignoring the role of the experience of employees that play a large role in recruitment, earning, promotion and good productivity (West, 2016). The emphasis on the ability by Becker (1976) fails to relate it to productivity. An employee with a high level of training may have the ability, but with no or low productivity (Morris, Alvarez, Barney, & Molloy, 2010).

Becker (1976) ignores the role of informal training and places too much emphasis on formal education (Oliveira & Costa, 2014). The economy is flooded with the appointment of many employees based on experience and on-job learning and

training without formal education and training and without formal qualifications. Many of these employees hold high positions as a result of promotional advantages and the duration of service.

Note should be taken here that many employers have complaints about TVET graduates and the type of education they receive. Becker (1976) ignores the role of cognitive abilities, like problem-solving and social skills. She overemphasises technical skills at the expense of soft skills that play a big part in adaptability in the place of work (Avey, Luthans, & Youssef 2010). Almendarez (2011) avers that the overemphasis of education over other approaches has denied other approaches the chance to prove themselves by investigating, explaining and solving the socio-economic problems (skills shortages), poverty, inequality, and unemployment, among others. This refutes the analogy that all the hope should be invested in education and training.

The type of education received is reflected in the quality of work performance. This implies that the quality of education is hypothetically lacking in the Schultz (1961) and Becker (1976) narratives of human capital theory. Education is sometimes seen as individualistic and carried out for personal gains and development. Measuring the years spent in education and training is not a means of ensuring productivity without considering the quality of education attained.

Education may not be measured in the real sense as is the case with on-the- job training and College or University training. In all cases, screening is conducted by companies at recruitment to identify a suitable employee using education and training as a tool to determine the employee's ability. There is no causal relationship between education and training and productivity at recruitment.

During recruitment, selection and screening procedures are emphasised followed by, training, re-training and development. This implies that the recruitment process follows a specific procedure for screening and selection regardless of the level of education and training an applicant possesses. This is the case because at this time, the employer has no or little data about the applicant; hence, applicants should have higher levels of education to increase the chances of selection (Coff & Kryscynski, 2011).

There is an assumption that an improvement in productivity leads to improved performance. However, it is extremely difficult to measure productivity at an individual level. The assumption that high levels of education lead to high earnings, lacks advanced reasons, and the lack of evidence underpins the criticism of human capital theory (Keep & James, 2010). While at work, employees are able to distinguish between the employees who are capable and those who are not capable regardless of qualifications. Hence, the economic value of education may not be reflected in qualifications but in the output (Keep, 2015).

People learn differently in different circumstances for different purposes and locations. *Secondly*, the requirements for urban areas may not be the same as for rural areas. This calls for interventions by the different stakeholders to design different curricula for different areas. This means that the TVET curriculum needs to be reconsidered especially for the uniqueness of the aspirations, services, activities and the level of development for rural areas. This will address the challenges as enshrined in this study, hence, addressing the skills shortage gap.

Nevertheless, despite the criticism, the theory remains credible for addressing the skills questions of many countries (Vally & Motala, 2014). This motivates the choice of the human capital theory for this study.

3.16 CONCLUSION

This chapter examined the theoretical framework underpinning the concept of ‘the human capital theory.’ The theory calls for an investment in education and training to acquire the necessary skills and knowledge. Education and training are emphasised as a way of improving the acquired skills for employability, better earnings, better production and contributing better for economic growth.

The acquisition of skills was found attainable in educational learning institutions, such as, TVET colleges, universities and other skills-based learning programmes. Relevant studies were used as evidence to support the selection of the human capital theory as a theoretical framework for this study. The next chapter will present the methodology and research design used in this study.

CHAPTER FOUR

RESEARCH METHODOLOGY

4.1 INTRODUCTION

In Chapter three, the theoretical framework in terms of which this research is viewed, was discussed. In this chapter, the study will outline and discuss the methodological approach used in data collection, the instruments used, how they were used and why they were used. The chapter will also present the paradigm used to explain the research design, methods, procedures and processes that were followed during the various stages of the study. Furthermore, the chapter will also discuss the ethical considerations, explain how the different gatekeepers were approached and handled. In addition, the issue of the reliability and validity as well as data analysis concerns will also be detailed.

Research methodology is the activity of selection, application, assessing and supporting the methods used in any study. As a plan for collecting and processing data within the research process, Johnson and Christensen (2010) assert that a research methodology is the unbiased application of research tools and procedures appropriate for achieving the study's aim and objectives. Creswell (2014) holds that the researcher needs to plan the methods and procedures carefully to collect and interpret the data in order to answer the research questions.

One TVET College Principal, two Campus Managers, One Assistant Director: Curriculum and two Curriculum Specialists, and 120 Lecturers were selected randomly to give their views on the topic under study. Yin (2011) argues that the views and perspectives of people provide insights that help to explain human social behaviour using multiple sources of evidence rather than relying on only a single source. The researcher administered open-ended questionnaires to the TVET lecturers where the lecturers responded by ticking the right box according to the participants' views and opinions on the challenges facing the TVET curriculum. Semi-structured interviews were also used with the TVET managers as a way of collecting data about the topic of study.

The researcher used an audio recorder to record all the responses from semi-structured interviews where open-ended questions as well as probing questions were used during the interview sessions which lasted for 1.45 minutes.

The aim of this study was to investigate the challenges facing the TVET curriculum in addressing the skills shortage gap in the rural areas of Northern Kwa-Zulu Natal.

The research questions poised were:

- To explore the TVET curriculum in an attempt to address the skills shortage gap in the rural areas of Northern Kwa-Zulu Natal,
- To investigate the challenges facing the TVET curriculum in addressing the skills shortage gap in the rural areas of Northern Kwa-Zulu Natal,
- To determine possible alternative ways for the TVET curriculum to address the skills shortage gap in the rural areas of Northern Kwa-Zulu Natal.

4.2 RESEARCH PARADIGM

According to Creswell (2014), a paradigm is the theoretical orientation of the world of research for the researcher. It is the part of the study where the researcher hopes to investigate the research problem, while presenting the philosophical process (Du Plooy, Davis & Bezuidenhout, 2014). Furthermore, a paradigm is defined as an explanation of the process of data collection and analysis. In this regard, Hall (2013) avers that a research methodology outlines three research paradigms, namely, positivism, constructivism and pragmatism.

Neuman (2014) describes a research paradigm as an organisational framework for theory and research comprising assumptions, key issues, models of quality research and the research methods for collecting the data. To Levy (2017), a paradigm is a guiding rod throughout the study used to interpret the opinions of the research world. The researcher investigated the responses of the participants using questionnaires and semi-structured interviews.

A paradigm creates the idea that there is a pattern of thought or a mental picture that was formed in order to view the world in a particular way. Thus, a paradigm works as a structure or system of scientific and academic ideas, values and assumptions. This study is guided by the post-positivism paradigm.

Post-positivism

The emergence of post-positivism in the social sciences can be traced to the 20th century offering to meet the requirements other paradigms could not meet in social research, thus, post-positivism is a justification as an alternative paradigm (Foreman-Peck & Winch, 2010).

Post-positivism is an extension of positivism, since it represents the thinking after positivism. Post-positivism challenges the traditional notion of the absolute and objective truth of knowledge in the social sciences. Significantly, post-positivism is a useful paradigm for researchers who are interested in some aspects of positivism, such as quantification and, yet wish to incorporate and interpret concerns around subjectivity and a combination of qualitative and quantitative methods. Furthermore, post-positivism focuses on researching issues in the context of involving experiences of the majority and presenting the results of what the majority signify is acceptable (Hameed, Shah & Ali, 2017). In line with this explanation, the researcher selected post-positivism for exploring the views and opinions of the TVET lecturers on the topic of study.

Post-positivism is broad, brings theory and practice together, simultaneously, allowing acknowledgement and encouragement for the researchers' motivations and commitment to the topic, while recognising that many correct techniques can be applied to collecting and analysing the data. The purpose of post-positivism was to bring the facts forward as much as possible to help the researcher answer the research questions. Therefore, post-positivist conclusions are not laws, but conditional realities that can be valid for a period of time in a given society.

Post-positivist research is viewed as broad rather than as specialised. Post-positivism is seen as a scientific methodology that aims at understanding the social phenomena holistically. According to post-positivism, to study a complex phenomenon, the possibilities, multiple points of views and perspectives, and different variables that may affect the proceedings of the whole, have to be emphasised. Denzin and Lincoln (2011) indicate that post-positivism emphasises multiple methods for capturing the possible reality at the same time, the emphasis is placed on the discovery and verification of theories.

It is important to note that post-positivist research principles emphasise meaning and the creation of new knowledge to support social movements that aim to change the world and contribute towards social justice. Post-positivists believe that there is a reality independent of our thinking that can be studied through scientific methods. The paradigm assumes that the objects of study are themselves engaged in the ongoing project of making a living in the social world, and therefore, their effort to make sense of it must become part of the social science subject-matter. This assumption rules the simplistic limitation of study to social facts out. This is supported by the selection of TVET lecturers and the TVET managers because they were actively involved in the implementation of the TVET curriculum. Importantly, they had the knowledge, facts and experience about the topic of study (Foreman-Peck & Winch, 2010).

Secondly, the paradigm provides that the tools of study in social sciences entail the capacities of human beings to interpret the world. As such, these instruments (lecturers and managers) work as tools for giving meaning that the social scientist seeks to study. The post-positivist researcher should gather data from multiple sources at the same time he is expected to collaborate with the participants of the study. Through interaction and collaboration with the participants, the researcher gathered data about the research topic.

This implies that people's perceptions or opinions and attitudes cannot be used as evidence of knowledge. Knowledge has to be verified and experienced empirically through data analysis. Post-positivists are biased with quantitative data approaches. Hence, this study adopted both quantitative and qualitative approaches to collecting, analysing and interpreting data. This study adopted post-positivism because it promotes the triangulation of the methods that explore the diversity of researchable facts through various kinds of investigations (qualitative and quantitative) while respecting and valuing all the findings as essential components for the development of knowledge. The paradigm also recognises that dualistic thinking is usually inadequate and that multiplicity and complexity are the reality of all human experiences. The study employed post-positivism as a paradigm to compensate for the shortfalls of positivism and other interpretive approaches.

4.3 RESEARCH DESIGN

Research is an activity that connects the theoretical framework with methods of collecting data. Denzin and Lincoln (2018) is a plan for collecting and analysing collected pieces of information. Creswell (2014) asserts that a research design is a procedure in research for the gathering, analysis and presentation of data in order to answer the research questions. Creswell (2014) further argues that a research design is the process used for requesting raw data from the participants without the subjective collusion of the researcher within the parameters of the study aimed at giving the scholar a deep insight about the topic of study based on the experience of the participants, expertise and sentiments.

A research design encompasses the aim of the study in relation to the methods to be used for the analysis. Yin (2011) explains that a research design is the structure of the study. Taylor, Bogdan and DeVault (2016) propound that a research design is a map for conducting the study while collecting information from the participants. Almalki (2016) categorises three types of research design, namely, descriptive, causal and explanatory designs, respectively. Furthermore, a research design is a type of inquiry within qualitative, quantitative and mixed-methods that provides specific directions for the procedures used in the study. According to Pandey and Pandey (2015), a research design is the foundation structure used by the researcher to guide the collection, scrutiny and analysis of data.

When a researcher formulates a research problem, the next step is to determine the research design as a plan and procedures. Therefore, research design refers to the plan of procedures and methods a researcher will take to collect data for the study (Zikmund *et al* 2013).

A research design addresses the aims, purposes, intentions, plans, and rationale while considering the research delimitations, such as, time, resources and funds. Yin (2011) explains that research designs are logical plans and procedures for the study that spans the decisions deductively. In addition, a research design bears the knowledge claims and theoretical perspectives to be added to research to address the problems of bias, inconsistencies and compromise.

Furthermore, a research design is a plan for selecting subjects, research sites and data collection procedures to answer the set research questions (MacMillan &

Schumacher, 2010). A research design ensures that the chosen methods respond to research questions appropriately. In this study, the researcher decided to use a qualitative and quantitative research design. The purpose of a mixed-methods design was to collect both quantitative and qualitative data, merge the data, and use them to conceptualise the research problem better. The reason for using mixed-methods was to expand and strengthen conclusions and, subsequently, add to the research reliability and validity.

The mixed-methods design that was used for this study is the convergent parallel design. The purpose of a convergent parallel or concurrent mixed-methods design is to collect both quantitative and qualitative data concurrently, merge the data, and use the results to understand a research problem better (Creswell & Plano Clark, 2011). Two basic reasons for this design are that one data collection method supplies strengths to counterbalance the weaknesses of the other method and that a more complete understanding of a research problem results from collecting both quantitative and qualitative data (De Vos, Strydom, Fouché & Delport, 2011). The main benefits of this design are that the strengths of qualitative data offset the weaknesses of quantitative data, while the strengths of quantitative data offset the weaknesses of qualitative data (Mills & Gay, 2016).

Based on the rationale for using mixed-methods, the researcher reflected on the research questions and was cognisant of the principles and justifications for choosing mixed-methods over other approaches.

In general, mixed-methods were used to collect, analyse, and interpret quantitative and qualitative data on a comparative scale with other studies that investigated a similar phenomenon. Data in the form of views, opinions, perceptions, understanding, meaning, thinking, reasoning (qualitative) and figures, numbers, variables, and numerals from participants (quantitative data), were collected. The blending of quantitative and qualitative research using mixed-methods ensured a more reliable and valid study.

4.4 RESEARCH APPROACH

Creswell (2014) urges that using a mixed-methods approach helps to explore and understand the meanings individuals or groups ascribe to a social or human problem. The approach involves the questions emerging from the aims of the

study, the procedures used, the data collected from the participants' setting and data analysis so that the researcher can make interpretations and infer the meaning.

On the other hand, quantitative research is an approach for testing theories by examining the relationship between variables. These variables can be measured by instruments so that the numbered data can be analysed using statistical procedures. Both qualitative and quantitative methods were chosen for this study because the researcher wanted to get a detailed account of the topic under study, and also quantify the data collected.

A comparative and systematic study was taken to study the available literature on skills shortage gap and skills development as well as the TVET education and training system. The study undertook an in-depth analysis to compare the dynamics of TVET systems in South Africa with selected countries, such as, Germany, Australia, China, and Ethiopia. The history of TVET was reviewed for tracing the historical events regarding TVET provisioning. The literature on the current, as well as on the desired TVET, was considered to determine possible alternative ways for the TVET curriculum to address the skills shortage gap.

An in-depth analysis approach was considered to look at every possible argument and assumption about the topic under study. In addition, using in-depth analysis, the researcher aimed at understanding the socio-economic phenomenon of the TVET curriculum and the skills shortage gap to make linkages in skills development in view of the nature and degree of the associated challenges. *Secondary*, the literature gave the researcher key insights into the skills shortage gap as well as information on the contextual information on the programmes offered with a special focus on the scope of the study. All the available documentation was consulted including research papers, reports, presentations, policies, frameworks and legislations, such as, the National Skills Development Strategy (RSA, 2011b) and the National Skills Development Plan (RSA, 2011d).

Other documents reviewed were documents on the skills shortage gap and the skills mismatch, documents on skills development, documents on the concept of 'TVET,' the TVET curriculum and TVET education and training, documents on jobs, jobs creation, employment, unemployment and poverty. Other documents

that were reviewed were documents on youths and young people in rural areas, documents on sustainable development, lifelong learning, and documents on education and training. The verification and crosschecking of the sources were undertaken to ensure accuracy, fairness and insightfulness to meet the study objectives.

4.5 POPULATION AND SAMPLING PROCEDURES

A population is a universe from which a sample of the study is chosen. Cohen Marion and Morrison (2011) define a population as the entire group of persons or objects that are of interest to the researcher's objectives. It is a group of potential participants to whom the researcher wants to generalise the study results.

A population consists of elements from the population in which the researcher is interested in studying. Terrell (2011) defines a research population as the study of a group of well-defined collection of individuals or objects taken from the general population. Furthermore, a research population is generally a large collection of individuals or objects as the main focus of scientific inquiry. All individuals within a certain population should have a common, binding characteristic or trait.

Cohen, Manion and Morrison (2011) state that the quality of research is not only based on the appropriateness of methods and instruments, but also on the suitability of the sampling strategy. Identification procedures should be used as the basis for deciding whether an individual or object would or would not be classified as a member of the population in question (Brink, Van der Walt and Van Ransburg, 2012). The study population consisted of a TVET college principal, campus managers, heads of department, curriculum specialists and subject specialists and TVET college lecturers.

Sampling entails the researcher's process of selecting the sample from a population to obtain information regarding the phenomena in a way that represents the population of interest. Brink, Van der Walt and Van Ransburg (2012), define a sample as a part of a fraction of a whole or a subset of a more extensive set that is selected randomly by the researcher to participate in a research study.

A sample is a section of research variables to be studied in a large population to acquire knowledge about the entire population. Instead of studying the whole

population, the researcher selected representative variables of the target population in order to simplify the study; save time and cut costs.

The sample frame consisted of One TVET College Principal, Two Campus Managers, One Assistant Director: Curriculum, Two Curriculum Specialists and 120 TVET Lecturers, based on their knowledge and experience about the topic. Due to the limited resources and time, the researcher was convinced that the sample size was adequate and representative of the population and topic under study.

The College Principal was regarded as the chief executive of the TVET College. The Campus Managers were regarded as the overseers of the TVET College at campuses where different TVET curriculum programmes were implemented. They were looked at as the supervisor of the campus. The Assistant Director: Curriculum, was regarded as a staff member with sound curriculum training and experience. The curriculum specialists were believed to be the managers of different departmental units of homogeneous instructional offerings. They were identified as subject managers with a full understanding of both theory and practice. Accordingly, the TVET lecturers were selected because they were the implementers of the TVET curriculum. Questionnaires were issued to the TVET college lecturers; while semi-structured interviews were conducted with the TVET managers in the sample.

The quality of research work does rely solely on the effectiveness of the methods employed but also on the representativeness of the sample (Creswell, 2014). There are two sampling methods, namely, *probability sampling and non-probability sampling* (Wagner, 2012). The types of non-probability sampling include *convenience, snowball, quota and purposive* sampling respectively.

Probability sampling involves randomisation. This category of sampling assumes that all members of the sampling frame have equal chances of being selected for the study. On the other hand, non-probability sampling entails that there are no equal chances for selection of a participant during the selection of the study samples. In turn, Bobbie (2014) states that, probability sampling is suitable for large representatives whereas non-probability sampling is basically used in qualitative research. However, in this study, the researcher selected the

participants in accordance with probability sampling, which gave all the probable participants equal opportunities of being selected. No other factor apart from chance played a role in the selection of the respondents. After studying the sample, the researcher generalised the results to describe the properties of the whole population.

4.5.1: Purposive sampling

Purposive sampling is a process where the researcher selects a sample based on experience or knowledge of the group on the topic of study. Purposive sampling means participants are selected because they possess the distinct features of the data needed (Creswell & Plano Clark, 2011). This implies that, the researcher purposively selected those participants who possessed the knowledge and experience in the TVET curriculum. Purposive sampling refers to the process where the researcher selects a sample based on experience or knowledge of the group. Importantly, purposive sampling means participants are selected because they possess the distinct features of the data needed (Creswell, 2014).

Brink, Van der Walt and Van Ransburg (2012) explain that purposive sampling is a technique that “is based on the judgement of the researcher regarding participants.” He further notes that participants are regarded as typical representatives of the study and that are knowledgeable on the topic under investigations.

In this study, the researcher selected respondents who responded to the questionnaire randomly for the sample based on the judgment and typicality of those characteristics being sought by the study (Cohen, Minion & Morrison, 2011). According to Creswell (2014), the purpose of purposive sampling is to identify respondents who have the appropriate information. The researcher was convinced that the selected sample was within the ambit of the topic under study as well as the proximity and work experience of the research.

Brink, Van der Walt and Van Ransburg (2012) regard purposive sampling as a technique “based on the judgement of the researcher regarding participants.” They add that participants are regarded as typical representatives of the study who are knowledgeable. In addition, Brink Van der Walt and Van Ransburg *et al.* (2012) indicate that the characteristics of random sampling involve a one-stage selection

process, in which each participant has equal and independent chances of being selected in the study.

Purposive sampling is advantaged by selecting a population upon which the focus of the study is directed. *Secondly*, it was simple to work with a smaller number. *Thirdly*, purposive sampling gives each participant in the sampling frame “an equal chance of being included in the study” (Creswell & Plano Clark *et al*, 2011).

However, if not used carefully, purposive sampling is disadvantaged in terms of pre-determining the participants which may create bias in the study findings. Sampling a small population may have detrimental impact on the generalisation of study findings and results to describe the properties of the whole population.

A computer-generated selection process was used to select those respondents and situations that had the largest potential for the advancement of the study in terms of saving time and cutting costs. The sample framework of participants was based on the possession of the characteristics, knowledge and experience, being sought in accordance with the study needs (Cohen, Minion & Morrison, 2011).

The participants were selected on the basis of their willingness to participate through word-of-mouth and formal requests. The researcher used his knowledge to decide which members should be selected for the sample population by making a judgement regarding who would be relevant and resourceful. A convenient sample was selected because this was influenced by the accessibility, proximity, availability affordability, expedient, as well as the participants' ability. All the population in the sample were assumed to possess the above qualities by the very nature of their work. They were readily available and were involved with the TVET curriculum.

4.6 RESEARCH SITE

In this study, the researcher used a case study design of one TVET college from The King Cetshwayo District and two sample campuses, one from the Umhlathuze Municipality and another one from the Umlalazi Municipality respectively. Below is the map of Northern Kwa-Zulu Natal. These campuses are fed by rural schools that fall within the research site, namely, the Umkhanyude, Zululand, Mthonjaneni and Inkandla Schools respectively.



Figure 4.1: Map of Kwa-Zulu Natal (Source: Google maps)

4.7 DATA COLLECTION

Leech and Onwuegbuzie (2011) define data as those pieces of information that any particular situation transmits to an observer. There are two types of data, namely; *primary and secondary data*. Primary data are data collected directly from the respondents and comprise first-hand information collected directly by the researcher.

Primary data entail information that were gathered from the sample frame because no one collected or published it; hence, it was not accessible to the public. This included the views, behaviour, responses, opinions, views as well as perceptions of the research participants on the topic under investigation. With regard to the primary data, reliability is assumed to be high because it is collected by a reliable party. Furthermore, primary data are current, original and relevant to give the researcher a better view of the topic under study. Primary data can be collected by means of various methods such as interviews, focus groups and questionnaires (Creswell, 2014).

Secondary data were also explored in this study. This was the information that was collected and analysed by earlier researchers. In addition, secondary data may be data that are not related to the current study, but considered worthy of being used to affirm the study reliability, validity and authenticity. Secondary data involved

literature such as, books, periodicals, manuals, magazines, journals, dissertations, reports, articles, papers and theses on the skills shortage gap, the skills mismatch, rural areas, TVET education and training and the TVET curriculum administration and management. Using secondary data provided the researcher with a frame of reference, while saving time, effort and money. Lastly, the data collection took place by means of questionnaires and semi-structured interviews.

4.7.1 Data collection methods

All studies involve data collecting techniques and analysis either through reading, asking questions, measurement, observation, or a combination of strategies (Johnson & Christensen, 2010). Without high-quality data collection techniques, the accuracy of the study conclusions is easily challenged. Creswell (2014) maintains that data are obtained by the use of data collection methods. This implies that the researcher should be aware of the advantages and disadvantages of the selected methods and approaches. Bryman (2012) avers that data collection is an extremely important step in research.

Data collecting methods are fact-finding strategies serving as tools for data collection (Zohrabi, 2013). The researcher ought to ensure that the chosen methods for collecting data are appropriate with regard to the research objectives and are able to provide answers to the study questions. Leech and Onwuegbuzie (2010) posit that the methods chosen should be convenient and easy to use. Data can be collected through a set of questions by an interviewer using an interview schedule (Zikmund *et al.*, 2013). In this study, data were collected by the use of semi-structured interviews (See *Appendix F*) and questionnaires (See *appendix E*).

Questionnaires

There are ways of using questionnaires, namely, in person (also called face-to-face), telephonic interviews (also called voice-to-voice), and mailed surveys (also called self-administered and computer networks. A questionnaire is a written set of questions (Terrell, 2011). In this study, self-administered questionnaires were used to collect data. A total of 120 questionnaires (see *Appendix E*) were issued to the participants (lecturers). Every respondent was contacted telephonically for an appointment to request his/her participation as the questionnaire and interviews

were done during the COVID 19 Level 2-3 lockdown. An explanation of the purpose and procedures of research were given to all the participants before the questionnaires were administered.

All the respondents were briefed regarding the ethical considerations of the names with regard to the confidentiality, privacy, respect and anonymity principles. This was helpful with building relationships, confidence and trust between the researcher and the respondents. The questionnaires consisted of 31 carefully selected closed-ended questions spread across the TVET curriculum and the skills shortage question with regard to the implementation, management and administration and training of skills, work-based experience (WBE), and work integrated experience (WIL). Other topics addressed in the questionnaire were: personnel, infrastructure, legislation, curriculum content, human resources, delivery, relevancy and responsiveness. The distribution of questions was aimed at obtaining reliable and valid data.

The researcher chose questionnaires as a data collecting tool because questionnaires were cheap to produce in terms of the costs, energy and time. *Secondly*, questionnaires had open-ended questions which made it simple for the participants to respond. It was estimated that it would take 15 to 20 minutes for the participant to complete a questionnaire. It is important to note that questionnaires respect the anonymity of participants in terms of ethical considerations. Furthermore, since there was no face-to-face interaction between the researcher and the respondent, questionnaires gave the respondents the freedom to disclose sensitive information in case it was sought.

Questionnaires were cheap to deliver and to collect from the participants. On the part of the researcher, it was easy to administer, and the data provided were simple to categorise, analyse and interpret. Importantly, questionnaires were not subject to the researcher's bias in terms of interpretation and were less intimidating, thus, obviating the validity and reliability concerns. Furthermore, questionnaires were used because they did not limit the answers; they permitted creativity, and were self-administered raising the chances of providing diverse and detailed data.

Accordingly, the questionnaires ensured the confidentiality of the participants and their responses. The researcher collected the questionnaires himself and put them

in a safe place accessed by himself alone. The respondents were told that all the data given would remain anonymous and confidential and that it would be published in an academic journal for academic purposes. In this study, no identity of any participant from the datasheets or their names appeared on the questionnaires or in any recording. No names, college, office or campus or any particulars of any respondent was identifiable. This increased the anonymity and confidentiality of the data.

Closed questions helped with ensuring that the research maintains focus to produce the data that were easy to translate into standardised forms. The questionnaires gave the participants the option to choose and give responses that did not need explanations; hence, the data provided were specific, easy and quick to compare, to communicate the meaning and to code and analyse statistically. The respondents were more likely to provide information on the sensitive topics touched on in the questionnaires.

However, closed questions, are challenged by the lack of explanations to the responses. In some cases, some participants may not attempt to complete the questionnaires or may not return them to the researcher despite the consent obtained. Sometimes, some questions may require explanations that may not be provided. This will have an impact on the research study.

However, the researcher planned carefully beforehand for all these situations and was aware of all those circumstances, and made sure that the questions were in simple and clear language, sensible, unbiased and did not cause the participants to experience emotional stress.

Individual Semi-structured interviews

Brink, Van der Walt and van Rensburg (2012) define an interview (see *Appendix E*) as a method of data collection in which an interviewer obtains responses from the participants (interviewees) either in a face-to-face encounter or through a telephonic call or by electronic means. Interviews refer to the personal exchange of information between the interviewer and the interviewee. This implies that an interview is a two-way communication process where the researcher asks the participant questions to collect data and to learn about the participant's views, ideas and opinions, knowledge and experience about the topic under study.

Yin (2011) explains that a focus-group is focused because it is comprised of people presumed to have experience of the common views of the topic under study. Creswell (2014) states that an interview involves a researcher asking one or more participants, general or open-ended questions and records their answers. He continues to explain that open-ended questions are asked to ensure that, the participants can voice their opinions. One College Principal, two Campus Managers, One Assistant Director: Curriculum and two Curriculum Specialists were interviewed.

Individual semi-structured interviews were conducted on the sampled selection of participants after making an appointment with each of for a convenient date, time and venue prior to the sessions. The respondents participated voluntarily. At the beginning of the session, the researcher re-explained the purpose of the study, their role and rights to the participants and gave every participant a fair chance to make contributions. Bryman and Bell (2014) argue that the individuals will often argue with each other's views leading to a more realistic account of what people think, and in that way, the researcher can study how participants make sense of a topic under study collectively to construct meaning. De Vos, Strydom, Fouchè, and Delport (2011) pronounce that semi-structured interviews are used to elicit individual perceptions, opinions, facts, forecasts and their reactions to the findings and the potential solutions.

In the individual semi-structured interviews, the interviewer typically has a general interview guide (interview schedule) with a list of topics. The questioning style is usually informal, and the phrasing and sequencing of questions vary from interview to interview, supplemented with probing questions, when necessary. Individual semi-structured interviews consisted of open-ended questions lasting for 1.45 minutes at intervals of one month as an evaluative approach for data reliability and validity. Accordingly, the researcher designed an interview schedule to guide him during the interview sessions. An interview schedule consisted of a set list of questions put together. Individual interviews were administered to participants by asking a set of questions and follow-up questions to obtain their responses.

In this study, individual semi-structured interviews were used with the researcher acting as a facilitator to elicit the participants' insights and views. Individual semi-structured interviews were justified for this study because the respondents could

give their opinions freely, interact with others and give an interpretation of the world around them and expressed how they defined and gave meaning of the situation in which they found themselves. Interview questions were given to the respondents before the interview session so that they would be prepared for their responses.

Face-to-face individual interviews gave the researcher a chance to clarify the questions or re-phrase them. They also used follow-up questions that aimed to ensure the clarity and authenticity of the information. The face-to-face interaction between the researcher and the respondents helped to get direct views rather than collect data from the questionnaires to gain greater insight into and deeper perceptions of the same topic. Because there was a physical encounter between the researcher and the participant, individual semi-structured interviews permitted dialogue to construct a meaningful reality (Yin, 2011).

Thus, individual semi-structured interviews helped to focus on the real-life experiences of the respondents with regard to the topic under study. While using interviews, the researcher was able to make notes on the non-verbal communication of the participants, such as body language and the use of visual aids to avoid ambiguity concerning the respondents' responses. Individual semi-structured addressed emotional and spontaneous issues to allow a social discussion and helped the researcher to obtain multiple perspectives on the study (Brink & Van Rensburg, 2012).

The researcher encouraged the participants to express their views freely in their own words, while providing clarity on the questions that seemed or sounded ambiguous (Creswell, 2014). The researcher selected participants randomly and purposely with whom to conduct the individual interviews. All the responses were audio-recorded and noted verbatim on a notepad for data analysis and interpretation. Bryman and Bell (2014) affirm that recordings during interviews are necessary for the detailed analysis that is required and to ensure that interviewees' answers are captured.

Nevertheless, individual semi-structured interviews were challenged by unprecedented approaches by the researcher where a researcher may be attempted to give cues regarding the responses of the participants. Secondly,

interviews may create insecurity in participants that may result in withholding important information from the study.

Issues of rapport, honesty, openness and mutual trust are extremely important to address during research. Conducting interviews is also time-consuming for both parties. Furthermore, interviews require discipline on the part of the researcher to allow the responses to flow while holding back on the questions emerging by the researcher until the participant finishes his/her response (Galetta, 2013). The researcher planned carefully for all these situations beforehand and was aware of all these circumstances.

Data recording

The data collected from the questionnaires was captured and entered into the SPSS on a secure password protected computer. Flick (2014) believes that the captured data should be stored in a private email known to the researcher alone. Furthermore, the data collected from the interviews were recorded and transcribed. They used questionnaires, and the interview schedules were sealed in an envelope and kept safely.

Data processing

McNabbi (2013) asserts that raw data represent nothing. He explains that data have a meaning when they are processed from their raw state to explain or address the research aim, objectives and questions. Data processing precedes data analysis. Accordingly, relevant instruments were designed to process the data, such as, recording, reporting, categorising, coding and triangulating. The researcher was aware of the kinds of data collected as well as the variables and how to manipulate them. A correlation was carried out to establish the relationship between and among the variables. In this study, raw data collected were entered into the SPSS with different codes.

4.8 DATA ANALYSIS

Data analysis involves reducing high volumes of information, sorting out the significant from the insignificant data as well as the relevant data from the irrelevant data, identifying patterns and trends and constructing a framework of communication for the purpose of the research. Data collection and analysis happen simultaneously. They are inseparable because of their intimate relationship for building a coherent interpretation (MacMillan & Schumacher, 2010).

The term “data” points to information that is collected in a systematic way, organised and recorded to enable the reader to interpret it correctly. Data analysis can be described as the process of making sense of the views and opinions of the research participants, corresponding patterns, themes, categories and regular similarities. Thus, data analysis is the process of bringing order, structure and meaning to the mass of collected data. In data analysis, the search for general statements about relationships among categories is done. It is the inductive process of transforming data into meaning and, then organising them in themes and categories and identifying patterns or relationships among the categories.

In addition, descriptive statistical techniques were used to analyse the data. A descriptive statistics approach employs measures such as frequency distributions, measures of central tendency, dispersion or variability and measures of relationships (Babbie & Mouton, 2010). The responses from the interviews were analysed using content analysis that was done with the use of thematic, common and recurring words.

The purpose of data analysis was to generalise the data through a comparison of various materials, texts or cases. The data were classified, categorised, identified, presented and interpreted to discover and describe the emerging themes. An assessment of the skills shortage gap and its impact on economic development, especially in rural areas was carried out, and the impact of TVET education on education and training was examined. Comparisons, trends and patterns were identified including the youth skills shortage, poverty and unemployment.

During and after the data collection process, the researcher categorised, coded, prepared, transcribed, scanned, typed and sorted the data according to the source.

The views and opinions of the participants with an emphasis on the tone and language were considered, especially through the semi-structured interviews.

The researcher frequently read through the transcripts of the data collected to arrange them into segments to create meaning in the form of symbols, signs, labels, and or letters or names (codes). Lastly, the themes were arranged and presented as illustrations, graphs and/ or quotations. To ensure that the correct description of the views of the participants was given, the researcher employed a constant comparative method to analyse the data that is based on grounded theory to allow a three-part coding approach namely, axial, open and selective coding, respectively.

Axial coding relates the initial codes to one another. Open coding pertains to when the data are examined to develop names and categories. Selective coding takes place when choices are made regarding the most relevant codes. All the collected data were recorded verbatim and analysed using codes with reference to particular participants and sources before the final findings were presented.

4.8.1 Data analysis process

Step 1: Organising and preparing data

The questionnaires were issued to the lecturers, and interviews were conducted with the TVET managers on the subject being investigated. The researcher used audio tape recorders to record the responses of the interviews that he later transcribed verbatim.

Step 2: Reading data

The researcher frequently read through all the transcribed information to get a better understanding of it.

Step 3: Coding of data

Data coding consists of arranging data into themes and categories and naming them according to the kinds of participants (Creswell, 2014).

Step 4: Generating descriptions and themes for analysis

Creswell (2014) maintains that a researcher should use five to seven themes in a single study. The detailed descriptions provide details by giving information

regarding the participants, places and events. Codes were given and used to label the information provided by the participants.

Step 5: Presenting the themes and description

The researcher presented the findings collected from the respondents using a Narrative approach.

Step 6: Interpretation of data

This was the last step in the data analysis process. The researcher reviewed all the study findings while focusing on the aim of the study, namely, the challenges facing the TVET curriculum in addressing the skills shortage gap in the northern areas of rural Kwa-Zulu Natal.

4.8.2 DATA ANALYSIS METHODS

Data analysis began while data collection was still underway. The experiences of the respondents were described, broken up into themes, patterns and relationships that were manageable. The data were organised in order to establish any emerging trends by typing, studying, presenting and comparing trends within categories to look for variations.

As part of the process of theme identification, a thematic content analysis was applied to allow the researcher to immerse himself in the collected data and to categorise it into different themes by employing a bottom-up approach as the data emerged from the transcripts.

Open coding was carried out through dismantling the texts, while the contrasting relationships among different concepts were also assessed and organised systematically. The classified categories were informed by the established conceptual framework. The final analysis involved comparing materials within categories to look for variations and nuances in meaning.

Data coding

Data coding entails assigning codes or labelling the themes by going through the responses to the same question to identify commonality in meaning. Coding was given the attention it deserved as a basic ethical issue. In this study, data coding was done in different ways using coloured marker pens, making copies of responses and sorting responses into smaller sections that were grouped together.

Coding was used to make sense of the collected raw data and to categorise them into different themes and patterns. Bryman and Bell (2014) explain that keywords, names, letters and numbers are assigned to themes according to the source as pseudonyms to hide the identity of the participants.

4.9 ETHICAL CONSIDERATIONS

Ethics define what is and what is not legitimate for the research process. It conveys a meaning to the moral values of the research subjects, especially how the researcher ought to behave and administer research with the research participants. The ethical considerations involved, research procedures, accepted and unaccepted behaviour in research studies. Respondents cannot be coerced into providing data, but rather encouraged to participate in this research study. However, the final decision regarding whether to become involved and when to withdraw from the research is entirely theirs. Cohen, Marion and Morrison (2014) comment that respondents are not passive data providers for the research; moreover, they are not objects, but subjects.

The purpose of being aware of ethical issues is to maintain the dignity and integrity of human subjects. Ethics protect the participants before, during and after the study, so that they are not abused, coerced, and their rights are not violated in the quest for scientific research or career advancement (Cohen, 2011). Ethical considerations uphold human dignity, privacy, anonymity, self-esteem and the independence of the respondents. It includes the reporting of data without fabrication, falsification, misrepresentation or favouritism, with honest relationships and anything that protects the prejudice of the study (Creswell, 2014).

It is imperative for researchers to know that they are dealing with human beings who are serving as participants in the study; hence, they should be treated with respect, dignity, honesty and trust. A researcher should establish good rapport, good communication, cooperation between him and the participants. Even though the researcher has a right to search for the truth, he or she should not do it at the expense of the freedom and rights as well as the integrity of the participants. In short, both parties have the right to privacy (Cohen *et al* 2014).

Ethics refers to the principles and guidelines that help uphold the aspects valued by research. Ethical issues begin with research planning, data collection,

processing, interpretation, reporting and publication as well as disposal in any case. These are the principles and standards that have to be followed by the researcher, and they govern the research behaviour. For the purpose of this research, ethical considerations mean the rules or a set of codes of conduct according to which a researcher conducts himself or herself while conducting research.

Whenever we conduct research on people, the well-being of the research participants must be our top priority. According to Johnson and Christensen (2010):

Issues of ethics focus on establishing safeguards that would protect the rights of participants. The traditional and often dominant issues that emerge when considering research ethics involve obtaining informed consent from participants to protect them from harm, and ensure confidentiality.

It is believed that while carrying the research out, the researcher encroaches on the private life of the participants. Bell (2010) emphasises that the major ethical issues entail striving to do no harm, ensuring privacy and anonymity of information providers, confidentiality, informed consent, creating rapport, avoiding inappropriate behaviour and sticking to an appropriate data interpretation.

In this study, the researcher adhered to the required ethical standards including, obtaining informed consent (*See Appendix B*), anonymity, confidentiality, trustworthiness, and privacy, no harm to participants, respect and gaining access to different gatekeepers. After consultation and permission had been requested by telephone to gain access to the respondents, the consent forms were signed that explained the responsibilities, rights, and expectations in this study. The participants were given the freedom to engage in voluntary participation. This ethical principle was discussed with the participants and it was explained that they had the right to participate or withdraw from the study or withhold information at any time without notice, fear, favour, victimisation or penalty.

During this study, the researcher ensured that the research conformed to all acceptable ethical considerations. Permission to conduct research was sought, and an ethical certificate was issued by the University of Zululand (*See appendix A*), permission from Principal of the College (*See Appendix C*) and the Campus

Managers (See *Appendix D*). The information provided by the participants was handled with the utmost confidentiality. In this regard, the identities of the participants were concealed using pseudonyms and the data were processed anonymously by assigning codes to them. The principles of beneficence were emphasised to ensure the protection of the participants against harm and or exploitation or any form of coercion during the research process.

The researcher explained the aim of the study to the participants as well as the fact that it was purely for academic purposes to build a body of scientific research and that no information received would be used against any participant. The participants were given an opportunity to ask any questions at any time they did not understand any conditions. Consequently, the researcher reported the responses of the participants without any additions.

Furthermore, the researcher attempted to understand the social status of the participants as TVET managers and lecturers in the context of the TVET curriculum under investigation. This allowed the researcher to gain a deeper understanding of the field of research. The security of the data was emphasised, where no private access to it by unauthorised personnel would be granted apart from the participants themselves, the researcher and the supervisor.

There was an understanding between the researcher and the participants regarding the necessity of building trust between the two parties (Creswell, 2014). Accordingly, the researcher established a good rapport between himself and the participants, which was conducive for the atmosphere in which the data collection process took place.

Permission

Permission was requested from the authorities and participants to conduct the research (*Appendices, A, B, C and D*). Secondly, the researcher disclosed his status and interest in the study as a way of promoting the research integrity. The researcher also explained all the procedures to be followed in an introductory letter to the participants beforehand.

Informed consent

Consent is an agreement by the participant to provide data and to be part of the study. Creswell (2014), believes that informed consent ensures that individuals

participate in an exercise out of choice, free from any element of fraud, deceit, duress or similar unfair inducement or manipulation.

For the purpose of this research, the researcher made it a requirement that every participant should indicate his or her willingness to participate in the study through the signing of the informed consent letters. This was done in accordance with the ethical principle that it was the responsibility of the researcher to ensure that participants in the research not only agreed and consented to participating in the research of their own free choice, without being pressurised or influenced, but that they were fully informed about what they were consenting to.

Voluntary participation

The researcher made it clear to all the participants before enrolling in a study that, they were not committed to remaining in the study, and they would terminate their participation at any time. All the precautions were explained in detail to the participants: the research was only for academic purposes, and their participation was completely voluntary. No token or favour was promised to any participant. Although the participant consented to the data release, freedom of refusal and access were also granted throughout the research process. This meant that their data would not be used at all in the research and would be removed immediately upon request.

For the purpose of this research, the participants were allowed the freedom to participate willingly and withdraw from the study at any time or refuse to provide information if they so wished. The University of Zululand Policy and Procedures on Research Ethics and the discussions on ethical issues with the supervisors, gave the researcher a base of ethical information before, during and after the research was carried out. In addition, a pilot study was also conducted to ensure that all the anticipated challenges were noted and addressed before the main study.

The safety of the participants was ensured and no harm was inflicted on them

The safety of the participants, sometimes termed the principle of “*do no harm*” is one of the cornerstones of ethical conduct (Bell, 2010). Participants may be harmed physically or emotionally by revealing information that could embarrass

them and endanger their home lives, friendships or jobs before, during and after the research was conducted (Bryman & Bell, 2014).

The researcher promised not to cause any physical harm, psychological torture, embarrassment or anything that could lead to adverse reactions to any participant. The researcher also considered how adverse events would be handled with regard to participants in the process of research. He was certain that this was the case concerning all the approaches to be employed; while ensuring that the researcher was not misunderstood and his respondents were not intimidated in any way. The researcher guaranteed that no participants would be put in a situation where they would be harmed. To ensure security against harm, all the participants were informed of the potential impact of the investigation beforehand to give them an opportunity to participate in or withdraw from the study (De Vos & Delport, 2011).

In this study, the researcher did everything possible to avoid anything that could harm the participants physically, economically, socially or emotionally. *Secondly*, the researcher adopted a good research language that was not offensive even within the administration of interviews and questionnaires. The questions were framed in simple and clear language, so that no harm could be caused to the participants.

Both the participants and the researcher agreed on the tools to be used to avoid any loss of self-esteem. Importantly, the participants were respected at all times, thereby minimising any psychological risks and maximising the research benefits at all times. The researcher offered the uncompromising safety of the research participants considering the risk/benefit ratio through consent and a good rapport.

Anonymity

A participant is anonymous when a researcher cannot identify a given response to a given participant. This is extremely important because participants give information freely, willingly and voluntarily and in good spirit (Cohen, *et al* 2014). Anonymising a participant entail not linking the participant's identity to the data collected as well as not disclosing them to anyone else.

The researcher promised to protect the identity of the participants so that there were no harmful consequences with regard to sensitive or negative findings or the stigmatisation of institutions or communities. To preserve anonymity, all the data

collected were coded. Furthermore, no participant's details were made known to outsiders, and no data were recorded without the consent of the participants, and no one had access to the data apart from the researcher. Sample selection, data collection and reporting were considered carefully and ethically. No one apart from the researcher knew the addresses and personal details of the participants and all the data were kept private.

Respect

It is unethical of a researcher to leave the collected data from any respondent unattended where unauthorised personnel may access it. The researcher ensured that the data were kept safe and unwanted data were destroyed in the recommended ways. No names, designations or personal information was exposed or referred to personally, instead codes were assigned to all the participants and locations.

The researcher observed the principle of respect for all participants, whereby he made a commitment to the participants not to disclose their identities. The participants were allowed the freedom to participate, withdraw at any time or refuse to provide information willingly. The responses received were treated with respect as those reported experiences of the participants that were *recorded verbatim*.

Confidentiality

All the information and participants' identities were kept confidential as mentioned before. The researcher observed the traditional ethical principles of autonomy, beneficence and justice. Data were coded and captured with the use of an SPSS computer programme that was password-protected with authorised access only.

For the purpose of this study, the researcher made it clear that the participants' identities would not be used for any purposes, nor would any information be shared that revealed their identity in any way. Furthermore, no hidden apparatus was used, while the apparatuses that were used were agreed upon by both parties. In addition, the privacy of the participants was maintained through the removal of any identification information before widespread dissemination of information, using pseudonyms. In addition, private passwords for all the data stored in computer files were used. Lastly, all the unnecessary work was also destroyed.

Dependability

Dependability entails the provision of evidence so that if it were to be repeated with the same or similar participants in the same or similar contexts, the findings would be the same (Brink, Van der Walt & Van Rensburg 2012).

To ensure that the data were dependable, the researcher recorded the views of the participants verbatim so that the respondents would be able to confirm that those were indeed their views. After generating the transcripts, the researcher verified them with the participants to confirm whether those transcripts actually reflected the participants' responses. The consistency of results, as well as triangulation, was also emphasised.

Conformability

The concept of 'conformability' implies adherence to objectivity. Creswell & Plano Clark (2011) guarantee that data support the findings, conclusions and recommendations of the research and that there is an internal agreement between the researcher's interpretation and the actual evidence. The researcher, therefore, needs to ensure that the findings are informed by the views and opinions of the participants and not the preferences of the researcher.

To determine conformability, the views of the participants were written verbatim in italics to represent the voices of the participants and to separate them from the interpretation of the researcher. The researcher also used an audit procedure after all the data had been transcribed and recorded. One of the unexpected concerns relating to ethical issues is cultural sensitivity. The relationship between the researcher and the subject needs to be considered in terms of the values of the researcher and the cultural aspects (Brink, Van der Walt & Van Rensburg, 2012). The researcher took the appropriate steps to adhere to strict ethical guidelines to respect the participants' cultural sensitivity, such as anonymity, privacy, confidentiality, refusal to provide data, withdrawing from the study and seeking permission. Data triangulation was also adopted. Zohrabi (2013) opines that research triangulation is important in reducing the inherent bias of a single source. *Lastly*, the researcher ensured that data analysis served the purpose of the study.

4.10 VALIDITY, RELIABILITY, CREDIBILITY, TRUSTWORTHINESS AND TRIANGULATION

'Reliability' and 'validity' are important concepts in research because they are used for enhancing the accuracy, "assessment and evaluation of a research work" (Tavakol & Dennick, 2011). It is assumed to be a research rule that reliability and validity are addressed in a research report. Bryman (2012) notes that measurement, replication, generalisation and causality are key components of validity and reliability. For all the data collected, a detailed assessment of reliability and validity involved an appraisal of the methods used to collect the data. According to (Oluwatayo, (2012). Validity and reliability increase transparency, and decrease opportunities to insert bias in research."

Reliability and validity were maintained in the study by ensuring that the data gathering instruments were of a high quality and that they measured what they were supposed to measure. This was managed through a questionnaire that was piloted on selected respondents to sort any mistakes out and to check the relevance of the questions and to determine whether the included questions would answer the main questions of the study before finally using the questionnaire.

This provided the researcher with an opportunity to make adjustments to the questionnaire. For validation of the overall research findings, the data were triangulated based on a variety of methods and sources. Importantly, the reliability and validity of the questionnaire have a direct effect on the drawing of the research conclusions.

Reliability

Reliability is the consistency or stability of measurements over a variety of conditions in which the same results should be obtained. Accordingly, reliability refers to the dependability and replicability with regard to measurements, instruments and groups of respondents over time (Tavakol & Dennick, 2011).

Reliability may be regarded as the fit between what a researcher records as data and what actually occurs in the natural setting that is being researched. If the results can be reproduced under a similar methodology, then the researcher's instrument is considered to be reliable. In effect, it is the repeatability of the informants' accounts as well as the investigator's ability to collect and record

information accurately. In this regard, Robson (2011) points out that, “The evidence of validity and reliability are prerequisites to assure the integrity and quality of a measurement instrument” (Robson *et al.*, 2011).

Importantly, reliability generates research dependability, trustworthiness, credibility, applicability and conformability. In addition, reliability seeks to ask the following questions. *Will the measure that you have employed yield similar results? Does the measure really measure the theoretical concept? Will all the items of the measure be consistent internally?* (Creswell, 2014). The consistency of the results repeated in the same situation, in the same way on the same variables, is extremely important in any study. Any measure is considered reliable if the score is persistent when using the same test given.

To ensure reliability in this study, a number of approaches were used to record the researcher’s observation constantly as well as triangulation. All the responses were recorded verbatim and accurately and all the transcripts were checked thoroughly to ascertain that they did not contain simple mistakes made by the researcher. The researcher confirmed that there was no deviation in the meanings of the assigned codes to different data. The researcher constantly checked and compared the data and the codes, as well as their interpretation.

In this research, reliability was ensured, beginning with the nature and scale of the questions in the questionnaires and the interview sessions. The questions set were in simple and clear language to avoid ambiguity and prevent unnecessary stress on the part of the respondents. In the case of the interviews, the researcher clarified the questions where necessary. The questions were set within the ambit of the work environment of the participants. In addition, the researcher outlined and explained all the steps to be followed in a manner that could set the participants at ease.

Relationships with the subjects being studied are extremely important to move from being a stranger to being a friendly, trusted person. The researcher established, assessed and reflected on his behaviour, feelings and responses in relation to the behaviours of his subjects as he started to collect data for confirmation of the truth. He ensured that the findings were credible to the extent that they could stand up to scrutiny. This was done by:

- Making sure that the informants were extremely clear about the nature of the study, for example, what the researcher was studying and the data was being collected as well as the purpose of the study.
- Building a trust relationship with the participants and staying in that relationship throughout the research process.
- Repeatedly using the same instruments over different times and different variables.
- Comparing the results obtained with other evidence.
- Confirming the findings and analysis with the informants.
- Making accurate and detailed notes to note the variations in responses.
- Showing field notes to a second outside researcher to see where or how a field worker was misled.
- Looking purposely for contrasting cases, such as, negative, extreme and countervailing cases.
- Considering contrasting views, mostly in high scoring and under-representing informants.

The researcher was as consistent as possible in collecting the data from all the respondents. He created a conducive environment for the respondents to feel free and comfortable. The researcher also made sure that his pre-conceived opinions did not influence the responses of the respondents nor the study findings.

Any anticipated issues were clarified to the participants beforehand. The researcher avoided feelings that could make him aloof or lead to misconceptions and false judgment regarding the respondents' views. Furthermore, the researcher guarded against misunderstandings on the part of the respondents within the question framework so that the respondent could answer the questions freely. He alerted all the participants before the time, provided clarification where the participants seemed to be giving ambiguous information to guard against misunderstandings and misconceptions.

Validity

Validity is seen as the integrity of the conclusions that are generated from a piece of research (Robson, 2011). It is synonymous with dependability or credibility and the accuracy of the scientific findings. This implies that all parts of the data must

be inspected, analysed, and tabulated appropriately finally to give the reader a chance to gain a sense of the data as a whole.

In turn, Thatcher (2010) posits that any measuring research tool should measure what it is supposed to measure. Importantly, validity refers to the degree to which an empirical measure represents the exact meaning appropriately and explores the accuracy of the questions asked, the data collected and the explanations offered. In effect, a valid study should demonstrate what actually exists, therefore, a valid instrument or measure should actually measure what it is supposed to measure. Moreover, validity ascertains whether the findings are correct between the researcher and the participants. Such findings should have truthfulness in themselves and the explanations of those findings should be accurate. The perspectives, the opinions, and attitudes of respondents can also contribute towards the validity of the data (Robson, 2011).

Importantly, Creswell (2014) notes that when reading a research study, you need to look for evidence that the researcher has addressed the issue of validity, including, *face validity*, *content validity*, *criterion validity* and *construct validity* where the underlying theory is tested. In order to address validity, the researcher made sure that the study was tailored in terms of its aim and objectives. Accordingly, the researcher endeavoured to be honest, with regard to the depth, richness and scope of the data to be collected, approachable to participants, be objective and also ensure the authenticity of the triangulation phase of the study. To ensure validity, the researcher explained the purpose of the study to the participants as well and also ensured the anonymity and confidentiality of the respondents. He emphasised that content validity was addressed rigorously by conducting periodical intervals of a one-month interval to evaluate the reliability of the data collected (Creswell, 2014).

The member check strategy of internal validity was used to ensure the plausibility of the findings and interpretations. After the transcription of the interviews, the data were sent to the respondents to confirm that what was written, was consistent with their answers. According to Zohrabi (2013), external validity relates to whether or not research findings can be generalised beyond the immediate study sample setting. (Zohrabi, 2013, p. 254-262). The researcher ensured external validity by considering the exact life settings of the participants, which were presumed to yield

the same results even if the tools were administered to the same participants in the same setting. External validity addressed the degree to which representation was legitimately applicable across the groups.

To ensure validity, the researcher emphasised that, there were enough resources to collect data with the necessary arrangements, such as questionnaires, were delivered to the respondents in time according to the agreed date and time. Furthermore, the data were recorded accurately to guard against the distortion of the views of the respondents (Cohen *et al.*, 2011).

The researcher ensured the validity of this study through prolonged and persistent fieldwork and by t establishing a positive rapport with his respondents. In addition, he carried out in-depth interviews in the settings against the backdrop of the experience of the participants. This was aimed at developing an understanding of the phenomena under study (Creswell, 2014).

The researcher used mixed-methods to collect the data that was aimed at promoting triangulation across the data. Using mixed-methods helped to provide insight to the researcher about the topic of study to increase its trustworthiness.

The researcher used simple and clear language throughout the research process in both interviews and questionnaires and recorded the responses of the participants verbatim without adding or subtracting anything. The researcher also noted the opinions of the respondents as the data were collected. He used audio methods to record the responses of the participants, which helped him with the process of coding and reporting (Creswell, 2014).

Credibility

Credibility is seen as the correspondence between the way in which the researcher interprets and presents the research findings and the meaning and perspectives of the research participants. Furthermore, credibility in any research is obtained through a detailed description of the setting, the participants and themes that emerged (Creswell, 2014).

In this study, the researcher provided a detailed description of the setting of participants and themes that emerged from the data. The participants were given an opportunity to participate or refuse to participate or withdraw from the study

without prejudice. Only the really willing participants participated in this study upon signing consent forms. In this study, participants' responses were italicised.

Member checking

Member checking is the intentional correction of factual errors, by offering respondents a chance to elaborate, clarify or confirm their responses. This is the research procedure used to ensure the credibility and validity of the study involving making the transcripts of the interviews and observations available to the participants to check the accuracy of the data provided. Carlson (2010) opines that data should be revisited and scrutinised continually for the accuracy of the interpretation and meaningfulness, coherency and conveyance of the responses. As an ethical consideration, member checking was offered to the respondents throughout the data collecting process and recording to ensure the authenticity of the correspondence. Questions were re-phrased and clarified.

Trustworthiness

It is not sufficient to focus only on validity, reliability and objectivity when measuring the value of research, but rather the concept of 'trustworthiness.' The concept of trustworthiness implies establishing the truth value of the study relating to validity and reliability.

Trustworthiness entails credibility, transferability, and dependability that is synonymous with the traditional research notions of internal validity, external validity and reliability. This implies that the researcher should provide a detailed account to enable a reader to make a judgment of the emerging themes (Cohen *et al* 2011). In this study, the researcher emphasised that data was factual, honest and balanced regarding the social lives of the respondents from their points of view since they lived their lives on a daily basis. The researcher paid a great deal of attention to trustworthiness to convince the audience that the findings were credible. For the purpose of this study, a negative case analysis was reported, and attention was paid to member checking, transferability, persistent observations and triangulation. In this way, the applicability, neutrality, consistency and truth value concerns were ensured.

Triangulation

This is the process used to ensure validity in research by cross-checking the data. Accordingly, triangulation is used to increase credibility and dependability by obtaining information from different sources to identify consistent themes in the study. In this study, triangulation was used by referring to different sources of data as well as using different methods (mixed-methods) to collect data.

4.11 LIMITATIONS AND DELIMITATIONS

The purpose of the study was to investigate the topic under study and to make possible recommendations on how the TVET curriculum can address the skills shortage gap in the rural areas of Northern Kwa-Zulu Natal. The findings of this study were interpreted in line with certain limitations and delimitations.

There was a shortage of finance, time, and diversity of the respondents. In addition, time constrained the study in such a way that the interviews had to be rescheduled to accommodate the needs and availability of the participants. Furthermore, some participants were not willing to co-operate. In order to encourage the co-operation, of the participants, the researcher built a professional rapport with them by earnestly explaining the purpose of the study. Only one TVET College with few, managers and lecturers was studied. It is presumed that, a large amount of data would be obtained if a large sample was designed. No comparison of findings between campuses, managers or lecturers was made because this could cause conflict. Resources, such as a lack of an audio recorder, also limited the study. The researcher used a tablet and a smart phone for audio recording, sometimes the tablet was not audible enough. The researcher had to use written notes to supplement the other apparatus.

4.12 CONCLUSION

The purpose of this chapter was to explain how the study was conducted. The different methods used, how they were used and why they were chosen for the study were mentioned and explained in detail. This chapter gave a comprehensive account of how the data were generated by means of questionnaires and semi-structured interviews.

The chapter also discussed extensively how the data were analysed. In addition, the issues of ethical considerations, validity and reliability were also discussed. The next chapter will present the data findings, analysis and interpretation.

CHAPTER FIVE

DATA ANALYSIS AND PRESENTATION

5.1 INTRODUCTION

In Chapter four, the study explored the methodological perspectives of this research study. In this chapter, the use of mixed data analysis and findings was presented for the purpose of triangulation from both qualitative and quantitative methods. The aim of mixed-methods was to guard against any research bias of a single method approach. Accordingly, data was analysed concurrently.

The collected data were recorded, transcribed, coded, and evaluated for relevancy, to obtain an overview that lists the categories to identify thematic patterns, nuances and re-transcription. The data were captured using the Statistical Package for Social Sciences (SPSS) for analysis. Bryman and Bell (2014) note that the coded data are not presented in an original format, but it is interpreted and presented by the researcher. In this study, the collected data were transcribed and analysed by making summative notes of the key aspects. The data were coded and organised into relevant themes and categories guided by the interview questions and the aim of the research.

The researcher used questionnaires for the TVET lecturers to collect their views through their responses and experience of the research topic. In addition, individual semi-structured interviews were used on the TVET managers to collect first-hand information with clarity and insight through explanations and observations of the emotions and attitudes of the respondents.

Post-positivists embrace quantifiable data but also allow for subjectivity. Although the questionnaire generated quantifiable data, the interview added a dimension by means of which the researcher gained insight into the opinions and perspectives of the parent governors. Interviews tend to provide a more suitable method in the cases where the researcher needs to gain insight into aspects such as people's opinions, feelings and emotions and experiences, as it is a method that is attuned to the intricacy of the subject. The following section is a concurrent presentation of the findings for both quantitative and qualitative data collected.

5.2 QUANTITATIVE DATA

The researcher handed out 120 questionnaires and was able to receive all of them back. Each campus was given 60 questionnaires. The participants (lecturers) were selected randomly using secret papers in a box with numbers on them.

5.3 BIOGRAPHICAL INFORMATION

Biographical information relates to the numbers and category of respondents to whom the questionnaires and individual semi-structured interviews were administered. Biographical information gives a quantitative description of the respondents for the mixed- methods used. In this study, questionnaires (quantitative) and individual semi-structured interviews (qualitative) were used.

Biographical information was important for the researcher as it provided him with an in-depth understanding of the behaviour of individual lecturers and managers and the contextualisation of the TVET curriculum. Biographical information also aimed at giving the researcher an overview and insight into the experiences of the lecturers thus, building an informed understanding, while generating new concepts and building new variables and measures.

Data relating to lecturers (participants) profiles are given below in different topical outlines, and the data analysed represent their responses to the questionnaires sent to them.

Table 5.1: Participants who were given the questionnaires

Category	Campus A	Campus B	Males	%	Females	%	Total
Lecturers	60	60	45	37.5	75	62.5	120
Total	60	60	45	37.5	75	62.5	120

In Table 5.1, it is shown that 120 lecturers were sampled from two campuses, namely, Campus A and Campus B, respectively. There were 45 male lecturers in this study, comprising (37.5%) of the respondents, while there were 75 females that accounted for (62.5%) of the respondents. This implies that there were many more female lecturers than male lecturers. These biographical data were important to establish the gender distribution in a numerical description and to explore how gender impacted on the performance of an individual lecturer regarding the TVET

curriculum. This also provided a description of the lecturers responsible for curriculum implementation in the campuses that took part in the study.

Table 5.2: Description of the participants who were interviewed

Gender	Campus A		Campus B	
Title	Female	Male	Female	Male
College Principal	X			
Campus Manager		X	X	
Assistant Director: Curriculum			X	
Curriculum Specialist	X			X
Total	2	1	2	1

Below is the sample frame of who participated in the study.

- One College Principal
- Two Campus Managers
- One Assistant Director: Curriculum
- Two Curriculum Specialists

Table 5.2 above depicts the categories of respondents that were interviewed. The information provides insight into the responsibility held by the respondents with regard to the TVET curriculum. A total number of six participants depicted in the table above were selected conveniently.

A convenient sample should be addressed in detail because this relates to accessibility, proximity, availability affordability, expedience and the ability of the participants. The researcher decided to choose convenient selection because the participants (lecturers and TVET managers) were conveniently available at any time to participate in the study. Lecturers were accessible to the researcher operating within the scope of the study and were also willing to participate in the study. The convenient selection was relevant for this study because the researcher could afford to reach the lecturers in time, and they seemed homogeneous. The convenient selection was justified because it did not require any criteria for selecting participants. Any participant that complied with the characteristics of the

study's aim and objectives stood a chance to be part of the study sample. Convenient selection helped the researcher collect data on perception and views of the lecturers and TVET managers.

Participants were selected from the different roles played as lecturers and TVET managers to investigate the challenges facing the TVET curriculum in addressing the skills shortage gap in the rural areas of Kwa-Zulu Natal.

Table 5.3: Age levels for the research respondents

No	Age domain	Number	Percentage
1	30-40	94	78.3%
2	40-50	14	11.6%
3	50 -60	10	12%

Table 5.3 shows the age levels for the research respondents. The table shows that, most of the lecturers ranged from 30 to 40 (78.3%) years. Age levels 40 to 50 accounted for (11.6%); while the age group of 50 to 60 contributed to (12%) of the respondents. The information on the age levels was explored to relate the experience of the lecturers as well as understanding the individual variations and to allow for differentiation.

This also indicated that most lecturers who took part were young and may not have been able to cope with the demands associated with a vocational curriculum. However, in a study that was done by Mabusela (2016), it was found that age does not have any effect in the implementation of the curriculum as the expectations were that young educators do have a better understanding of the new system having not been polluted by the traditional system. The findings of the above study are supported by Gichuru and Ongus (2016) that, young facilitators should be well educated in the first place. They must have a mastery of the concepts, both with regard to the theory and the practice with a view to new innovations, creativity and practicability. This implies that age is not the factor under study, as the case with knowledge, skills, experience and applied competencies

Table 5 4: Lecturers' qualifications

No	Qualification	Total	Percentage
1	PhD	0	0%
2	Master's	4	3.3%
3	Honours	10	8.3%
4	Degree	40	33%
5	Diploma	66	55%
6	Certificate	0	0%
Total	6	120	100%

The above information in Table 5.3.4 indicates that only (3.3%) of the lecturers have a master's degree, while (12%) have an honours degree, (33%) have first degrees, and (55%) of the respondents have a diploma which are at National Qualification Framework (NQF) level 6 and they formed the majority of the lecturing staff. From the collected questionnaires, no participant (lecturer) possessed a PhD or a lower certificate level.

The qualification of lecturers is a key factor in teaching and learning. The researcher was interested in exploring the qualification of lecturers to establish their academic achievement and to ascertain whether they had the minimum requirements to meet the requirement for employment in TVET. *Secondly*, the researcher also wanted to establish how lecturers' qualification impacted on their delivery of the TVET curriculum.

There is an increasing need for qualified lecturers in the TVET colleges because academically qualified lecturers are effective and are more likely to produce a good performance for their students. There is a close relationship between the lecturers' qualifications and the academic performance of the students (Arends & Kilcher, 2010). The above information provides the reader with some insight into the background of the participants.

In section A, the selection and composition of the study participants are discussed as well as the qualifications and the importance of their qualifications with regard to the TVET curriculum. The biographical data for both quantitative and qualitative

data are also detailed. In section B the results for quantitative and qualitative data will be presented.

5.4 SECTION B DATA PRESENTATION

In this section, questions were set for quantitative and qualitative investigation. The mixed-methods used in this study warranted the use of the questionnaire as well as interviews. The purpose of this section was to collect a detailed description of the TVET curriculum regarding the topic of study. The researcher aimed at exploring the feelings, opinions, views and experiences of the TVET lecturers and managers on how they respond to the curriculum that they implement.

Thirty -two close-ended questions were set with options for responses. The participants were given the freedom to respond based on their feelings using the following criteria as the rating scale; SA Strongly agree (4), A Agree (3), D Disagree (2) and SD Strongly disagree (1). They were asked to tick the appropriate box provided on the questionnaire.

Post- positivists embrace quantifiable data but also allow for subjectivity. Although the questionnaire generated quantifiable data, the interview added a dimension where the researcher gained insight into the personal opinions and perspectives of the TVET managers during the interview sessions lasting one hour. This section presents a concurrent presentation of the findings of the quantitative data and the qualitative data. The research problem was viewed from the perspectives of the two different components of the TVET lecturers and managers. This added a measure of rigour to the findings. The section that follows presents the data generated in terms of the quantitative data followed by the qualitative data. The data presented in *italics* were the direct responses of the TVET managers that were recorded, analysed and discussed verbatim with support from the related literature

Table 5.5: The TVET curriculum was designed to address the skills shortage gap

	Number	Percentage
Strongly agree	77	64.1%
Agree	39	32.5%
Disagree	4	3.4%
Strongly disagree	0	0%
Total	120	100%

Table 5.5 represents a summary of the findings based on lecturers' responses to the statement which sought to determine whether the TVET curriculum was designed to address the skills shortage gap. The table shows that, out of the 77 respondents, (66.9%) responded that they strongly agreed that the TVET curriculum was designed to address the skills shortage gap. About 39 (32.5%) agreed with the statement, and only four (3.4%) disagreed with the statement, and there was no response that strongly disagreed. Therefore, on average (99.4%) lecturers agreed that the TVET curriculum was designed to address the skills shortage gap. This implies that, despite the challenges, the TVET curriculum aims to provide students with skills training to address the skills shortage gap.

The above results concur with those of with Gewer (2014), namely, that the TVET colleges equip learners with the necessary skills and competencies to work as well as social cohesion. In the same vein, Nzimande (2012) views TVET as consumers of untrained youths. This concludes that the TVET curriculum should be designed to prepare students for professional careers (Harris, 2013).

How does the TVET curriculum attempt to address the skills shortage gap in South Africa?

The College Principal responded:

“TVET colleges provide training of skills for a skilled workforce in the country.”

The results imply that the TVET curriculum is aimed at offering skills training to enable students to get jobs that will, in turn, contribute to development.

The result is supported by the National Skills Development Plan (2011d), which denotes that a skilled workforce promotes economic development in an organisation. The plan also advocates adequate, appropriate and high-quality skills to bring about economic growth, job creation and social development in South Africa.

The Assistant Director: Curriculum was quoted as saying;

“TVET Colleges enrol students from different academic lines as far as grade 9. We offer courses to the employed, unemployed, old and young, men and women. We also have special programs for the disabled, including evening programs”.

The results imply that the TVET curriculum has an extensive programme concerned with enrolling all types of students who aspire to take a course. This is indicated by the varied programmes designed for different categories of students to produce a large number of graduates with skills to take up employment, hence, addressing the skills shortage gap. The results indicated that there may be requirements for enrolment in a TVET College, but they are not strictly observed.

This result is affirmed by Taylor (2011), who notes that TVET college enrolment combined with that of technical high schools constitutes (20%) of the total enrolment at the upper primary secondary level. The total enrolment of the PSET sector is predicted to be (60%) by 2030 in the college sector (DHET, 2015c). This is a confirmation that the TVET curriculum is geared towards achieving high enrolment figures, as a way of addressing the skills shortage gap.

The Campus Manager of Campus B, noted:

“TVET Colleges try to implement the absenteeism policy from DHET. This helps us to control absenteeism and attrition of students. Using this policy, we're able to improve on throughput and certification. But, the policy faces many challenges.”

The researcher regards this result as extremely critical. Colleges try to use a weak policy to address the skills shortage gap. This implies that the systems within the TVET sector are not capacitated with regard to effective policies and legislation. Furthermore, absenteeism and dropping out are seen to be major challenges to throughput and certification. This affects the TVET curriculum in addressing the skills shortage gap.

The Green Paper (2012d) concurs that, the TVET sector is small and weak. This implies that, in its present capacity, the TVET curriculum can neither absorb significantly larger numbers of students nor achieve acceptable levels of throughput and certification.

Campus Manager (Campus A) had this to say:

“Colleges offer (NSFAS) to every student who qualifies.”

The explanation that can be offered here is that a large number of students in TVET are offered bursaries in the form of tuition and other learning costs. Secondly, it means that most of the students in TVET colleges come from low-income families who cannot pay tuition for their children. By offering bursaries to students, TVET colleges are attempting to address the skills shortage gap by giving every qualifying student a chance to study. However, the challenge is poised for those who do not qualify for NSFAS.

To affirm this, TVET Colleges have seen an increase in the recapitalisation grants of over (60%) from DHET. Other sources, like the SETAs, have contributed over (15%); while NSFAS has contributed (20%) and (5%) has been generated in TVET colleges (StatsSA, 2016)

The Curriculum Specialist (Campus A) noted:

“We give accommodation to students. Those who are poor, who are funded by NSFAS and those from long distances. A student is required to sign an

agreement to stay in a hostel under the conditions of the hostel. Our hostels need renovations and restructuring. More than five students live in a single cubical, and not all NSFAS students get hostels. But they need to qualify.”

The implication here is that hostels are given to students as a way of increasing and motivating students to enrol at a TVET college. Hostels help students focus on their studies and to excel academically. However, the results indicate that hostels are not in a good condition and are not accessible to all the students as certain requirements have to be met. Even if a student qualifies, there are not enough hostels to accommodate all the students. Furthermore, there are additional selection tools that limit the number of students that qualify.

The College Principal explained:

“We are on a plan to mobilise all our partners. We are building relationships, especially with the employers, to certify our training. Employers are important to us. They train our students in practical skills through WBE and WIL. These are DHET programs for workplace training for both lecturers and students. We are also trying to change the belief of our partners that TVET training is poor.”

The result shows that the TVET sectors have pillars (employers) that need to be strengthened to address the skills shortage gap. These are the employers of the TVET graduates who, according to the explanation, appear to have a perception that affects skills training in the TVET colleges. Importantly, the emphasis on workplace training through the WBE and WIL programmes, is a step towards addressing the skills shortage gap because students and lecturers will acquire experiential learning.

The Campus Manager of Campus B responded:

“The college is on a plan to open up new campuses deep in the villages. In fact, we have already opened 3 of them. The purpose is to take skills training to rural students where they are. We also have satellite campuses and online courses.”

The implication is that TVET colleges are indeed trying to extend their service to all the different locations, thereby giving all young and old prospective students an

opportunity to study. In this way, the TVET colleges are attempting to address the skills shortage gap. The results, however, do not refer to the challenges faced by the TVET curriculum in attempting to address the skills shortage gap.

The DHET (2012c) proposes addressing skills shortages in rural areas by establishing one skills institution per district together with community education and training centres (CETCs) as alternatives to address the specific skills requirements for the youths and adults.

During individual semi-structured interviews, the College Principal explained:

“Many of our students have completed their courses and passed with distinctions, but they fail to get jobs in their careers, instead they take up anything they come across.”

The above quote highlights the inappropriate skills acquired in relation to the available jobs which can hamper these graduates in their careers. Secondly, the findings indicate a lack of information and connections with regard to employment opportunities. This calls for the DHET to review the TVET curriculum. Accordingly, curriculum design needs to be aware of the lives and needs of the people for which it is going to be implemented.

Table 5.6: The TVET curriculum is an answer to the skills shortages in South Africa

	Number	Percentage
Strongly agree	6	5%
Agree	15	12.5%
Disagree	66	55%
Strongly disagree	33	27.5%
Total	120	100%

Table 5.6 above shows the responses of the lecturers on the answerability of the skills shortage in South Africa by the TVET curriculum. The data indicate that six lecturers (5%) strongly agreed. 15 lecturers (12.5%) agreed with the statement. About 66 (55%) and 33 (27.5%) of the lecturers denied that the TVET curriculum is an answer to the skills shortage in South Africa. Therefore, on average, the

majority of the educators (82.5%) revealed the reality of the situation, namely that the TVET curriculum is not the answer to the skills shortage in South Africa.

This explains that, despite the fact that the data in Table 1 above largely shows that the TVET curriculum is not entirely the answer to the skills shortage in South Africa. There seems to be doubt and a lack of belief in the TVET curriculum for producing competent and skilled graduates who may fill the vacuum with regard to the skills shortage. This is supported by the White Paper on PSET (2015b) that aims the quality to improve the TVET sector through appropriate programmes, capacity building, continuous professional development, good governance, improved learner support, information technology systems, partnerships with major stakeholders, and improved funding (DHET, 2015c).

The success of a business relies on the ability to secure the services of a skilled workforce. The TVET curriculum should aim at addressing those skills shortage gaps and challenges by producing both equitable skills and employable graduates. This should be done by blending both theory and practice through work-based training and experiential schemes. It was found that lecturers who have the qualifications, lack the work experience. Out of the 120 lecturers who completed the questionnaires, only (10%) had work experience of over six months. Only (19 %) had work experience of a year and 70.8% did not have any work experience.

Ferej (2012) notes that many TVET college lecturers lack the necessary vocational experience for the vocational curriculum. The results indicated that over (70%) of the lecturers did not have the requisite experience for implementing the TVET curriculum. Note should be taken here that skills and experience are vital ingredients in teaching and learning. The lack of skills and experience and exposure to industrial training is a key challenge with regard to skills training in the TVET curriculum. TVET colleges report that there are lecturers that are too inexperienced to unpack a vocational curriculum. Experience is seen as an ingredient of knowledge that forms the basis for mastery of the subject content and the command of the appropriate teaching methods. Furthermore, experience builds confidence and a lecturer has knowledge of with a variety of approaches from which to choose to teach his/her learners effectively.

Which skills are trained in the TVET curriculum?

The following note was made by the Assistant Director: Curriculum during the individual semi-structured interviews:

“Critical skills include information technology, engineering, construction, Nursing, Medicine, marine, surveying, etc. Some of these skills are not offered by the TVET Colleges, they are offered in Universities. TVET Colleges offer mid-level skills and these skills are not compatible in the rural life of our students.”

The results reveal that despite the fact that, the TVET curriculum aims at addressing the skills shortage, many critical skills are not trained for. Gewer (2013) supports the result indicating that the TVET colleges offer mid-level skills. This implies that even those programmes offered by the TVET colleges are offered at a medium or moderate level. The nature of the skills trained prevents the TVET graduates from accessing employment and worthwhile work in the labour market. Secondly, no specifically tailored skills are offered by the TVET curriculum. Skills help a person to manipulate his/her environment and earn a living. In such a case where no specific skills are taught, it becomes difficult for the TVET curriculum to address the skills shortage gap effectively.

Importantly, UNESCO (2010c) regards TVET as education system that leads to the acquisition of practical skills, knowledge and an understanding of the trades of employment. Esa, Yunus and Assain. (2011) affirm that TVET training serves as an engine to drive the national economy and the social fabric through the development of human capital to achieve a skilled labour force in order to compete economically at a global level with the acquired skills of its population.

On the same question, Campus Manager (Campus B) noted;

“The TVET curriculum implemented in rural areas is wasted energy and resources. It does not meet the needs of rural life. TVET Colleges offer many courses which do not have a market in rural areas. Rural students need short-hands-on skills courses. This is quote a big challenge for us.”

The above result shows that TVET colleges implement a curriculum that does not speak to rural areas with a knowledge of what kind of curriculum should be administered. The above is a clear testimony for this study. The general skills

contained in the TVET curriculum do not address the skills shortage gap as expected, instead, it widens it.

According to Akooje and Nkomo (2010), equity and access to higher education are critical for achieving both social and economic progress. This is also enshrined in the constitution as a right of every person. The South African Freedom Charter (1995) states:

“The doors of learning and culture shall be opened,” 58-68.”

This is a true manifestation of the need to provide education and training to all people in their diverse situations and areas through every opportunity including TVET. This is also supported by the Millennium Development Goals (MDGS) (UNDP *et al*, 2000).

Table 5.7: The TVET curriculum is responsive to national skills needs

	Number	Percentage
Strongly agree	0	0
Agree	14	11.6%
Disagree	25	20.8%
Strongly disagree	81	67.5%
Total	120	99%%

A total of 81 (67.5%) strongly agreed, while 25 (20.8%) disagreed that the TVET curriculum is responsive to the national skills needs. Only 14 (11.6%) agreed and no response was noted for strongly agree. On average, 106 lecturers (88.3%) in the sample disagreed that the TVET curriculum is responsive to the national skills needs.

This can indicate that the TVET curriculum is unresponsive, irrelevant and inconsiderate with regard to the national skills needs, Irresponsiveness here refers to the inability of the curriculum to react to addressing the skills shortage gap. South Africa needs both advanced technical and soft skills to curb the high unemployment rates that are believed to have been created by the lack of skills. Coughlan (2014) believes that the TVET curriculum has to close the educational skills and competence gaps created in the past by inculcating the required skills

and implementing responsive programmes to actualise the graduates' opportunities to access employment, self-employment and further education. With regard to design, a vocational curriculum should include practicals, theory and workplace training. The data collected imply that the TVET curriculum is largely implemented theoretically; hence, it is not aligned effectively with the world of work. The training of skills should be practical and should be carried out by trained supervisors. The WBE and WIL created for practical lessons should be enforced through the provision of enough funding and by building stronger relationships with the industry.

Gaining workplace training and experience increases people's employability skills. In TVET colleges, workplace training and experience is gained through work-based experience (WBE) and work integrated learning (WIL). At the same time, lecturers need to be exposed to industry training to enhance their knowledge and skills to align themselves with the industry standards and processes during their lessons.

The result is supported by ILO (2010a), which assumes that the TVET curriculum should have both the design and the approach to prepare students for professional careers.

Table 5.8: TVET colleges are better-placed for skills development

	Number	Percentage
Strongly agree	12	10%
Agree	89	74.1%
Disagree	19	15.8%
Strongly disagree	0	0%
Total	120	99%

Table 5.8 above, indicates that 12 (10%) of the lecturers strongly agreed, while 89 (74.1%) agreed with the research statement that TVET colleges are better placed for skills development. About 19 (15.8%) disagreed. On average, 101 (84.1%) of the lecturers agreed that TVET colleges are better placed for skills development. Clearly, the above results indicate that the vision for TVET colleges entails

addressing skills development. The case noted here is that institutional factors within the TVET sector, hamper skills development.

Worldwide, rural populations experience, poverty, unemployment, unhealthy, malnourishment, marginalisation and oppression, a lack of information, poor services, and inequality, among others (ILO, 2013). This calls for positive and enabling policy frameworks within the DHET as well as encouraging partnerships and collaboration with all the TVET stakeholders. This can build capacity and subsequently foster effective and the development of high-quality skills. UNESCO (2016) holds that providing and increasing peoples' skills provides them with the opportunity to improve their lives.

What is your experience of vocational education and training?

During the individual semi-structured interviews, the Curriculum Specialist (Campus A) commented:

“We studied for normal qualifications to work in normal schools which do not require vocational skills. When we got here, we entered into a very different system which requires vocational knowledge in the vocational subjects. We do not have it. Even the College does not have the ability to offer vocational training to the lecturers. We end up striving to implement this curriculum.”

The result presents a clear indication that lecturers do not have the experience in the vocational field. They are untrained for the TVET curriculum; hence, skills training for the students is often of an inadequate quality.

In view of the above result, Kahn (2017) opines that there are few TVET college lecturers in the country with the necessary vocational qualification to deliver the TVET curriculum. Lecturer development should occur concurrently with the programme designs. This result is affirmed by the World Bank (2012) which agrees that, many TVET lecturers do not possess the necessary expertise, and their attitudes are also not aligned with the curriculum philosophy that they implement. This suggests that the training and re-training of lecturers should take place.

Table 5.9: The TVET curriculum content caters adequately for the required national skills

	Number	Percentage
Strongly agree	3	2.5%
Agree	6	5%
Disagree	22	18.3%
Strongly disagree	89	74%
Total	120	99.8%

Table 5.9 reveals that 89 (74%) of the lecturers strongly disagreed and 22 (18.3%) disagreed that the TVET curriculum content caters adequately for the required national skills, while 6 (5%) agreed and 3 (2.5%) strongly agreed. On average, (92, 3%) lecturers disagreed that the TVET curriculum content adequately caters for the required national skills. The implication here is that the curriculum content does not cater for the required national skills adequately. The results suggest that the TVET curriculum content seems to be inadequate, fragmented, theoretical and inconsistent with the requirements of skills development. The curriculum content is presented as weak, irrelevant and unresponsive to skills needs.

Gewer (2010c) avers that, upon completion, the TVET graduate has acquired the necessary knowledge, practical skills, applied competencies and understanding required for employment, self-employment and further learning in a particular occupation or trades. This implies, therefore, that at this level, the TVET graduate is ready for the job. However, this does not seem to be the case for the TVET

Being weak has led to producing graduates with mid-level skills who cannot compete in the world of work. As a result, a negative feeling has developed on the part of the students, parents and employers. Cosser (2010) confirms that TVET colleges do not provide relevant credible programmes for the labour market.

How do you assess the structure of the TVET curriculum?

The Assistant Director Curriculum had this to say:

“The TVET curriculum is divided into three categories namely; the NCV, NATED and the specific skills programmes managed by SETAs.”

The disintegration identified above signifies that the TVET curriculum is weak, unfocused and lacks a common approach and strategy to address the skills shortage gap. Gewer (2010a) and NSDS III (RSA, 2011b) (RSA, 2011a) opine that many TVET Colleges in rural areas are poor, weak and underperforming in many aspects. During the individual semi-structured interviews, the Curriculum Specialist from Campus B, had this to say:

“The TVET curriculum is disintegrated and not practical at all.”

The above result indicates that much is expected from the TVET curriculum by its founders, but this cannot be achieved given the current state of the curriculum. One can deduce here that the curriculum itself is not commensurate with its expectations. There is an argument that the TVET curriculum functions in segments, which makes it difficult to provide credible skills training and, subsequently address the skills shortage gap for which it was formed.

The TVET curriculum leaves many questions that need to be answered because it is assumed to be irrelevant and irresponsive to the rural skills demands, hence, it does not cater for rural students’ interests and diversified needs. The Green Paper (2012d) expounds that, the main problem of the TVET curriculum is the lack of diversity and the weakness of many of its institutions. The Green Paper implies that the TVET curriculum needs to diversify the programmes offered while addressing its institutional frameworks and capacity.

Note should be taken that, the employment world demands advanced technical and practical skills; thus, the structure of the TVET curriculum should be practical with consistent and the relationship with the labour market needs to contribute to effective socio-economic development.

Table 5.10: The TVET curriculum change is necessary for the skills needs

	Number	Percentage
Strongly agree	82	68.3%
Agree	32	26.6%
Disagree	6	5%
Strongly disagree	0	0%
Total	120	99%

Table 5.10 illustrates that 82 (68.3%) of the lecturers strongly disagreed, while 32 (26.6%) agreed that a TVET curriculum change is necessary with regard to the skills needs. About 6 (5%) disagreed and no one selected strongly disagreed. On average (94, 9%) of the lecturers agreed that the TVET curriculum needs to be changed to comply with the skills needs. The results in Table 5.10 above are a reflection of the nature of the design and development of the TVET curriculum, namely, that it is weak and the content inadequate. Therefore, a curriculum change is necessary to address the skills needed, while aligning it with the standards of the employers and the employment world at the same time.

The McKinsey Global Institute (2017) recommends that TVET should continue to create new programmes that predict future skills, create new types of work and occupations, with the unprecedented rate which will require a different set of skills and knowledge. From the above results, it is clear that there is a growing demand for the new 21st century skills called for by the national economic requirements. Accordingly, there is an urgent need for the TVET curriculum to address these challenges to respond to the 21st century skills required.

Table 5.11: The TVET curriculum needs review

	Number	Percentage
Strongly agree	79	65.8%
Agree	26	21.6%
Disagree	15	12.5%
Strongly disagree	0	0%
Total	120	99%

According to Table 5.11, 79 (65.8%) of the lecturers strongly agreed and 26 (21.6%) that the TVET curriculum needs a review. Fifteen (12.5%) disagreed and no one selected strongly agreed. On average, (87.4%) agreed that the TVET curriculum needs to be reviewed.

The results in Table 5.11 above, make it clear that the TVET curriculum needs to be reviewed as is evidenced by the majority of the responses. This means that the curriculum content appears to have an open face value that conceals its weakness

from the outside. A review of the curriculum should address the content, inadequacies, deficiency, approaches and strategies and also develop new modalities to deliver effective skills training. Furthermore, this can imply that, from the onset, the TVET curriculum did not rest on strong functional pillars in terms of cohesion and vision. Importantly, the curriculum lacks the materials to address the skills shortage gaps. Accordingly, the TVET system should make sure that the doors for pathways are wide open with equal accessibility.

The results of the curriculum review can provide all young people with an equal opportunity to acquire the skills set deemed essential. Care and Luo (2016) conclude that, “The 21st century calls for a sustained research and policy effort.”

Table 5.12: Lecturers in TVET colleges are adequately prepared for the requirements of the curriculum

	Number	Percentage
Strongly agree	0	0
Agree	5	4.1%
Disagree	10	8.3%
Strongly disagree	105	87.5%
Total	120	99%

Table 5.12 illustrates that 105 (88%) of the lecturers strongly disagreed, while ten (8.3%) disagreed that lecturers at the TVET colleges are adequately prepared with regard to the requirements of the curriculum. Readiness here refers to the skills, attitudes, qualifications and experience to implement the vocational curriculum.

TVET lecturers are unqualified, ill-equipped with outdated technology and have poor teaching and learning methods. Umar-ud-Din, Kamal and Shahzad (2010) assert that teachers’ academic qualifications have an effect on the teacher’s attitudes and eventually, the performance of the students. This indicates that many of the lecturers do not possess the minimum qualifications needed to implement the TVET curriculum. In Table 5.12, above, it can be seen that only 5 (4.1%) agreed, while there was no score for strongly agreed that lecturers were ready for the curriculum.

The above results reveal a negative impression regarding the ability of the TVET curriculum to address the skills shortage gap in the rural areas. It should be noted that TVET colleges in rural areas strive to secure the services of qualified lecturers based on geographical factors.

Table 5.13: Lecturers have a sound understanding of alternative ways of delivering the TVET curriculum

	Number	Percentage
Strongly agree	0	0%
Agree	10	8.3%
Disagree	38	31.6%
Strongly disagree	72	60%
Total	120	99%

Table 5.13 indicates that 72 (60%) of the lecturers strongly disagreed and 38 (31.6 %) disagreed that the lecturers have a sound understanding of alternative ways of delivering the TVET curriculum. About 10 (8.3%) agreed, and there was no response (0%) for strongly agreed with regard to lecturers having a sound understanding of alternative ways of delivering the TVET curriculum. On average, (91.6%) of the lecturers disagreed that they have a sound understanding of alternative ways of delivering the TVET curriculum.

The results corroborate the findings reported by Ngubane *et al.* (2018), where it was found that most lecturers within the TVET sector, lack a sound understanding of the curriculum. This implies that lecturers lack both the required expertise and positive attitudes to deliver the curriculum (Ngubane *et al.*, 2018).

Gewer (2013) avers that TVET lecturers are ill-equipped to cope with the academic and social demands of the students and often complain about the low education and maturity level of these students. According to the responses, many lecturers are not trained, and many lack experience, and the majority lack vocational and industrial experience.

The TVET sector seems to lack the initiative, imagination, creativity and innovation by the lecturer to devise a way of addressing the challenges faced. Accordingly, colleges and the DHET need to offer training to lecturers that is aimed at building

the capacity needed. Training may take place through continuous professional development (CPD) in-service training, refresher courses, seminars and workshops as well as conferences and symposiums.

What are the possible alternatives for the TVET curriculum to address the skills shortage in the rural areas of Northern KwaZulu-Natal?

The aim of TVET provisioning is to address the skills shortage gap in the country. While conducting individual semi-structured interviews, Assistant Director Curriculum noted:

“The TVET system needs to be overhauled from scratch. DHET has to release more money to establish and develop the necessary infrastructure, including capacity building, staff training, and building modern workshops and computer laboratories. The government should emphasise the minimum staff requirements with vocational qualification as a requirement. DHET should offer professional development to lecturers, motivate students, organise College days for parents, change the enrolment criteria, re-design the curriculum and offer a different curriculum to different students from different areas especially rural areas. The system which is related to labour market conditions. TVET colleges with modern technology and modern ways of curriculum delivery. Colleges which embrace all the skills needed for economic development.”

The results indicate that the current TVET curriculum is not commensurate with the nature of the TVET proposed above. Accordingly, it is evident that the current TVET system needs to be reviewed and redesigned. Therefore, there should be a change in the administration, management and implementation of the TVET curriculum. The opinion of the Assistant Director: Curriculum was that a different curriculum should be administered to specific students powered by adequate funding norms to secure the required resources.

Furthermore, the results imply that the TVET curriculum needs a technological upgrade to match the new skills required by the employers. TVET workshops need to be connected to facilities such as unlimited internet, e-teaching, online teaching, satellites, DSTV, computers with current window versions, digital electronics and

any other skills related technology. This will help the TVET curriculum to address the skills shortage gap as expected.

New technological advancements will provide colleges with information on the new technology and the demands of the labour market to keep the curriculum relevant and responsive and, subsequently, lead to a curriculum review in line with the aspirations of TVET students. In view of this argument, the TVET curriculum should be short and simple with a strong focus on practical skills using modern training facilities as enshrined in new technological advancement by the employers.

TVET skills are the key resources for economic development. A well-educated and trained population is crucial for the efficient acquisition, utilisation, creation and dissemination of knowledge and skills that increase productivity and economic growth. North link TVET College (2016) believes that an integrated system should be built between TVET, business, industry and the employers of TVET graduates to help address the skills shortage gaps in rural areas.

During individual structured interviews, the College Principal was explained:

“A TVET curriculum should be practical, hands-on skills, considerate of the students’ conditions, a curriculum which is short with short skills-based content, a curriculum based on the life of the people, a curriculum based on research and a curriculum which offers quick employment and the creation of jobs. I think a curriculum which opens the chances of students to enrol for further learning, a curriculum which is developed from within the society.”

The observation by the principal implies that the TVET curriculum should stem from a skill needs analysis, based on the economic activities in the area, translated into training programmes with hands-on skills. The result reveals that the curriculum should be able to open pathways. In other words, the curriculum should be unique and specific. The TVET curriculum implemented in rural areas is inappropriate and lacks the integrity and authenticity to address the rural skills shortage gap. Consensus on the skills shortage gap in rural areas is found in many documents like NSDP (RSA, 2011d), DHET (2010a) and (2013b) among others.

The Curriculum Specialist from Campus B, noted during the individual structured interviews:

“TVET colleges ought to establish partnerships. Partnerships will help to relate the curriculum to the local, national and international skills-demand.”

The results imply that relationships with all the stakeholders for the TVET sector are imperative. To build partnerships, there should be a network of approaches by the TVET colleges, the DHET, the government and all other partners in skills development. The results reveal that partners need to work together through concerted efforts towards a common vision, approach and goal. The curriculum question needs to be addressed right from the inception, at implementation, and through assessment.

The Green Paper (2012d) supports fostering partnerships between Colleges and the industry. The DHET (2015d) also offers advice to TVET Colleges to initiate, build, develop and maintain relationships and partnerships with all stakeholders within the sector.

The College Principal responded:

“We outsource funding from industries and companies to facilitate the curriculum.”

The result means that funding will open possible alternative ways of implementing the TVET curriculum to address the skills shortage gap. Recently, the DHET has more than doubled the recapitalisation grant for TVET colleges at an amount of R2.5 billion (DHET *et al*, 2015d). Funding is aimed at transforming the TVET sector into the first choice education system and is meant for the provision of facilities, training of lecturers, capacity building, research, the building of workshops and library laboratories, the purchase of equipment, renovations and repairs, the purchase of consumables, such as paper, hiring of non-payroll staff (support staff) and cleaners (DHET *et al*, 2015d).

Table 5.14: Lecturers have the skills and training required to implement the TVET curriculum

	Number	Percentage
Strongly agree	0	0%
Agree	0	0%
Disagree	23	19.1%
Strongly disagree	97	80.8%
Total	120	99%

Table 5.14 shows that 97 (80%) strongly disagreed and 23 (19.1%) disagreed that lecturers barely have the skills and training required by the TVET curriculum. No responses were submitted for strongly agreed and agreed respectively (0%). On average, all the lecturers disagreed that lecturers have the skills and training required by the TVET curriculum.

The inference can be made here that lecturers hardly have the skills and training required by the TVET curriculum. From these results, it appears that the TVET lecturers are presented as incapable of implementing the curriculum that requires specific skills and training that they do not have. Lacking the required skills that are essential to realise the aspirations of the whole TVET sector whose mandate is to offer training to address the skills shortage gap.

Gichuru and Ongus (2016) confirm that the success of a curriculum is reflected in the interpreters and implementers. This means that the quality of lecturers is the single greatest determinant for trainees' (students') achievement.

Table 5.15: Lecturers are offered training and re-training on the TVET curriculum

	Number	Percentage
Strongly agree	0	0%
Agree	12	10%
Disagree	23	19.1%
Strongly disagree	85	70.8%
Total	120	99%

According to Table 5.15, 85 (70.8%) of the lecturers strongly disagreed, and 23 (19.1%) disagreed that lecturers receive training and re-training on the curriculum. About 12 (10%) agreed, and none strongly disagreed. On average, about (89.9%) of the lecturers are offered training and re-training on the TVET curriculum.

The results above imply that lecturers are unable to deliver a curriculum that requires specific skills through regular and periodical training. Training empowers an employee to perform his tasks confidently, effectively and efficiently. The ability to execute tasks lies within the scope of skills. Secondly, skills are transformational and should be relevant and responsive to the labour market conditions. This implies that training and re-training should be promoted to empower an employee to cope with the new changes in the labour market.

Lecturers should possess specific personal skills and qualities. In this case, where lecturers do not receive training and re-training on the necessary vocational skills, they may not be able to offer quality training to their students to be able to compete in the world of work.

Table 5.16: The TVET curriculum faces many challenges in addressing the skills shortage

	Number	Percentage
Strongly agree	99	82.5%
Agree	21	17.5%
Disagree	0	0%
Strongly disagree	0	0%
Total	120	100%

Table 5.16 above illustrates that 99 (82.5%) of the lecturers strongly agreed and 21 (17.5%) agreed that the TVET curriculum faces many challenges in addressing the skills shortage. No response was recorded for disagree and strongly disagree (0%) respectively. It is obvious that the majority (100%) agreed that there are many challenges affecting the TVET curriculum.

The result implies that the TVET curriculum faces a multitude of challenges that prevent it from addressing the skills shortage gap. The challenges are regarded as institutional, historical, labour market challenges, personnel challenges, infrastructure and resources, management and administration of the TVET sectors, poor partnerships and collaboration, persistent unemployment of the TVET graduates, and the negative perceptions of the lecturers, students and employers, among others.

The HRDCSA (2015) believes that specific challenges concerning the TVET curriculum are a lack of clarity regarding the existing pathways with respect to the entry and exit routes. The HRDCSA (2014) agrees with the HRDCSA (2015) that, whether it is employment, self-employment or further education, the challenge facing TVET colleges is a lack of clarity in the existing pathways.

What are the challenges facing the TVET curriculum?

From the managers that were interviewed, the following challenges were enumerated: poor funding, poor curriculum design, poor infrastructure, a lack of trained lecturers, the negative perceptions of students, lecturers and employers, the unemployment of many TVET graduates in rural areas, the lack of workplace

learning, the disjointed curriculum, ineffective policies, the nature of students enrolled at the TVET colleges, and disjointed qualifications in the TVET sector.

Curriculum Specialist (Campus A) commented:

“TVET Colleges are poorly funded and resourced to implement the curriculum. Learning is largely theoretical with old machinery. Lecturers lack the expertise to manipulate the machinery, what is studied is theoretical and irrelevant to the industry. Our students do not have enough practical lessons. Colleges do not have money to buy the required materials for practical work. It is said that our students are mocked by the industry during WBE.”

Based on the above results, one can assert that the TVET curriculum may not address the skills shortage gap due to the shortage of funds. TVET students learn skills in a theoretical way due to the shortage of equipment and other necessary appliances. It needs to be pointed out that it is the practical side of skills that is important in skills training. The ridicule that TVET students receive from the industry is the result of the prevailing negative perceptions and the lack of support.

In terms of the same perspective, the Green Paper (DHET, 2012d) provides a vision in a single coherent differentiated and highly articulated PSET system in order to overcome the structural challenges facing rural areas by expanding the funding and accessibility to education and training opportunities, equity, excellence and innovation (DHET, 2012c).

During individual semi- interview session, the Campus Manager of Campus B noted:

“TVET colleges are poorly funded. Grants from DHET come late and are not consistent. Sometimes colleges borrow from each other or seek credit from suppliers which they cannot pay in time. Suppliers always terminate services from us because Colleges do not pay in time. Campuses cannot secure even a simple service on their own. We rely on the Central Office. We have a very little petty cash. All the little money collected at Campus is deposited on a central College account. Getting back this money from Central Office is impossible.”

The results indicate that the TVET colleges and campuses have inadequate funds both from within and from the DHET to facilitate skills training. In effect, funds from the DHET are not adequate and are not received timeously. Furthermore, suppliers do not have confidence in the college administration. Services are regularly retracted from the colleges, and internal procedures are bureaucratic and curtailed.

This argument makes funding a key challenge for the curriculum to address the skills shortage gap. In this respect, the results reveal that there is slow and little progress with respect to skills training by the TVET curriculum, which requires a substantial capital investment. This means that the TVET curriculum may not offer credible skills training.

The Assistant Director Curriculum noted:

“Absenteeism and dropping of students affect the College too much. Students are not regular at College. Many drop out for some reasons.”

The results indicate that the certification and throughput are affected negatively. Although the Assistant Director: Curriculum does not give reasons for the absenteeism and drop-out, the assumption may be made here that, curriculum administration and management are prime factors.

The absenteeism policy (DHET, 2012a) is not aligned effectively with the setting of rural students. Muzenda (2013) argues that, because of the ineffectiveness of the policy, the possibility is that, students will continue to be absent from colleges while Otto (2016) points out that the punishment procedures attached to the absenteeism policy are not realistic. On many occasions, the management and lecturers are not consistent with the administration of the policy.

The inconsistency with regard to the policy administration weakens attempts by the curriculum to address the skills shortage gap. To address the inconsistency, Moodley (2015) opines that the absenteeism policy needs to be handed out to students during induction for students so that they know in time what is expected of them during college time.

How do TVET colleges address those challenges?

The College Principal responded:

“In most case, colleges borrow from each other.”

The Curriculum Specialist (Campus B) responded:

“Colleges have tried to offer some training to lecturers, training like moderator, assessor, coaching and facilitators’ course.”

The Assistant Director: Curriculum noted:

“DHET makes policies for TVET colleges, nonetheless, some policies do not help us. So colleges adjust.”

The implication of the above results is that funding is inadequate, untimely and inconsistent. Secondly, the training offered to TVET lecturers does not speak directly to skills training. Undoubtedly, training is necessary for the delivery, assessment and evaluation of the TVET curriculum. *Thirdly*, TVET colleges do not have strong policies to address the challenges facing the curriculum, instead, TVET colleges adapt to the prevailing circumstances without any legal reference.

Lamb (2011) holds that the government has been developing policies to increase the completion rates and reduce the drop-out rate. The results reveal helplessness, limited choices and the incapacity of TVET colleges to address f the challenges that compromise skills training. This can be done effectively by increasing student’s diversity. The DHET (2013a) affirms that the aim of the DHET is to strengthen TVET colleges to become learning institutions that are students’ first choice. This implies that efforts have to be made to market, attract and maintain students in Colleges through positive engagements. For example, by implementing policies.

Table 5.17: The TVET curriculum embeds skills, knowledge, abilities, and competence

	Number	Percentage
Strongly agree	0	0
Agree	37	30.8%
Disagree	74	61.6%
Strongly disagree	9	7.5%
Total	120	99%

Table 5.17 shows that (0%) was recorded for strongly agreed with regard to the statement made; while 37 (30.8%) of the lecturers agreed, while 74 (61.6%) disagreed and nine (7.5%) strongly disagreed that the TVET curriculum embeds skills, knowledge, abilities, and competence. On average, (61.6%) felt that the TVET curriculum embeds skills, knowledge, abilities, and competence. The explanation offered is that the TVET curriculum appears to be theoretical with no specific skills advanced. The results explain that TVET graduates may be unable to cope with the workplace requirements due to the poor quality of the training.

In terms of competence, the TVET graduates may not be able to operate workplace equipment due to the lack of exposure, the lack of experiential training, the outdated equipment and the inability by the trainers (lecturers) to demonstrate work skills during training. Hanushek (2010) maintains that TVET should be an education system which inculcates practical skills in students so that that graduates will find it easy to get a job faster than those with theoretical education skills.

Table 5.18: The TVET curriculum is inclusive of practical and work-based training

	Number	Percentage
Strongly agree	6	5%
Agree	36	30%
Disagree	67	55.8%
Strongly disagree	11	9.1%
Total	120	99%

Table 5.18 reveals that 6 (5%) strongly agreed that the TVET curriculum is inclusive of practical and work-based training and 36 (30%) were in agreement with the statement while 67 (55.8%) disagreed and only 11 (9.1%) strongly disagreed. On average, (64.9%) lecturers disagreed that TVET curriculum is inclusive of practical and work-based training.

From Table 5.18 one can deduce that the TVET curriculum is dominated by theoretical studies and experience. *Secondly*, there is little work-based training of the TVET graduates during and after training. *Thirdly*, scant attention is paid to the practical component in skills training due to the lack of resources and funding in the TVET sector. In view of the above results, Abebe (2012) opines that the TVET curriculum is too theoretical and is overloaded, while another challenge is the poor timetabling of the TVET calendar year.

Table 5.19: The TVET curriculum addresses youth unemployment

	Number	Percentage
Strongly agree	0	0%
Agree	18	15%
Disagree	19	15.8%
Strongly disagree	83	69.1%
Total	120	99%

Table 5.18 reveals that six (5%) of the lecturers strongly believed that the TVET curriculum is inclusive of practical and work-based training and 36 (30%) were in agreement with the statement, while 67 (55.8%) disagreed and only 11 (9.1%) strongly disagreed. On average, (64.9%) lecturers disagreed that the TVET curriculum is inclusive of practical and work-based training. Accordingly, it can be deduced that a TVET graduate may not be able to secure employment after college training; instead, he or she may add to the number of NEETS (not in employment, not in education and not in training).

The results mean that unemployment may continue to be a reality in the rural areas for the productive age with demographic, social, economic, health and environmental repercussions which need to be addressed through vocational education and training.

Rural youths need to be reached early before they become vulnerable. Therefore, they are placed in vocational skills training to prepare them in the labour market through credible and relevant vocational education and training.

Musset and Álvarez-Galván (2014) argue that the challenge of unemployment among the youths in rural areas must be resolved by implementing effective vocational training programmes to increase the likelihood of a career. This can be promoted through linkages and partnerships for training the youths with regard to the necessary knowledge, skills and attitudes in view of the above perspective, the government and DHET need to create avenues for employment opportunities for the TVET graduates who are among the (NEETS), by offering the relevant skills training and opening up for industrialisation on the part of trade and industry through enacting enabling policies and legislation.

UNESCO (2010a) notes:

“It is every Politician’s nightmare, unemployed young hanging out on the streets with little chance of finding a job or going to the University. While the parents of these youth may digest their own dashed hopes for a better life, frustrations can reach revolt when the bleak horizon confronts the next generation. It is a time-bomb that awaits to happen as hundreds of thousands of youth’s finish primary schools and look for secondary education or work opportunities which do not always exist” (UNESCO, 2010a, 116).

From the above excerpt, it is clear that skills training is imperative for rural youths. However, UNESCO *et al.*, 2010a) explains that the challenge students face after TVET College is a failure to obtain employment due to inadequate training and the failure to become self-employed because of poverty.

COSATU (2012) also submits that the economy has failed to create employment thus, 57% of the people of South Africa live below the poverty line. This is also affirmed by the World Economic Forum Global Competitive Index (2013-2014), (Schwab, 2013) which holds that sustainability is underpinned by high-income inequality, low growth rates, youth unemployment and lack of universal access to sanitation.

The results reveal that there is a shortcoming in the TVET curriculum with regard to the nature of skills, trainers and the training acquired by the students, considering the in-built reasons for unemployment, such as, the few industries in rural areas and the incompatibility of the curriculum with rural skills needs. This implies that the TVET curriculum has to focus on skills which guarantee employment. This can be explored further through research and development in partnership with employers. The curriculum is also required to find ways of addressing the NEETS question by providing diversified, adequate, training programmes.

Table 5.20: The TVET curriculum offers the required training for employment

	Number	Percentage
Strongly agree	0	0
Agree	15	12.5%
Disagree	21	17.5%
Strongly disagree	84	70%
Total	120	100%

Table 5.20 reveals that 0% of the lecturers strongly agreed and only 15 (12.5%) agreed that the TVET curriculum offers the required training for employment. About 21(17.5%) and 84 (70%) of lecturers denied that the TVET curriculum offers the required training for employment. On average, (87.5%) of the lecturers disagreed that the TVET curriculum offers the required training for employment.

The inference that may be made here is that the training offered by the TVET curriculum is not adequate and qualitative enough to offer employment to a TVET graduate. *Secondly*, the curriculum appears to lack the salient ingredients of skills training, such as, practicals, work-based experience (WBE) and work-integrated learning (WIL). Education and training is a pathway to enhance employability. Nevertheless, education and training is not a guarantee of securing employment, but equips students with skills.

What feedback do you usually get from the employers regarding the employability of TVET graduates?

The Curriculum Specialist from Campus A responded:

“Very, very negative. The nature of training our students receive is not right, and the qualifications received do not match. Stakeholders do not understand the TVET curriculum and the qualifications obtained. These are the employers of our students. So if the employers do not understand our curriculum, obviously, they have trust issues with the kind of skills our graduates possess.”

The results show that employers, among other stakeholders do not have the knowledge and confidence of the content, the training and the skills acquired.

Secondly, employers cannot interpret the TVET qualification. The lack of understanding of these two important areas within the TVET system impact negatively on the credibility of the curriculum and eventually affects the employability of the TVET graduates. In line with the above result, Hooley (2017) notes that employability brings about an understanding of the awareness of one’s potential, skills and abilities as well as experiences. This implies that a TVET graduate should have employability skills, should also have the required work skills and experience and should be competitive in the employment world.

The Assistant Director: Curriculum responded,

“Some employers do not take TVET students during WBE.”

The Campus Manager of Campus A commented:

“TVET students largely have theoretical skills. Employers want practical skills. So we have complaints after complaints. Employers are confused about whether to employ or not to employ. TVET students.”

Both the Assistant Director Curriculum and the Campus Manager implied that the employers are confused about the type of training offered by the TVET curriculum. From the responses, it appears that the TVET curriculum is too theoretical for a graduate to compete in the workplace. Secondly, employers are not ready to incur extensive costs on the training and re-training of a new recruit. Accordance with this perspective, employers would prefer not to attempt to appoint TVET college

students, but rather appoint university students who are cost-effective in terms of training.

Afeti (2013) notes that the feedback from the industry is that, while the theoretical knowledge of the TVET graduates is fairly sound, graduates often seem to be significantly lacking in practical skills due to the fact that they do not have sufficient time to practise the application of the theory. This implies that the lack of emphasis on the practicability of the TVET curriculum is a weakness with regard to addressing the skills shortage gap.

On the same note, the Green Paper (2012d) states that the main problem of the TVET curriculum is the lack of diversity and the weakness of many of its institutions. This finding is supported by both Gewer (2010c) and the National Development Plan (RSA, 2012), who assert that many TVET colleges in rural areas are poor, weak and underperforming in all respects. The result implies that rural students are disadvantaged in terms of exposure and opportunities. As a result, rural students may not perform to their full potential.

Table 5.21: The TVET curriculum produces employable graduates

	Number	Percentage
Strongly agree	5	4.1%
Agree	8	6.6%
Disagree	13	10.8%
Strongly disagree	94	78.3%
Total	120	100%

Table 5.21 shows that five (4.1%) respondents strongly agreed and eight (6.6%) respondents agreed that the TVET curriculum produces employable graduates. About 13 (10.8%) disagreed, and 94 (78.3%) strongly disagreed that the TVET curriculum produces employable graduates. On average, 89.1% agreed that the TVET curriculum does not produce employable graduates. The result indicates that the TVET curriculum is not appropriate for addressing the skills shortage gap. Accordingly, unemployment continues to widen as shown in the results and the high rate of unemployment among the TVET graduates in rural areas.

Agrawal (2012) and (2013) note that the lack of employment is a major challenge for the TVET curriculum. Over (60%) of the TVET graduates remain unemployed for a period of more than three years after completion. The role of the TVET curriculum is to create employment and self-employment through skills training. Skills training reduces the skills shortage gap, empowers the students to manage their lives and contribute to personal and community development. Through skills training, the TVET curriculum effects good citizenry for sustainable development and lifelong learning. However, there is a general consensus that the TVET curriculum is not meeting the needs of the economy and society as a whole (HRDCSA, 2010, RSA, 2012 and DHET 2012a).

How does the TVET curriculum prepare students for the world of work?

The College Principal remarked:

“The TVET curriculum has offered training to thousands and thousands of students. Unfortunately, many of our students are unemployed. South Africa has a high rate of unemployment. Despite the challenges the TVET sector faces, the thing is that, at some point, every student acquired a certain skill of some sort which he can use to develop.”

The Assistant Director of Curriculum responded:

“The curriculum develops different skills. Practical training is also offered however, on a small scale. Colleges lack the necessary resources.”

The results indicate that the TVET curriculum plays a key role in offering skills training to students. However, the role played by the TVET curriculum is hampered by the lack of resources and unemployment. This also implies that the TVET curriculum is not able to offer effective practical skills training to all students.

Curriculum Specialist (Campus A) observed:

“After training, students get experiential learning for 2 weeks through WBE and WIL to get work experience, but not all.”

According to the Subject Specialist (Campus A), another way TVET colleges prepare students for the world of work is through experiential learning. However, TVET colleges cannot accommodate the large numbers of students for work-

based training and students cannot secure employment after the minimal two weeks of experiential training. The results above show that two weeks of workplace training is an insufficient amount of time for practical training. Needham (2017) holds that practical skills should supplement the training of artisans at a TVET college either through funding by the government, company, partnerships or SETAs.

Gewer (2010a) comments that TVET colleges must be connected to both the industry and the workplace for employment and self-employment. Magnus (2013) holds that all TVET students should be exposed to workplace training through a comprehensive national plan. This stresses and explains the rationale for the introduction of workplace training in TVET colleges, namely, work-based experience (WBE) and the work integrated learning (WIL) intended to combine classroom training with practical work for both lecturers and students.

The Campus Manager (Campus A) commented:

“Through the office of student support services, the curriculum offers career guidance to students for making relevant career choices.”

In terms of the above, guidance and counselling are presented as a strategy to prepare students for the world of work by helping them to make informed career choices that are relevant in the labour market industry. The result underscores the importance of career choice and career guidance within the TVET sector.

The DHET (2011) highlights that academic achievement by students is likely to take place in an environment where there is support in terms of correct programme choices, proper orientation and academic support. This implies that career choices precede skills training. A choice that speaks to the aspirations of the student, is reflective of the labour market conditions, technological advancement, and the effect of globalisation. Accordingly, a good career choice minimises the chances of unemployment of a TVET graduate. However, Gewer and Akoobhai (2013) note that the TVET system has failed to direct rural students towards the course of study that is likely to maximise their natural talents. This can mean that unemployment is a result of poor career choices.

Table 5.22: The students are not satisfied with the TVET curriculum

	Number	Percentage
Strongly agree	79	65.8%
Agree	33	27.5%
Disagree	8	6.6%
Strongly disagree	0	0%
Total	120	99%

Table 5.22 illustrates that 79 (65.8%) respondents strongly agreed, while 33 (27.5 %) agreed that students are not satisfied with the TVET curriculum. About eight (6.6%) disagreed, and no respondents (0 %) disagreed strongly that the students are not satisfied with the TVET curriculum. On average, (93.3%) agreed that the students are not satisfied with the TVET curriculum.

According to Johnson (2011), young people are required to make well-informed choices regarding their investment in education, in effect, this career choice will bring job satisfaction relevant to the labour market and their aspirations. With regard to the above result, the programmes offered, and the nature of skills training in the TVET colleges, raise many uncertainties that make students dissatisfied with the TVET curriculum.

This means that the needs of many of the TVET students are not catered for. Note should be taken that students enter TVET to be trained in skills to enter and compete in the employment world for proper work. *Secondly*, globalisation and the labour market economy prescribe the necessary skills for competitive employment. In such a case where the curriculum does not cater for the shift in skills needs, it is logical for any student to be dissatisfied. As a result, the certification and throughput of students are compromised in higher education. This means that many students do not complete their college education for a number of reasons, among which, is dissatisfaction. Students look dissatisfied and are unable to help themselves to acquire the necessary skills to realise their aspirations.

What are some of the views of students on the TVET curriculum?

The Assistant Director: Curriculum noted:

“Some students do not say anything; they respond with their actions.”

The Curriculum Specialist of Campus B) responded:

“You notice from their attitudes, absenteeism, and drop-out.”

The Curriculum Specialist (Campus A) explained:

“The TVET curriculum is boring. It is a repetition of matric. No training of skills we shall acquire here.”

The results imply that students view the curriculum as unresponsive and irrelevant to their needs. They do not seem to believe and trust that the curriculum will cater for their skills needs. The lack of confidence has created classical absenteeism, dropouts seeking other opportunities, such as universities.

Onyesom and Ashibogwu (2013) assert that education is the medium through which the global values and norms of learners are transformed through the formal schooling system. This indicates that education is a key instrument in realising economic growth and development. It appears that students may want to enrol at TVET colleges, but the structural challenges in the TVET curriculum provisioning do not permit students to stay and complete their college training successfully. The results reveal a negative attitude on the part of the TVET students. *Secondly*, students' actions speak louder than words as evidenced by the class absenteeism and dropping out of TVET colleges.

Absenteeism and student dropouts compromise skills development and deprive the TVET curriculum of its prime aim of addressing the skills shortage gap. Suleiman (2015) believes that a lack of basic knowledge and information on TVET and the negative perceptions of the TVET sector hinder the marketability and publicity of the TVET curriculum. This means that the lack of marketability offers little information about the TVET curriculum; hence, students lack important information about the programmes and training they receive for the skills of the modern employment world.

During individual semi-structured interviews, the Curriculum Specialist of Campus B, commented:

“The TVET curriculum bears a good vision, but the DHET approaches are not consistent. The curriculum is not consistent with its objectives. It is too rhetoric with poor infrastructure. TVET Colleges lack almost everything, infrastructure, funding, human resources, marketing, involvement of the trade and industry as potential employers for our graduates. Much of the equipment is old, and the majority of the lecturers lack the necessary skills.”

These results reveal an inadequacy in the provision of TVET education and training with inconsistency in the administration and management of the sector. The results show that the provision of resources for the TVET curriculum is not sufficient, Lecturers may be motivated to work, but the logistics do not permit them to do so.

“A training needs an assessment study commissioned by the South African College Principals Organisation (SACPO) in 2004, revealed that there are many challenges facing” the TVET college leadership, such as poor management and the failure to offer proper institutional guidance to lecturers and students (HRDCSA, 2014).

Table 5.23: The objective of the TVET curriculum is to address the skills shortage gap

	Number	Percentage
Strongly agree	5	4.1%
Agree	24	20%
Disagree	35	29.1%
Strongly disagree	56	46.6%
Total	120	99.8%

Table 5.23 shows that five (4.1%) respondents strongly agreed, while 24 (20%) agreed that the objective of the TVET curriculum is to address the skills shortages. About 35 (29.1%) respondents disagreed and 56 (46.6%) strongly disagreed that the objective of the TVET curriculum is to address the skills shortage. On average, (24.1%) of the respondents agree and (75.7%) do not agree that the objective of

the TVET curriculum is to address the skills shortage gap. This indicates that despite the rhetoric concerning skills training in the TVET curriculum, the mode of delivery seems inadequate for addressing the skills shortage gap.

UNESCO (2012c) expresses the view that the TVET curriculum faces many challenges. This view implies that many students are unable to develop skills for the current market demands against the poorly delivered curriculum which does not reflect the current and future labour demands. This limits the potential of the TVET curriculum to contribute to economic development.

Table 5.24: The TVET curriculum addresses critical skills in Northern Kwa-Zulu Natal

	Number	Percentage
Strongly agree	0	0%
Agree	24	20%
Disagree	36	30%
Strongly disagree	60	50%
Total	120	100

Table 4.24 shows that there was no submission (0%) for strongly agree, while 24 (20%) lecturers agreed that the TVET curriculum addresses critical skills in South Africa. However, 36 (30%) lecturers disagreed, and 60 (50%) strongly agreed that the TVET curriculum addresses critical skills in South Africa. On average, (80%) of the lecturers disagreed that the TVET curriculum addresses the critical skills in Northern Kwa-Zulu Natal.

This result speaks to the nature of the curriculum, the curriculum content, curriculum alignment, mode of delivery and the institutional frameworks within which the TVET curriculum operates. The results suggest that the curriculum should be reviewed to address the critical skills and institutional capacity that needs to be built for the curriculum to be able to address the development of critical skills.

UNESCO (2012e) lists the three types of skills necessary for the rural youth, namely:

- Foundational skills: these include literature, numeracy and arithmetic.

- Transferable skills (Soft skills) which consist of communication skills, decision-making, relationships, coordination and comprehension, among others.
- Technical skills (Specific expertise in the requisite skills). These are the skills needed for a particular trade or occupation.

Chinyamurindi (2014) and Davies (2012) concur that employability skills are important variables in the development of an economy. This means that the TVET curriculum needs to embed itself in the foundation, with transferable and technical skills to offer comprehensive quality skills training programmes as an attempt to addressing the skills shortage gap in the world of work.

Irina Bokava, the Director-General of UNESCO, had this to say:

“We are witnessing a young generation frustrated by the chronic mismatch between skills and work. The best answer to the chronic downtown and youth unemployment is to ensure that young people acquire the basic skills and relevant training they need to enter in the world of work with confidence”. (UNESCO, 2012d, 116).

The TVET system has failed to produce skills for the informal sector, and there is a strong mismatch between the demand and supply of skills (Gamble, 2013). The above result means that, the TVET curriculum is not responding innovatively to the critical skills gap and needs of the economy.

Table 5.25: TVET colleges are suited to the purpose of the curriculum

	Number	Percentage
Strongly agree	0	0%
Agree	18	15%
Disagree	31	25.8%
Strongly disagree	71	59.1%
Total	120	99%

According to Table 5.25, no (0%) responses were received for strongly disagree, while 18 (15%) agreed that TVET colleges are suited for the purposes of the curriculum, while, 31 (25.8%) disagreed and 71 (59.1%) strongly disagreed that

TVET colleges are suited for the purpose of the curriculum. On average, (84.9%) of the lecturers disagreed that TVET colleges are suited for the purpose of the curriculum.

This result reveals that TVET colleges are not well facilitated for the purpose of implementing a vocationally oriented curriculum. The explanation given here is that TVET colleges are not capacitated in terms of the infrastructure to offer high-quality skills training. The Green Paper (2012d) believes that the purpose of the TVET college sector is located within a vision of a single, coherent, differentiated and highly articulated PSET system. This is a call for the DHET to provide, upgrade and improve the infrastructure to line with the purposes of the curriculum.

Table 5.26: The TVET curriculum is adequately aligned with the world of work

	Number	Percentage
Strongly agree	0	0%
Agree	7	5.8%
Disagree	15	12.5%
Strongly disagree	98	81.6%
Total	120	99%

Table 5.26 illustrates that there were no responses 0 (0%) on strongly agreed, whereas seven (5.8%) respondents agreed that the TVET curriculum is adequately aligned with the world of work. Fifteen (12.5%) disagreed, and 98 (81.6%) strongly disagreed that the TVET curriculum is adequately aligned with the world of work.

The implication from this result is that the TVET curriculum is not aligned effectively with the world of work. Alignment speaks to the relationship, relevancy, responsiveness, standardisation and requirements with regard to the world of work. It also denotes the courses and programmes offered in TVET colleges that should reflect on the skills-demand in the employment world. Considering the above result, one can conclude that, the TVET curriculum faces many challenges which limit its alignment with work experiences. Jayaram (2017) concludes that TVET is concerned essentially with applied learning, such as the acquisition of skills, knowledge, values and ethics appropriate for the world of work to increase

opportunities for productive work, sustainable livelihoods, personal empowerment and socio-economic development.

Table 5.27: The TVET curriculum should focus largely on skills training

	Number	Percentage
Strongly agree	114	95%
Agree	6	5%
Disagree	0	0%
Strongly disagree	0	0%
Total	120	100%

Table 5.27 shows that 114 (95%) of the lecturers strongly agreed, while 6 (5%) agreed that the TVET curriculum should focus primarily on skills training. There were no responses for disagree or strongly disagree (0%) respectively. This implies that skills training should be the focus and ultimate goal of the TVET curriculum to address the skills shortage gap as well as unemployment.

Nakabashi, Pereira and Sachsida (2013) agree that highly skilled workers are more likely to be more productive than mid-level or low skilled workers. This means that, the stronger the collection of skills, competencies, knowledge and experience in the country, the greater the production. This leads to massive economic development, production and growth and the distribution of political power. TVET colleges need to adapt to the skills-demands of employers, the trade and industry to be able to effectuate hands-on skills training. Nevertheless, the results make an allowance for the curriculum to focus on other matters, such as theory.

Table 5.28: The TVET curriculum should be more practical, short and simple with a strong focus on skills development

	Number	Percentage
Strongly agree	117	97.5%
Agree	3	2.5%
Disagree	0	0%
Strongly disagree	0	0%
Total	120	100%

Table 5.28 shows that 117 (97.5%) of the lecturers strongly agreed and 3 (2.5%) lecturers agreed that the TVET curriculum should be more practical, short and simple with a large focus on skills development. No responses were received for disagree and strongly disagree (0%) respectively. On average, all those who responded (100%) agreed that the TVET curriculum should be more practical, short and simple with a large focus on skills development.

The results imply that the TVET curriculum should adopt a more pragmatic approach towards skills training by being practical during training, being short with regard to the composition and time periods with an emphasis on skills development. Practical training sessions should be given enough time for grounding students in the skills. This is affirmed by Field (2012) who alludes to the fact that, students learning in the workplace need not necessarily obtain full qualifications, but need short programmes with the aim of achieving the development of particular labour skills.

Table 5.29: Skills training is effective within the TVET curriculum

	Number	Percentage
Strongly agree	0	0
Agree	12	10%
Disagree	23	19.1%
Strongly disagree	85	70.8%
Total	120	99%

Table 5.29 above shows that no (0) participants responded to the strongly agreed item. However, 12 (10%) of the lecturers agreed that skills training is effective within the TVET curriculum. About 23 (19.1%) disagreed, and 85 (70.8%) strongly disagreed that skills training is effective within the TVET curriculum. On average, (89.9%) disagreed that skills training is effective within the TVET curriculum.

The explanation inferred from the results is that skills training is not effective in the TVET curriculum. Effectiveness denotes quality, answerability to the skills demand, efficiency, alignment and relativity to addressing the skills shortage gap

as the ultimate goal of the TVET curriculum. The DHET (2018) posits that skills development can lead to economic development. It is therefore, imperative to conceptualise the challenges facing the TVET curriculum in addressing the skills shortage gap in rural areas as stated by the aim of this study.

Table 5.30: The TVET curriculum has a direct bearing and relationship on the skills for which it is intended and its content.

	Number	Percentage
Strongly agree	0	0%
Agree	9	7.5%
Disagree	30	25%
Strongly disagree	81	67.5%
Total	120	100%

Table 5.30 reveals that there were (0%) responses for strongly agreed and that 9 (7.5%) of the respondents agreed that the TVET curriculum has a direct bearing on and relationship with the intended skills and its content. About 30 (25%) lecturers disagreed, and only 81 (67.5%) strongly agreed with the statement. On average, (92.5%) agreed that the TVET curriculum has a direct bearing and relationship between for the skills intended and its content. The results largely mean that the skills included in the TVET curriculum (contents) are not related to the skills for which they are trained. However, this is an inseparable relationship. If one component does not speak to the other, the output (graduates) will not be compatible in the world of work because the skills attained are not deeply rooted in the employment world.

The NSDS 111 (RSA, 2011b) seeks to ensure that, South Africa, has adequate, appropriate and high-quality skills that contribute towards economic growth and employment while creating social development (OECD, 2016). As noted above, skills are key factors to bring about the economic development of a single economy, which can be built through partnerships. The lack of effective partnerships with the stakeholders, weakens the attempt by the TVET curriculum to address the skills shortage gap. This is confirmed by Reddy *et al* (2016) who maintains that there is a lack of effective engagement among the different

stakeholders in the TVET sector and the industry. This implies that it is imperative to involve all the stakeholders in the implementation of the TVET curriculum.

Table 5.31: The current TVET curriculum cannot provide the necessary skills

	Number	Percentage
Strongly agree	84	70%
Agree	32	26.6%
Disagree	4	3.3%
Strongly disagree	0	0%
Total	120	96.6%

Table 5.31 indicates that 84 (70%) lecturers strongly agreed, with a further 32 (26.6%) agreeing that the current TVET curriculum cannot provide the necessary skills. About 4 (3.3%) disagreed and (0%) strongly disagreed. On average, (96.6%) of the lecturers agreed that the current TVET curriculum cannot provide the necessary skills.

The implication is that the current TVET curriculum needs to change or be reviewed to be able to provide the necessary skills. This implies that the content, the affiliation, the relationship and or mode of delivery of the current TVET curriculum does not produce the necessary skills. The result supports the general view that the TVET curriculum should be redesigned to focus on the necessary skills.

Training for the necessary skills offers a chance of employability to graduates. The argument is affirmed by UNESCO (2016), which asserts that vocational education and training should prepare graduates for further study both in their broad fields and the complementary fields for direct entry into the workplace. Brewer (2010) posits that ILO (2013) prepared a guide for core work skills to help key stakeholders understand better what core work skills are, their importance and the ways those core skills can be delivered, attained and recognised. This implies that there is a set of skills standards that should be considered to ensure effective skills training.

Table 5.32: The TVET curriculum should be redesigned to suit the purposes for which it was designed

	Number	Percentage
Strongly agree	87	72.5%
Agree	33	27.5%
Disagree	0	0%
Strongly disagree	0	0%
Total	120	100%

Table 5. 32 shows that 87 (72.5%) of the lecturers strongly agreed and 33 (27.5%) agreed with the statement that the TVET curriculum should be redesigned to suit the purposes for which it was designed. No respondents disagreed or strongly disagreed, respectively. On average, all the lecturers (100%) agreed that the TVET curriculum should be redesigned to suit the purposes for which it was designed.

The results indicate that the government and the DHET have to go back to the drawing board to redesign the TVET curriculum. This implies that the purposes of the TVET curriculum are important. Unfortunately, the curriculum is marred by inadequacies and deficiencies, which call for a new approach. It is further indicated that consultations from the different stakeholders of the TVET sector need to be made for a credible TVET curriculum.

Table 5.33: TVET colleges, the industry and other stakeholders in the TVET sector have a common ground with regard to experience on the TVET curriculum

	Number	Percentage
Strongly agree	2	1.6%
Agree	13	10.8%
Disagree	23	19.1%
Strongly disagree	82	68.3%
Total	120	99.8%

Table 5.33 reveals that two (1.6%) lecturers strongly agreed and 13 (10.8%) lecturers agreed that the TVET colleges, the industry and other stakeholders in the TVET sector have common ground regarding experience of the TVET curriculum. About 23 (19.1%) lecturers disagreed, whereas, 82 (68%) strongly disagreed. On average, (87.4%) lecturers disagreed that the TVET colleges, the industry and other stakeholders in the TVET sector, have a common ground with regard to experience of the TVET curriculum.

National Development Plan (RSA, 2012) refers to partnership building between colleges and the industry to ensure the quick absorption of college graduates in jobs. This means that the TVET sector needs to build, strengthen and maintain strong partnerships locally and internationally with all the stakeholders, including the government, trade and industry, the DHET, NGOs, donor agencies and the private sector. Partnerships can help with the placement and absorption of graduates for quick employment and self-employment as well as the funding and training of teaching staff for exposure to modern equipment. Accordingly, TVET colleges need to explore WBE and WIL programmes initiated by the DHET to acquire experiential learning.

SAQA (2013) also avers that a poor quality TVET system will produce poor training and, in turn, poor training will produce poor graduates with poor skills and poor knowledge, the impact of which, will affect sustainable development. This implies that trainers should be able to meet the minimum requirements for an effective TVET system that sacrifices the needs of the industry and, ultimately, the development agenda.

Table 5.34: The policies from government and DHET foster skills development for the TVET curriculum

	Number	Percentage
Strongly agree	10	8.3%
Agree	20	16.6%
Disagree	28	23.3%
Strongly disagree	62	51.6%
Total	120	99.8%

Table 5.34 shows that ten (8.3%) strongly agreed and 20 (16.6%) agreed that the policies of the DHET promote skills development for the TVET curriculum. Only 28 (23.3%) disagreed and 62(32.3%) strongly disagreed. On average, (74.9%) lecturers strongly disagreed that policies of the DHET foster skills development for the TVET curriculum.

The results above indicate that, indeed, the policies of the TVET colleges do not foster skills training effectively. This implies that many policies are either unimplementable, negative, or do not promote the type of training to be offered nor address skills development. The New Growth Path (RSA, 2011c) asserts that policies affect the system administration either negatively or positively.

How does policy affect the TVET curriculum in South Africa?

The government makes policies to be implemented by the DHET in TVET colleges. Policies affect any development, positively or negatively.

The Campus Manager from Campus B explained:

“TVET sector has very weak systems to make and supervise the implementation of policies. There is no will and desire. Policies are not progressive or pro-active. Legislation is.... There is inadequate funding to facilitate policy administration in TVET colleges.”

This implies that policies are negative and uncoordinated and that they are formulated by weak, demotivated and unwilling structures. From the results, it is clear that policies are neither positive nor enabling. The College Principal enumerated examples of policies to the researcher administered within the TVET sector, such as, the Absenteeism Policy (DHET, 2013a), NSFAS Policy, (DHET, 2019), Assessment Policy (DHET, 2007b), Enrolment/Admission Policy (DHET, 2018a) and Recruitment Policies (DHET, 2019a). The results explain the challenge of institutional frameworks, which make it impossible to plan, administer and manage the sector effectively with regard to addressing the skills shortage gap.

Subject Specialist (Campus B) remarked;

“You cannot implement some policies due to lack of adequate infrastructure, others conflict and some I do not know.”

The African Development Bank (2012) notes that the current policy and planning focus of the government on skills should take an inclusive growth path as a key for economic growth. This result indicates that the nature of policies for the TVET curriculum are not favourable, hence, there is a need to address policy administration within the TVET sector.

Table 5.35: The TVET curriculum is challenged by global skills competitiveness

	Number	Percentage
Strongly agree	64	53.3%
Agree	38	31.6%
Disagree	15	12.5%
Strongly disagree	3	2.5%
Total	120	100%

Table 5.35, shows that, 64 (53.3%) strongly agreed, while 38 (31.6%) agreed that the TVET curriculum is challenged by the global skills competitiveness. About 15 (12.5%) disagreed and only 3 (2.5%) strongly disagreed. On average, (84.9%) agreed that the TVET curriculum is challenged by the global skills competitiveness. The results above reflect indisputably that the TVET curriculum is challenged by global skills competitiveness. UNESCO (2015b) holds that, in its present form, the current TVET curriculum is unable to produce graduates who can compete and secure a decent job on a global perspective. This implies that, in this context, global competitiveness speaks to responsiveness, relevancy, and the impact of globalisation, the nature of training and the ability of the graduates to compete in the global employment world.

How does the TVET curriculum position itself in the global skills competition?

The above question was posed to the TVET managers for qualitative data.

Curriculum Specialist (Campus A) remarked,

“TVET should offer skills which are universal, it is not the case in the TVET we have.”

In turn, Assistant Director Curriculum commented:

“Our students cannot compete with globalisation, the skills acquired here cannot be rated with international standards. A lot is missing.”

The above results reveal the nature of the TVET curriculum. The results imply that students in TVET acquire middle-level skills which cannot compete with the global skills. *Secondly*, there appears to be a mismatch between the curriculum content, programmes offered and the nature of curriculum delivery in accordance with global standards. This is in line with Amiruddin *et al.* (2016) who opines that rapid globalisation and the new dynamics of information and communication technology have transformed the international labour market where human resources are seen as the most important capital in influencing progress and development. This means that for the TVET curriculum to compete on a global level, skills training with the TVET curriculum has to match the impact of global labour market conditions.

5.5 CONCLUSION

In this chapter, the study has presented and analysed the findings of this study. In the following chapter, the conclusions, suggestions and recommendations will be discussed. Future research will also be proposed to explore the TVET sector further.

CHAPTER SIX

SUMMARY, FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

6.1 INTRODUCTION

In Chapter five, the researcher analysed, discussed and presented the study findings in terms of their meanings. In this chapter, the summary, findings, conclusions and recommendations from the study will be given. The researcher will revisit the aim, the research questions and objectives of the study by linking the findings to the questions posed.

In this chapter, the researcher will attempt to propose the means for the effective administration and management of the TVET curriculum in rural areas as recommendations for the DHET, the government, the partners and the stakeholders in the TVET provisioning. Lastly, the chapter will recommend areas of further research in the TVET sector.

6.2. SUMMARY OF THE STUDY

Skills are viewed as the key inputs in the development of an individual, society and national economy destined to be obtained through TVET education and training. The study aimed to investigate the challenges facing the TVET curriculum in addressing the skills shortage gap in the rural areas of Northern Kwa-Zulu Natal. The study was guided by the following questions:

- How does the TVET curriculum address the skills shortage gap in the rural areas of Northern Kwa-Zulu Natal?
- Which challenges are facing the TVET curriculum in addressing the skills shortage gap in the rural areas of Northern Kwa-Zulu Natal?
- Which possible alternative ways are there for the TVET curriculum to address the skills shortage gap in the rural areas of Northern Kwa-Zulu Natal?

The study used mixed-methods to achieve the study aims. In this regard, closed-ended questions were used in the questionnaires for the TVET lecturers for the quantitative data. In turn, open-ended questions were used for the TVET managers for the qualitative data in the form of semi-structured interviews. Triangulation was adopted as an approach to ensure the validity and reliability of the study through a number of ways as an evaluative approach. The themes and categories that

emerged from the data were based on the relevant literature. Accordingly, the trustworthiness of data and ethical considerations were ensured.

The study found that there were many varied challenges facing the TVET curriculum. *Secondly*, the lecturers had different opinions about the conceptualisation of the TVET curriculum, the skills shortage gap and skills training in TVET colleges. However, the results indicated that the TVET curriculum, designed to address the skills shortage gap, was challenged, regarding its purposes. The results provided that, the TVET curriculum was disintegrated, weak, inappropriate, uncoordinated and un-facilitated. The facilitators (lecturers and managers) of the curriculum were also found to be lacking in knowledge, skills and experiences.

Furthermore, the results also indicated that the TVET curriculum was not specific with regard to skills. The responses of the lecturers and employers (partners) implied that the TVET curriculum does not promote effective skills development within the TVET band. The results implied that the TVET curriculum was inadequate in terms of its content and its mode of delivery was questionable with regard to its purposes. The results indicated that, alternative ways should be devised for the TVET curriculum to address the skills shortage gap better with consideration to curriculum review and curriculum re-design. It was also determined that, the political will, funding and partnership were at their lowest ebb which limits the TVET curriculum to thrive.

The results further showed that, the TVET curriculum was challenged by human resources factor in terms of management and lecturers to unpack a vocationally-oriented curriculum, strategic planning and administration.

The results further indicated that, the feeling of the stakeholders like students, lecturers, employers and other partners was negative which in turn affects delivery, skills training, experiential learning and employment. This attitude has resulted into a large number of NEETS especially in rural areas.

Given the above findings, it is imperative for South Africa and any other global nation to pay heed to the challenges facing education and training especially in the education and training where skills training is assumed to be offered to the youth who need to be arrested in their formative years so as to be contributory to

economic and social arenas. This makes vocational education pivotal in addressing the skills shortage gap of any nation aspiring to economic development.

The following section gives the summary of the aspects addressed in each chapter:

6.2.1. Chapter one

The chapter outlined the background to the research problem, stating the research problem, the research aim and the objectives. The preliminary literature was reviewed to explain the concepts used in this study. The chapter also gave a brief explanation of the theoretical framework underpinning this study. In addition, discussed the research design and methodology briefly and the methods of data collection, the sampling strategy and the data analysis. A brief discussion of the ethical considerations was also given.

6.2.2. Chapter two

Chapter two provided a detailed discussion of the related literature about the challenges facing the TVET curriculum in addressing the skills shortage gap in the rural areas, enumerating the challenges supported by the relevant literature. This chapter detailed how the TVET curriculum is challenged with regard to addressing the skills shortage gap. The challenges were looked at within the TVET sector, the DHET, the government, the stakeholders, the global perspectives and the students. The researcher also discussed TVET education and training from selected countries such as Australia and Germany in comparison with TVET in South Africa.

The researcher emphasised the institutional factors and global perspectives in terms of the policy formulation and implementation. Different legislations were also identified as imperative for the TVET curriculum. In this regard, the human capital theory of was adopted as a theoretical framework because developing human capital is seen as an indispensable resource for individual, societal and national economic development.

The researcher dealt with concepts, such as skills, skills shortages the skills shortage gap, and the TVET curriculum, the historical background of TVET and skills shortage gap, the skills demand, education and training. The literature reviewed, underpinned the theoretical framework of the study.

6.2.3. Chapter three

This chapter discussed the theoretical framework. The human capital theory was employed to underpin this study. Accordingly, the researcher discussed the assumptions, factors and justification for the choice of the theory of human capital. Related research studies were cited and discussed in detail and how they reflect on the topic of study. Finally, the chapter presented the relevancy of the theory to education and training thorough the TVET provisioning.

6.2.4. Chapter four

This chapter presented a detailed description of the research design and methodology, the research philosophy, the research approach, the research paradigm and the research methods used to collect the data. In addition, the chapter discussed post-positivism. The use of mixed-methods, the rationale for mixed-methods and how mixed-methods were used was discussed in detail. Furthermore, the selection of the study population, the sample frame and the research instruments were presented. This chapter explained how questionnaires and face-to-face interviews were conducted. Lastly, the data analysis approach and methods, ethical considerations, validity and reliability and triangulation technique were also presented in detail.

6.2.5. Chapter five

This chapter, presented the results of the study based on the study findings from the mixed-methods approach. Both quantitative and qualitative data were derived from the questionnaires and face-to-face interviews using collaboration and triangulation techniques. In this chapter, the researcher discussed the data collected with regard to the challenges facing TVET colleges in connection with their curricula, amongst others. The data collected indicated, that indeed, there were numerous challenges facing the TVET curriculum in addressing the skills shortage gap in the rural areas of Northern Kwa-Zulu Natal as evidenced by the human capital theory. The researcher presented, analysed, interpreted and discussed the findings (results) of the study in detail. The researcher referred to the research objectives as stated in Chapter one and after reviewing the data collected and the results thereof, the researcher was convinced that, the study objectives had been achieved.

The following section will provide a specific research objective with the proposed recommendations.

6.3. FINDINGS OF THE STUDY

Objective 1: How does the TVET curriculum address the skills shortage gap in the rural areas of Northern Kwa-Zulu Natal?

6.3.1. Focus on skills training

It was found out that, the TVET curriculum tries to focus on skills training as the ultimate goal. The responses of the participants showed that (95%) of the participants submitted that the TVET curriculum should largely focus on skills training. Soares (2014) opines that, vocational education is essentially based on the bedrock of skills and applied competencies. Despite the challenges, training in the TVET curriculum focuses on skills alongside the theory.

6.3.2. Practicability of the curriculum

In their responses, (97.5%) of the participants felt that the TVET curriculum should be more practical, as well as, short and simple with a focus on practical training. This could be done through work-based experience (WBE) and (WIL)/ administered by the DHET and colleges, so that TVET students are able to access the practical application of the skills and knowledge acquired through experiential learning in industries

6.3.3. Alignment with the world of work

The TVET curriculum attempts to align itself with the world of work. It transpired that only (5.8%) of the respondents believed that the TVET curriculum is adequately aligned with the world of work. However, this is a low percentage. Jayaram (2017) concludes that TVET is essentially concerned with applied learning such as the acquisition of skills, knowledge, values and ethics appropriate for the world of work to increase opportunities for productive work, sustainable livelihoods, personal empowerment and socio-economic development. This implies that The TVET curriculum needs to have a direct relationship between its content and the skills trained, based on the demands of the employers and the labour market economy.

6.3.4. Emphasis on employability skills

The TVET curriculum aims at producing employable graduates for the labour market. Employers believe that TVET graduates should have the employability skills demanded of them. Only (6.6%) of the respondents indicated that the TVET curriculum produces employable graduates. Davies, Fidler and Gorbis (2011) concur that employability skills are important variables in the development of an

economy. According to Musset and Álvarez-Galván (2014), unemployment among the youths in South Africa may be resolved by implementing effective vocational education and training for rural youths which will provide practical training, experience and exposure to increase the likelihood of a career and employment opportunities through partnerships. This means that employability skills need to be stressed in vocational training to open the gates for probable employment.

6.3.5. Skills responsiveness and relevancy

The TVET curriculum attempts to be sensitive to the skills needs of the economy. About (11.6%) of the responses agreed that the TVET curriculum is responsive to the national skills needs. Skills responsiveness, global competitiveness and the prevalent labour market demands as prescribed by globalisation and the industrial revolution have a great impact on skills training in any education and training system. Furthermore, (53.3%) of the participants responded that the TVET curriculum is challenged by global skills competitiveness. Schwab (2017) eludes industrial revolution is fundamentally impacting on the global demand for new skills, and the new technology fusing the physical, digital and biological worlds impacting on all disciplines, economies and industries.

Competitive skills dictate development in new advanced technology, business and new models of production, lifestyle, adaptation which require advanced skilled learning, collaboration and partnerships, by the different social, economic actors, review of policy and strategies for skills development and the overhauling of the education systems and curriculum development.

6.3.6. Fighting unemployment

Unemployment is one of the major social problems in rural areas. In this regard, only 12.5% of the respondents indicated that the TVET curriculum offers the required training for employment. This is affirmed by Bhorat (2014) who believes that rural areas are faced with a deficit of high skills; however, they have a surplus of low skilled workers. This implies that the TVET curriculum has not yet played its part to address the skills shortage gap effectively.

Cooper (2011) supports Bhorat (2014) by asserting that, there are too many unemployed-school leavers and job-seekers that are anxious to obtain employment due to the low level of industrialisation and the poor nature of skills training while Hicks *et al* (2013) believe that the problem of unemployment in Africa can be traced back to the period of social-economic instability and political factors. Accordingly, Afeti (2013) asserts that there must be effective mechanisms for the articulated employer demands for the skills that will be needed for the future. Ultimately, it is then up to designers of the TVET curriculum to address the skills shortage gap in the design of an improved curriculum.

6.3.7. Increase in the enrolment of TVET students

It was found that the number of enrolments in TVET colleges has more than tripled. Students from different walks of life, academic backgrounds, adults and youths, employed and unemployed, men and women, the disadvantaged as well as the disabled are all given equal opportunities to enrol at a TVET College. The classes are made up of all the cohorts of students. This extensive enrolment is the precedent for the increased throughput and certification with regard to the TVET sector. These will be the graduates who will go out and take up employment, create jobs or engage in further learning. In turn, this will address the skills shortage gap.

6.3.8 Making collaborative links

TVET Colleges are in a bid to make links with the employers for experiential learning and the placement of graduates thereafter. Results indicated that (10.8%) of the participants submitted that, there was a common ground and understanding between the Colleges and its partners. Links include companies in trade and industry as well as multinational companies for outsourcing funds to facilitate the curriculum. Nevertheless, the challenges are so huge to be zeroed within a short time.

6.3.9. Offering in-service training courses for lecturers

It was found out that, TVET and DHET try to train lecturers to acquire the necessary skills for a vocational curriculum. Results indicated that (30%) that lecturers were offered training for the curriculum.

Objective 2: What are the challenges facing the TVET curriculum in addressing the skills shortage gap in the rural areas of Northern Kwa-Zulu Natal?

Results indicated that (82.5%) of the participants that, the TVET curriculum is faced with many challenges, however, there were efforts by the TVET curriculum to address those challenges.

6.4.1. Unqualified TVET lecturers

The responses of (55%) of the respondents revealed that many of the TVET lecturers possessed lower qualifications. This presents a challenge that affects the administration and management of the TVET curriculum. The researcher found that the level of education prevented lecturers from doing the designated work as required by the curriculum. In terms of the human capital framework, TVET has remained the same despite the fact that the TVET curriculum is supposed to make a significant contribution to skills development for economic growth. The World Bank (2011) alludes to the fact that many TVET lecturers do not possess the requisite training, skills, experience, motivation and vocational exposure. What is more, their attitudes are not aligned with the curriculum philosophy that they implement. This implies that delivery of the TVET curriculum is staffed by unqualified personnel who need training.

6.4.2. Lack of enough trained vocational and experienced lecturers

TVET college lecturers lack the vocational skills to train students for a vocational curriculum. The findings revealed that (84.1%) of the respondents held the view that lecturers in TVET colleges lack vocational training and experience. Umalusi (RSA, 2017d), the national education quality assurance body in South Africa concludes that the majority of lecturers are ill-equipped to cope with the academic and social demands of vocational teaching. This implies that lecturers are incapacitated with regard to achieving the purposes of the curriculum.

6.4.3. Poor motivation of TVET lecturers

The study found out, lecturers within the TVET band were demotivated in terms of doing their work. *Secondly*, the study observed that many TVET lecturers exhibited a low motivation towards professional development as indicated by (11.6%) of the lecturers with higher qualifications (Honours and Masters Degrees). Many of them had Diplomas (55%) and first Degrees (33%) which accounted for the majority of the lecturers (88%).

Extrinsic factors and the low level of pay and benefits are presumed to be the factors leading to lecturers' demotivation. Dasmani (2011) asserts that the low level of motivation of lecturers affects the performance of TVET institutions negatively. In turn, Abebe (2012), supports the above assertion by maintaining that the low ratings of TVET institutions have an extremely negative effect on lecturers' motivation. This means that teachers' perceptions influence their motivation to teach as well as their attitudes towards their profession, negatively, thereby, presenting a challenge to the TVET curriculum with regard to addressing the skills shortage gap.

6.4.4. Overloading and understaffing

The study discovered that the ratio for a single lecturer to students was not viable. The ration was one lecturer to 55 students. *Secondly*, TVET colleges were found to be implementing a non-replaceable staffing approach that entailed that, if one lecturer is promoted, transferred to another campus, dies, relocates, retires or resigns, he is not replaced. The available lecturers make adjustments to take on the workload of the absent lecturer.

Thirdly, the researcher observed that the enrolment figures at TVET colleges have soared due to the government prioritisation of TVET education and training as evidenced by additional funding norms and the recruitment of the youth for TVET education and training. Blom (2016) urges that all the administrative and cooperate services functions in the TVET colleges should jointly support the process of learning and teaching while Wedekind and Buthelezi (2016) hold that there is little articulation between the layers of the structures between the management, the administration, the lecturing staff and the students which evidently adds to the instructional challenges. This implies that the lecturers' workload is too heavy for them to carry in view of the curriculum implementation.

6.4.5. Poor timetabling

TVET colleges were inundated with unplanned programmes and events from both within and without. Abebe (2012) urges that a too heavy theoretical workload and the poor timetabling of the TVET calendar year are key challenges for the TVET curriculum. This has affected the teaching and learning activities as the core values for the curriculum.

6.4.6. Inadequate workplace training and delivery

The majority of the respondents (74%) indicated that the TVET curriculum does not adequately cater for the required skills. The nature of training and the subsequent workplace training was observed to be inadequate. The researcher found that the work-based experience (WBE) and work-integrated learning (WIL) schemes provided only two weeks of workplace learning that was an insufficient amount of time for experiential learning. The CEDEFOP (2012) defines workplace training as a form of training that takes place in the workplace, usually on the job, under normal operational conditions based on learning by doing including a demonstration by an employee under supervision and coaching, job rotation and participation in specific projects. It is associated with informal, formal and incidental learning. Obioma (2015) maintains that, TVET colleges need to organise workshops by inviting experts from the industry to offer training to lecturers and students. It was observed from the study that few TVET graduates attained workplace learning, which impacted negatively on students' employability.

6.4.7. Unresponsiveness of the TVET curriculum

Most of the participants (67.5%) responded that the TVET curriculum was structurally unresponsive to the national skills needs. Importantly, the researcher noted that the content of the curriculum is too theoretical and does not address the salient skills needs of the labour market, especially in the rural areas. Mitgang (2012) maintains that the South African TVET system needs to be strengthened in order to provide access to high quality differentiated, technical, vocational education and skills training that is responsive and relevant for all. The Green Paper (DHET, 2012d) also expounds that the main problem of the TVET curriculum is the lack of diversity and relevancy and the weakness of many of its institutions. This explains the dichotomy the TVET curriculum faces in addressing the skills shortage gap in an environment where the content does not support the skills and nature of training demanded in the labour market alongside un-trained

and un-experienced lecturers. Scott (2014) alludes, the TVET curriculum lacks competitiveness and relevancy due to a number of challenges.

6.4.8. Lack of pedagogical skills by the TVET lecturers

A large number of participants (70.8%) responded that lecturers were not capacitated through training and re-training in the curriculum. The National Development Plan (RSA, 2012) avers that the TVET sector is not effective, it is too small, and its output is poor due to the lack of capacity building programmes.

6.4.9. Inaccessibility to TVET training

Accessibility indicates providing inclusive education and training for all within the limits of finance, distance, affordability, flexibility and adjustability. About (70%) of the lecturers responded that the TVET curriculum does not offer full accessibility to the required training for employment. Agenda 2030, (UNESCO, 2015a) emphasises universal access to basic education, lifelong learning opportunities, including vocational education, higher education and adult learning. Therefore, the TVET curriculum needs to offer differentiated bridging courses to allow for flexibility and mobility within the college sector to achieve an articulated post-school education and training system with no dead ends for students.

The majority of the respondents (55.8%) indicated that the TVET curriculum did not involve a practical component of skills training to a large extent within the framework of the economic needs and aspirations that served as a strong base for youth employment. *Secondly*, rural students were found to be unique with unique ambitions based on their exposure and experience in partnership with the rural economy. The researcher found that, the TVET curriculum was implemented universally with regard to all the cohorts of students that led to the producing of graduates that could not be compatible in the work environment. This was noted as one of the major causes of NEETS. The researcher observed that TVET colleges in rural areas were disadvantaged with regard to facilities and infrastructure. Currently, the TVET curriculum is seen as an education programme operating outside the normality of the education system. It is viewed by many as a retrogressive curriculum due to the many bottlenecks involved.

UNESCO (2012d) opines that youth unemployment needs to be supported by strong relationships within the economy that invest in the TVET curriculum, employment creation and job opportunities. Thus, TVET colleges need to develop

a unique curriculum with its own approach and rights within the expected framework to fight the skills shortages and unemployment of the youth.

6.4.10. Poor TVET curriculum design

The design of the TVET curriculum was found to be lacking the authenticity to address the skills shortage gap. A large percentage of respondents (66.9%) indicated that the TVET curriculum was destined to address the skills shortage gap despite the institutional challenges faced. The National Skills Development Plan (2011a) regards the TVET curriculum as pivotal in addressing the skills shortage gap in South Africa. The plan believes that education and training are central to long term development, the reduction of poverty and inequality and the building of a foundation for an equal society

The researcher observed that the TVET curriculum was not reflective of the rural skills needs. The results (72.5%) showed that the TVET curriculum needs to be re-designed to suit its purposes determined by the labour market preferences. Christensen *et al* (2013) and Kautz and Zanon (2014) stress that the TVET curriculum should be able to close the skills shortage gap through relevant learning programmes and continuing education. Thus, the design of the curriculum should embed the salient skills in itself for the workplace and the key aspects that the labour market seeks employability.

6.4.11 Institutional challenges like Qualification, Certification and throughput (poor marketability and publicity, negative perception for the TVET curriculum, poor career guidance, absenteeism and drop-out)

The results showed that (75.7%) of the participants did submit that the objective of the TVET curriculum is to address the skills shortage gap. The Green Paper (DHET, 2012d) believes that TVET colleges are key learning institutions for training young people for vocational and occupational qualifications from the age of 16 to 24. However, there is confusion regarding the certification due to the lack of clarity, alignment, relationships, confidence, as well as trust.

The researcher found that, TVET colleges were perceived negatively by different stakeholders due to poor branding and marketing as well as the nature of the programmes provided and the nature of training thereof. Sulaiman (2015) has a lack of basic knowledge and information on TVET and the negative perception of the TVET sector, hinders the marketability and publicity of the TVET curriculum to students and parents. The findings indicated that career guidance to students

lacked the intensity and gravity of the requirements of a vocational curriculum leading to a negative perception, absenteeism and dropping out. United Nations Development Program (UNDP, 2013) urges that it difficult for employers to comprehend the content of the curriculum and the skills acquired at each level. The negative perception is due to limited knowledge and information available about TVET perceived to be low and the fact that there are low employment and further learning opportunities within the TVET sector.

6.4.12. Lack of effective employability skills

Employers believe that TVET graduates should have the employability skills demanded of them. Nevertheless, during experiential learning and upon employment, employers find TVET graduates lacking in the employability skills. This is attributed to the theoretical nature of the training, untrained and inexperienced trainers, lack of effective workplace training as well as outdated training resources, among others. Davies, Fidler and Gorbis (2011) concur that the employability skills are important variables in the development of an economy. This is supported by DHET (2012e) that affirms that lecturers should receive training and retraining to be able to implement a vocational curriculum with different cohorts of students in the same classroom with an advanced programme for students' exposure to the requirements of the employment world.

6.4.13. Insensitivity of the TVET curriculum to national and global competitive skills

The provision of education and training needs to accommodate revolutionary skills which direct education and training. The results indicated that (53.3%) of the participants responded that, the TVET curriculum was not competitive in the global skills version. Schwab (2017) urges all economies to adapt to new labour demands to avert the consequences in the skills shortage gap in their economies. This implies that the TVET curriculum should imbed in itself the competitive skills that dictate development in new advanced technology, business and new models of production, lifestyle and adaptation that require advanced skilled learning, collaboration and partnerships by the different social, economic actors. The WEF (2018a) posits that the training of skills needs a skills development strategy for implementing a skills curriculum. Hence, a TVET curriculum should be supported by a strategy of reviewed policy formulation for skills development and the overhauling of the education systems for curriculum development.

6.4.14. The widening skills shortage gap

The researcher found that the large number of participants, expressed concern about the widening skills shortage gap as reflected in the high unemployment figures and NEETS. Education and training is important for freeing the economic and social development demands of a knowledge economy Phago and Thwala, (2015) while Chinyamurindi (2012) contends that education and training offers an opportunity to marginalised communities to enter the labour market. The TVET curriculum needs to offer high quality vocational programmes as the foundation for addressing the skills shortage gap from school to the world of work through building and encouraging strong links between education and training and the world of work to match skills provision to meet the market demands. In its report on the contemporary role of TVET, UNESCO (2014a) notes that TVET education has great prospects with regard to tackling poverty, enhancing employability through skills acquisition and boosting sustainable development on the different continents.

6.4.15 Outdated information technology

The researcher became aware that TVET colleges were facilitated by poor technology in communication, instructional offerings. Obioma (2015) opines that TVET colleges have a challenge with regard to securing modern training equipment for workshops that will expose students to practical life in the workplace and the world of employment. Wilson (2013) argues that the skills training offered by TVET colleges is not backed by information on accessing employment by the graduates, while Scott (2014) holds that no information is provided to graduates about career paths and career management in terms of employment and further learning. This was found to be a major challenge for the TVET curriculum in addressing the skills shortage gap in terms of relevancy and responsiveness.

6.4.16. Poor administrative and management skills at TVET colleges

The researcher learnt that the management of the TVET curriculum was not effective in TVET colleges due to many institutional challenges. The HRDCSA, (2014) relates that “A training needs assessment study commissioned by the South African College Principals Organisation (SACPO) in 2004,” also revealed that there were many challenges facing the TVET college leadership such as the poor management and failure to offer proper institutional guidance to lecturers and

students (The rejuvenation of the South African Institute for Vocational and Continuing Education and Training (SAIVCET) is proposed by the Green Paper (DHET, 2012d) as a key element for a long term strategy to build the institutional capacity to enable it to function as research and policy, quality assurance for the TVET curriculum, examination, lecturer and management development and marketing.

6.4.17. Inadequate funding

The concept of 'inadequate funding' was identified as one of the main challenges facing the TVET curriculum in addressing the skills shortage gap. The funds allocated by the government through the DHET was found to be inadequate for the implementation of the TVET curriculum. Accordingly, the DHET (2013b) contends that the funds allocated by the government through the DHET should be maximised to implement the TVET curriculum and do research on a comparative study of good practices in other countries that offer TVET systems. An improvement in the funding norms for the TVET curriculum was seen as important for the acquisition of facilities, tools, equipment, instruments, workshops, laboratories, library, maintenance and capacity building.

6.4.18. Poor policy formulation and legislation

The findings indicated that (74.9%) of the respondents felt that the TVET curriculum policies were not conducive to skills training. The New Growth Path (RSA, 2011c), concurs that policies affect the system administration negatively or positively. The government needs to review the legislation and the acts and other legal frameworks pertaining to TVET.

6.4.19. Weak partnerships and collaboration links

It transpired according to the findings that most TVET colleges have no formal relationship with the industry, with the exception of cases where they are offering apprenticeships, learnerships or other skills programmes that are inherently a practical component. The DHET (2013a) affirms that the relationship between TVET colleges and other partners is weak. *Secondly*, the TVET curriculum is alienated from its prime market as well as the consumers of the graduates in the form of the trade and industry (employers). As a result, many TVET graduates are unable to get the workplace experience that is required for the completion of the practical component for reasonable work. The training offered seems ambiguous, unrealistic, and unresponsive to the needs of the economy for rural areas.

6.4.20. Inadequate infrastructure

It was discovered that the TVET infrastructure does not facilitate the curriculum appropriately to address the skills shortage gap in rural areas. In this study, the term “infrastructure” was used to refer to workshops, funding, library, laboratories, auditoriums, the internet, equipment and all the other necessary resources for teaching and learning for the TVET curriculum.

6.4.21 Inconsistency in TVET pathways

Another challenge identified was inconsistency in the TVET pathways. Many TVET graduates are unable to get employment, be self-employed or enrol in further learning. This anomaly is created by the lack of support by universities who do not seem to comprehend the qualifications and content as well as the structure of the TVET curriculum and its compatibility with university education. The UNDP (2016) conceptualises the purpose of TVET as industrialisation and economic development. This is supported by Tikly (2013) who argues that the role of TVET and its evolution is related to economic and human development. UNESCO (2011) argues that vocational education and training should prepare graduates for further study in their broad fields and in a complementary field to direct entry into the workforce. This means that a TVET graduate should have a variety of options for personal and national growth and development in terms of choices and progress.

6.4.22. High rates of TVET graduate unemployment

It is undeniably so that unemployment is a cause of social problems in rural areas. The findings in this study showed that the TVET curriculum has not yet played its role with regard to addressing the skills shortage gap. In this regard, the responses of the participants indicated that (12.5%) of the TVET curriculum offered the required training for employment, underscoring the fact that rural areas are faced with a deficit of high skills, while they do have a surplus of low skilled workers. Cooper & Schindler (2011) state that there are too many unemployed-school leavers and job-seekers that are anxious to obtain employment. Even the youth in rural areas who have the skills, cannot find employment with their skills due to poor training, outdated skills, lack of exposure, few industries, lack of information and poor acceptance by the employers among other factors. The TVET graduates who find jobs are not working in the industries for which they are trained. This signifies poor linkages, poor partnerships, poor communication and collaboration in terms of placement.

In his study, Salleh (2017), reached the conclusion that that vocational educational and training contributes to a decline in employment rates in the regions studied. The higher the percentage of people who have vocational education and training, the lower the rate of unemployment. Therefore, it is clear that TVET is an option to reduce the unemployment rates through preparing students for jobs that are based on manual or practical activities, traditionally non-theoretical and totally rated to a specific trade, occupation or vocational for immediate employment.

Objective 3: What possible alternative ways are there for the TVET curriculum to address the skills shortage gap in the rural areas of Northern Kwa-Zulu Natal?

6.5.1 TVET curriculum change

Curriculum change was seen as a possible alternative way for the TVET curriculum to address the skills shortage gap. Change is necessary for TVET colleges to provide the relevant programmes required for specific students and specific locations. Curriculum change will promote accessible and high-quality skills training. Onyesom and Ashibogwu (2013) assert that education is a medium through which the global values and norms of learners are transformed through the formal schooling system. This means that investing in education through the TVET curriculum will explore the potentialities of the rural youth and will enable them to enjoy full citizenry and their purpose of life. A challenge for any government is to estimate and anticipate the education and skills required to support the development and production of the society (RSA, 2015). A framework to set up the indicators of skills planning should be set up to inform the government to obtain a holistic understanding of the supply and the demand for skills.

Furthermore, curriculum change can provide and propel a curriculum that is aligned with the needs of the students as well as the industry. Rural areas need a specific and appropriate skills development plan that encompasses an assessment of the relationship between the changing economy and the type of skills required. Therefore, there is also a need to consider the skills of the unemployed to achieve an inclusive growth path. This could be done through the emphasis on the practical component of the TVET curriculum, partnerships employability skills, workplace experience and training and interventions through policy formulation by the government. The TVET sector should adopt the good practices of other models in vocationally developed TVET countries, such as

Germany, to help build capacity for future skills development (ILO, 2013). TVET should also offer short-skills courses to offer qualifications, such as certificates that used to be offered by Technikons. In short, education is a key instrument in realising economic growth and development.

6.5.2. Universal accessibility to TVET training

Accessibility entails providing an inclusive education and training for all within the limits of finance, distance, affordability, flexibility and adjustability. Therefore, the TVET curriculum should be designed to include bridging courses to allow for flexibility and mobility within the college sector. Education (Agenda 2030) emphasises universal access to basic education, long-life learning opportunities, including vocational education, higher education and adult learning (UN, 2015b). This is important to achieve the version of an articulated post-school education and training system, the one with no dead ends for students. In this study, dormitories were found to be a challenge for TVET students because it was a causative factor in the phenomena of absenteeism and dropping out.

Alternatively, TVET colleges should provide free dormitories to college students to help them access vocational education in their areas, especially those who come from long distances and who cannot afford the off-campus rent. In this regard, TVET colleges have decided to open more skills centres in rural areas to train more students in their own areas and in accordance with their needs as reflected in the demand for skills in those areas to be able to contribute to rural and national development.

6.5.3. Offering continuous professional development programmes

This study found that TVET college lecturers lacked the required knowledge, competencies, experience and skills and personal qualities for training students. Regarding the need for the TVET curriculum to address the skills shortage gap, the lecturers' attitudes seem to be negative and feel that this gap should be addressed through institutional structures and systems. The government with the DHET should set minimum standard requirements for TVET lecturers. The requirements should include being a teacher by profession with a stated number of years in service, except in the scarce skills trades and occupations. Every TVET lecturer should have a vocational qualification, and be an artisan with industrial training and experience for those in the practical band.

The DHET and the TVET colleges ought to have a comprehensive plan for in-service vocational training programmes for the TVET lecturers. This training should form part of the continuous professional development (CPD) programmes as well as refresher courses, workshops, conferences and symposia to keep lecturers abreast of the new skills developments and innovations within the TVET sector, industry and the curriculum, in particular. This will speak to the critical pedagogy and the skills training requirements with regard to the TVET students in rural areas. Addressing the issue of the heavy workloads and understaffing in TVET colleges, is a possible alternative way of improving the TVET curriculum as TVET lecturers seem to be have a great deal of work to do.

Importantly, the TVET lecturers need to be motivated with regard to recruitment, service and maintenance. Accordingly, lecturers' remuneration should be standardised with concomitant benefits to attract them to work at rural TVET colleges. Motivation will also help lecturers change their attitudes towards the TVET curriculum and the entire sector in general., Umalusi, the national education quality assurance body in South Africa (RSA, 2014d), concludes that the majority of lecturers are ill-equipped to cope with the academic and social demands of vocational teaching.

6.5.4. Addressing institutional framework

Re-structuring institutional frameworks is extremely pertinent as an alternative way which encompasses policy and training and administration. Soares (2010) holds that, the government, DHET and the TVET Colleges need to have the political will for vocational education and training through positive policy formulation, legislation and funding. The necessity to address institutional frameworks is supported by the Green Paper (DHET, 2012d) which expounds that, the main problem of the TVET curriculum is lack of diversity and the weakness of many of its institutions. The nature of training needs to focus on skills training and development to meet the skills needs based on new innovations and research. Adequate infrastructure, resources and facilities for vocational training are thus, necessary to foster skills training.

6.5.5. Practical skills training

There is no skills training without practicals. The practicality of training lays the

foundation for skills acquisition. In this regard, TVET colleges need to pay greater attention and resources for practical training if they are to address the skills shortage gap. Practical lessons should form the largest part of the TVET curriculum training by implementing the approach for subject experts to meet the administrative requirements for undertaking practical work. Obioma (2015) affirms that TVET colleges need to secure modern training equipment for workshops that will expose students to practical life in the workplace.

Mitgang (2012) asserts that the South African TVET system needs to be strengthened in order to provide access to high-quality differentiated, technical, vocational education and skills training and for all companies to plan the continuous workplace training and retraining of employees, so that adjustability to new emerging technological trends and demands is adhered to. This means that all the stakeholders for vocational education and training should have a planned focus on the future employment and skills demands projected and infused into the TVET curriculum. Furthermore, the content for practical training should be selected with a vision to meeting the employment demands.

6.5.6 Policy re-consideration

Alternatively, the government can reconsider the legislation and Acts as well as other legal frameworks subject to suit TVET provisioning. Adjustment in policies should embed the characteristics of user-friendliness, positivity, enabling, promote cohesion within the sector. Reconsideration of policies should stem from consultative meetings with the different stakeholders. However, there is no skills strategy/policy or system that can single-handedly address the skills shortage gap in any country but rather a holistic approach in education and training that is able to address the qualitative and quantitative issues within the system. A clear and well-drafted policy inclusive of special skills strategy with special consideration will undoubtedly guide TVET in addressing the skills shortage gap.

6.5.7. Infrastructural upgrade

Due to the ever-changing emerging skills trends within the labour market, relevant and modern infrastructure is imperative for the TVET curriculum with regard to skills training and transferring knowledge to the rural youth. Upgrading the current infrastructure was viewed as an alternative for the TVET curriculum in its bid to address the skills shortage gap. The TVET curriculum infrastructure and

curriculum implementation systems need to be upgraded continually in alignment with the skills training needs. Partnerships need to be forged between the TVET colleges, industry and employers to solicit advice on the necessary infrastructure for the modern workplace environment.

6.5.8 Exploring collaborative opportunities

Building strong partnerships was seen as an alternative way of effective skills training by the TVET curriculum and, subsequently address the skills shortage gap better. As was discussed with regard to other countries, especially Germany, Ethiopia and Australia, companies play a crucial role in designing, development, implementation, assessment, experiential learning, apprenticeships, trade tests and employment as well as funding for vocational training. The European Commission (2016), alludes to the fact that the social partners of TVET include organisations that represent the interests of workers and employers, while the ILO (2010b) maintains that social partners have an impact on the responses to the labour market policies. This is the role that is missing in the South African TVET context. In fact, the South African version of TVET provisioning has not explored the role and contribution of partnerships effectively. Accordingly, partnerships may be built locally, internationally with ILO, UNESCO, SADC, ETF, and CEDEFOP, as well as with private and public domains under a regulatory framework that will set well-defined boundaries for inter-operations for sharing good practices, allowing competition and making comparisons (UNESCO, 2012b).

6.5.9 Offering high-quality skills training

As a possible alternative route for the TVET curriculum, the TVET curriculum needs to emphasise the high-quality training of young people to upgrade their skills as demanded by the employer, to make them more employable. Importantly, qualitative training could be done by offering relevant programmes that will address the skills mismatch to promote the competition and labour market sensitivity of the TVET graduates. This implies that TVET employment programmes need to target local livelihood opportunities rather than be universal. In this way, students will experience on-the-job training as a requirement for employment. Afeti (2013) asserts that there must be effective mechanisms for articulated employer demands for the skills that will be needed for the future. This means that the TVET curriculum should be an intervention to correct what was missing and to re-align the nation for collective and inclusive economic growth through qualitative training. *Secondly,*

qualitative skills training will need an established TVET college-based mechanism for collecting labour market information on skills other than depending on the DHET and Statistics South Africa.

6.5.10 Promotion of the TVET curriculum

The TVET curriculum is perceived negatively by many of its partners, including employers, students and lecturers among others seen as a second-choice education provisioning; hence, there is little acceptance. The promotion of the TVET curriculum may be done through college days, partnerships, qualitative training, practical training, imbizos and Indaba meetings and community engagements. Sulaiman *et al* (2015) believe that the lack of basic knowledge and information on TVET and the negative perceptions of the TVET sector, hamper the marketability and publicity of the TVET curriculum with regard to students and parents. Hence, the majority of the students choose University education. He notes that TVET students need to be vigilant, versatile and holistic with regard to the knowledge and skills gained to be progressive, adaptable and visionary through the mastery of the labour market and its performance skills. Advertising and marketing are seen as alternative ways of addressing the issues of negative perceptions, the lack of trust and active support by the employers and subsequently, the sector will attract many students, get a lot of support, funding and employment for the TVET graduates. The promotion of the curriculum entails attending to institutional challenges as well as aligning the curriculum, having trained personnel and securing the relevant infrastructure and resources.

6.5.11 Addressing rural skills challenges

The TVET curriculum possibly has to address the rural skills challenges in a unique way with a unique approach and strategy through a unique vocational curriculum. As alluded before, “unemployment is one of the big social problems” in rural areas StatsSA (2013a). Hicks *et al* (2013) affirms that the problem of unemployment in Africa can be traced to the period of socio-economic instability and political factors. The findings in this study revealed that the TVET curriculum has not yet played its role in addressing the skills shortage gap. Bhorat (2014) believes that rural areas are faced with a deficit of high skills; however, they have a surplus of low-skilled workers. This is the gap the TVET curriculum has to fill through relevant programmes and high-quality training with hands-on skills.

Cooper and Schindler (2011) state that there are too many unemployed school leavers and job-seekers that are anxious to obtain employment. Even those youths in rural areas who have the skills, cannot find employment for their skills due to poor training, outdated skills, lack of exposure, few industries, lack of information and the poor support of the employers, among other factors. Most of the TVET graduates who find jobs are not working in the industries for which they were trained. This signifies poor linkages, poor partnerships, poor communication and collaboration in terms of placement. In his study, Salleh, Sulaiman and Gloeckner (2017), found that vocational educational and training contributes to a decline in employment rates in the regions studied. The higher the percentage of people who have vocational education and training, the lower the rate of unemployment. Therefore, TVET is regarded as an option to reduce the unemployment rates by preparing students for jobs that are based on manual or practical activities, and that are traditionally non-theoretical and are totally related to a specific trade, occupation or vocational for immediate employment.

6.5.12 CONCLUSION

Addressing the key challenges of the rural youth requires the integration of rurality into both planning and analysis. Sharp (2012) believes that the purpose of skills is to enhance the ability of students to understand themselves fully, act purposefully and to be able to get personal gratification through realistic goals setting and achievement. Accordingly, TVET is part of life-long learning that can take place at secondary, post-secondary and tertiary levels including work-based learning, continuing training and professional development which may lead to qualifications. The TVET curriculum must, therefore, do more to meet the needs of the broad-based development. There is a need to do undertake more in-depth research on the supply and demand of skills in rural areas with the shift to education and training liberalism. The next section will contain all the appendices for this study.

It is recommended that the TVET sector should initiate and maintain collaboration and coordination with the private sector to improve and increase the relevance of training within the TVET curriculum. This will improve curriculum delivery, outsource funding, access mentoring and coaching, as well as support. This study recommends that SETAs need to collect credible data and analyse them in demographic terms of work centres and other relevant dimensions to plan the

skills demands, the supply and the requirements to design appropriate learning programmes in the TVET curriculum.

Another recommendation is that the DHET is urged to invest in training materials, toolkits and modern equipment and technology, lecturer training and better remuneration for both lecturers and trainees. Therefore,, TVET colleges will have to leave their comfort zones and use outreach measures such as mobile or distance training through information and communication technologies, such as, mobile phones, computers, laptops, satellite campuses to make the TVET curriculum accessible to rural students. This will also call for the training of lecturers in ICT skills. There is a need to provide diverse-skills systems in rural areas that require various types of skills, using innovative methods of delivery and the decentralisation of existing social institutions, in particular.

6.7 RECOMMENDATIONS

This section will review the results of the study and therefore suggest recommendations in line with the study findings. In this section, recommendations will act as suggestions or modalities that may be taken by the DHET, government and other stakeholder (partners) to facilitate the TVET curriculum in addressing the skills shortage gap.

6.7.1 Curriculum review

The findings of the study indicated that the TVET curriculum is disintegrated and weak. The study recommends a curriculum that is aligned with the needs of the industry and the contemporary labour market aligned with the waves of globalisation, the industrial revolution and the 21st century skills drive. This can be effected through partnership links, a focus on employability skills, workplace experience and training and interventions through policies and legislation by the government. The study further recommends that TVET colleges should become involved in their affairs in terms of curriculum design and development.

A good skills-demand-driven TVET curriculum is potentially one of the most important tools for developing young people's skills in rural areas (DHET, 2015a). TVET colleges should ensure that they do not only train and transfer skills to students, but that they also align education and training with the social needs for social improvements. Hence, the TVET curriculum needs to be overhauled to

address the issue of poor articulation either for the labour demands, higher education or economic development.

In terms of specify, rural areas need a specific and appropriate skills development curriculum that encompasses an assessment of the relationship between the changing economy and the type of skills required. The study, therefore, recommends the need for a credible rural skills training body and assurer that will be responsible for skills training similar to the National Skills Authority (NSA).

Access to education promotes human development, quality of life and access to basic needs; hence, it is recommended that skills training should be decentralised and should be closer to the areas and students where they are needed. The curriculum needs to be designed at different levels of national development to meet the economic and social needs of the areas and students for which it will be implemented. In order for the TVET curriculum to address the skills shortage gap, it should provide different curricula for different areas and students. For rural students, the embedded knowledge and skills should be those reflective of their livelihoods in order to shape their society. Therefore, ultimate objective of the TVET curriculum system is sustainable development for lifelong learning with regard to the rural context. This implies that, the TVET curriculum should introduce a paradigm shift to focus on individual-area-skills needs.

This researcher proposes a framework of indicators for skills planning to inform the government so that it can attain a holistic understanding of the supply and demand of skills. RSA (2014b) believes that the challenge for any government is to estimate and anticipate the education and skills required to support the development and production of society. Thus, the DHET should implement a national skills-driven development approach to plan and oversee the national skills needs in terms of the different community needs for sustainable development. The RSA (2013b) proposes that an information data providing mechanism should be institutionalised to collect and disseminate data on the skills needs, the demand and supply of skills in the rural labour market to assist the DHET and the government to plan for skills development in the areas with the critical needs. This will help to alleviate misinformation on the skills shortage gap.

6.6.2 Curriculum re-design

The findings of the study revealed inconsistencies and a lack of clarity with regard to the vision and approach to the TVET curriculum. The results of the study indicated that (72.5%) of the participants responded that the TVET curriculum should be re-designed. The study, therefore, recommends that the TVET curriculum should be re-designed to suit the purposes for which it was launched. The re-designing of the curriculum will be manifested by providing relevantly-demanded programmes for specific students and specific locations with high-quality training being offered, delivered and made accessible to all students. The

TVET curriculum should identify social issues in rural areas and not respond to them only. This is supported by Motala and Treat (2014) who assume that markets pertaining to pre-existing needs of consumers completely ignore the obvious ways in which the markets manufacture needs and desires as opposed to merely responding to them. This implies that the curriculum demands the contextualisation of the daily and environmental contexts of the rural students. The TVET curriculum needs to be democratised for a vibrant and inclusive economy.

In terms of offerings and programmes, the study recommends that the curriculum needs to have short-skills as well as seasonal courses for qualifications, such as, certificates that used to be offered by Technikons as determined by the labour market to meet the need for particular skills, especially for those students who have been out of school for a long time. Short courses will act as a solution to the skills shortage and unemployment rates working as a pathway. This is based on the assumption that employers use qualifications as a skills proxy, while people use qualifications to position themselves for work. This means that, qualifications appear to be a medium of exchange for expertise and competence to create employment opportunities. The study also recommends a training programme for those students who dropped out of schools through the TVET curriculum.

6.6.3 Review of funding norms

Funding plays a vital role in any development aspect. The study findings revealed that funding had hampered the TVET curriculum with regard to addressing the skills shortage gap. The study recommends that the funding norms should be revised to suit the requirements for skills training at the TVET colleges. Funding will help build capacity including the infrastructure, facilities, training, buying the equipment, maintenance, marketing and publicity, workplace learning and self-employment or job creation as well as research and development and stipends for students during experiential learning. The DHET (2013b) contends that the funds allocated by the government through the DHET should be maximised when implementing the TVET curriculum and taking a comparative study of good practice from other countries that offer TVET system.

The study further recommends that TVET colleges should outsource funding from multi-national agencies and donor organisations, such as, Non-Governmental Organisations (NGOS), Sector Education and Training Authority (SETAs), the

business community, donors and the industry through partnership linkages. Another area of funding is proposed through bursaries and scholarships to accommodate all the rural students. In doing this, the qualifying criteria should be revisited to avoid the exclusion of some students. The overall purpose of the sector should be designed with the aim of creating opportunities for youths and adults to acquire the skills, knowledge and value for lifelong learning. Funding should be increased to TVET colleges to enable access to them and the restructuring of systems and functions by:

- Maximising public space at campuses by making use of it purposively and/or upgrading the infrastructure through new constructions.
- Ensuring that TVET colleges provide the kind of programmes needed in rural areas.
- Ensuring that students are not constrained by finances from enrolling at TVET colleges.
- Facilitating TVET Colleges to offer skills training where it is needed without necessarily requiring students to come to campuses which may be a long distance.

6.6.4 Capacity building

Capacity building plays a critical role in any system if it is to deliver as expected. The study recommends that TVET colleges should build their capacities to be able to address the skills shortage gap. This can be through an institutional upgrade, the training and re-training of lecturers and managers, improvement of the infrastructure, review of policies, positive policy formulation and implementation, research and development, funding and partnerships.

The study further recommends that the DHET and TVET colleges should consider the outsourcing of personnel from industries in terms of trainers to upskill the TVET lecturers, especially with regard to the practical lessons. The National Development Plan (RSA, 2012) states that the TVET sector is not effective, it is too small, and its output is poor due to lack of capacity building programmes. Accordingly, the industry personnel will act as experts, coaches, mentors or facilitators in training, planning, assessment and evaluation. TVET college managers need to be trained in strategic planning skills, financial management skills, human resources management skills, crisis management skills, time

management skills, communication skills and partnership-building skills to enable them to implement the curriculum.

In addition, this study recommends a TVET lecturer professional body that will guide and regulate lecturers' conduct and professionalism. Currently, TVET lecturers are registered and regulated by the South African Council of Educators (SACE) (SACE, 2011). Having a separate body will help build capacity on a common ground, based on needs, alignment, expectations and challenges. In the same vein, the DHET and colleges need to offer comprehensive continuous professional development (CPD) to lecturers through refresher courses and workshops that aim at capacitating them regarding the demands of unpacking a skills-demand curriculum. This study recommends that the government must revise the funding norms of the DHET to address the urgent capacity building within the TVET sector.

6.6.5 Policy review

The findings of the study indicated that the TVET curriculum is challenged by the current policies and legislation. The study recommends a review of the TVET curriculum policies and formulate policies that are positive, progressive, enabling and relevant. This implies that the government should prioritise and bring clarity regarding the vision of the TVET curriculum. Tikly (2013) maintains that lecturers' and unions should be consulted concerning policy making-decisions. Hence, there should be a reconceptualisation of the role of the lecturers and unions within the TVET curriculum. This is affirmed by the OECD (2017) that holds that understanding the role and potential of lecturers and unions is essential for improving education and the health of a country's education system. This means that TVET colleges and DHET should emphasise the TVET data collection via TVETMIS and use of this data for effective policy and decision-making.

6.6.6 Building strong partnerships

It was found in this study that the TVET sector is isolated from its prime partners. The researcher recommends that the TVET sector should place great emphasis on coordination within the different skills development partners to focus on planning, implementation and assessment as well as securing funding, capacity-building and an infrastructural upgrade. Couldrey and Loveder (2017) contend that both TVET colleges and industries should be willing to build relationships that will

ensure that a competent workforce is produced to meet industrial demands. The study further recommends that concerted efforts be made among the employers, SETAs and the TVET colleges to collaborate regarding the training of the students. This will bring relief to the immediate skills needs and therefore recommended that, the DHET and the government should prioritise skills training and development in rural areas, linking them to growth and lifelong learning.

The study recommends for developing inter-departmental-government relationships with the basic departments, such as, the Department of Trade and Industry (DoL), the DHET and the National Planning Commission and the SETAs. The Green Paper (DHET, 2012d) contends that vocational education and training should be used strategically to foster and strengthen economic, social and political relations including Community Education and Training Centres (CETCs) to address the needs of out of school youths and adults. This implies that those responsible for planning and developing the TVET curriculum should collaborate with TVET colleges, the DHET and industries to ensure that trained, skilled and employable graduates are produced, as a product of partnership efforts, with a common knowledge and vision of the needed skills and competencies in the employment world.

Another recommendation by this study in this regard, is that the DHET and TVET colleges should develop links between education and training, and the unemployed and untrained youth by collecting data on their competencies against the skills supplied, to determine the future needs of the labour market in rural areas. Work-based experience in industries and the business world is necessary to absorb TVET curriculum graduates so that they are mentored in the practical realities of the workplace and on-the-job training. This will introduce TVET graduates to employment opportunities to curb unemployment and poverty and eventually address the skills shortage gap. The ILO (2010b) stresses the importance of skills partnerships with organisations, employers, workers' unions to develop training. This implies that TVET colleges and industries should develop a framework that will lead to graduating a competent workforce that will meet the industrial skills demands.

6.6.7 Opening of TVET pathways

Based on the findings of the study, the researcher found that TVET pathways lacked clarity and openness with regard to employment, self-employment and further learning. The study recommends that pathways need to be opened for integrating TVET with general education and for equal accessibility. Needham (2017) affirms that pathways to employment and further learning opportunities should be crafted at entry into a TVET college, the NEETS and those who are looking for occupational or professional careers. Opening pathways in education and training needs linkages in terms of the curriculum to open gates for further learning at universities. This implies that TVET education and training should open pathways for further learning, employment and self-employment as well as general learning to lifelong learning and sustainable development.

Another recommendation by this study is that employers need to be encouraged to offer support for and acceptance of the TVET system to ensure that graduates are job-ready. In doing this, The TVET curriculum should offer programmes that provide a horizontal and vertical axis for students' mobility. These programmes will recognise and address the rapid changes in the competitive labour market to cope with the effects of globalisation.

It is recommended that the TVET curriculum should supplement technical and vocational training with basic education (literacy and numeracy) technical and life skills, such as, decision-making, confidence-building, and relationship-building and communication skills. This will make skills training comprehensive and complete. Life or soft skills help a candidate to get a job and maintain it. The researcher recommends diversification skills development policies by the DHET that speak to both formal and non-formal training embedding non-formal skills training in national training systems. This can be done by forging a relationship and strengthening relationships between the DHET and colleges, and with support being offered in terms of financial and non-financial incentives so that students can access basic education as a stepping-stone to further their skills training. This will expand high-quality basic education and vocational training.

6.6.8 Merger of TVET qualifications

Confusion and misinformation exists regarding the TVET qualifications obtained by graduates. The researcher recommends that the TVET qualifications for NCV should be merged for a single-articulated qualification that is relevant, understandable and easy to interpret by the employers. Gewer (2010c) views TVET qualifications as disintegrated with a lack of a sense of commonality with the traditional qualification framework. However, the Green Paper (2012d) holds that TVET colleges are key learning institutions for training young people in vocational and occupational qualifications from the age of 16 to 24. For this reason, the TVET system should merge its qualification and certification system with the traditional system, especially the NCV certification. This will help provide clarity and recognition of those skills attained from the TVET curriculum by the employers and to ascertain reliability in the labour market.

The study further recommends that all TVET qualifications should be harmonised into a single qualification such as the National Certificate Vocational (NCV), which has three qualifications in the form of Level 2 to Level 4 of the qualification framework. UNESCO (2010c) asserts that this disintegration makes it difficult for employers to comprehend the content of the curriculum and the skills acquired at each level.

The researcher recommends that a relationship with different stakeholders should be worked out by Umalusi as the quality assurance body for the TVET curriculum to provide information and clarity on the TVET qualification to avoid confusion and misinformation. This will address the challenges of negativity and lack of active support by the partners of the TVET sector. Frieberg (2010) proposes that informal knowledge should be merged with the current TVET training. This implies that the DHET needs to work hard to link the TVET occupations and the acquisition of mid-level skills required.

6.6.9 Rigorous marketing and publicity for the TVET curriculum

It was found that the negative attitudes among the stakeholders concerning the TVET curriculum was one of the challenges facing the curriculum with regard to addressing the skills shortage gap. This study recommends that the TVET sector should bring all the relevant partners on board in the skills development process so that they are involved in skills training planning within the TVET sector. This can

be done through consultations via indaba meetings, such as, imbizo arrangements, college days, among others, to market the sector as well as borrowing from other TVET models in various countries. In this vein, the Asian Development Bank (2014) recommends that the TVET sector should adopt the good practices of TVET provisioning from other countries. This will help improve the management and administration of the TVET curriculum. Secondly, TVET a curriculum review and re-designing are recommended to address the challenges of structure, content, practical training, certification and the employability of graduates. Partnerships with all the relevant stakeholders is imperative for the TVET curriculum administration and management.

6.6.10 Improvement of the TVET college infrastructure

Concerning the challenge, the TVET curriculum is facing with regard to addressing the skills shortage gap, the researcher recommends that the DHET should provide adequate funding for the TVET colleges to be able to secure the necessary, modern and relevant facilities in the workshops, library and simulation rooms. The study also recommends the training of the lecturers on this equipment to enable them to train the students effectively because of their sound knowledge and experience.

It was noted during this study that procurement procedures within the TVET colleges worked against the TVET curriculum, such as, the decision to lease most of the infrastructure, such as, photocopiers, printers, computers and cars. Suppliers and service providers tend to terminate contracts with TVET colleges due to late payments and/or non-payments hence colleges move from one supplier to another. In view of the above point, this study recommends timely and adequate funding from the DHET to ease tension in colleges and to facilitate the curriculum better in terms of the acquisition of facilities, tools, equipment, instruments for workshops, laboratories, library, and maintenance. The researcher recommends the decentralisation of some functions and roles from the central office to the campus levels. In this study, it became apparent that there was over-centralisation of functions and roles at central offices. This delayed decision-making, procurement and convenience in the management and administration of the TVET colleges.

6.6.11 Laying the emphasis on workplace training

Workplace training was seen as a major challenge for the TVET curriculum to address the skills shortage gap. Too few TVET graduates attain workplace learning; accordingly, this has a negative impact on employability. This study recommends that TVET colleges need to organise workshops by inviting experts from the industry to offer training to both lecturers and students. On this point, Scott (2014) notes that the DHET should provide information to graduates about career paths and career management with regard to employment and further learning.

The success of a business relies on the ability to secure the services of a skilled workforce (Obioma, 2015). This is done by blending both theory and practice through programmes, such as the Work-Based Experience (WBE) and Work-Integrated Learning (WIL) schemes. Workplace learning is extremely important to enable trainees to acquire experiential learning and to promote apprenticeships and artisanal systems. This study recommends that TVET college lecturers need to be placed in industries within their offerings to get first-hand experience and exposure regarding the needs and requirements of particular skills training within their classrooms.

This implies that TVET colleges as institutions of higher learning, contribute to the training and retraining of students, young and adults, males and females, employed and unemployed in the skills that help individuals achieve self-actualisation, thereby, contributing to the economic growth and development of a country. It is, therefore, imperative to note here, that TVET colleges are indispensable learning institutions in any national economic pursuit for it is the media through which skills are obtained and developed. Human resource is developed through the acquisition of skills and the application of those skills to self-sustenance.

It is recommended by this study that the government must engage in building more skills centres in rural areas to train more people within their areas and aspirations of the demand of skills in those areas and to contribute to national development collectively. Hautamaki (2015) opines that teaching skills is important within the TVET curriculum because training aids a person to acquire the needed skills to find a job and maintain a job. Skills centres will work as skills practice centres where TVET students can practise to acquire experiential learning facilitated by

adequate funding in terms of stipends, securing personal protective equipment (PPE) and taking medical tests.

6.6.12 Paying attention to rural skills challenges

Based on the findings, this study recommends that rural students should upgrade their skills in line with the demands of the employers to render themselves more employable. Importantly, TVET programmes need to target local livelihood opportunities rather than being universal through relevant programmes for rural skills and that are competitive and labour market sensitive. The TVET curriculum is recommended to evaluate the rural labour market needs and the economic opportunities in rural areas and link its training to skills requirements in the rural context.

Many people in rural areas live under abject poverty. Poverty is the inability of an individual to access the basic needs of life, for example, food, clothes, shelter, education and medical care. Moreover, it creates social inequality as well as unequal opportunities and rewards for different social positions or statuses within a group or society. Furthermore, poverty entails people having unequal access to valued resources, services and positions in the society. Therefore, this study recommends the establishment of a TVET research department to undertake research on the appropriate skills for rural areas. In its report on the contemporary role of TVET, UNESCO-UNEVOC (2012a) notes that this form of education has great prospects of tackling poverty and enhancing employability through skills acquisition and boosting sustainable development in the different continents.

The researcher recommends that a comprehensive skills development and employment strategy should be designed and adopted for all the area, and social classes that seem to be the result of apartheid and where social class formations, backgrounds, customs, and traditional cultures, appear to be excluded, to bring about and sustain economic growth. This is based on the assumption that skills enhance people's capacity in the world of work as well as the opportunity to work. Rogan and Reynolds (2016), affirm that the education and training of rural black students is affected by inadequate schooling systems. This implies that systems and structures in rural areas have to be planned carefully through adequate funding.

Furthermore, the study proposes a rural skills development strategy, such as, the Poverty Eradication Programme (PEF) within the TVET curriculum should be established to advance rural development by offering opportunities to rural people in different ways to address rural poverty through education and training to bridge the gap between the so-called first and second economies where the former are living in extreme wealth and the latter in abject poverty. The government should stress the need for rural industrialisation to establish employment for rural graduates. This could be done by setting up cooperative societies, adult education, civic education, entrepreneurship and business management, the marketing of rural produce, and the diversification of the rural economy into other activities.

Informal training is always a major form of training in rural areas; hence, many youths find it hard to enter the labour market due to the low level of education and training as well as the lack of the relevant skills and work experiences. The study recommends establishing shop kiosks in rural areas that work as information centres regarding the demand and supply of skills for rural areas, employment opportunities and further learning for rural students. TVET need to consider the extension of rural skills services through a combination of formal and non-formal approaches or combining institutional-based education with enterprise-based learning. Furthermore, this study recommends that a combination of technical and entrepreneurship training be developed, such as combining business knowledge and skills in formal secondary and tertiary education or through developing innovative community-based learning programmes. These services can enhance the skills acquisition and technical knowledge greatly of rural students to capacitate them so that they can develop and apply the acquired skills as set out in the theory of human capital underpinning this study.

In addition, this study recommends stronger coordination and partnerships between the different stakeholders to stimulate policies, funding, support, workplace learning and employment for the TVET curriculum graduates and, subsequently, lead to curriculum reformation. Kruss *et al.* (2014) contends that SETAs have a mandate to provide workplace training to those who are in employment and to offer training to the unemployed through learnerships, artisanal programs and skills programs. Accordingly, vocational education and training should ease school leavers (NEETS) into the practical jobs or training for self-

sustenance and or employment. Afeti (2013) asserts that there must be effective mechanisms for articulated employer demands for the skills that will be needed for the future. This means that the TVET curriculum should be an intervention to correct the past wrongs and re-align the nation to follow a collective and inclusive economic growth path. No one should be denied access to employment if he or she possesses the required skills. There are legislations to this effect such as the Affirmative Action (AA) and Employment Equity (EE) Act, Act no.55 of 1998 (RSA, 1998a).

However, Rasool and Botha (2011) assert that the unemployment figures are miscalculated, misrepresented and misunderstood by many public policy frameworks. Hicks *et al* (2013) believe that the problem of unemployment in Africa can be traced to the period of socio-economic instability and the concomitant political factors. The National Development Plan (RSA. 2011d) holds that the improvement of skills through education and training is a fundamental prerequisite for achieving many of the goals on the growth path.

6.6.13 Structural changes

Importantly, the TVET sector was found to be structurally malfunctioning in many of its structural set-ups. The researcher recommends that the functions of subject and curriculum specialists should be facilitated to offer guidance on implementation and assessment. The two offices (subject and curriculum specialists) will, among other projects, introduce programmes, such as distance learning, a pilot system, E-tutoring and satellite campuses to extend the TVET training to the remotest rural areas where there are no campuses. In order to address the skills shortage, gap better, the TVET curriculum should provide different curricula for different areas and students. For rural students, the embedded knowledge and skills should be reflective of their livelihoods in order to shape their society. This should be the ultimate objective of the TVET curriculum system (sustainable development for lifelong learning) as viewed in the rural context. It is evident that, the South Africa TVET curriculum has to address several issues for realistic TVET curriculum delivery in order to bridge the skills shortage gap.

This study recommends that an analysis be carried out of the needs of each sector of the economy to determine the skills-needs in the greater labour market perspectives. The analysis can help to identify the strengths, needs, shortfalls and opportunities for skills development and subsequently, the development of the TVET curriculum in general. TVET needs to become involved in the labour market for delivering the demanded, responsive and relevant skills curriculum. This can have an impact on policy and legislation. The study suggests for motivation to be given to rural students from basic education to learn science-based-courses like Science, Technology, Engineering and Mathematics (STEM) which are the core subjects for many courses, especially in the technical fields. This could be in the form of a bursary, stipend, scholarship or different awards, outside support, mentorship or coaching.

6.6.14 Change of procurement procedures

It was observed that most of the facilities in the TVET colleges were procured on lease agreement terms, which does not favour the TVET curriculum. The study recommends that procurement procedures be revised and improved. In this regard, the researcher recommends the timely release of funds by the DHET to TVET colleges. Furthermore, the observations revealed that most of the functions were over-centralised at the central offices. This delayed decision-making, procurement and convenience in management and administration of the TVET colleges. It is suggested that the TVET colleges decentralise some functions and roles to campus levels.

6.6.15 Students' career guidance and counselling

The study recommends that effective career guidance and counselling should be emphasised in TVET colleges to help students make good career choices that reflect their aspirations and are related to the rural societal settings and the environment in which students live, to compete in the skills market and employment.

6.6.16 Emphasis on employability

Skills are central to improve the employability and livelihood opportunities, reduce poverty, enhance productivity and promote environmentally sustainable development. Many rural people do not have good basic education, hence, this limits them from entering into vocational education and training. This study

recommends for coordinated efforts to be made “to develop an integrated approach that improves access to relevant, good quality education and training to all rural people” (StatsSA, 2013b).

Furthermore, this study recommends that an emphasis be placed on skills training for self-employment within the TVET curriculum. This can include mentoring, coaching, and that long-term credit should be offered by the government and financial institutions, as well as the facilitating the installation of technology for those graduates who prefer self-employment. This dictates that the TVET curriculum should work out modalities for improving and focusing on work-based experiences while emphasising technical programmes for technical skills, such as, engineering, including Science Technology Engineering and Mathematics (STEM) programmes from basic education.

Furthermore, this study recommends the shift of skills training from the Department of Higher Education and Training (DHET) to the Department of Trade and Industry (DTI) who are the employers of the TVET graduates with full knowledge of, as well as the structures, systems, equipment and technology regarding the demanded skills. Initially, the training of skills was carried out by the Department of Labour (DoL), but now it is conducted by the Department of Higher Education and Training (DHET). This shift in roles has impacted negatively on planning for skills training.

6.6.17 The proposed NCV Level 5

DHET is planning to open up the progression of NCV L4 graduates. The proposal of level 4 progression is attributed to the low quality training provided by the TVET curriculum up to level 4 that lacks the practicalities that are relevant for the students and are demanded of the rural economy. Accordingly, this study recommends the rejuvenation of the proposal of the NCV Level 5 aimed at addressing the employability of TVET college graduates. The DHET (2015b) argues that Level 5 will address the skills shortage gap more appropriately by offering hands-on skills.

6.7 GENERAL RECOMMENDATIONS FOR THE TVET THAT WORK FOR RURAL AREAS

The aim of the study was to investigate the challenges facing the TVET curriculum in addressing the skills shortage gap in the rural areas of Northern Kwa-Zulu Natal. It is recommended by this study that the government promote apprenticeships as an important option for rural youths through the Department of Labour (DoL) and

the DHET. Apprenticeships are practical and are usually a cost-effective way of developing skills, especially for those who do not meet the entry requirements into formal training.

The training of craftsmen in modern technical and technological skills, improves equal access to apprenticeships, combining apprenticeship with formal vocational training and developing recognition mechanisms for skills acquired through apprenticeships. This study recommends that the traditional and informal apprenticeship systems be upgraded to offer high-quality training in new technological and innovations in rural areas be recognising and accrediting skills gained from the informal learning (Recognition of Prior Learning (RPL) which can be embedded within the training of the TVET curriculum. This will mainly apply to adult students in the TVET. Importantly, it is recommended that the TVET curriculum should develop students' productive capabilities categorised into; knowledge-based practice, technical-based practice and attributes-personal needs for a particular occupation. Furthermore, The TVET curriculum should design distance, weekend, holiday or evening training to provide skills to students in their different abilities and affordability to extend skills acquisition.

Another recommendation is that technical and vocational training should be affordable and accessible to everyone through the easing of the financial and stringent entry requirements for students. This can be done by designing interventions to include those most disadvantaged in accessing education and training, such as, women and students with disabilities. In addition, this study recommends that the TVET curriculum should be flexible with modular training to benefit those students (adults) who cannot afford to take time off, such as, seasonal workers, the employed and household workers. Accordingly, the TVET curriculum will adopt a positive approach to addressing the skills shortage gap.

Another recommendation in this regard is that the DHET needs to make a concerted effort to focus on the main objective of the TVET system, which is education and training for skills acquisition. In this way, the TVET curriculum will need to be redesigned and delivered in accordance with the locations where the colleges are situated based on new innovations and research.

6.8 LIMITATIONS

This study was limited by its scope as well as the sample frame, which was relatively small; hence, the researcher could not generalise the findings of the study to the entire population of all the TVET colleges. Nevertheless, the findings could be used as an impetus for effective skills training within the TVET curriculum. Time, space and the shortage of other necessary resources also constrained the study. To sum up, the aim of the study was to investigate the challenges facing the TVET curriculum in addressing the skills shortage gap in the rural areas of Northern Kwa-Zulu Natal.

Only 120 lecturers completed the questionnaires, and only six TVET managers were interviewed. The researcher is of the view that this was a small representation of the TVET sector. Based on the study findings, the researcher proposes further research in the following areas:

- Curriculum planning.
- Curriculum implementation.
- Curriculum administration and management

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APPENDICES

APPENDIX A: ETHICAL CLEARANCE CERTIFICATE

**UNIVERSITY OF ZULULAND
RESEARCH ETHICS COMMITTEE**
(Reg No: UZREC 171110-030)



RESEARCH & INNOVATION

Website: <http://www.unizulu.ac.za>
Private Bag X1001
KwaDlangezwa 3886
Tel: 035 902 6731
Fax: 035 902 6222
Email: LundallN@unizulu.ac.za

ETHICAL CLEARANCE CERTIFICATE

Certificate Number	UZREC 171110-030 PGD 2019/38				
Project Title	Challenges facing the Technical and Vocational Education and Training (TVET) curriculum in addressing the skills shortages in Northern KZN				
Principal Researcher/ Investigator	L Jackson				
Supervisor and Co-supervisor	Prof M.S Mabusela				
Department	Curriculum & Instructural Studies				
Faculty	Education				
Type of Risk	Med Risk – Data collection from people				
Nature of Project	Honours/4 th Year	Master's	Doctoral	x	Departmental

The University of Zululand's Research Ethics Committee (UZREC) hereby gives ethical approval in respect of the undertakings contained in the above-mentioned project. The Researcher may therefore commence with data collection as from the date of this Certificate, using the certificate number indicated above.

Special conditions:

- (1) This certificate is valid for 1 year from the date of issue.
- (2) Principal researcher must provide an annual report to the UZREC in the prescribed format [due date-01 December 2020]
- (3) Principal researcher must submit a report at the end of project in respect of ethical compliance.
- (4) The UZREC must be informed immediately of any material change in the conditions or undertakings mentioned in the documents that were presented to the meeting.

The UZREC wishes the researcher well in conducting research.


Professor Gideon De Wet
Chairperson: University Research Ethics Committee
Deputy Vice-Chancellor: Research & Innovation

27 November 2019

CHAIRPERSON
UNIVERSITY OF ZULULAND RESEARCH
ETHICS COMMITTEE (UZREC)
REG NO: UZREC 171110-30
27 -11- 2019
RESEARCH & INNOVATION OFFICE

APPENDIX B: PARTICIPANT INFORMED CONSENT DECLARATION

INFORMED CONSENT DECLARATION

(Participant)

Project Title: ***Challenges facing the Technical and Vocational Education and Training (TVET) curriculum in addressing the skills shortage gap in Northern KwaZulu-Natal.***

Lutaaya: Jackson **from** the Department of Curriculum and Instructional Studies University of Zululand has requested my permission to participate in the above-mentioned research project.

The nature and the purpose of the research project, and of this informed consent declaration have been explained to me in a language that I understand.

I am aware that:

1. The purpose of the research project is to investigate the challenges facing the TVET curriculum in addressing the skills shortage gap in South Africa.
2. The University of Zululand has given ethical clearance to this research project and I have seen/ may request to see the clearance certificate.
3. By participating in this research project I will be contributing towards. The study will try to reveal the degree of the skills shortage gap in South Africa, trace and identify the historical causes as well as analysing the impact of skills shortage in the social and economic development. The study will generate debate on how to address skills shortage in South Africa as well as on a global perspective. The study will make subsequent conclusions, observations and suggestions and recommendations on how to address skills shortage. Form the data collected, the study will compile and display figures to present the skills gap at the same time identifying the salient skills adversely needed for development in South Africa. The study will bring all stake holders in a general and specific debate on how to allow transformations in the TVET curriculum to address skills shortage.
4. I will participate in the project by responding to the questions that will be asked in the interview and the questions in the questionnaire.
5. My participation is entirely voluntary and should I at any stage wish to withdraw from participating further, I may do so without any negative consequences.
6. I will not be compensated for participating in the research, but my out-of-pocket expenses will be reimbursed.
7. There may be risks associated with my participation in the project. I am aware that

- a. the following risks are associated with my participation: **N/A**
 - b. the following steps have been taken to prevent the risks: **N/A**
 - c. there is a **0%** chance of the risk materialising
8. The researcher intends publishing the research results in the form of form of presenting in a conference and publishing in accredited journal. However, confidentiality and anonymity of records will be maintained and that my name and identity will not be revealed to anyone who has not been involved in the conduct of the research.
 9. I will not receive feedback/will receive feedback in the form of money regarding the results obtained during the study.
 10. Any further questions that I might have concerning the research or my participation will be answered by **Lutaaya: Jackson** 0833362691
 11. By signing this informed consent declaration, I am not waiving any legal claims, rights or remedies.
 12. A copy of this informed consent declaration will be given to me, and the original will be kept on record.

I, have read the above information / confirm that the above information has been explained to me in a language that I understand and I am aware of this document's contents. I have asked all questions that I wished to ask and these have been answered to my satisfaction. I fully understand what is expected of me during the research.

I have not been pressurised in any way and I voluntarily agree to participate in the above-mentioned project.

.....

.....

Participant's signature

Date

APPENDIX C: PERMISSION FROM THE COLLEGE



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



Let the future be known

UMFOLOZI TVET COLLEGE, PRIVATE BAG X 5023 RICHARDS BAY 3900, TEL: (035) 902 9501 FAX: 035 7892585

13th December 2019

RE: REQUEST FOR PERMISSION TO CONDUCT RESEARCH AT UMFOLOZI TVET COLLEGE ON THE TITLE "CHALLENGES FACING THE TVET CURRICULUM IN ADDRESSING THE SKILLS SHORTAGE GAP IN THE RURAL AREAS OF NORTHERN KWA-ZULU NATAL"

I am pleased to inform you that, on behalf of the College, I have granted you permission to carry out research at our College on the stated title of your study as indicated in the above reference. It is emphasised that you stick to the research ethics as prescribed by the University Research Ethics Committee. You may use this letter within our College as a permit to approach any research participants as you may so wish.

Yours faithfully

Ms EPL Du Toit
Acting Principal

APPENDIX D: PERMISSION FROM CAMPUS MANAGER



**higher education
& training**

Department:
Higher Education and Training
REPUBLIC OF SOUTH AFRICA



Let the future be known

ESIKHAWINI CAMPUS

Lot No. 11
ESIKHAWINI HIGHWAY
ESIKHAWINI
3887

Private Bag X5023
RICHARDS BAY 3900
Tel.: 035 796 5568

Date 10th December 2019

RE: REQUEST TO CONDUCT RESEARCH AT UMFOLOZI TVET COLLEGE- ESIKHAWINI CAMPUS

This letter serves to indicate that permission is granted to Mr. Jackson Lutaaya to conduct research at our institution on the study title **"Challenges facing the TVET Curriculum in addressing the skills shortage gap in the rural areas of Northern Kwa-Zulu Natal"**

The responsibility rests upon the researcher to arrange times and schedules with the research participants. The researcher is free to start his research once he gets his ethical clearance certificate from the University Research Ethics Committee.

**KN ZULU
CAMPUS MANAGER**

APPENDIX E: RESEARCH QUESTIONNAIRE FOR TVET LECTURERS

Dear colleague,

This questionnaire was based on the research topic; the challenges facing the Technical and Vocational Education and Training (TVET) curriculum in addressing the skills shortage gap in the rural areas of Northern Kwa-Zulu-Natal.

You are humbly requested to respond to this questionnaire.

All the data collected will be treated confidentially for the purposes of this research.

Please do not write your name, or the name of your college, campus or class group

Pseudonyms will be allocated by the researcher.

Thank you for your time.

Mr. Jackson Lutaaya

Faculty of Education

Department of Curriculum Studies

University Zululand

Kwa-Dlangezwa

3886

Email: lujafoundation80@yahoo.com

Cell: 0833362691

Section B

Below are 31 statements concerning the challenges facing the Technical and Vocational Education and Training (TVET) curriculum in addressing the skills shortage gap in the rural areas of Northern Kwa-Zulu Natal. Please make a cross (X) through the letter that best describes your position. The meanings of letters are as follows:

SA Strongly Agree

A

Agree

D Disagree

SD

Strong Disagree

1	The TVET curriculum was designed to address the skills shortages.	SA 4	A 3	D 2	SD 1
2	The TVET curriculum is an answer to the skills shortages in South Africa.	SA 4	A 3	D 2	SD 1
3	The TVET curriculum is responsive to the national skills needs	SA	A	D	SD

		4	3	2	1
4	The TVET colleges are better placed for skills development.	SA 4	A 3	D 2	SD 1
5	The TVET curriculum content caters adequately for the required national skills	SA 4	A 3	D 2	SD 1
6	The TVET curriculum change is necessary to address the skills needs	SA 4	A 3	D 2	SD 1
7	The TVET curriculum needs a review.	SA 4	A 3	D 2	SD 1
8	Lecturers at TVET colleges are adequately prepared to the requirements of the curriculum	SA 4	A 3	D 2	SD 1
9	Lecturers have a sound understanding of alternative ways of delivering the TVET curriculum	SA 4	A 3	D 2	SD 1
10	The lecturers have the skills and training required to implement the TVET curriculum	SA 4	A 3	D 2	SD 1
11	The lecturers are offered training and re-training in the TVET curriculum.	SA 4	A 3	D 2	SD 1
12	The TVET curriculum faces many challenges in addressing the skills shortages	SA 4	A 3	D 2	SD 1
13	The TVET curriculum embeds skills, knowledge, abilities, and competence.	SA 4	A 3	D 2	SD 1
14	The TVET curriculum is inclusive of practical and work-based training	SA 4	A 3	D 2	SD 1
15	The TVET curriculum addresses youth unemployment	SA 4	A 3	D 2	SD 1
16	The TVET curriculum offers the required training for employment	SA 4	A 3	D 2	SD 1
17	The TVET curriculum produces employable graduates	SA 4	A 3	D 2	SD 1
18	The TVET curriculum caters for the needs of students	SA 4	A 3	D 2	SD 1
19	The objective of the TVET curriculum is to address the skills shortage gap.	SA 4	A 3	D 2	SD 1
20	The TVET curriculum addresses critical skills in South Africa.	SA 4	A 3	D 2	SD 1

21	TVET colleges are suited for the purpose of the curriculum	SA 4	A 3	D 2	SD 1
22	The TVET curriculum is adequately aligned with the world of work	SA 4	A 3	D 2	SD 1
23	The TVET curriculum should largely focus on skills training	SA 4	A 3	D 2	SD 1
24	The TVET curriculum should be more practical, short and simple with a large focus on skills-development	SA 4	A 3	D 2	SD 1
25	Skills training is effective within the TVET curriculum	SA 4	A 3	D 2	SD 1
26	The TVET curriculum has a direct bearing and relationship on the skills for which it is intended and its content	SA 4	A 3	D 2	SD 1
27	Lecturers are offered training and re-training on the curriculum.	SA 4	A 3	D 2	SD 1
28	The current TVET curriculum cannot provide the necessary skills	SA 4	A 3	D 2	SD 1
29	The TVET curriculum should be re-designed to suit the purposes for which it was designed	SA 4	A 3	D 2	SD 1
30	TVET colleges, the industry and other stakeholders in the TVET sector have a common ground with regard to experience on the TVET curriculum.	SA 4	A 3	D 2	SD 1
31	The policies of the government and the DHET foster skills development through the TVET curriculum.	SA 4	A 3	D 2	SD 1
32	The TVET curriculum is challenged by global skills competitiveness	SA 4	A 3	D 2	SD 1

APPENDIX F: SEMI-STRUCTURED INTERVIEW SCHEDULE FOR TVET MANAGERS

Date of the interview _____

Time of the interview _____

Name of the interviewee _____

Name of the college/campus _____

Designation of the interviewee _____

Duration of the interview (1.45 minutes)

Subject: A semi-structured interview to investigate the challenges facing the TVET curriculum in addressing the skills shortage gap in the rural areas of Northern Kwa-Zulu Natal.

Introduction to the interviewee.

The purpose of the interview is to investigate the challenges facing the Technical and Vocational Education and Training (TVET) curriculum in addressing the skills shortage gap in the rural areas of Northern Kwa-Zulu Natal and to give the interviewee an opportunity to share any relevant information pertaining to the topic of research.

Confirm your college/campus _____

Confirm the level you teach _____

Comment on the TVET curriculum content _____

Section A. TVET Curriculum

1. How does the TVET curriculum attempt to address the skills shortage gap in South Africa?
2. Which skills are trained by the TVET curriculum?
3. What is your experience with regard to vocational education and training?
4. How do you assess the structures for the TVET curriculum?
5. What possible alternatives are there for the TVET curriculum to address the skills shortage in Northern KwaZulu-Natal?
6. Which challenges are facing the TVET curriculum?
7. How do TVET colleges address those challenges?
8. What feedback do you usually get from the employers regarding the employability of TVET graduates?
9. How does the TVET curriculum prepare students for the world of work?
10. What are some of the views of students on the TVET curriculum?

11. How do policies affect the TVET curriculum in South Africa?
12. How does the TVET curriculum position itself in competition for global skills?

Thank you so much