COMPETENCY-BASED EDUCATION AND TRAINING FOR TECHNICAL AND VOCATIONAL EDUCATION TRAINING IN NAMIBIA: AN EVALUATION OF THE TECHNICAL TEACHER TRAINING PROGRAMME

by

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DECLARATION

I, **Lance Paendohamba Hauuanga** (Student number: 2000027553), declare that the thesis, **COMPETENCY-BASED EDUCATION AND TRAINING FOR TECHNICAL AND VOCATIONAL EDUCATION TRAINING IN NAMIBIA: AN EVALUATION OF THE TECHNICAL TEACHER TRAINING PROGRAMME**, submitted for the qualification of Doctor of Philosophy with specialisation in Higher Education Studies at the University of the Free State is my independent work.

All the references I have used have been indicated and acknowledged using complete references.

I affirm that I have not previously submitted this work for qualification to any other university or faculty.

SIGNED:  **DATE:** 7 August 2023

ABSTRACT

Since 2008, with the establishment of the Namibia Training Authority (NTA), there has been an unprecedented focus on vocational education and training (VET) in the country. The establishment of the NTA reflects the government's commitment to addressing issues such as high youth unemployment, economic struggles, and the need for (re)industrialisation as well as revitalising the economy through technical and vocational education and training (TVET).

Quality TVET depends heavily on the competencies and performance of TVET teachers, trainers, and instructors, which includes their theoretical knowledge, technical and pedagogical skills, and positive attitudes as well as staying up to date with new technologies in the workplace. Recognising the need for competent TVET teachers in a knowledge-based society undergoing technological transformation is crucial to producing skilled artisans and craftsmen in the country. This research addressed this gap by reconsidering the training and competence of TVET teachers in technical settings through assessing the adequacy, appropriateness, effectiveness and relevance of the DTVT qualification in training vocational teachers and trainers in Namibia. Bridging this gap is essential for TVET teachers to effectively prepare students and trainees for the world of work and the demands of the modern workforce. This new approach requires a combination of theoretical knowledge and practical skills, and it is acknowledged that many TVET teachers currently lack these integrated abilities, which confirms the study’s relevance and contemporariness.

The study conducted in Namibia used a qualitative phenomenological case study approach to evaluate the DTVT programme offered at NUST. This approach was selected due to its ability to provide in-depth insights into the lived experiences within the TVET context, enabling a nuanced and comprehensive understanding of the phenomenon under investigation. To guide its activities, the study adopted a dual theoretical framework that focused on Context, Input, Process, and Product (CIPP) model and the Capability Approach (CA). These models aim to provide a comprehensive understanding of the TVET teacher training programme’s effectiveness and to identify areas for improvement.

By using these evaluation frameworks and conducting further research, the study aims to identify strategies and recommendations to transform TVET teachers' education in Namibia. The ultimate goal is to either enhance, amend, or replace the existing programme to transform and equip TVET teachers with the necessary skills to effectively bridge the gap between theory and practice.

Overall, this study emphasises the importance of TVET in addressing Namibia's socioeconomic challenges and highlights the need to invest in quality TVET teachers to ensure the successful transformation of the TVET industry in the country. Two of the major findings were DTVT programme was inappropriate as it was not preparing student-teachers to effectively fulfil the demands of a dual profession. This encompassed the necessity for them to possess both practical/technical skills, and a comprehensive understanding of methodological approaches as well as work integrated learning (WIL) that affected its appropriateness.

Keywords:

Capability Approach (CA); Context, Input, Process and Product (CIPP) model; technical vocational education and training (TVET); teacher education (TE); programme development; quality education

DEDICATION

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LIST OF ACRONYMS

CA	Capability Approach
CBET	Competency-Based Education and Training
CEDEFOP	European Centre for the Development of Vocational Training
CIPP	Context Input Process Product
COSDECs	Community Skills Development Centres
ESTs	Enrolled Student Teachers
ETTs	Employed TVET Teachers
EVTC	Eenhana Vocational Training Centre
DTVET	Department of Technical and Vocational Education and Training
DTVT	Diploma in Technical and Vocational Educational and Training: Trainer
InWEnt	Internationale Weiterbildung und Entwicklung
FGD/FGDs	Focus Group Discussion / Focus Group Discussions
FPLs	Full and Part-time lecturers
ITP	Instructor Training Programme
MHETI	Ministry of Higher Education, Technology and Innovation
MOE	Ministry of Education
NIMT-WC	Namibian Institute of Mining and Technology (Western Campus)
NQA	Namibia Qualification Authority
NTA	Namibia Training Authority
NUST	Namibia University of Science and Technology
SME	Small Medium Enterprise
STEM	Science, Technology, Engineeringand Mathematics

TE	Teacher Education
TVET	Technical and Vocational Education and Training
TVT	Technical and Vocational Training
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNEVOC	Centre for Technical and Vocational Education and Training
UNDP	United Nations Development Programme
UK	United Kingdom
USs	Unit Standards
WIL	Work Integrated Learning
WVTC	Windhoek Vocational Training Centre
TVET	Vocational Education and Training
VTC/VTCs	Vocational Training Centre / Vocational Training Centres

CHAPTER 1
ORIENTATION OF THE STUDY

1.1 INTRODUCTION

The United Nations Educational, Scientific and Cultural Organization's Centre for Technical and Vocational Education and Training (UNESCO–UNEVOC 2020:8) believes that pre-service training for TVET teachers/trainers in the higher education sector can no longer be confined to academic programmes leading to a qualification. For TVET teachers to be competent now and in the future, they must have practical skills and trade knowledge in their pre-service training offerings. Additionally, UNESCO postulates that TVET teachers need active, learner-centred andragogy training to build student trainers' cross-curricular skills and cross-occupational competencies (UNESCO-UNEVOC 2020:9). However, UNESCO (2020: 60-61) also argued that pre-service training programmes must include industry experience or exposure because it provides hands-on, practical application of theoretical knowledge learned in classrooms, making it easier for students to understand and apply concepts in real work scenarios.

Additionally, Igberaharha (2021:3) posits that the outcome of TVET education in terms of quality is proportional to the quality of its teachers. In other words, if TVET teachers are competent, they are likely to influence quality education outcomes positively. Subsequently, if a training institution offers excellent TVET programmes, it needs to employ TVET teachers who are sufficiently experienced and competent to deliver training programmes. Competency-based education for TVET teachers ensures that educators are equipped with practical skills and knowledge tailored to the demands of vocational education, fostering a more effective and relevant learning environment for trainees and students.

This chapter presents the necessary background information to situate the research within the context of the history of TVET Teacher Education (TE) programmes globally and in Namibia, as well as within TVET system reform in Namibia (see section 1.2.1).

Furthermore, the chapter expands on the problem statement (see section 1.3) and the study's rationale to establish significance (see section 1.7), and the main research question is presented (see section 1.4). The research aims and objectives (see section 1.5) are explained. Relevant definitions, within the context of this case study, are clarified (see section 1.6). The chapter ends with the dual theoretical framework lenses (see section 1.8), where the qualitative case-study research design and methodology have steered this study (see section 1.9). In conclusion, this case study's ethical clearance (see section 1.9.6) is presented.

1.2 BACKGROUND TO THIS STUDY

This section mainly addresses the research gap and why this study is necessary and relevant. This section also presents a historical summary of TVET teacher training programmes globally (see section 1.2.1) and in Namibia (see section 1.2.2).

The DTVT programme has not undergone evaluation since its inception to gauge its adequacy, relevance, appropriateness, and effectiveness amid the evolving knowledge requirements of the Fourth Industrial Revolution and the latest technological advancements in the industry. It was therefore found to be appropriate to evaluate the programme under this title: "COMPETENCY-BASED EDUCATION AND TRAINING FOR TECHNICAL AND VOCATIONAL EDUCATION TRAINING IN NAMIBIA: AN EVALUATION OF THE TECHNICAL TEACHER TRAINING PROGRAMME."

Haolader, Cicioglu and Kassim's (2017:2) research study revealed that TVET contributes to personal, general, and entrepreneurial skills, which can assist individuals in their lifelong learning, improve their employability, and facilitate overall involvement in society. Hollander et al. (2017:2) indicate that TVET teachers must acquire competencies and qualities that will allow them to execute their functions and tasks diligently. In other words, TVET teachers need to be competent in order for their trainees to complete their studies.

TVET TE has always been a powerful agency. It is considered an instrument for transforming the well-being of people (Boudersa 2016:2). Since TVET teachers are among the most critical agents in educational offerings, they must receive adequate educational and professional training. Such training should equip them with the

necessary knowledge and teaching skills and enable them to dedicate themselves to the teaching profession. Within this context, TVET teacher programmes should be mentored and evaluated regularly by experts in the field (Boudersa 2016:2–3). In addition, Boudersa (2016:3) argues that learning is an ever-changing process since knowledge is dynamic. Therefore, teaching should be research-based and have data-driven evidence, hence the importance of regular training programme evaluation.

Furthermore, Ismail et al. (2018:10) believe that education has entered a new environment where quality plays an increasingly important role. Quality education is crucial in reducing poverty and inequalities and can empower people to live more healthy and sustainable lives. Through quality education, people can improve their job and life opportunities (United Nations 2018:1). Additionally, quality education can best be achieved if TVET teachers possess the core competencies to prepare their trainees comprehensively for the transition to employment (United Nations 2018:1). Given the importance of TVET and TVET teacher programmes and quality education, various scholars attach great value to the evaluation of training programmes.

Erdogan and Mede (2021:2) believe that the purpose of programme evaluation is to provide feedback for programme improvement and increase accountability. Programme evaluation in education is also undertaken to assess the value and worth of the programme by collecting, analysing, and interpreting information about teaching and learning (Erdogan and Mede 2021:4). Thus, programme evaluation is not only a process of collecting data but also one of decision-making (Nunan 1991:3). Similarly, programme evaluation is a process that helps to assess a programme's quality to provide valuable information to all stakeholders, such as student teachers, lecturers, industry, and the training institution (Lynch 1990:146). Moreover, Tyler (2013:81) also mentions that the purpose of programme evaluation is to determine whether a programme is effective.

The general perception that Vocational Training Centres (VTCs) in Namibia were not producing competent and adequately qualified artisans, and that there was a need to improve TVET, resulted in the Ministry of Education requesting a review of the Instructor Training Programme (ITP). Consequently, in 2008, the Namibia Training Authority (NTA) hired foreign consultants to review the ITP's qualifications (Certificate and Higher Certificate: Trainer) offered at the then Polytechnic of Namibia, now known

as the Namibia University of Science and Technology (NUST). The consultants recommended replacing the ITP-based programmes with a Competency-based Education and Training (CBET) curriculum based on unit standards (USs), because, according to them, the CBET was consistent with the policies and procedures of the NQA and with the relevant technical and higher education qualifications that were registered on the Namibian Qualification Framework (NQF).

In 2016, the Ministry of Higher Education, Technology and Innovation (MHETI) again requested NUST to improve the TVET TE offerings to upgrade the programmes to a diploma level on Level 6. The reason for the request to review the TVET teacher programmes was part of transforming NUST into a University of Science and Technology and moving away from undergraduate certificates as far as possible. This shift from undergraduate certificates resulted in the development of the DTVT programme at NQF Level 6 (see Appendix A).

Within the Namibian context of TVET TE programmes at both the national and institutional level, programmes are designed and implemented by NUST as per its institutional mandate. The above brief shows that NUST undertakes the responsibility of programme development in TVET on behalf of the NTA as the custodian of TVET programmes and regulator of TVET activities.

This study literature review shows that various studies have been conducted on TVET in Namibia, which have focused on mainly the following issues:

- History of TVET and teacher training (Craelius 1989)
- Nature of vocational education (Brunette 2006)
- Integration of identified employability skills into the Namibian Vocational and Training curriculum (Naanda 2010)
- TVET reform (Chaun 2000)
- Benchmark model for educational standards (Hategekimana 2014)
- Stakeholder engagement in skills development (Sheehamandje-Mwiya 2014)
- TVET levy disbursement (Lipinge 2019)

According to this study's EBSCO literature search between 2014 and 2019, which focused on programme development with updates where necessary between 2020

and 2023, there seems to be a lack of studies within the Namibian context that address TVET teacher programme evaluation. However, UNESCO's (2016:60) review revealed that the VTCs in Namibia were characterised by poor quality training and high dropout rates. The initial qualifications and training of trainers were perceived to be inadequate because the equipment of training centres was occasionally deficient and outdated (UNESCO 2016:13). However, UNESCO (2016:60–61) stated that the poor training and the high dropout rates are due to a lack of foundation skills among trainees, inadequate trained instructors, and in some instances deficient and outdated training equipment. Given that NUST was one of the leading institutions offering TVET TE programmes, this necessitated the call to undertake such an evaluative study to ensure the value and worth of TVET TE programmes at NUST.

Additionally, the EBSCO literature review in 2019 that focused on the TVET Namibian context revealed that there are limited legal and policy frameworks to guide TVET TE, including the promotion of TVET TE programme evaluation. In order to address the limited contextual detail on TVET in Namibia, this study identified, listed, and analysed the following diverse documents: UNESCO's TVET, Higher Education and Innovation Policy Review: Namibia (2016) (see section 5.2.1.1), the MHETI's Strategic Plan (2017/18–2020/21) (see section 5.2.1.2), the National TVET Policy (MHETI 2021) (see section 5.2.1.3), the NUST Diploma in TVET (NUST 2018) (see section 5.2.1.4), and the Windhoek Vocational Training Centre Job Description (WVTC 2022) (see section 5.2.1.5).

Since the introduction of the TVET teacher training programmes, there appears to be a research gap in evaluating the TVET TE practices and programmes in the Namibian TVET sector. Thus, this study strives to contribute towards the quality of the DTVT: Trainer programme by evaluating its appropriateness, adequacy, effectiveness, and relevance.

1.2.1 Global perspectives on Technical and Vocational Education and Training (TVET) teacher education (TE)

TVET TE programmes have a long history globally, especially in developed countries. In the early 1900s, the first and most important TVET programme for training

vocational teachers was registered in Sao Paulo, Brazil (Carniellie et al. 2007:27–35). A two-year programme was created in which men and women were trained separately, and after two years, they had to attend six months of practical training to qualify as competent TVET teachers.

In addition, a comparative study of the training of vocational teachers in Lithuania, Romania, Germany, Finland, and Italy reveals similarities and differences among the university partners in that project (Pukelis, Savickiene and Fokiene 2009:8). In Lithuania, for example, TVET teachers need higher education or university vocational education in addition to working experience. They must have a didactic qualification from a university, which is generally completed between 12 and 18 months full-time or part-time. Universities design training curricula based on the qualification requirements stipulated in the professional standards for TVET teachers. These TVET teacher standards provide a detailed list of competencies for a junior vocational teacher, vocational teacher, senior vocational teacher, and vocational teacher methodologist who could serve as a specialist mentor. In Finland, teacher qualifications for general and vocational institutions were harmonised in 1999, in that the same 60 credits or one year of full-time study is required regardless of the type of educational institution in which the student intends to teach - the idea being that student teachers obtain core knowledge of teaching and learning that can be generalised to all forms of education and training. Vocational teachers must have the highest possible technical degree and three years of work experience in their occupational field. A typical pedagogical studies programme would consist of fundamental studies in pedagogy, studies in vocational education, teaching practice, and “other studies” (Papier 2017:3).

Moreover, practical instructors are expected to hold appropriate technical qualifications that are recognised in the workplace, and the mandatory 30 credits (for all college lecturers) in the Vocational Educator Orientation Programme (VEOP) comprises 300 hours of learning. These prerequisites for an appropriate qualification are similar to the UK, which offers, in the main, a top-up model for vocational TE with an emphasis on classroom methodology and didactics. However, there is an attempt, albeit insufficient, to focus on subject-directed didactics according to the UK

inspectorate Office for Standards in Education, Children's Services and Skills (Ofsted) critique (2004).

Furthermore, UNESCO (2020) believes that TVET TE provides people with skills in emerging areas, transversal skills (e.g., problem-solving), and cross-occupational competencies in areas such as entrepreneurship. TVET TE programme offerings should address current and evolving skills needs from the private sector to programme beneficiaries, teaching staff, and TVET institutions (UNESCO 2020:7). According to UNESCO (2020), TVET TE is based on future-oriented skills, where teachers and trainers are self-directed learners. It should be sensitive and inclusive regarding gender, cultural and learning differences, as well as social disadvantages (UNESCO 2020:8).

UNESCO (2020) advocates for pre-service TVET TE, which attaches great value to industry experience and exposure. In other words, pre-service training should be designed so that programme beneficiaries acquire updated andragogical skills, practical skills and industry exposure. According to Moll (2023:149), Knowles (1980) argued that adults need a reason for their learning efforts. They prefer to learn in a practical, problem-solving way where they can apply their knowledge to real-world issues. In the context of technical and vocational education and training (TVET), Knowles emphasised the importance of problem-based learning methods, which align with the principles of andragogy.

UNESCO (2020) is further of the view that TVET TE should be based on effective stakeholder coordination to improve the relevance and quality of training and professional development of TVET teachers (UNESCO 2020:8).

1.2.2 Historical development of Namibian TVET TE

This section outlines a brief historical development of TVET TE both pre- and post-Namibian independence. Before independence in 1990, the education system was characterised by an almost complete lack of Namibian teachers of technical and vocational subjects, and this situation was exacerbated by the apartheid regime (Akoojee, Gewer and McGrath 2005:84).

The foundation for TVET, higher education, and innovation needs to be stronger in Namibia's educational system (UNESCO 2016:13). As a result, vast amounts of public spending have supported the constitutional commitment to education since the country's independence. According to the 2016–2018 UNESCO report, the international comparisons of learning outcomes showed patterns of inequality in the Namibian society and are reflected in their distribution within the nation, notwithstanding recent national assessments from the Nation Statistics Agents (NSA) which seem to reveal a margin of improvement in recent years. These flaws in the educational system suggest that there is low and unequal distribution of academic levels.

The TVET system in Namibia must be more cohesive among several providers and form an extensive and reliable network. In addition, the Namibian TVET system's connections to basic education, higher education, and their various components could be more assertive. Fundamental problems with quantity, quality, and relevance explain why the TVET system only produces a minimal percentage of workers with the necessary skills, highlighting the dual nature of Namibia's labour market.

NUST developed two Instructor Training Programmes (ITPs) in 2001 – the Certificate in Vocational Education and Training: Trainer (NQF Level 4) and the Higher Certificate in Vocational Education and Training (NQF Level 5) (NUST 2023:109), which is aimed at providing pre-service training for trainers/instructors. This programme was reviewed in 2008 to establish two training certificates: the Certificate TVET trainer (Level 4 and Level 5) and the Diploma: Vocational Education and Training Management (Level 6). In 2018, the MHETI identified the need to upgrade the two certificates to a diploma (Level 6). The Diploma in Technical, Vocational Education, and Training: Trainer (NQF Level 6) was developed, and it is a revised programme replacing the Certificate in Vocational Education and Training: Trainer (NQF Level 4) and the Certificate in Vocational Education and Training (NQF Level 5) – formerly the Higher Certificate in Vocational Education and Training (NQF Level 5). The revised diploma was implemented at the start of the 2020 academic year (NUST 2023:109). NUST's transition arrangements were that "the students who were registered in 2019 for the Certificate in Vocational Education and Training: Trainer (NQF Level 4) (old curriculum), who failed more than 50% of the courses at the end of the year 2019, will

be required to change their registration to the revised programme namely the Diploma in Technical, Vocational Education, and Training: Trainer (NQF Level 6)" (NUST 2023:109).

In addition, the students who in 2019 were registered for the Certificate in Vocational Education and Training: Trainer (NQF Level 4) (old curriculum) and who had met the requirements to progress to the Certificate in Vocational Education and Training (NQF Level 5), formerly the Higher Certificate in Vocational Education and Training (NQF Level 5), were allowed to register for the second-year Diploma in TVET: Trainer (NQF Level 6). Students in this category were also permitted to take the first-year second-semester courses (Management of TVET and Education for Sustainable Development (ESD)) in the first semester of the second year. This arrangement stemmed from the fact that these courses have no equivalent courses in the revised programme (NUST 2023:109).

The promotion of TVET in the country has been supported by the TVET Policy of 2005 and the TVET Legislative Framework of 2008. Recently, a new TVET policy has been created and approved for implementation in 2021. This policy includes provisions for the development of TVET standards for technical teachers, ongoing professional development strategies, and training needs assessments for specialised teachers and trainers. These developments place importance on the promotion of TVET TE (Ministry of Education 2005; Ministry of Education 2008; Ministry of Higher Education, Technology and Innovation 2021).

1.3 PROBLEM STATEMENT

UNESCO (2020) believes that TVET should equip youth and adults with relevant competencies for work and life. Thus, there is a need for TVET staff to play a crucial role in assuring the quality and relevance of TVET. However, high-quality TVET staff are needed to achieve this aim. Furthermore, the purpose mentioned above can only be achieved if TVET TE policies and frameworks are developed and implemented (UNESCO–UNEVOC 2020:10).

For example, NUST has developed various TVET qualifications to train vocational trainers/instructors. However, no guiding policies and frameworks for TVET TE exist (NUST 2022). Moreover, the lack of a policy on professional qualifications for TVET teachers and their professional standards in the country might lead to misunderstandings about the quality and relevance of the DTVT: Trainer programme (Ministry of Education 2005).

TVET TE remains a challenge in the country, especially in terms of producing high-quality and adequately trained TVET teachers and trainers. This challenge is confirmed by the Namibian government's new TVET Policy, which has acknowledged the following challenges impacting TVET TE (Ministry of Higher Education, Technology and Innovation 2021:11):

- "The sector lacks a unified training model and strong links with the education sector because of the lack of a suitable national training model"
- "Inadequately trained TVET teachers"

Moreover, the country needs a legal framework that regulates TVET TE. A study conducted by UNESCO (2018:89) revealed that trainers' initial qualifications and training had to be revised. Different stakeholders offer TVET TE according to their own "standards", which are not nationally regulated. NUST offers teaching methodology and management programmes without upgrading the student trainers' technical skills. In other words, their vocational teachers might not have advanced technical skills to offer the VTCs and other training institutions. Institutions such as the Namibian Institute of Mining and Technology (NIMT) and Community Skills Development Centres (COSDECs) train their TVET teachers internally, often carried out by alumni (UNESCO 2016:60).

1.4 RESEARCH QUESTIONS

The following main research question guided the evaluation of the technical teacher training programme in Namibia:

How adequate, appropriate, effective, and relevant is the current DTVT programme in transforming vocational teachers and trainers in Namibia?

The following secondary research questions guided the study:

1) To what extent are the CIPP model and CA suited for the Namibian DTVT programme evaluation? (see Chapter 2)

2) What are the historical perspectives on the TVET programmes for training vocational teachers and trainers, particularly in Namibia? (see Chapter 3)

3) How adequate, appropriate, effective, and relevant is the DTVT qualification in terms of the value and services provided (i.e., as an accredited programme; for human resource development and individual learning; and for employment and personal aspirations) using both the CIPP model and CA? (see Chapter 5)

4) How could the DTVT be enhanced and amended to transform vocational teachers' education in Namibia? (see Chapter 6)

1.5 RESEARCH AIM AND OBJECTIVES

This study aims to evaluate the DTVT qualification to determine its adequacy, appropriateness, effectiveness, and relevance in training vocational teachers and trainers in Namibia.

The objectives of this study included the following:

1) To support the application of the CIPP model and CA to evaluate the DTVT programme (see Chapter 2).
2) To determine the historical and quality literature review perspectives on the TVET-based programmes for training vocational teachers and trainers, particularly in Namibia (see Chapter 3).
3) To determine how adequate, appropriate, effective, and relevant the DTVT programme is for individuals and society in terms of the value and services provided (i.e., being an accredited programme; for human resource

development and individual learning; and for employment and personal aspirations), through the use of both the CIPP and CA (see Chapter 5).

4) To make recommendations on transforming future vocational teachers' education in Namibia (see Chapter 6).

1.6 IMPORTANT CONCEPTS OF THE STUDY

To fully comprehend the implications of the central concerns of this study, which focuses on the evaluation of the DTVT programme, it is critical to provide explicit operational definitions of the main concepts utilised throughout the study. The main concepts used in this Namibian TVET study are adequacy, appropriateness, effectiveness, and relevance.

An elaboration of the following concepts is necessary to justify the study's conceptualisation:

a) The definitions of the adjectives used in the main research question are as follows:

- **Adequate:** "sufficient for a specific need or requirement" or "satisfactory or acceptable in quality or quantity", i.e., does the DTVT qualification provide sufficient training for TVET trainers, instructors, and teachers? (Buye 2021:3)
- **Appropriate:** "especially suitable or compatible", i.e., is the DTVT qualification a good fit for TVET trainer, instructor, and teacher training? (Buye 2021:3)
- **Practical:** "successful in producing a desired or intended result" or "producing a decided, decisive, or desired effect; ready for service or action", i.e., does the DTVT qualification produce properly trained TVET trainers, instructors, and teachers? (Buye 2021:4)
- **Relevant:** refers to the extent to which the programme's expected results are closely connected to, or appropriate for, the needs of the beneficiaries, i.e., is it essential or significant? (Buye 2021:2)
- **Effectiveness:** refers to the extent to which programme goals have been achieved or are expected to be achieved (Buye 2021:3)

b) **TVET trainers, instructors, and teachers** are staff who are professionally employed to guide and direct trainees' learning experiences, irrespective of their training, qualifications, or delivery mechanism (UNESCO-UNEVOC 2020:6). For the purpose of this study, TVET trainers/instructors refers to the TVET educators who were employed before the introduction of the CBET system with little or no pedagogical qualifications, while TVET teachers refers to the employed TVET educators with both trade and pedagogical qualifications.

c) **A technical teacher training programme** is designed for student teachers to acquire the knowledge, skills, and competencies specific to the TVET trainer occupation (NTA 2021:4).

d) **Technical Vocational Education and Training (TVET):** According to Tripney and Hombrados (2013:2), the term "technical vocational education and training" (TVET) is defined as "those aspects of the educational process involving, in addition to general education, the study of technologies and related sciences and the acquisition of practical skills, attitudes, understanding and knowledge relating to occupation in various sectors of economic life." This field involves technical education, vocational training, and apprenticeship training or a combination thereof.

For this study, the terms VET and TVET are used interchangeably. In Namibia, the term Vocational Education and Training (VET) was originally used, instead of Technical Vocational Education and Training (TVET), due to the adoption of the VET Act of 2008. However, in March 2018, the Southern Africa Development Community (SADC) region (which includes Namibia) agreed on a shared naming convention for TVET based on international standards and the broader context of TVET. This decision was made to improve TVET and skills development planning and monitoring in the region (SADC 2018:1).

1.7 SIGNIFICANCE OF THE STUDY

This case study provides a foundation for further research in evaluating TVET TE programmes and projects in Namibia (i.e., an area that is currently deficient in Namibian TVET). The recommendations of this case study (see Chapter 6) could assist academics and other stakeholders in programmatic decision-making in improving the DTVT programme and providing relevant support and professional development guidance (see Chapter 6).

According to Aziz, Mahmood and Rehman (2018:4), the objectives of context evaluation are "to define, identify and address the needs of the target population, identify the problems and assess if the goals are responsive to the desired needs". It is within this context that the CIPP model was chosen as it allows the researcher, through the "context evaluation", to determine the relevance of the DTVT programme. This involves assessing the extent to which vocational training centres, private TVET centres and society's needs were met and assessing the opportunities within a defined context.

1.8 THEORETICAL FRAMEWORK

The study draws from two theoretical frameworks discussed in further detail in Chapter 2. The Context, Input, Process and Product (CIPP) model is adopted in this research as an evaluative framework (see section 1.8.1), while the Capability Approach (CA) was used to complement the CIPP model (see section 1.8.2). Thus, through these theoretical lenses, these research questions, and objectives (see sections 1.4–1.5) aim to evaluate the DTVT programme offered within the TVET department at NUST, as this DTVT programme has yet to be assessed.

1.8.1 Context, Input, Process, and Product (CIPP) model

To move the DTVT evaluation along and produce results that are worthy of respect, whether in terms of amendments to the programme and its methodology or further work and analysis that could be taken forward, the CIPP model and its evaluation possibilities appears to be the most naturally suited model.

The purpose of input in the CIPP model is to provide information for determining the resources that are needed to meet the programme goals and learning outcomes (Aziz

et al. 2018:5). Therefore, the CIPP model is suitable for assessing all aspects related to teaching and learning inputs, such as the provision of resources.

The aim of the study is also to determine the programme's effectiveness, and since the CIPP model is designed to assess the outcomes of a programme or project, it is the most appropriate model for this doctoral study.

1.8.2 The Capability Approach (CA)

The second theoretical framework used in the study is Amartya Sen's CA, which provides a comprehensive framework for conceptualising the quality of life and well-being of individuals (Landorf, Doscher and Rocco 2008:227). The CA provides a normative framework that is informed by the principles of social justice and, more recently, by what Sen (2009:16) has termed "comparative justice" (Sen 2009). There is a central commitment to the dignity of each individual. For example, at its core, the CA is about providing individuals with the opportunities to live a life they have reason to value and enabling them to become agents in their own lives (Deneulin and Shahani 2009). By putting the needs of people first – rather than the needs of the economy – the CA brings the importance of social justice, human rights, and poverty alleviation to the forefront of TVET discourse. Additionally, the DTVT programme's primary aim/purpose and the rationale for the programme are stated respectively as follows:

> "On completion, the graduate should be able to participate in instructional activities actively and assessment of performance standards within a formal training environment such as vocational training centres and, thereby, contribute to the development of the national economy." (NUST 2018:1, DTVT curriculum document).
>
> "In keeping with Namibia's Vision 2030 goal to become an industrialised and knowledge-based economy by 2030, TVET in Namibia must be strengthened and expanded to serve the current and emerging needs. This entails developing and supporting skilled human resources in the country." (NUST 2018:2, DTVT curriculum document)

The DTVT programme's purpose and rationale stated above show that the overall intended outcomes of the programme are for graduates to contribute to the

development of the national economy and thereby ensure skilled human resources in the country. However, this perspective on the purpose of education and training seems to undermine other values, such as developing people's well-being and dignity and creating opportunities for people to live a life that they have reason to value as well as enabling individuals to become change agents in their lives (Powell and McGrath 2014:7). In other words, it appears that human development as a whole is not prioritised, and instead the focus is on economic growth and human capital.

In contrary to "productivist" approaches, which emphasise economic growth and income generation as key development objectives with employability and the creation of human capital conceived to that end, the CA emphasises human flourishing, with economic growth considered a necessary but insufficient means to achieve development.

The CA was chosen as it is located within the human development paradigm and espouses the values of participation, sustainability, equity, and institutional efficiency (Calitz 2015:54). The CA was also preferred as it advocates for education based on people's development. Ul Haq (2003:17) believes that the purpose of human development is to "create an enabling environment for people to enjoy long, healthy and creative lives". According to the CA, the role of education in achieving growth fulfils three functions: it is instrumental, empowering, and redistributive. Through the instrumental part, education promotes literacy, allowing people to become involved in public debates and dialogue on sociopolitical issues (see section 6.3.1.2a). Furthermore, it also capacitates people to participate in decision-making processes (Vermeulen 2012:6). Education has an empowering and distributive role in enabling the voiceless (e.g., marginalised, excluded and disadvantaged groups) to organise politically to gain access to power centres (Vermeulen 2012:6).

1.9 RESEARCH DESIGN AND METHODOLOGY

This section presents the research design and methodology of the study. The first part discusses the Pragmatic Constructivism (PC) research paradigm (see section 1.9.1), phenomenological research design (see section 1.9.2), the qualitative research approach (see section 1.9.3), and the research methodological approach (see section 1.9.4). The second part discusses the research population and sampling approaches

(see section 1.9.5). The third part has highlighted the study's data collection tools in terms of how and why they were used in the data collection process. The last part examines the ethical considerations and limitations of the methodology (see sections 1.9.8–1.9.9).

1.9.1 Research paradigm

Rehman and Alharthi (2016:2) define a paradigm as "a basic belief system and theoretical framework with assumptions about ontology, epistemology, methodology and methods". They believe that researchers must be able to understand and articulate beliefs about the nature of reality and how much truth can be known. According to Chilisa and Kawulich (2012:1), a paradigm is also a way of describing a worldview informed by philosophical assumptions. Such assumptions are about the nature of social reality (i.e., ontology), ways of knowing (i.e., epistemology – how we know what we know), and ethics and value systems (i.e., axiology – what we believe is proper).

Rehman and Alharthi (2016:3) also believe that a paradigm assists researchers in identifying and using appropriate approaches to systematic inquiry (known as methodology, i.e., how should we study the world?). Therefore, in deciding on a research methodology (i.e., a plan of action, process, or design that informs one's choice of research methods – see detail in 1.9.4), a researcher should start with selecting the research paradigm that best informs the study. In other words, the methodological process is guided by philosophical beliefs about the nature of reality, knowledge, and values and the theoretical framework (Rehman and Alharthi 2016:3). The researcher is interested in inquiring about what kind of reality exists for the student teachers participating in the DTVT programme and its implementation. However, equally, it is essential to understand the nature and forms of knowledge, how they can be acquired, and how they can be communicated to other people. Within this context, the Pragmatic Constructivism (PC) research paradigm is identified as the most suitable and has thus been applied to the study.

The PC paradigm is based on the belief that the relational construct controls human beings – called reality – in which four well-integrated dimensions (i.e., facts,

possibilities, values, and communication) constitute reality and enable people to function effectively as actors (Nørreklit 2013:60). The PC paradigm was chosen because of its focus on how best to achieve successful action in the endeavours we plan to undertake as human beings. The PC paradigm was also selected because it posits that actions (i.e., programme evaluation or TVET programme delivery) should always be based on realistic expectations to succeed. It is reasoned that for expectations (e.g., for NUST to produce quality TVET teacher graduates) to be credible and practical, they must integrate facts, possibilities, values, and communication (Nørreklit 2013:62).

In addition, the DTVT programme is implemented in a context where stakeholders act differently in diverse experiences of reality. These “other” stakeholders have different expectations regarding how the programme should be implemented and how it should benefit them. The PC is therefore used to analyse and understand the facts of the other stakeholders (e.g., student teachers, lecturers, industry, vocational training centres, and the MHETI). The PC paradigm can help elucidate the complexity of NUST’s DTVT programme offering by analysing organisational actors’ facts, possibilities, values, and logic (see full details in 4.2).

1.9.2 Research design

A phenomenological research design was used in this study as the most suitable research design because of the attempts to comprehend people’s perceptions, perspectives, and understanding of a particular phenomenon (Pathak 2017:1).

The phenomenon under study is the DTVT programme offered at NUST (see full detail in 4.3). Additionally, Lester (1999) is of the view that the phenomenological research design is a robust design used for understanding people’s subjective experiences, gaining insights into their motivations and actions, and examining the common assumptions and conventional wisdom of people (Lester 1999:1). Thus, the phenomenological research design was chosen because it attempts to understand people’s perceptions, perspectives, and understanding of the DTVT programme (see section 4.3) in terms of its design, implementation, and outcomes (Pathak 2017:1). The research design was also applied as it helped the researcher to collect data on

the research participants' perspectives and interpretation (see section 6.4) in terms of the phenomenon under study (Lester 1999:1).

1.9.3 Qualitative research approach

Astelin (2013:1) defines qualitative research as "a systematic scientific inquiry which seeks to build a holistic, primarily narrative description to inform the researcher's understanding of a social or cultural phenomenon. In other words, it is a systematic inquiry into social phenomena in natural settings. Wyllie (2019:6) is of a similar view that the qualitative research approach is based on the interpretive construct (links with section 1.9.1 of this study) whose objective is to explain the phenomenon from the subjective reasoning based on research participants' realities and opinions, meanings, attitudes, and motivations that lie behind their social behaviour. The qualitative research approach gives the researcher insight into the problem and provides in-depth information and understanding (e.g., aligns with the interpretive paradigm and phenomenological research design of the study – see sections 1.9.1 and 1.9.2).

This study chose a qualitative research approach for various reasons (see full details in section 4.4). Qualitative research is applicable to this study due to the interpretive nature (Hoepfl 1997:3) of uncovering the perceptions, implementation, and experiences of the DTVT programme from the perspective of the research participants as a particular social or cultural phenomenon (Palmer and Bolderston 2006:2). It also allowed the researcher to research NUST lecturers' lived work experiences and the student trainers' training experience, behaviours, and emotions as well as organisational functioning (Rahman 2020:2).

This study's evaluation of the DTVT programme (see section 6.4) required the researcher to collect detailed information from the research participants through direct interaction in order to better understand their work situations. Therefore, diverse qualitative research methods (see also Chapter 4, particularly section 4.7) were applied in this study (e.g., focus groups, interviews, open-ended questionnaires, and observation). Thus, the qualitative case study approach will be expanded in sections 1.9.4 and 4.5.

1.9.4 Case study methodology

This study employed a case study approach (see section 4.4). McCombes (2019) believes that case studies are an appropriate research methodology when the researcher wants to gain factual, contextual, in-depth knowledge about a specific real-world subject. Thus, the case study design allows the researcher to explore the case's key characteristics, meanings, and implications. In addition, this qualitative case study is a research method that enables a complex phenomenon to be explored by identifying interacting factors (see full details in section 4.5). In contrast, the case observed is an actual situation where qualitative research is considered an interpretive approach (Rahman 2020:2).

1.9.5 Research population and sampling

This study's research population and sampling details are discussed in more detail in section 4.6. The people of interest for the study were the DTVET lecturers from NUST, managers from NTA, student teachers from NUST, and TVET teachers from the Windhoek Vocational Training Centre (WVTC), the Namibia Institute of Mining and Technology (NIMT-WC), the Swakopmund Community Skills Development Centre (COSDEC), and Eenhana Vocational Training Centre (EVTC). All of the full-time and part-time DTVET lecturers at NUST were invited to the focus group discussions (FGDs) (see Appendix B). Unfortunately, only six participants were willing to participate in the two focus groups. Additionally, due to challenges with participants' availability, the minimum of three members per focus group could not be met (e.g., in Focus Group 1, four full-time lecturers attended, but during Focus Group 2 only two part-time lecturers joined). While five NTA managers were individually interviewed (see Appendix C), five student teachers enrolled at NUST and five TVET teachers employed at vocational training institutions who are studying at NUST also completed open-ended questionnaires (see Appendix D). A total of 21 research participants were therefore sampled for the study.

1.9.5.1 Purposive sampling

Purposive sampling was used in this study in order to have a suitable target sample and thus a greater probability of responding to the research questions (see also section 4.6). Furthermore, purposive sampling allowed the researcher to interact with the research participants who were knowledgeable and could communicate their experiences and opinions in an articulate, expressive, and reflective manner (Palinkas, Horwitz, Green, Wisdom, Duan and Hoagwood 2013:3). Additionally, purposive sampling was chosen because it is distinctly less costly and less time-consuming. Furthermore, purposive sampling enables the researcher to ensure that critical potential research participants are included in the study's data generation.

1.9.6 Instruments and techniques for data generation

This qualitative study applied both descriptive and exploratory research strategies. In the descriptive research strategy, a document analysis (see section 5.2.1) provides the context for the Namibian TVET. The exploratory research was conducted by means of using diverse instruments to generate data (see also sections 4.7 and 5.3–5.7), such as the following: two FGDs with NUST lecturers (Appendix B, 5.3), face-to-face semi-structured interviews with NTA managers (see Appendix C, section 5.4), open-ended questionnaires with employed TVET teachers from the VTCs and studying at NUST, and the enrolled student teachers at NUST (see Appendix D, section 5.5).

1.9.7 Data analysis, triangulation, and reporting

Data analysis is "the systematic study of data so that its meaning, structure, relationships, origins, etc., are understood" (Van der Merwe 2005:16). In this study, thematic analysis was applied, because it is considered a good approach to research in which the researcher attempts to determine people's views, opinions, knowledge, experiences, or values from a set of qualitative data (Caulfield 2019:64). Therefore, in this study, thematic analysis was used to analyse the data (see section 4.6) gathered from the document analysis (see section 5.2.1), two FGDs with NUST's (DTVET) full-

time and part-time lecturers (FPLs) (see Appendix B, section 5.3), face-to-face semi-structured interviews with NTA managers (see Appendix C, section 5.4), open-ended questionnaires with employed TVET teachers from the various VTCs studying at NUST, and student teachers enrolled at NUST (see Appendix D, section 5.5).

The analyses of the research questions (see section 1.4) were conducted as follows:

The third research question – how adequate, appropriate, effective, and relevant is the DTVT qualification in terms of the value and services provided (i.e., as an accredited programme; for human resource development; and for individual learning, employment, and personal aspirations) using both the CIPP model and CA? – was addressed (see section 1.4, number 3). The responses to programme inputs, implementation, and outcomes were analysed through input, process, and product evaluation respectively.

All context-associated issues (e.g., curricula issues, instructor job descriptions, TVET-related policies and programmes, and legislation) were mainly analysed through document analysis (see section 5.2.1).

Additionally, the audio-recorded qualitative collection instruments (i.e., a focus group session and face-to-face interviews) were transcribed and coded by identifying keywords and phrases using the ATLAS system from NUST. Thereafter, the identified themes were documented and relevant data was written down.

Furthermore, open-ended questionnaires were thematically analysed using hierarchical coding frames based on the study's qualitative approach. The above steps were also used to analyse the data. The observation notes (i.e., visiting the four VTCs - WVTC, NIMT-WC, COSDEC Swakopmund, and EVTC) include the location of the centre, the physical facilities (i.e., classrooms and workshops), engagement with management and staff, and the resources available at the centres (see Table 5.3 and sections 5.6.2–5.6.3), which were also thematically analysed.

Finally, the multiple datasets, methods, and theories of these descriptive and exploratory research strategies (see also section 1.9.6) were triangulated to provide a more comprehensive understanding of the Namibian TVET in order to address the research questions (see section 1.4). In addition, triangulation as a research strategy

also enhances the validity and credibility of the findings and mitigates the presence of any research biases in one's work (see section 4.10).

1.9.8 Ethical considerations

The researcher obtained an ethical clearance certificate (UFS-HSD2017/0556/21) from the UFS's Ethics Committee to collect data (see Appendix E). In addition, permission letters to conduct the study were obtained from the NTA (see Appendix F), NUST (see Appendix G), and the MHETI (see Appendix H).

The research participants were informed that their participation was voluntary and they were free to withdraw during the research. The research participants (NUST lecturers, NTA managers, and NUST students) were requested to complete a consent form to participate in the study (see Appendix J). The participants were assured that they would remain anonymous and that codes would be used instead of their actual names. The data was stored safely and disposed of in accordance with the university's policy for collecting research data (Chetram 2017; Kadhila 2012).

1.9.9 Scope of the study

The study focuses only on the DTVT programme and the TVET student trainers who were already exposed to the study programmes. Therefore, this qualitative case study's inclusion criteria confine the sample to NUST lecturers, TVET teachers, NTA managers, and student teachers (see also section 1.9.5.1). The purposive sampling technique was used to identify exemplary student teachers who could contribute positively to obtain appropriate data.

1.10 CHAPTER SUMMARY

This chapter highlighted the core aspects (see sections 1.2–1.9) of the current study of the CBET for TVET, a programme evaluation for TVET teachers. Additionally, this study also included broader comparative international discourses on programme

evaluation for a future-focused cadre of vocational educators (see sections 1.2–1.3). In this regard, Namibia is certainly not unique, as developing countries often borrow practices from developed countries where common questions of curricula have manifested, and they are then adapted into workable local systems.

Questions about vocational TE that have been asked and debated in different contexts include, among other things, issues of form and content; qualification pathways, structure, and sequencing; lecturer competencies; theoretical underpinnings of curricula; and the value assigned to workplace knowledge and practice. Evidence of comparative work done in this regard by faculties of education in Europe, the US, the UK, and Australasia shows that, while institutions may differ on the detail, there is a level of agreement about the scope and orientation of vocational teacher training that points to a growing and increasingly coherent knowledge base in this field (see sections 1.2.1 and 3.3–3.5). This chapter also introduced and discussed the two theoretical frameworks adopted for this research as an evaluative framework (see sections 1.8.1 and 1.8.2) to complement each other. The researcher elaborates on these frameworks in detail in Chapter 2.

Finally, the research design and methodology of the study were presented. The first part discussed the PC research paradigm (see section 1.9.1), phenomenological research design (see section 1.9.2), qualitative research approach (see section 1.9.3), and research methodology (see section 1.9.4). Thereafter, the Namibian TVET research population and selected sampling (see section 1.9.5) instruments and techniques for data generation (see section 1.9.6), data analysis, triangulation, and reporting (see section 1.9.7) were discussed as well as the ethical considerations (see section 1.9.8) and scope of the study (see section 1.9.9).

CHAPTER 2
DUAL THEORETICAL FRAMEWORKS FOR THE QUALITATIVE CASE STUDY

2.1 INTRODUCTION

As previously stated, (see section 1.8), this study deals with two theoretical frameworks for conducting the research, namely the CIPP model (see sections 2.2.1–2.2.3) and the CA (see sections 2.4–2.2.10). Therefore, this chapter aims to provide the necessary grounding for the research through a thorough presentation of these two theoretical frameworks. Additionally, this chapter seeks to demonstrate the justification for using the CIPP model and the CA as holistic approaches for evaluating the DTVT programme (see sections 2.2).

Similarly, the chapter starts to conceptualise the ideas of the CIPP model, such as context, input, process, and product evaluation (see section 2.2.3), as the theoretical foundation for this study. The value of the CIPP model is that it is a decision-oriented model that systematically collects information about a programme to identify strengths and limitations in content and delivery. Thus, this model helps to improve programme effectiveness for continuous improvement or to plan for the future of a programme (Zhang, Zeller, Griffith, Metcalf, Williams, Shea and Misulis 2011:63). This motivation for applying the CIPP model (see section 2.2.3) is suited to the focus of the study (see section 1.1.4).

Additionally, the discussion of the CIPP model is followed by a discussion of various concepts such as functioning, agency, capability, and conversion factors (see section 2.2). The value of the CA is that it seeks to improve understanding and evaluate the status and processes of human well-being and development through the lens of functioning, capabilities, and agency freedom. The term capability may refer to “a person’s ability to do valuable acts or to reach valuable states of being”; it “represents the alternative combinations of things a person can do or be” (Sen 1993:28). Furthermore, the CA asks the following core questions: “What are people able to do and to be? What real opportunities are available to them?” This study examines whether the DTVT programme grants its students the academic freedom to do and

achieve in pursuit of whatever goals or values they regard as necessary. In other words, will the completion of the DTVT programme enable the student teachers to do what is expected in the field of work and the profession, and will they be what they value most? Equally, do the instructors, for example, working in VTCs, have the freedom to achieve what is expected of them professionally? Within this context, the value and worth of the programme are being assessed. For example, the CA evaluates the programme beneficiaries' well-being and aspirations both during and after the programme (Kuhumba 2018:164).

2.2 DUAL THEORETICAL FRAMEWORKS

Different scholars define theoretical frameworks from various vantage points. For example, Swanson and Chermack (2013, cited in Kivunja 2018:46) describe a theoretical framework as "the structure that can hold or support a theory of a research study". Additionally, Kivunja (2018:48) posits that a theoretical framework provides a structure for what to look for in the data, for how one thinks or how what one sees in the data fits together and assists one in discussing one's findings more clearly in terms of the selected theories. Therefore, these proposed theories help to make connections between the data's abstract and concrete elements. Furthermore, Osanloo and Grant (2016:12) support the idea that the theoretical framework "serves as the structure". Nevertheless, they added that theoretical frameworks "support the rationale for the study, the problem statement, the purpose, the significance, and the research questions". Thus, a theoretical framework is suitable for offering a base, or an anchor, for the literature review and, most importantly, the methods and analysis. Moreover, the theoretical framework examines the theory that informs this study's framework to respond to the research questions and objectives. More focus is on the CIPP model and the CA developed by Stufflebeam (2003) and scholars such as Sen, Nussbaum, and Robeyns (Robeyns and Byskov 2021:4) respectively. This scholarly research served as evidence to support these theoretical frameworks (see section also 1.8) to drive the study to evaluate the DTVT programme within the Namibian TVET system.

2.2.1 Origin of the CIPP model

Stufflebeam has been a leader in educational evaluation since the 1960s. The CIPP model, developed in the late 1960s, is one example of the work. The CIPP model was created to help improve accountability for US school programmes funded by the government. In addition, these programmes were prioritised to enhance teaching and learning in urban, inner-city school districts. The improvement of the CIPP model took years. Nevertheless, it was eventually applied to educational programmes both within and outside of the US. In addition, it was adopted and used in other fields such as social programmes, health professions, business, construction, and the military (Stufflebeam 2003:1). The CIPP model was also developed to help state education departments, development centres, and the federal government to assess projects in the US War on Poverty (Stufflebeam 2015:4).

2.2.2 Principles and objectives of the CIPP model

According to Sopha and Nanni (2019:3), regulations are central to Stufflebeam's (2003:36) CIPP model as it is "fundamentally a values-oriented model". The CIPP model values are critical as they prevent evaluations from aiding and abetting morally wrong, unethical actions. However, the evaluations will be supportive in effectively pursuing justifiable ends in conducting evaluations (Sopha and Nanni 2019:3). Furthermore, Stufflebeam's (2003:3) CIPP model is based on the promotion of principles such as the meeting of state educational standards by student teachers, equality of opportunity, human rights, technical excellence, efficient use of resources, safety of products and procedures, and innovative progress. Thus, within the context of the CIPP model evaluation, Stufflebeam (2003:4) defines evaluation as follows:

> *Evaluation is the process of delineating, obtaining, providing, and applying descriptive and judgmental information about the merit and worth of some object's goals, design, implementation, and outcomes to guide improvement decisions, provide accountability reports, inform institutionalisation/ dissemination decisions, and improve understanding of the involved phenomena.*

The definition mentioned above suggests the objectives of the CIPP model and includes guiding decisions. The other objectives are to provide records for accountability; inform decisions about incorporating and disseminating developed products, programmes, and services; and promote understanding of the dynamics of the examined phenomena (Stufflebeam 2003:4). The CIPP model's prime objectives are to ensure that programmes and projects are holistically evaluated by considering context, input, process, and output. In this evaluation process, the purposes of improvement and accountability are to assist policymakers, programme directors and project managers in making good decisions (Aziz, Mahmood and Rehman 2018:192; Tunç 2010:21; Stufflebeam 1971:14; Stufflebeam 2003:32). Therefore, the CIPP model can support NUST policymakers in making informed decisions as well as implementing and accounting for those decisions and related actions (Stufflebeam 1971:14).

2.2.3 Justification for choosing the CIPP model

The CIPP model was chosen for this study because it allowed for the in-depth evaluation of four dimensions of the DTVT programme: context, input, process, and product. In addition, the CIPP model was chosen as the most appropriate tool as it offers a holistic and systematic evaluation designed to improve the programme's effectiveness. Finally, the CIPP model was selected because it considers stakeholders' needs in decision-making (Kipli and Khairani 2020:32). The following demonstrates how this universal CIPP model will help the researcher to evaluate the four above-mentioned dimensions in one study:

1. **Context evaluation** helps to evaluate the programme's objectives, policies that support the vision and mission of the institution, the relevant environment, identification of needs, opportunities, and specific problem diagnoses (Warju 2016:5; see sections 2.2.1 and 5.2.3).
2. **Input evaluation** assisted the researcher in checking whether the resources (e.g., financial, material, physical, and human resources) were adequate and appropriate (Chen 2009; Stufflebeam 1971:24; see sections 2.2.3 and 5.2.4).

3. **Process evaluation** serves to provide feedback to the individual to take responsibility for the activities of the programme or curriculum (Warju 2016:5; see sections 2.2.3 and 5.2.5).
4. **Product evaluation measures** assist in interpreting the achievement of objectives (Warju 2016:5; see sections 2.2.3 and 5.2.6).

The context evaluation allowed the researcher to assess the needs and problems encountered in offering the DTVT programme. Moreover, input evaluation assisted the researcher in checking whether the resources (e.g., financial, material, physical, and human resources) were adequate and appropriate (Chen 2009; Stufflebeam 1971). Therefore, the CIPP model was chosen for this study because it allowed the researcher to undertake a process evaluation that could examine all implementation aspects (see section 2.2.3), e.g., the competency of lecturing staff, the extent to which implementation plans were put into practice, implementation challenges, and identification of practices that worked well. In brief, the CIPP model was appropriate as it allows the researcher to explore lessons learnt during implementation of the DTVT programme (see section 5.3.2). In addition, the CIPP model was also selected because of its advantage in conducting a product evaluation, which helped the researcher to identify and assess outcomes (see sections 2.2.3 and 5.2.2), such as the number of successful graduates and the extent to which programme goals were achieved (Chen 2009; Stufflebeam 1971; Kipli and Khairani 2020). Furthermore, the CIPP model was preferred because it is designed to undertake evaluations that provide information for accurate decision-making. The CIPP model also allowed the researcher to undertake a formative, summative assessment (see sections 1.8.1 and 5.2.2) in an integrated manner (Kipli and Khairani 2020:24).

2.2.4 Origin and core of the CA

The CA was pioneered in the 1980s by Amartya Sen, an economist-philosopher who in 1998 won the Nobel Prize in Economics for his work in welfare economics. Sen challenged the limited informational bases of the traditional economic models and their mainstream ways of thinking. Thus, financial models were challenged with notions relating to the importance of freedoms and justice to improve well-being (Robeyns and Byskov 2021:1; Sen 2018:1).

Several other thinkers influenced Sen's CA work. However, the foundation of the CA can be traced back to the works of Karl Marx, Aristotle, Adam Smith, Isaiah Berlin, John Stuart, Frances Stewart, Paul Streeten, John Rawls, and the classical political economy (Robeyns 2000:4).

Sen's CA was also challenged and critiqued by other renowned scholars such as Martha Nussbaum, Ingrid Robeyns (her version was known as Capabilitarianism), and Cartwheel, who expanded the CA by creating their own versions to improve its application in other disciplines such as philosophy, the social sciences, and education (Robeyns 2016).

For example, Sen, as cited by Walker and Unterhalter (2007:2), defines capability as a "person's ability to do valuable acts or reach valuable states of being; [it] represents the alternative combinations of things a person can do or be". In other words, the CA posits that people are defined by "functioning", which constitutes "beings" and "doings" (i.e., what you are and what you do). Thus, functioning is a valuable activity that drives people's well-being (see sections 2.2.4.1 and 5.3.2). Such action can only be decided through participatory decision-making (Deneulin and Shahani 2009:1). Furthermore, these functions pertain to what people value and have reason to love, for example, being safe, educated, having a good job, and being well-nourished. Additionally, "capabilities" are the substantive freedoms people enjoy in leading a life that they have reason to value (Deneulin and Shahani 2009:16). In other words, capabilities can be regarded as the freedom to enjoy valuable functioning, and they are the opportunities or potential to achieve and enjoy those beings and doings (Robeyns and Byskov 2021). They refer to using the options for being and doing or exercising the ability to pursue and realise the goals one values and have reason to value. An agent creates change (Deneulin and Shahani 2009:16, 31), and the interaction between functioning, capabilities, and agency determines well-being and can lead to freedom.

2.2.4.1 Functioning, capabilities, and agency

In the CA, "functioning" entails what a person does (i.e., the activities involved), the life a person lives, and the person's state of well-being. In other words, it is what we do and value as people and what we are ("doings" and "beings") (Powell and McGrath 2014:8). Doing or not doing are potent determinants of well-being or disease, and this

can be experienced in the sense that people live education within the settings of their everyday life, where they learn, work, play, and love. Functions generally relate to many different dimensions of life that a person may value doing or being – being adequately nourished, employment, health, education, participation in community activities, relationships, being confident, being able to travel, or taking part in political decisions (Duff 2022:43; Alkire 2005:5).

Wilcock further demonstrates the synthesis of “doing, being, and becoming, which proves helpful in understanding capability. She states:

> “This is so because doing, being, and becoming affects health on an individual basis through the integrative systems of the organism, on a social level through shared activity, the continuous growth of occupational technology and socio-political activity, and on a global level through occupational development affecting the natural resources and ecosystems. Any or all of these can have negative or positive effects on health, and all are inextricably linked.” (Wilcock 1999:8)

In other words, capabilities are the fundamental freedoms or opportunities a person must achieve for functioning. Within the context of the DTVT programme, vocational teachers’ involvement in training is a functioning, but the real opportunity to exercise it is the capability. If someone does not receive the training, it might be because they chose not to, but it might also be because they are not free to obtain such training or cannot exercise it. Capability thus considers whether the person could receive training if they wanted to.

The CA also considers people to be active participants and agents whose values and insights matter. Therefore, the CA focuses on participation, as it is a way to express and reflect upon their values and participate fully in development interventions. This participation idea is encapsulated by Frediani (2007:2) as follows:

> “The people have to be seen, in this (development as freedom) perspective, as being actively involved – given the opportunity – in shaping their destiny, and not just as passive recipients of the fruits of cunning development programmes.”

The CA, therefore, situates people as active participants in development. Within this context, agency suggests that development processes should foster participation,

public debate, and democratic practice, as this is the best way to participate in economic, social, and political actions. This agency is therefore defined as “a person’s ability to pursue and realise goals that she/he values and has reason to value” (Deneulin and Shahan 2009:37). According to Conradie (2013:178), agency refers to the autonomy and ability of a person to select those capabilities (or freedoms) that they value and to perform the activities required to turn those valued goals into actual beings and doings.

2.2.5 Principles and objectives of the CA

The CA was developed to assist in evaluating and assessing an individual’s well-being and social arrangements, the design of policies, and proposals for social change in society (Robeyns 2005:1). Thus, the CA promotes principles such as equality, justice, freedom, human rights, and dignity. Sen, through the CA, was committed to promoting justice, freedom, equality, and poverty reduction. He opposed the economic models that did not address the question of poverty and subsequent inequalities. He viewed poverty as depriving people of specific basic capabilities (i.e., the ability to satisfy particularly crucially important functioning up to certain minimally adequate levels), e.g., being well nourished, adequately clothed and sheltered, avoiding preventable morbidity, and participating in community life. The CA’s primary focus is to remove barriers that force people “to live less or be less” and challenge all kinds of deprivation, including restricting or inhibiting the social lives of people (Alkire 2005:117; Hick 2012:3).

In addressing the problems of inequality, injustices, all kinds of deprivations, and poverty, the CA’s objective is to promote development based on the expansion of human capabilities or opportunities and to move away from the expansion of means of living such as utility or monetary income (Laderchi, Saith and Stewart 2003:15). The CA’s objective is also the promotion of freedom for people to live a life worthy of human dignity and such substantial freedoms people may choose to actively exercise. It is within this context that Brown (2017:40) defines capability as follows:

> *We are free to undertake an action, only to the extent to which no plausible constraints prohibit us from undertaking that action.*

The CA is based on achieving equality and promoting well-being by focusing on functioning and capabilities. The well-being of people lies in the fundamental freedoms and the adequate power that people must perform in their chosen functioning (Gasper 2002:440).

2.2.6 Critiques of the CA

Sen's CA has invited several critiques from scholars such as Nussbaum, Robeyns, Gore, and many others. A significant analysis of the CA indicates the lack of a specific set of capabilities (Nussbaum 2007:5). Several scholars criticise the approach of being insufficiently specified and not being a suitable framework for evaluating and analysing a person's well-being (Robeyns 2000:29). Although Robeyns also challenged the CA, she defended Sen's CA for not creating a capability list such as Nussbaum's. Furthermore, Robeyns argued that the application of the CA should be context-specific and, as a result, develop its list. Therefore, the CA's advantage is that it is considered non-prescriptive concerning the identification of capabilities (Robeyns 2003:68).

The CA is based on the promotion of democratic participation of people when it comes to the identification of capabilities for any group. In other words, people should be allowed to participate in the process of reaching valuable functioning and capabilities, thereby being given the freedom to address issues that affect their lives (Ikebuaku 2021:71). In addition, Robeyns (2005:104) argues that democratic participation is not always based on equal participation, as some individuals are likely to dominate others (i.e., their voices are heard more loudly because they are more powerful than others). As a result, Robeyns is not entirely in support of promoting democratic participation.

Furthermore, Gore (1997:237), as cited by Kuhumba (2018:6–7), critiques the CA for its individualistic position. The CA is viewed as basing its evaluation of well-being exclusively on individual properties. However, as Sen's CA does not focus on community capabilities, Gore (1997:240) argues that Sen does not consider that an individual has property belonging to a community or institution.

2.2.7 Application of the CA

This section outlines previous research studies that have employed the CA as a theoretical framework.

2.2.7.1 Previous applications of the CA

Various scholars have been inspired by Sen's work to further develop the CA. Nevertheless, the most prominent of these is Martha Nussbaum, who created a list of critical capabilities (Nussbaum 2001:61). Conradie (2013:160) also applied the approach in her study of a group of women in Khayelitsha, South Africa. She focused on the relationship between aspirations and capabilities and how this could help reduce poverty. The CA has also been applied in assessing the extent to which agricultural entrepreneurship in Nigeria could serve as a vehicle for expanding youth agricultural entrepreneurship and employment-creation opportunities. Vermeulen (2013:12) conducted a study in Uganda to analyse the mismatch between the national primary education curriculum and the classroom reality in rural government primary schools. Matenda (2019) conducted a research study in South Africa, investigating the role of female empowerment in providing TVET. Finally, Marangu (2014:3) applied the approach in her research on assessing the social protection policy in promoting human development outcomes by focusing on the cash transfer programme for orphans and vulnerable children in Kenya.

2.2.8 Application of the CA to vocational teacher/trainer training

Over the last three to five years, there has been significant focus on getting artisans into TVET teacher training. While this is undoubtedly a step in the right direction, more emphasis should be placed on the available capabilities (opportunities) for the artisans to be qualified and competent TVET teachers and trainers. Since it is a comprehensive framework, the CA can help to highlight various critical factors to help artisans successfully qualify as TVET educators.

The study argues that Sen's Capability Approach (CA) can serve as a lens for holistically assessing the DTVT programme to identify better strategies for improving TVET TE. The following sections explore the application of the CA to TVET teacher

training using the following concepts that are central to the process: functioning, agency, and capability (Alkire and Deneulin 2009:8).

2.2.8.1 Vocational teacher/trainer training as a valued function

As previously indicated, functioning constitutes the various doings and beings that humans have reasons to value (Powell and McGrath 2014:134). Therefore, the TVET teacher's motivation to enter the TVET teaching occupation is for various reasons. These different motivational profiles can be positive or negative for their commitment to teaching, satisfaction with their occupational choice, pedagogical beliefs, and other variables related to their career (Berger and D'Ascoli 2012:8), in other words, the motivating and demotivating factors that influence people either positively or negatively to join (or not) the TVET teaching profession.

The third category is the high personality utility group, which is portrayed by low intrinsic career value, low perceived teaching ability, and high personal utility, e.g., job security and transferability. The penultimate category is the increased opportunity group, which contains TVET educators reporting low unique utility but high opportunity (Berger and D'Ascoli 2012:14). The final category is the multiple motivations group, characterised by various motivations. This group is highly motivated to stay in the TVET teaching profession (Berger and D'Ascoli 2012:15–16). TVET teacher training as a valuable function can provide a deeper understanding into why trainees may choose and remain in the TVET teaching profession.

2.2.8.2 Agency and the vocational teacher/trainer career

The CA to education connects to human development by focusing on human beings' lives and values (Thapa and Sigh 2019:9). One objective of the CA, and that of the human development approach, is to enable people to become agents of change in their lives, families, and community (Alkire and Deneulin 2009:5).

Sen maintains that an agent is a person who acts and brings about change (Sen 1999; Deneulin and Shahani 2009:31). According to Alkire and Deneulin (2009:8), agency is "a person's ability to pursue and realise goals that he/she values and has reasons to value". Such pursuance demands that one reflects on one's situation and then acts to

bring about change. In the case of the TVET teaching profession, a person's agency can be reflected in their ability to identify teaching approaches and perceive such problems as opportunities to improve in order to deliver better quality teaching and service delivery to TVET student teachers. By doing so, the TVET lecturers (e.g., TVET lecturers at NUST) add value to TVET TE by preparing future TVET teacher graduates who can affect socioeconomic change through job opportunities and subsequent economic growth and reap the attendant financial and non-pecuniary rewards.

2.2.8.3 Capability for the vocational teacher career

As stated before, the CA focuses on the practical opportunities people must seize to become what they value. "Goods" (i.e., TVET training inputs) and services, such as the provision of technology, financing, and support related to TVET training, are considered significant only in the light that their characteristics enable people to do and be what they value, i.e., in light of the capabilities one can generate from these goods and services (Robeyns 2005:8).

Thus, a crucial aspect of exploring TVET teacher training using the capability lens is investigating the opportunities for artisans (i.e., potential student teachers) to engage in and succeed in TVET TE and training. The CA to TVET TE for human development concerns opportunities for individual advances. On the other hand, Sen (1999) is of the view that capabilities (freedoms) represent a combination or a set of institutional or social opportunities which interact with agency or personal engagement (Terjesen 2004:347). Therefore, it begs the question, instead of the dominant factors in the TVET TE sector, what opportunities must people engage in to succeed in TVET teacher training? To answer this question, we need to interrogate the various factors that can impact one's ability to engage in and grow in TVET teacher training. These are called conversion factors in the CA vernacular.

2.2.8.4 Justification for selecting the Capability Approach (CA)

The CA was chosen as it was applicable to address the first objective (see section 1.5), which consists of three aspects: i) how the DTVT programme contributed to the delivery of vocational education to individuals and society; ii) how the programme

developed human resources; and iii) how the programme developed personal learning and guided aspirations. These three aspects deal primarily with the well-being of individuals and society regarding functioning, capabilities, and agency, hence rendering the CA a suitable approach.

Most importantly, the CA was also chosen because capabilities are used as the space for evaluating human development, and vocational education is a critical aspect of human development (Smith and Seward 2009:220). As indicated by Smith and Seward (2009), the CA embraces the notion of development that places particular emphasis on the development of human capabilities, which makes it especially useful (Kileo 2017:36). This study used the CA to understand TVET lecturers' perceptions of experiences and freedoms and their functioning in delivering the DTVT programme. These freedoms and functionings are dependent on various capabilities. Nussbaum (2011:212), as cited by Kileo (2017:36), defines capabilities as "not just abilities residing inside a person but also the freedoms or opportunities created by a combination of personal abilities, social and political environment".

Additionally, the CA was chosen because it promotes the principle of equality. It is reasoned that people should be equal in terms of effective freedom (Gasper 2017 [YS4]). Concerning DTVT programme implementation, it is hoped that resources within the institution are fairly and equally distributed, so that quality programme delivery can be effected. Through the CA, the researcher could allow the research participants to see value in equally participating in evaluating the DTVT programme.

The CA was chosen because it puts great value on promoting people's freedom to enhance their well-being. DTVT programme delivery could only be effective and greatly valued if trainees are assured freedom of speech/expression and their voice is heard on any programme implementation and evaluation issue. In other words, the CA promotes and expands the fundamental freedoms that people value. The CA puts people first, since its objective is to develop what people can do and be, or what might be more appropriately called fundamental freedoms, which is why it was chosen for this study (Otto and Ziegler 2006:275). Otto and Ziegler (2006:3) state the following regarding the CA's inherent strengths:

> "Thus, the strength of the Capability Approach lies in its capacity to provide sensible tools and frameworks within which literacy, competencies and other educational aspects might be appropriately conceptualised and evaluated."

For example, the DTVT programme is based on CBET principles, which promote vocational teachers' competencies and all other aspects of the programme, hence rendering the CA useful. Furthermore, the CA was chosen because of its focus on putting the needs of people first rather than the needs of the economy. This then brings the importance of social justice, human rights, and the alleviation of poverty to the forefront of TVET discourse (Powell 2013:1).

2.2.9 Conclusion

This chapter presented the dual theoretical basis for this study with special reference to both the origin of the CIPP model (see section 2.2.1) and the origin of the CA (see section 2.2.4). Thus, both theoretical frameworks are operationalised in this research. After outlining the theoretical frameworks, the justification for using them was also outlined (see sections 2.2.3 and 2.2.10), including the principles of each theoretical framework (see sections 2.2.2 and 2.2.5). Other issues addressed in this chapter include the various critiques of Sen's CA (see section 2.2.6) and its application in TVET teacher training (see section 2.2.7). Matters relating to agency and TVET teacher careers were also discussed in the chapter.

Specifically, the various issues addressed under Sen's CA (see section 2.2.4.1) include functioning, agency, capabilities (real opportunities), and conversion factors (personal, social, and environmental), which tend to influence one's ability to engage in and succeed in TVET teacher training.

Chapter 3 will review the literature on the history, quality, and development of TVET (see Chapter 3).

CHAPTER 3
LITERATURE REVIEW ON TVET TRAINING AND DEVELOPMENT: A HISTORICAL AND QUALITY PERSPECTIVE

3.1 INTRODUCTION

This chapter discusses lessons learnt from TVET experiences over the years in order to better understand the training and development that is required for TVET teachers and trainers, primarily within the Namibian context. The importance of this focus is confirmed by Bukit (2012:1), who believes that qualified and skilled workers are critical for the competitiveness of most countries' economies. Therefore, governments ensure that their workforce is competent, adaptive, and innovative. It is within this context that TVET is regarded as contributing towards the attainment of economic growth and socioeconomic development. Among the several factors affecting the quality of vocational education, the quality of TVET teachers is recognised as the most salient factor among them. Therefore, Bukit (2012) states that TVET educators (i.e., TVET teachers/lecturers and trainers) have long been known as the backbone of countries' socioeconomic development. This implies that the professionalisation of TVET educators is widely regarded as a significant factor in the effectiveness of vocational education in generating skilled workers, hence the need to evaluate a TVET educator training programme, which is the aim of this study (see section 1.5).

The chapter aims to contextualise the study through a thorough synthesis of the extant literature on TVET TE and relevant TVET educator training globally and in Africa and Namibia. It also elucidates the conceptual, theoretical, and empirical understanding of TVET TE and training.

3.2 FACTORS INFLUENCING THE QUALITY AND EFFECTIVENESS OF TVET TE AND TRAINING

The quality and effectiveness of TVET TE and training are influenced by the following factors: national policies on TVET, national policies on TVET TE, the TVET system, and the TVET TE system. These factors also form the basis for the literature review

(European Commission 2014:21–22). In other words, the evaluation of the DTVT programme considers how these factors influence TVET TE.

The evaluation of TVET TE and training is enhanced by taking into account the two “systems” at two different levels, namely the TVET system (i.e., the educational sector in which TVET teachers operate) and the higher education (HE) system in which TVET teachers are educated for a career in teaching. The concerns include national, policy, operational, institutional, or school levels (European Commission 2014:21–22). In Figure 3.1, the framework of factors influencing the quality and effectiveness of TVET TE is illustrated. Figure 3.1 summarises this approach, in which the left side of the figure on TVET systems provides necessary contextual data to fully comprehend the background against which TVET teacher training is developed and delivered.

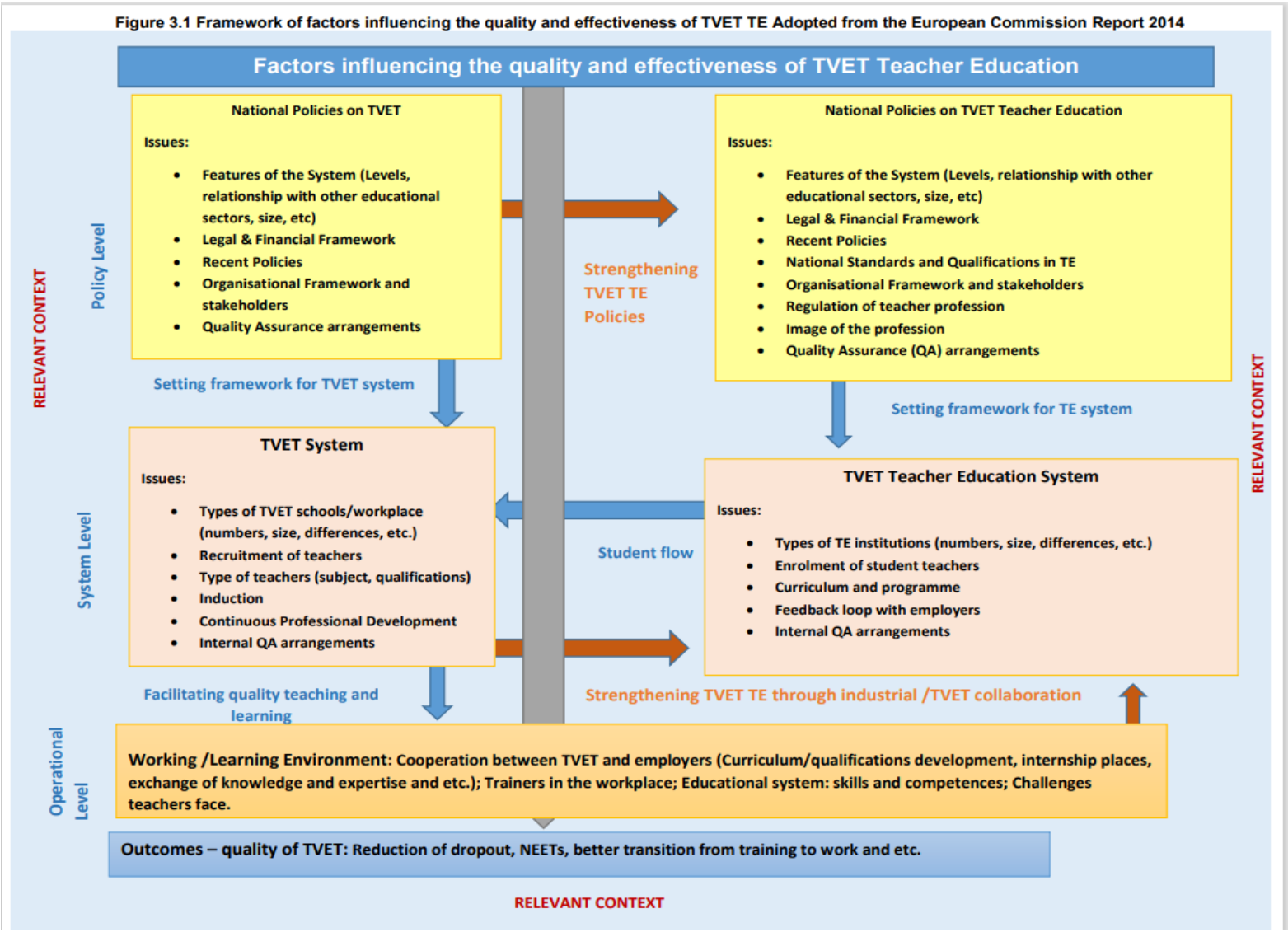

Figure 3.1: Framework of factors influencing the quality and effectiveness of TVET TE. Adopted from the European Commission Report (2014:22)

Figure 3.1 highlights the factors influencing the quality and effectiveness of TVET TE, which entail issues such as the characteristics of the TVET system at a policy level, legal and financial frameworks, current policies, organisational framework and stakeholders, and quality assurance arrangements. Equally, the types of TVET schools and institutions, the kind of TVET educators recruited, internal quality assurance arrangements, and educators' continuous professional development (CPD) all influence TVET TE and, in particular, the type of TVET educator programmes that can be developed and delivered.

Similarly, the absence of clear national policies, standards, and strategies on TVET TE affects the development of TVET TE and their related training programmes. In other words, the implementation of the TVET teacher training programme is influenced by the nature of the policies (i.e., national policies on TVET and national policies on TVET TE), systems (i.e., TVET system and TVET TE system), and strategies that are in place or are inadequate.

3.3 CLARIFICATION OF CONCEPTS IN THE VARIOUS DOMAINS OF THE STUDY

This study focuses on identifying challenges and opportunities in the training and development of quality Namibian TVET teachers within an appropriate demand-driven and high-quality TVET system (see also section 1.2.2). For clarification purposes, the diverse meanings attached to certain TVET concepts will be conceptualised (see sections 3.3.1–3.3.3). The three main domains are TVET (see section 3.3.1), TVET educators (see section 3.3.2), and CBET (see section 3.3.3).

3.3.1 The TVET concept

Different scholars and organisations define TVET from different perspectives. The language of TVET is complex and seems prone to jargon and is littered with acronyms. According to Blom (2013:119), alternative TVET terms used internationally include “technical and vocational education and training” (TVET), “vocational and technical education and training” (VTET), “technical and vocational education” (TVE), “vocational and technical education” (VTE), “further education and training” (FET), and “career and technical education” (CTE). Due to these diverse concepts, it is essential in this study to conceptualise the TVET concept as understood here. UNESCO and the International Labour Organization (2001) (cited in the African Union 2006:1) define TVET as “aspects of the educational process involving, in addition to general education, the study of technologies and related sciences, and the acquisition of practical skills, attitudes, understanding, and knowledge relating to occupants in various sectors of economic and social life”.

The European Centre for the Development of Vocational Training (CEDEFOP 2011:7) joins in with the definition above and conceptualises TVET as “education and training which aims to equip people with knowledge, know-how, skills and competencies required in particular occupations or more broadly on the labour market”. Moreover, the Organization for Economic Co-operation and Development (OECD) (2010:208) refers to TVET as “including education and training programmes designed for, typically leading to, a particular job or type of job. All these definitions imply that TVET normally involves practical training as well as the learning of relevant theory” that leads to work opportunities. Furthermore, TVET programmes holistically refer to “a collection of educational and training activities which are organised to accomplish a pre-determined objective or the completion of a specific set of educational tasks, one of which is to equip people with skills and competencies required in particular occupations or trades” (OECD 2010:2015).

Most of the definitions above adopted a holistic view of TVET, which means that TVET should serve a particular purpose for the benefit of all the stakeholders (teachers, student teachers, and society at large). It also shows that education and training should be linked to preparing students, especially young people, for the labour market. Most of the definitions presented define TVET from a labour market perspective and in terms of economic growth. Billett (2011:200) states that TVET is a diverse field in terms of purpose, education and training providers, participants (i.e., type of student teachers), and offerings. This diversity makes TVET difficult to define and fully conceptualise (Billet 2011:200).

The definitions above reflect the international convergence in education and training policies in which TVET is being positioned as a central instrument for economic growth and social reform. These policies are based on the premise that education and training (including TVET) serve as a lever for economic development and are the answer to social inequities, growing unemployment, and poverty. It is also assumed that education and training will contribute to social justice by widening participation in programmes targeted at employability within the communities most affected by unemployment (Powell 2014:1-2). According to McGrath (2011 and 2012a), the focus on the “productivist” and “employment” frameworks is the development of human

capital for economic advancement, with employability regarded as the solution to both the skills needs of the economy and growing unemployment.

McGrath (2012b:5) also critiques the productivist framework for being "too individualistic in its assumptions, too short term in its focus on immediate employability rather than lifelong processes, too focused on a particular model of work as paid employment" and, importantly, neglectful of human development approaches that seek to place the well-being of human beings at the "heart of development".

Considering that TVET is geared towards development, it is more appropriate that TVET is defined within the human development and CA, with the understanding that human development is described as:

> "… the expansion of people's freedoms to live long, healthy and creative lives; to advance other goals they have reason to value, and to engage actively in shaping development equitably and sustainably on a shared planet. People are both the beneficiaries and drivers of human development, as individuals and in groups." (McGrath 2012b:8)

According to the United Nations Development Programme (UNDP 2010), as indicated by McGrath (2012b:8), human development is made up of three components, namely:

- "Well-being: Expanding people's real freedoms – so people can flourish,
- Empowerment and agency: Enabling people and groups to act to drive valuable outcomes,
- Justice: Expanding equity, sustaining outcomes over time and respecting human rights and other goals of society."

The human development definition and its components are aligned with the principles and objectives of the CA. Within this context, the purpose of TVET should be to achieve human development and the overall well-being of human beings as framed from within the CA (see Chapter 2).

3.3.2 The concept of TVET educators (*i.e.,* TVET teachers/lecturers and trainers) within the TVET context

TVET trainers/instructors/teachers and lecturers are all TVET educators, but they are distinguished in terms of function and place of employment. TVET teachers or lecturers generally work in TVET schools and training institutions, while TVET teachers are employed in companies. The primary role of a TVET teacher is teaching, while trainers are usually company employees who have the additional responsibilities of coaching and mentoring trainees during apprenticeships or other forms of work placement, especially in school-based TVET (European Centre for the Development of Vocational Training [CEDEFOP] 2016:2). In other words, TVET teachers are those who are primarily responsible for theoretical skills instruction, while trainers are those who are primarily responsible for imparting practical vocational skills.

The above definition does not consider other experiences. For example, it excludes vocational trainers (in some instances they are called vocational instructors) within public TVET institutions responsible for practical vocational skills. Grollmann and Rauner (2007:60), as cited by Grollmann (2008:3), identified different titles for educators: TVET teachers, TVET lecturers, vocational trainers, and vocational instructors. These groups of TVET educators work in other settings, such as schools, colleges, universities, and companies, and they all have different roles and training requirements.

3.3.3 The concept of Competency-Based Education and Training (CBET) within the TVET context

Competency-Based Education and Training (CBET) has been defined in multiple ways and interpreted differently across academic programmes (Gervais 2016:100). CBET, as an example of outcomes-based education (Harden 2007:625), has been introduced in the curriculum reform of TVET across the world (Mulder 2017:1098; De Bruijn and Leeman 2011:695).

Additionally, CBET is “an approach to TVET in which knowledge, skills and attitudes are specified to define, steer and help achieve occupational action standards. The CBET training approach involves the development of occupational standards and qualifications, curriculum design, instruction/delivery, and assessment, based on an articulation of learning outcomes or occupational action competencies” (Ministry of Higher Education, Technology and Innovation 2021:7). Furthermore, Gervais (2016:2) defined CBE as “an outcome-based approach to education that incorporates modes of instructional delivery and assessment efforts designed to evaluate mastery of learning by student-teachers through their demonstration of the knowledge, attitudes, values, skills, and behaviours required for the degree sought”. InWEnt (Capacity Building International), a German non-profit organisation, views CBET as an approach to TVET in which skills, knowledge, and attitudes are specified to define, steer, and achieve competence standards, primarily within a national qualifications framework. InWEnt also described CBET as “training which is performance- and standards-based and related to realistic workplace practices. It is focussed on what learners can do rather than on the courses they have done” (Deißinger and Hellwig 2005:8).

3.4 TVET EDUCATORS’ EDUCATION AND TRAINING WITHIN THE GLOBAL CONTEXT

There is a global realisation that for countries to improve vocational skills for employability and citizenship, there is a need to enhance the quality, effectiveness, and relevance of teaching. Efforts are made in both developed and developing countries to strengthen the capacity of TVET systems, emphasising the importance of the professionalisation of TVET personnel within the international community through developing appropriate qualifications (Bünning and Zhao 2006:17–18). However, an additional challenge for the teaching profession in TVET is that it is generally more heterogeneous than in general education. This diversity is due to various types of TVET delivery, which contain components of the world of work and the education system, resulting in a “fragmented” profession (European Commission 2014:19).

Additionally, UNESCO (2015) also believes that there is an increasing concern for global teachers’ practical, technical, and professional training. In most instances,

existing systems generally provide the same pre-service training preparation for TVET teachers as is received by their counterparts across the wider teaching field. As a result, many TVET teachers enter training institutions' classrooms without the benefit of an industrial background and having missed the opportunity to experience the world of work. Within this context, there is a need to adopt a dual focus, incorporating both pre-and in-service training (UNESCO–UNEVOC 2012:5).

The greatest concern is the type of pre-service TVET TE that is offered by academics, especially in higher learning institutions. When four-year TVET teacher programmes are provided to those who will be teaching in public secondary schools, many TVET student teachers only receive pedagogic experiences rather than any practical insight into the industry. This results in graduates who need to be better prepared and subsequently affects the quality of teaching trainees. The learning content often needs to be more closely aligned with the realities and expectations of the learners (UNESCO–UNEVOC 2012:10).

In addition, Obwoge (2016:4) believes that the capacity of TVET systems to provide high-quality and relevant training is predominantly influenced by the quality of its teachers and trainers and, by extension, the quality of their teacher training systems. Scholars such as Obwoge (2016:344) and Axmann, Byusa, La Rue, Nordstrum and Rhoades (2015:7) believe that TVET teacher training programmes in developing countries are often characterised by challenges such as programmes not being well articulated, the assumption by many that the skills can be acquired without training, and a shortage and absence of pre- and in-service programmes for teachers and trainers. These challenges often affect progress towards lifelong learning for TVET teachers and trainers. The design and development of curricula constitute a further challenge as they are frequently prepared and set by government officials with limited or no exposure to the world of work. Equally, the teaching and training materials often need to be updated and relevant to what is needed for specific skills development. TVET teachers (in some circles called TVET instructors) also face challenges associated with instructional technologies that have emerged, such as online learning, distance learning, and new assessment strategies (Obwoge 2016:4; Axmann et al. 2015:7).

Axmann et al. (2015:8) identify further challenges to ensuring that TVET is recognised as a potential career path in transitional and developing countries, such as a lack of

structure and relevance, which impedes TVET TE and training. Moreover, there is a need for greater responsiveness and inclusion to ensure that TVET teacher training programmes are open to the specific fields and opportunities available to TVET teachers and the trainees they teach. Additionally, the need for greater innovation and progress to ensure that TVET teacher training programmes are constantly evolving and adapting to the latest advances in teaching methodology and technology is also identified as a significant challenge. Finally, TVET teachers and trainers also need an active voice and collegial support system that is aimed at promoting representation and communication (Axmann et al. 2015:12–19).

3.5 A GLOBAL VIEW OF TVET EDUCATORS' CHARACTERISTICS

According to Grollmann (2008:3), TVET TE is characterised by having a low status, contributing to the profession's fragmentation. To understand what TVET educators do, it is critical, firstly, to know who they are and how they practice their work. TVET educators are categorised as teachers, lecturers, trainers, and instructors in TVET. Grollmann and Rauner's (2007) research findings, as cited by Grollmann (2008:3), categorised TVET educators as follows, based on their educational backgrounds and roles:

- "Teachers or lecturers working in formal school or college settings and providing instructions in vocational courses,
- Instructors and laboratory assistants working in school or college settings in vocational laboratories who teach with a high degree of autonomy or sometimes act as assistants to other vocational teachers,
- Trainers, tutors and others in enterprises who integrate training and education functions into their jobs in varying degrees – in dual systems of vocational education,
- Instructors and trainers working in labour market training institutions supported by governments and public authorities, often with a strong focus on social inclusion and essential occupational competencies, and

- Instructors and trainers that work in employers' organisations and providers that focus on upgrading technical competencies, training in communication skills, etc."

The above clearly shows that the roles and activities of TVET educators have been diverse throughout their history within and across countries and programmes. The CEDEFOP (2016) believes that TVET provision differs between countries. As a result, it is imperative to define teaching and training staff in terms of functions and tasks rather than having a single descriptor for each professional group. Four distinct categories of TVET teachers and trainers can be identified across most European countries. TVET teachers teaching in schools or training centres are categorised as teachers of general subjects, vocational theoretical subjects, and practical subjects in school workshops or simulated learning environments (such as inter-company training centres). The fourth category constitutes trainers, apprentice tutors or mentors, or practical training instructors who accompany student teachers during apprenticeships or different placement types in companies as part of school-based TVET (CEDEFOP 2016:1–2). TVET teachers and trainers take on various roles and responsibilities such as planning, which entails organising and delivering off-the-job training in TVET institutions or companies; regularly monitoring the learning progress and skills development of apprentices/trainees; interacting with their counterparts in partner enterprises to ensure optimal coordination between the off-the-job and on-the-job elements of the training programme, and updating their knowledge, skills, and competence in their professional field whilst frequently adapting their training methods (International Labour Organization 2022:1).

TVET educators (teachers and trainers) are responsible for ensuring the quality and labour-market relevance of learning in all learning and training contexts (i.e., classrooms, in workshops, in labs and simulated learning environments, or at the workplace). In addition, they are responsible for strengthening the links between education and work, establishing new curricula, and providing more high-quality apprenticeships and other forms of work-based learning (CEDEFOP 2016:1).

Grollmann (2008:538) presented his perspective on what he considers the primary tasks of TVET teachers as follows: Support the technical or professional learning processes of trainees, which requires teachers to integrate knowledge about the

content as well as the appropriate methods and forms of learning; prepare trainees for work through the support of learning processes leading to general work-related attitudes and competences as well as their role in society; assess and evaluate trainees' learning processes; administer tasks regarding the organisation and the curriculum, and counsel trainees to improve their learning circumstances. These tasks are not static; they are affected by a changing conception of the roles and functions of education and learning in general and TVET in particular as well as globally (Grollmann 2008:539).

3.6 HOW ARE TVET EDUCATORS TRAINED AND EDUCATED GLOBALLY?

Most definitions in the literature are based on the roles and tasks of TVET teachers and trainers. However, there are suggestions that the purposes of TVET educators should be based on competency or academic qualification rather than on tasks or roles, as the level of competency usually informs the tasks. Moreover, competency-based categorisation may help develop a shared understanding of the TVET cadres. The professional skills and competencies of teachers, therefore, constitute a crucial factor in determining the success of the teaching processes that they endorse (UNESCO–UNEVOC 2012:5). Grollmann (2008:545) is of the view that one way to improve the quality of TVET educators is to raise the level of qualifications needed, as the education received is what leads to those qualifications.

TVET educators are expected to master two art types in order for them to teach: The art of teaching and the art of a craft or trade. The common practice is that TVET teachers are mainly recruited if they, at least, possess the skills of business or trade. It is argued that you can teach an experienced tradesperson an art, trade, or business much more easily than a prospective (or practising) teacher (Lynch 1998:48).

There is no uniform way of training TVET teachers and trainers worldwide, as most countries have different TVET models and approaches to training and working towards the professionalisation of TVET TE. The movement of TVET teachers and trainers and how they should be taught, or what qualification they should obtain, is also influenced by the type of TVET model in the national policy and the TVET system levels that are followed in a specific country. Such models are as follows: the liberal market economy

model (as seen in Great Britain and Australia), the state-regulated bureaucratic model (present in France, Italy, Sweden, and Finland) and the dual-system model (seen in Germany, Austria, Switzerland, Denmark, and Norway) (United States Agency for International Development 2014:3–4).

In addition, Grollmann and Rauner (2007:19) identified the following dominant TVET TE pathways:

- Methodological training in teaching methods: The teaching certificate in the UK as a preparatory measure or the in-service courses at the Danish Institute for Educational Training of Vocational Teachers (DEL). In such cases, it is assumed that the student teacher or student trainer already qualifies for a particular trade.
- An additive training concept, which is based on the sequence of studying the subject matter (e.g., a bachelor's degree), and then obtaining an appropriate entry qualification for the education sector by acquiring general teaching skills in a designated course programme (typical in the US). This concept can also be found in Turkey, where the first three years focus on the subject matter and the fourth year on pedagogic teaching skills.
- A model based on the concurrent study of the subject matter and educational sciences, leading to a bachelor's or master's degree. Often, the subject matter study takes the form of a reduced portion of an ordinary business or engineering degree, and occasionally special vocational didactics are added.
- A model based on an integrated conception of vocational disciplines entails the subject matter derived from the world of work and a competence development model within this domain. This model is used in Germany and, to a certain extent, in the reform of Norwegian and some Chinese TVET TE programmes (Grollmann and Rauner 2007:17–19; Grollmann 2008:4–5).

The above-mentioned two models are not examined but provide insight into how Namibia could consider benchmarking against the current programmes and link it with the various pathways.

The table below provides details about the various global models offered by selected countries.

Table 3.1: Formal level and content of vocational TE in a few countries

Formal level	CONTENT			
	Methodological training	Additive concept	Vocational didactics	Integrative teaching model
Certificate, Diploma	UK, Brazil, Japan, Denmark			
Bachelor's degree		US, France	Russia, Turkey, Norway, China	
Master's degree				Germany

Details of the above models are shown in Table 3.1 as well as the minimum qualifications needed to enter the TVET teaching profession in the different countries. Another commonly used model to train TVET teachers is the in-service model, which is offered by different institutions and bodies in varying forms. The in-service model mainly focuses on psychological and basic educational knowledge, teaching methods, and techniques. The in-service model of TVET teacher preparation can be found in different variations, occasionally with a short pre-service training period as the dominant model, as is the case in Denmark, the UK, and the US, and occasionally with more extended preparatory training, such as in France (Grollmann 2008:5).

The model used in Germany is one of the best practices concerning TVET TE, with great value attached to initial TVET teacher training. In contrast to TVET TE in the technical field, the TVET teachers in the commercial area were initially trained at the university level (at Leipzig) in 1898. In the 1920s, economics and business education teachers received diploma programmes at the university level. In 1834, the Polytechnic College in Karlsruhe implemented a scientific-oriented TVET teacher study programme focusing on teaching natural sciences, technology, and mathematics. However, it was only around the 1920s that the technical universities in Baden started offering TVET Württemberg teacher training at the academic level (Bauer 2007:3).

In the German TVET TE system, two main areas of competence are prioritised: specialised and pedagogical competence. Furthermore, it is argued that, in addition to knowledge of the subject matter, related didactics, educational sciences, and psychology, a teacher also needs a meta-competence for diagnosis, evaluation, cooperation, and quality development. Knowledge is therefore based on three dimensions, namely scientific knowledge, situated flexible routines, and a specific professional ethos that TVET teachers must acquire in order to be competent (Bauer 2007:29).

TVET teachers in vocational schools are mainly employed as civil servants. TVET teachers can only be hired if they meet the following general requirements: In the first category, they must pass the higher education entrance qualification (Allgemeine or Fachgebundene Hochschulreife), which is completed in two stages (nine semesters at university and two years of preparatory service at public teacher seminars). In other words, a vocational teacher known as a “scientific teacher” must have a master’s degree – a civil servant of the respective federal state – teaching both vocational and general subjects. They must also have proof of practical work experience in companies and school-based internships during their university training and a teacher training qualification culminating in a state examination after 18 months. The second category constitutes technical teachers with work experience who complete a teacher training qualification with the federal state seminars of teaching methodology (e.g., technicians, engineers). For the large part these are not civil servants. The third category constitutes grammar-school teachers who teach the general subjects of the curriculum, e.g., German, English, political studies, etc. (Bauer 2007:9). TVET educators doing in-company training are known as instructors and masters. They must have a certificate in a vocation or vocational field, should be 24 years of age, and pass an instructor aptitude or master artisan’s examination in which they are assessed on instructor aptitude and professional and personal skills (Bauer 2007:9).

In Europe, TVET TE has been founded on three strategies: Provision of quality initial education and training; early career support for new teachers; and raising the quality of continuing professional development opportunities. The EU has described general competence areas for its teachers, i.e., they must have the following capabilities: 1) to work with information, technology, and knowledge; 2) to cooperate with others –

students, colleagues, and other cooperation partners; and 3) to act on the local, regional, national, European, and global levels (Keurulainen 2014:1). According to Keurulainen (2014), there are commonly two types of initial TVET teachers in Europe, known as general-subject teachers and vocational-subject teachers. The general subject teachers usually have a university degree or a degree at the tertiary level and a teaching qualification. Moreover, vocational subject teachers (also known as craftsmen-turned-teachers) have vocational qualifications, work experience, and teaching qualifications. These teachers often teach practical or “technical” subjects in TVET institutions or schools. Another category concerns professional TVET teachers. These teachers are trained through special professional educational programmes to qualify as experienced TVET teachers. In this case, trainees choose TVET teaching as their career at the beginning of higher education training (e.g., Belgium, the Netherlands, Norway, Poland, Sweden, and South Africa) (Keurulainen 2014:8).

Table 3.2 below focuses on the training models used to train TVET teachers in selected countries. In contrast, the models in Table 3.1 focus on the various formal levels used during the multiple qualifications (certificate, diploma, and bachelor’s and master’s degrees in TVET) for vocational teachers’ education in a few selected countries. There are four dominant TVET training models that are used to train TVET teachers.

Table 3.2: TVET training models

Type of Model	Explanation	Countries
Model 1: Concurrent model	Entails the offering of subject and pedagogical studies in parallel.	e.g., Finland, Hungary, Latvia, Norway, Slovenia, and Spain
Model 2: Consecutive model	Entails the completion of subject studies followed by pedagogical practice studies.	e.g., Cyprus, Czech Republic, France, Germany, Greece, Hungary, Iceland, Latvia, Lithuania, and Slovenia
Model 3: Co-existence of concurrent and consecutive models	The concurrent and consecutive models coexist.	In Poland, for example, most prospective TVET teachers can choose between the two models
Model 4: The sequential, dual or integrated model	Here training practice is integrated as modules during the study.	For instance, there is teaching practice in the Netherlands at the end of each academic year. There are similar sequential structures in Belgium, the Czech Republic, Denmark, and Italy

Models 1–3 in Table 3.2 are completely school-based, whereas Model 4 combines school and practice in a dual structure. In Europe, TVET systems differ among many countries because of their own historically developed characteristics. As a result, the forms of vocational education and the position of TVET teachers are different.

To develop and promote quality TVET TE, the European Commission has published Common European Principles for TVET Teacher Competencies and Qualifications. The four main principles are:

- **A well-qualified profession:** High-quality education systems require that all teachers are graduates from higher education institutions. Those working in the field of initial vocational education should be highly qualified in their professional area and have suitable pedagogical qualifications.
- **A profession placed within the context of lifelong learning:** Teachers should be supported to continue their professional development throughout their careers. They should be encouraged to participate actively in professional development, which can include periods spent outside the education sector, and this should be recognised and rewarded within their systems.
- **A mobile profession:** Mobility should be a central component of initial and continuing TE programmes. Teachers should be encouraged to participate in European projects and work or study in other European countries for professional development.
- **A profession based on partnerships:** Institutions providing TE should work collaboratively with schools, local work environments, work-based training providers, and other stakeholders. Higher education institutions need to ensure that their teaching benefits from knowledge of the current practice. TE partnerships, which emphasise practical skills and an academic and scientific basis, should provide teachers with the competence and confidence to reflect on their own and others' practice. TE should be supported and become an object of study and research (European Commission 2005:2–3).

Ismail et al. (2018:3) believe that, in order to certify TVET educators, it is necessary to develop training programmes with suitable competencies to produce quality TVET

educators. There are debates about what type of cluster competencies educators should have as TVET educators in order to teach at the expected level. This has resulted in the development of various TVET Teachers' Competency Frameworks.

The Fourth Industrial Revolution, with its technological advancement, has modernised different aspects of life and affected many different areas, including TVET. It is therefore expected that TVET teachers should enhance their competencies to present vocational training that can facilitate future human capital and adapt to new technologies and global challenges in this digital era. A systematic literature review was conducted to investigate TVET Teacher Professional Competency for Industry 4.0, which is presented in Figure 3.2 below (Jafar, Saud, Hamid, Suhairom, Hisham and Zaid 2020:8).

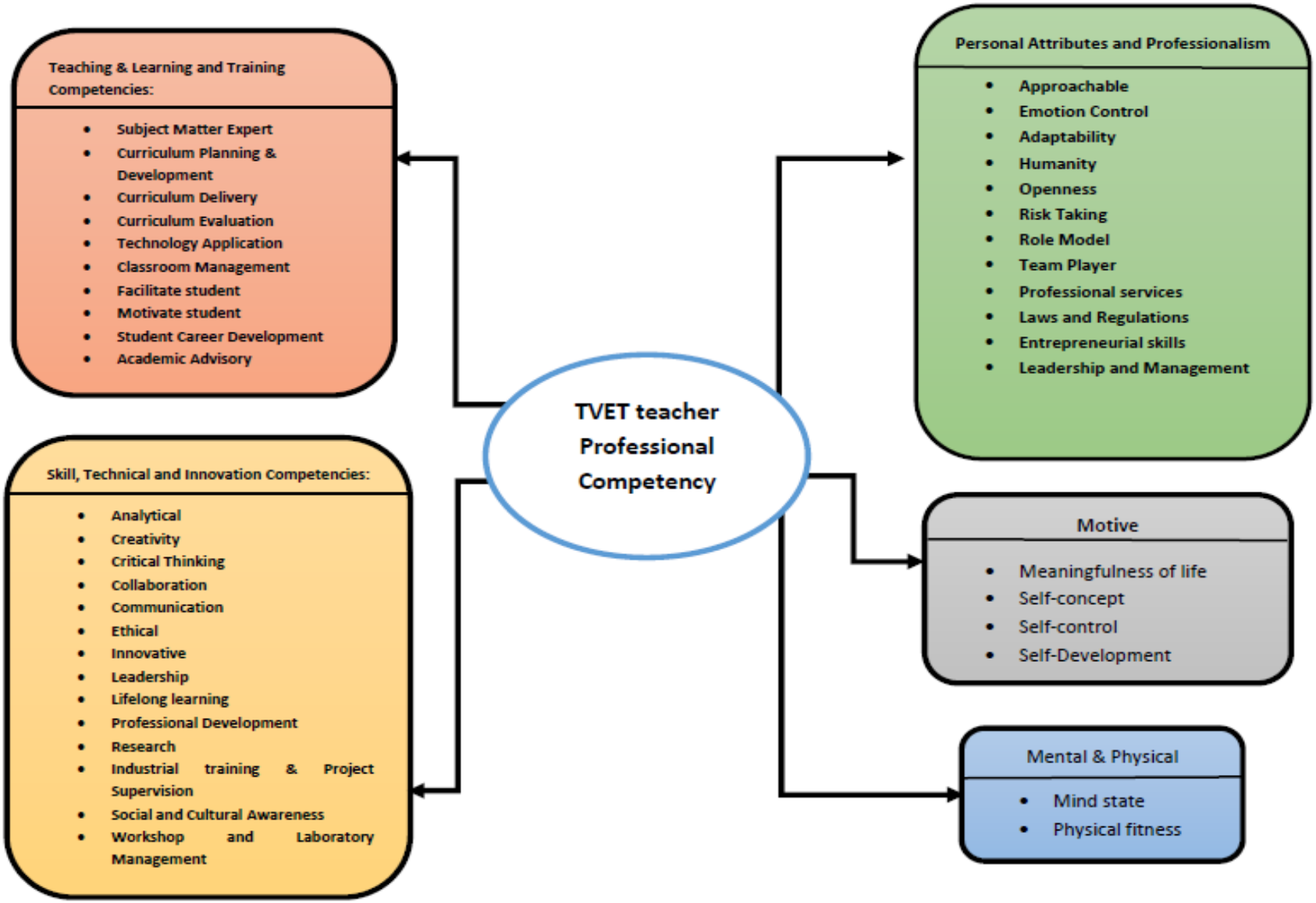

Figure 3.2 Adopted from TVET Teacher Professional Competency Framework in Industry 4.0 Era and the Malaysian TVET Educator Competencies

The Teaching and Learning and Training Competencies category of the TVET educator describes the pedagogical and subject-based methodological knowledge and skills. The mastery and usage of modern media and technology, such as 21st-century tools, also fall within this category. This category encourages the application of effective qualification strategies as well as reflection and self-evaluation to ensure understanding and implementation of teaching concepts and plans (Ismail et al. 2018:9; Jafar et al. 2020:8).

The Skill, Technical and Innovation Competencies categories should be kept in balance with the above category, by the TVET teachers, in order to remain relevant. The subject didactics must reflect this competency and thus support the educator's personality development. Industry experience, research and innovation, as well as workshop management are the essential elements of this component (Ismail et al. 2018:9; Jafar et al. 2020:8).

The Personal Attributes and Professionalism category describes how the TVET teacher should be professional, friendly, and pleasant. Educators must develop professionalism with entrepreneurial, management, leadership, and essential soft skills.

TVET teachers are expected to be calm, confident, mature, sensitive to trainees' differences, and enthusiastic during teaching and learning. They should be adaptive to technological advancement and provide a professional service. Even though this digital era focuses on technology, TVET teachers should maintain values of humanity. TVET teachers should have excellent personal characteristics to serve as role models for trainees and provide quality education and support (Ismail et al. 2018:9; Jafar et al. 2020:9–10).

The Motive category of teachers' professional competence is represented by the desire to build one's own life, the commitment to self-development, and the ability to control one's emotional state. TVET teachers require self-concept, self-confidence, and self-improvement to motivate themselves to develop and be more successful (Symanyuk and Pecherkina 2016:3; Jafar et al. 2020:10).

TVET Teachers Desire the Physical and Mental Fitness category because TVET education involves theoretical learning and requires psychological and physical endurance while conducting practical training. TVET teachers, due to the nature of their work, should have the mental toughness to work under pressure. They need to maintain their health and stamina and have work endurance as part of their competencies (Jafar et al. 2020:10).

The five competency categories of Figure 3.2 can be adapted contextually to support TVET training programmes, particularly in designing and developing TVET qualifications within the Namibian context.

Hunde and Tacconi (2017:333) argue that, in order to meet the challenges of the world of work – which demands new knowledge, innovative learning methods, advanced technology, and best practices – there is a need to promote the professionalisation of TVET teachers and trainers. The purpose of such professionalisation is to ensure that TVET teachers are equipped with the necessary skills and knowledge that enable them to cope with the ever-present change seen in the Industry 4.0 era (Hunde and Tacconi 2017:334). In their research findings of the Ethiopian TVET training system, Bekele and Tacconi (2017:1) revealed that there are four factors which appear to influence the status of a given profession: the professional profile of members, recruitment mechanisms, and opportunities for pre-service and in-service training. The profiling of TVET teachers requires the consideration of three parameters: educational qualifications, ethical and technical competence to teach (passing on occupational assessment), and attendance of teaching methodology training (Hunde and Tacconi 2017:334).

To improve the quality of TVET TE at TVET colleges in South Africa, the South African government has approved and implemented the “Policy on Professional Qualifications for Lecturers in Technical and Vocational Education and Training”. The policy aims to contribute to the availability and development of quality lecturers for the TVET sector by implementing a set of suitable higher education qualifications that can be used for the professional and post-professional development of TVET lecturers. The policy has also outlined the essential competencies for professionally qualified TVET lecturers (see Appendix I) (Department of Higher Education and Training 2013:3).

UNESCO's Recommendation concerning Technical and Vocational Education and Training (2015) sets out general principles, goals, and guidelines that each member state should apply according to its context, governing structures, and available resources. Experts compiled these recommendations to assist countries in implementing TVET and TVET TE programmes, as published in 2015. These recommendations have great global value in supporting TVET TE programmes.

The guidelines use an education system approach to group issues together and make recommendations in terms of the following eight broad categories of TVET TE policy interventions and programme delivery strategies (UNESCO 2015):

- Governance and regulatory framework
- Social dialogue, private sector, and other stakeholders' involvement
- Financing
- Quality and relevance
- TVET staff
- Qualifications systems and learning pathways
- Quality and quality assurance
- Relevance to labour markets and the world of work

Table 3.3 below summarises the recommendations made by UNESCO.

Table 3.3: Policy and programme delivery strategies from UNESCO's Recommendation concerning Technical and Vocational Education and Training (2015) (UNESCO 2016:1-16)

Improving TVET and TVET Teacher Education	
1. Governance and regulatory framework	● The primary responsibility for public policies is to consider defining or strengthening a regulatory framework for TVET by defining its public and private actors' roles, rights, obligations and accountabilities and encouraging stakeholder participation and partnerships. ● According to governance structures, there should be considered whether establishing or strengthening governance models for TVET institutions involves relevant local stakeholders and cooperating, when relevant, with business associations supporting work-based learning.
2. Social dialogue, private sector and other stakeholders' involvement	● Appropriate social partners should be fostered in TVET according to agreed labour market, education, training, and other regulations. Critical principles, including alignment with public policies, as support for social dialogue, responsibility, accountability, and efficiency, should guide increased private sector participation in TVET. When involving the private sector, TVET policies should recognise its diversity, including oversized, medium, small, micro, and household enterprises engaged in all sectors of the economy.
3. Financing	● TVET institutions, including at the secondary, post-secondary, and tertiary levels, should have adequate funding for their operations, including infrastructure, equipment and maintenance. TVET institutions should have appropriate operational and financial autonomy levels to enable them to engage with their local contexts, build new partnerships to improve the quality and relevance of TVET programmes and generate revenue.
4. Relevance to labour markets and the world of work	● In line with their specific work conditions, governing structures and constitutional provisions should support and facilitate transitions from education to work, employment, and self-employment. ● Establish TVET and labour market information systems, using open data when relevant, and build institutional capacities to ensure the relevance of TVET to current and evolving needs in the world of work. Nationally, regionally, and internationally, including those implied by the transitions to green occupations, economies, and societies. ● Public–private partnership arrangements could be used to identify and anticipate skills needed, for example, through prospective studies, observatories or sector skills councils. Furthermore, data collection and analyses of changing contexts and the systematic monitoring and evaluation of implementation and results should inform efforts to enhance the relevance of TVET.
We are improving TVET and TVET Teacher Education	

5. Quality and relevance	● Work-based learning should be promoted in various forms, including in-service training, attachments, apprenticeships, and internships. The quality of work-based learning should be enhanced and complemented by institution-based or other forms of learning when relevant. ● The potential of information and communication technologies should be fully exploited in TVET. The internet, mobile technologies, and social media should be utilised to promote distance and online delivery, including through blended models and the development and use of open educational resources.
6. TVET staff	● Policies and frameworks should be developed to ensure qualified and high-quality TVET staff, including teachers, instructors, trainers, tutors, managers, administrators, extension agents, guidance staff, and others. ● Given the growing consideration of work-based learning and TVET in other settings, including community-based, distance and online, member states need to more systematically support and acknowledge the emerging roles and learning needs of trainers, tutors, and other facilitators by considering the development or strengthening of policies and frameworks concerning their status, recruitment and professional development. TVET staff should have decent working conditions, adequate remuneration, and career and professional development opportunities. ● TVET staff in educational institutions and the workplace should have the capacities required to make TVET responsive to the economic, social, cultural, and environmental contexts of the communities and societies they serve and to contribute to the transformation and expansion of TVET. In particular, TVET staff require initial preparation, continuing training and professional development, including experience working in enterprises and support to enable them to reflect on their practices and adapt to change. The initial and continuing professional development of TVET staff should include training on guidance and gender equality.
7. Qualifications systems and learning pathways	● Well-articulated outcome-based qualification frameworks or systems based on learning outcomes and relating to a set of agreed standards should be established, in consultation with stakeholders, based on identified needs, including occupational standards. ● Policy or regulatory mechanisms supporting horizontal and vertical progression should be established and include flexible learning pathways, modularisation, the recognition of prior learning, accumulation and credit transfer.
8. Quality and quality assurance	● Establish a system for quality assurance in TVET based on participation by all relevant stakeholders. Quality assurance systems should include clear and measurable objectives and standards, implementation guidelines, feedback mechanisms, and widely accessible evaluation results. Quality assurance should include external and self-assessment, through which system performance and outcomes can be continuously monitored and improved. ● Improve the leadership and management of TVET institutions. Quality and quality assurance in TVET should engage the entire staff of educational institutions and other relevant stakeholders.

These 16 pragmatic recommendations can be adapted contextually to support TVET TE programmes and policy frameworks, particularly in the curricula design, development, and delivery and overall TVET TE support.

3.7 CBET WITHIN THE CONTEXT OF TVET TE AND TRAINING GLOBALLY

The roots of competency-based education and training (CBET) can be traced back to the US in the 1920s. CBET development advanced in 1968 when the US Office of Education awarded 10 sponsorship programmes to colleges and universities to develop CBET programmes.

According to Norris (1991), as cited by Ghazali (2004:35), the first tradition of the CBET approach grew out of the behaviourist tradition. The model focuses on identifying the role, duties, and tasks required by a competent worker. Many countries adopted the CBET approach to produce a skilled labour force. The pursuit of high-quality TVET that reflects labour market needs has been considered the driving force behind CBET (Solomon 2016:69).

Solomon's (2016) research findings reveal the importance of making TVET training programmes relevant by implementing CBET curricula based on labour market needs. The need to develop national occupational standards as a basis for curriculum development and assessment was highlighted as critical (Solomon 2016:69).

Nissilä, Karjalainen, Koukkari and Kepanen's (2015:30) research findings revealed that competency-based TVET could be implemented successfully if the following factors are driving the process, i.e., there is increased cooperation between educators and other actors in the field; educators are professionally supported; training is customer-oriented; and guidance, advice, and support are planned and implemented. The study also revealed that CBET TVET training requires promoting educators' teamwork and self-efficacy, because it advocates for cooperative learning and group work.

3.7.1 Training TVET teachers to apply CBET programme criteria and principles

The identification of CBET programmes is based on criteria that form the basis for designing and developing competence-based TVET learning programmes. They are as follows: outcome, curriculum, delivery, assessment, reporting/recording, and certification criteria (Harris, Hobart and Lundberg 1995:26). In other words, these criteria can be used to determine the extent to which a study programme is designed and developed in terms of the features of a CBET TVET programme.

Any competence-based TVET TE programme is expected to include the CBET principles and their application as part of the training delivery content. As such, student teachers will be expected to train trainees by using such regulations in the design and teaching of their programmes (Harris, Hobart and Lundberg 1995:26).

A TVET teacher training programme should meet the national competency standards endorsed by the National Qualification Authority or by industry representative bodies. Such a training programme's curriculum should provide student teachers with a clear indication of what is expected of them regarding performance, conditions, and standards. If appropriate, workplace and off-the-job training and assessment responsibilities should be identified. CBET TVET programmes should be delivered flexibly, and student teachers should be able to exercise initiative in the learning process. The learning materials provided to student teachers should be learner-centred. Competence-based TVET programmes should be designed so that assessment measures performance demonstrated against a competency standard. Moreover, the review should be available for competencies gained outside the course or programme. The estimate should include workplace or off-the-job components if appropriate. The student teachers should receive reports of competencies gained, which may be in completed modules (Harris, Hobart and Lundberg 1995:26).

3.8 TVET SYSTEM AND POLICY REFORM IN NAMIBIA

Since gaining independence in 1990, the Namibian government has achieved visible progress in reducing poverty (World Bank in Namibia 2019). However, according to the World Bank (2019), more than 50% of the Namibian population still lives below the national poverty line. This section will address all issues related to the TVET system and TVET TE within the global context (see sections 3.8.1–3.8.3) but with

specific reference to the Namibian context (e.g., additional contextual information on Namibian TVET is provided in the document analysis; see section 5.2.1). The next section briefly describes the development of TVET education in Namibia before and after independence in 1990.

3.8.1 Use of TVET-related concepts in the Namibian education system

Namibia is located in the southwest of the African continent, bordered to the north by Angola, to the south by South Africa, to the east by Botswana, and to the west by the Atlantic Ocean. The conceptualisation of TVET has been a challenge both before and after independence, and different concepts related to TVET were formally used before Namibia gained independence (i.e., during the German colonialism period between 1884 and 1915 and the South African rule and apartheid period from 1915 to 1966). Namibia fought for independence from South Africa from 1966 to 1990. During these aforementioned periods, vocational education was mainly focused on skills development, and it was commonly classified as technical education (including education in exile under the leadership of the South West Africa People's Organisation – SWAPO) (Brunette 2006:25-48). Such technical education primarily entailed the training of manual workers and, in some instances, semi-artisans and artisans.

According to the Ministry of Education, vocational education in the first 14 years of independence (1990 to 2004) was commonly known as Vocational Training (VT), as clearly reflected in the Vocational Training Act, No. 18 of 1994 (Ministry of Education 1994:1). It is within this context that public-funded TVET institutions are currently still called Vocational Training Centres (VTCs).

Since the introduction of the TVET Policy in 2005 and the TVET Act in 2008, Namibia moved from vocational training to vocational education and training (TVET). TVET was then defined as "vocational education and training", which refers to education and training which provides learners with occupational or work-related knowledge and skills (Ministry of Education and Culture 2008:6). Thus, the term TVET is used, because the Namibian TVET Act of 2008 adopted this term.

With the establishment of the new National TVET Policy in 2021, the MHETI adopted the UNESCO and the International Labour Organization (2001) (cited in the African Union 2006:1) definition of TVET, which refers to “aspects of the educational process involving, in addition to general education, the study of technologies and related sciences, and the acquisition of practical skills, attitudes, understanding, and knowledge relating to occupants in various sectors of economic and social life”. The rationale for adopting the above TVET definition was to align with TVET international developmental trends and good practices (MHETI 2021:12). The NUST TVET and Vocational Training Centres curricula have remained the same after adopting the TVET definition, and the promotion of TVET as a whole has remained largely insignificant. Equally, the training of technicians in the country by universities as part of TVET development has remained a challenge (MHETI 2021:34). The next section briefly discusses TVET educators’ education and training in Namibia as well as the role that the Namibian government has played in introducing the strategic development plans (NDPs).

3.8.2 TVET educators’ education and training in the Namibian context

According to Du Plessis and Keyter (2019:77), the Namibian government created Vision 2030 (Office of the President) in 2004 as a policy framework for long-term national development to reduce imbalances and address the task of restoration and development. The aim of Vision 2030 was to improve the quality of life of all Namibians and for them to be on par with their counterparts in the developed world. In order to supplement Vision 2030 and the NDPs, the Namibian government crafted and introduced a national action plan called the “Harambee Prosperity Plan (HPP)”. The plan, among others, aimed to improve the quality of the training staff and the number of qualified TVET teachers from 15,000 in 2015 to 25,000 by 2020 (Government of the Republic of Namibia 2016:45).

It is worth noting that the numbers documented in the HPP to improve the skills of qualified TVET teachers in the country should have been more accurate. According to the Namibia Training Authority (NTA), there are less than 1000 TVET teachers in the country (NTA 2015:36). According to the HPP, the Namibian government

acknowledged that there is a need to address the quality of TVET in a knowledge-based society that is in the process of transforming in order to implement the technological and vocational needs of the 21st century; hence, its decision to prioritise and invest in the training of TVET teachers. Qualified trainers are believed to be vital in producing quality artisans and craftsmen who can enhance the economy (Government of the Republic of Namibia 2016:44).

Improved quality TVET is necessary in any country, because it supplies a high-quality labour force, and “PhD holders did not build developed economies, but [it is built] by craftsmen and artisans” (Government of Namibia 2016:44). It is evident from the aforementioned statement that qualified TVET teachers will play a vital role in producing quality artisans and craftsmen who can contribute to enhancing the country’s economy. A country with a skilled labour force will enhance its economy.

Thus, TVET continues to be considered a source of skills development that is important for productivity and sustained economic development, and it is acknowledged by the government as one of the strategic priority areas of the national economy (MHETI 2020:2). The next two sections briefly describe the development of TVET education in Namibia before (see section 3.8.2.1) and after its independence in 1990 (see section 3.8.2.2). In September 2023, the NTA hosted the World Skills Competition with the primary aim of promoting vocational skills and education as viable career options for school learners and students at higher learning institutions. The competition focused on various skill areas such as carpentry, plumbing, electrical installation, graphic design, web development, and cooking. The event aimed to raise awareness about the importance of TVET programmes and training, especially among the youth who are still in school or studying at higher learning institutions (NTA, 2023:32).

3.8.2.1 TVET educators’ education and training before independence

Before independence, technical education (as it was commonly known) was offered only in a few schools in the country with limited resources, primarily former black schools. This trend was mainly due to the apartheid education system that prevailed under former South African colonial rule. However, technical education in the years before independence should have been addressed, and the quality worsened. It was

also fragmented and inadequate, and most white teachers obtained their qualifications in South Africa (Brunette 2006:38). This tendency of obtaining qualifications outside Namibia can be attributed to the fact that equipment and tools have not been replaced and modernised over the years, and there is a need for more materials (Brunette 2006; Turner 1993).

Before independence, the country was characterised by poor qualifications and a shortage of TVET teachers (commonly known as technical teachers) in the education system. Most of them were recruited from South Africa, where Namibians were required to study in South Africa to obtain either the National Technical Teachers' Diploma or the National Technical Teachers' Certificate (Brunette 2006:25). The qualified technical teachers returned home to teach technical subjects at public and missionary schools as early as 1921 (Brunette 2006:50).

According to Brunette (2006:47), in the early 1980s, several separate ethnic teacher training institutions were established, i.e., for whites (the Windhoek Teacher Training College), for coloureds, Rehoboth Basters and the Namas (the Khomasdal Teachers' Training College), and Oshiwambos (who had a small number of institutions in the northern part of the country). Technical teachers were also being trained within these colleges, although the syllabi and quality of the training differed significantly. For example, the whites, coloureds, Rehoboth Basters and the Namas were taught the same syllabi as in South African colleges. The rest of the ethnic groups followed sub-standard local syllabi (Brunette 2006:75).

Despite the many challenges of TVET education, it should be stated that the former vocational system was predominantly industry-based, with a strong focus on apprenticeships. However, only a few organisations provided training. Thus, after independence, four developmental goals were prioritised, i.e., access, equality, quality, and democracy (Ministry of Education and Culture 1994).

3.8.2.2 Namibian TVET educators' education and training after independence

In the 1990s, there were three ministries, and all were involved in technical education programmes. The three ministries were the Ministry of Basic Education, Sport and Culture (MBESC), the Ministry of Higher Education, Vocational Training, Science and Technology (MHEVTST), and the Ministry of Youth and Sport (MYS). The existence of the two Ministries of Education negatively affected the future of technical education. This arrangement required many secondary schools to report to two different ministries, creating obscured lines of authority, contradictory statements of objectives, and inconsistent patterns of accountability. Duplication of technical education programmes was the order of the day, placing significant pressure on the limited financial and human resources (Brunette 2006; Turner 1993).

According to Turner (1993:8–9), the Report of the Presidential Commission on Higher Education (i.e., the first Presidential Commission of its kind at independence) made the following recommendations, among others, on how best to transform TVET education in the country:

- "A national system of occupationally-related training is required, guided by a national training policy enunciated by the government.
- Occupationally-related training should be provided in the national system through a network of public, parastatal, private sector, NGO and community-sponsored institutions, centres and programmes, working as far as possible in a coordinated, cooperative and cost-effective way.
- A coherent, linked sequence of qualifications should be established in each programme area, from basic skill level to advanced sub-professional level, which commands the confidence of trainees, training providers and employers, which is comparable at critical points to internationally known and recognised qualifications, and which enables competent and hardworking Namibians to progress efficiently to their highest level of capability.
- The provision of adequate in-service TE and instructor training for the technical and vocational education system must be given immediate attention" (Turner 1993:8–9).

The need to train TVET teachers and instructors had a sense of urgency for the first time in the country's history. Despite the poor technical education offerings in schools and Vocational Training Centres, little was done to improve the situation. The second Presidential Commission (Presidential Commission Report 1999), as cited by Brunette (2006:84), recognised the low status of technical education and suggested programmes to increase the quality and popularity of the subject area. Despite the promises of politicians to strengthen technical education, technical education was not promoted as initially envisaged.

The second Presidential Commission of 1999 identified the following findings concerning technical education:

- Technical education cannot be optimised due to insufficient materials and tools.
- Technical teachers with the required skills take much work.
- A low enrolment for this subject area makes technical education very expensive.
- Technical education has a low status because of the wrong perception that "less able" learners should take technical subjects. These strategies contribute to its low quality.
- Poor career guidance contributes to the neglect of technical education. (Brunette 2006:103).

This second Presidential Commission report also highlighted the importance of TVET TE, indicating a shortage of skilled technical teachers. In 1994, the National Vocational Training Act, No. 18 of 1994, was enacted to direct the governance and promotion of the development of TVET in the country. The Act remained predominantly apprenticeship-based, which was appropriate as the vision was to promote practical skills training (National Vocational Training Act 1994:20–21). The Act addressed the following issues concerning TVET development: vocational standards and training schemes, employment and training of apprentices, training of vocational trainees, powers of inspectors, registration of vocational training centres, vocational training levies, establishment of vocational training funds, and trade testing and certification (National Vocational Training Act 1994:20–21). No explicit provision was made for developing policies and standards for TVET teachers, and it appears that the focus fell on all issues except TVET TE.

In 2005, a new TVET policy known as the Namibia TVET Policy identified the following policy objectives to reform the TVET system:

- Namibia Vocational Education Training (TVET) Policy 2005,
- A stable organisation and management system that clarifies roles and responsibilities and is accountable to the National Assembly through the Minister of Education,
- A sustainable partnership between the Government, private sector and civil society to resource the provision of TVET, and
- A training system responsive to emerging needs, equitable in terms of access, a system that provides learning towards recognised qualifications" (Ministry of Education 2005:6–7).

Within the above objectives and their associated priority actions (as stipulated by the Ministry of Education [2005:2] in the policy document), no provision was made to transform or reform TVET TE. The policy outlined the importance of establishing the NTA and curriculum reform through the introduction of CBET (Ministry of Education 2005).

In 2008, the Vocational Education and Training Act, No. 1 of 2008 and the NTA were established with the mandate to transform the TVET system into "an effective, sustainable system of skill formation closely aligned with the labour market that equitably provides the skills needed for accelerated development and the competencies needed by youth and adults for productive work and increased standards of living" (Ministry of Education 2008:6). Equally, this 2008 Act did not make any provisions for the development and/or improvement of TVET TE as can be assessed from the above-stated policy objectives.

The Namibian government, through a financing agreement with the European Commission for the Namibia Human Resource Development Programme, designed and established vocational instructor training programmes at the then Polytechnic of Namibia in 1998 (PON 2002:16). The initiative was launched in 2001 and the vocational instructor programmes have been offered on campus since then. Such

training targeted pre-service and in-service TVET teachers (Presidential Commission 1999:165).

In 1996, the Ministry of Higher Education, Vocational Training and Science and Technology had already proposed to NUST to provide TVET teacher training for instructors in the form of practical training with sufficient information on trade theory. In addition, the ministry also propsed for instructors with a high level of competency in theory, practice, and pedagogical and didactic skills to be employed at technical schools and VTCs (MHEVTST 1996:2). According to NUST's TVET programme curricula, the envisaged curricula were not developed, and, instead, predominantly theory-based curricula were developed, with very limited practical skills included (NUST 2019). The next section briefly describes the process of how TVET educators were trained and educated in Namibia.

3.8.3 How TVET educators are trained and educated in Namibia

As already indicated, NUST adopted the CBET approach in its TVET teacher training offering without making any adaptations to the Namibian education context. The CBET approach was exported to Namibia by Australia and South Africa starting in 1996 and with the introduction of the Namibian Qualifications Framework (NQF) (Gessler and Peters 2020:1).

According to Gessler and Peters (2020:15), using CBET in the TVET system is mainly relevant for NQF levels 1 and 2. Namibia has adopted a CBET system that was originally designed in the UK and ultimately recorded in the 1990s as a failed TVET system in the UK. Analysis of the Namibian NTA programmes shows that the CBET approach is behaviour-oriented and focused on low-level qualifications (Gessler and Peters 2020:11). In other words, the use of a CBET approach for TVET educators' training programmes will not be suitable for any country including Namibia. In order to expand on the contextual aspects in Namibian TVET, a document analysis was conducted (see details in section 5.2.1).

3.9 CONCLUSION

On a global level, TVET TE is facing several challenges, such as limited policy and legal frameworks, a shortage of well-qualified TVET educators, inadequate professionalisation of TVET educators, ineffective and appropriate TVET educator training programmes, etc. The 2015 UNESCO Recommendation concerning Technical and Vocational Education and Training has further entrenched international commitment to successful TVET teacher training programmes and TVET development.

Factors influencing the quality and effectiveness of TVET TE are highlighted and entail issues such as characteristics of the TVET system at the policy level, legal and financial frameworks, current policies, organisational framework and stakeholders, and quality assurance arrangements. Equally, the types of TVET schools and institutions, the kind of TVET educators recruited, internal quality assurance arrangements and educators' CPD all influence TVET TE and, in particular, the type of TVET education programmes that can be developed and delivered.

Similarly, the absence of clear national policies, standards, and strategies on TVET TE affects the development thereof as well as related training programmes. According to Gessler and Peters (2020:15), the CBET approach needs to be revised and, as a result, is not suitable for TVET teacher qualifications at Level 3 and above.

This chapter brought together relevant literature to provide context to the current global TVET movement and TVET TE, particularly explaining what TVET educators are and how they are trained. Moreover, the current stance on TVET in Namibia has been highlighted about the TVET system reform to build an argument around the education and training of TVET educators going forward, mainly based on the CBET approach. In order to expand on the contextual aspects in Namibian TVET, a document analysis was conducted (see details in section 5.2.1).

Chapter 4 explains the methodology used in this research to evaluate the DTVT qualification.

CHAPTER 4
RESEARCH DESIGN AND METHODOLOGY

4.1 INTRODUCTION

As already stipulated (see section 1.9), this chapter provides full details of this study's research design and methodology applied to explore the previously stated research questions, aims, and to fulfil the study's objectives (see sections 1.4 and 1.5). The holistic purpose of Chapter 4 is to discuss the research paradigm (see section 4.2), research design (see section 4.3), qualitative research approach (see section 4.4), and case study methodology adopted in carrying out the investigation (see section 4.5) in order to answer the sub-questions (see section 1.4). Additionally, this chapter addressed the different methods selected to collect the data (see section 4.7), population and sampling procedures (see section 4.6), analysis, interpretation, and triangulation of the qualitative data (see sections 4.9–4.10), as well as ethical considerations (see section 4.11). Finally, the summary and conclusion to the study (see section 4.12) are provided.

4.2 RESEARCH PARADIGM

The interpretive framework that guided this qualitative research was the constructivist paradigm (see section 1.9.1), which is supported by the pragmatic paradigm, hence the use of the term pragmatic constructivism (PC). The PC approach was inspired by the philosopher Wittgenstein (1953) in his book titled *Philosophical Investigations* and further promoted by Nørreklit (1978). The philosophy of PC is concerned with understanding and controlling the conditions sufficient for actions to succeed in achieving well-being. PC, as a result, is based on a framework which explains how people construct and influence their reality (see also section 1.9.1). As previously specified (see section 1.9.1), the PC paradigm is also based on the belief that the relational construct called reality controls human beings, and four well-integrated dimensions (i.e., facts, possibilities, values, and communication) constitute reality and enable people to function effectively as actors (Nørreklit 2013:60). Through the

evaluation of the DTVT programme, factors related to programme implementation will be identified and discussed (see Chapters 5 and 6).

According to the PC paradigm, our being in the world constitutes an intertwined set of relations. These relations include phenomena such as knowledge, values, and meaning. To be successful actors (i.e., to engage in action), they must integrate and align facts, possibilities, values, and communication (Nørreklit 2020:12–13). In other words, our actions in TVET programme delivery can only be successfully actualised if we:

- Integrate facts (i.e., facts serve as the basis for possible action)
- Ensure that there are real possibilities (i.e., they must be incorporated in the factual basis)
- Act, motivated by a set of values that stakeholders or actors need to communicate among themselves (Nørreklit 2020).

The evaluation of the DTVT programme's adequacy, effectiveness, appropriateness, and relevance (in Chapter 5) assisted in coming to an understanding of the facts, values, and communication related to different stakeholders' involvement in programme design and implementation. In addition, the possibilities for improving and transforming the programme's offerings and student teachers' capabilities were addressed through the recommendations stated in Chapter 6.

The PC paradigm (see also section 1.9.1) was chosen because of its focus on how best to achieve successful action in the endeavours we plan to undertake as human beings. The PC paradigm was also selected because it posits that actions (i.e., programme evaluation or TVET programme delivery) should always be based on realistic expectations to succeed. Furthermore, it is reasoned that for expectations (e.g., for NUST to produce quality TVET teacher graduates) to be credible and practical, they must integrate facts, possibilities, values, and communication (Nørreklit 2020:20) as applied in Chapters 5 and 6.

Finally, the use of PC in this study was justified because pragmatists believe that human actions can never be separated from past-life experiences and the beliefs that have originated from those experiences. Pragmatists believe that reality is accurate

as it helps them enter into satisfactory relations with other parts of their experiences (Kaushik and Walsh 2019:3). It is believed that pragmatism seeks solutions to problems. This study concurs with one of the leading proponents of pragmatism. Dewey promoted pragmatism by reorienting philosophy away from abstract concerns and emphasising human experience. Dewey was also of the view that experiences create meaning by bringing beliefs and actions into contact with each other (Morgan 2014:3). Therefore, PC was chosen as it exists within the pragmatism framework.

4.3 RESEARCH DESIGN

Jongbo (2014:2–6) believes that the most critical purpose of the research design is to translate research problems and issues into data for analysis to provide the answer to research questions at a minimal cost. A research design should also have an approach for interpreting the analysed data to furnish adequate findings and conclusions, allowing for advanced recommendations or implications based on the study. Jongbo (2014:5) is further of the view that the research design must have a clear research purpose in the form of research aims and objectives, including a theoretical framework that helps simplify the questions, problems, and goals of the study. The research design's above-stated purposes also served as reasons for the study's chosen qualitative approach.

A phenomenological research design (see section 1.9.2) was used in this study. A phenomenological research design is a study "that attempts to understand people's perceptions, perspectives, and understanding of a particular phenomenon" (Pathak 2017:1).

As previously stated (see section 1.9.2), the phenomenon under study was the DTVT programme offered at NUST. The evaluation of this phenomenon links with Lester's (1999:1) postulated function of a research design (see also section 1.9.2) to comprehend individual DTVT programme experiences and insights into drivers and engagements in terms of its design, implementation, and outcomes (Pathak 2017:1). The research design was also applied as it helped the researcher to collect data on the research participants' perspective and interpretation of the phenomenon under study as well as their interpretation thereof (Lester 1999:1).

4.4 QUALITATIVE RESEARCH APPROACH

This study's postulated qualitative approach (see section 1.9.3) was defined by Astalin (2013:1) as "a systematic scientific inquiry which seeks to build a holistic, primarily narrative, description to inform the researcher's understanding of a social or cultural phenomenon". This study aims to evaluate the DTVT qualification through a qualitative case study in order to determine its adequacy, appropriateness, effectiveness, and relevance as training for Namibian vocational teachers and trainers (see sections 1.4 and 1.5). This qualitative perspective also relates to Wyllie's (2019:1) equivalent view (see section 1.9.3) that the qualitative research approach is based on the interpretive construct underpinnings whose purpose is to allow the researcher to have insights into the problem and/or provides in-depth information and understandings (e.g., to evaluate the DTVT phenomenon).

This study defended a qualitative research approach for various reasons (see section 1.9.3). In this study, qualitative research was chosen because it has an interpretive character aimed at discovering the meaning that the programme implementation activities had for the research participants who experienced them (Hoepfl 1997:3). It also allowed the researcher to research NUST lecturers' lived work experiences and student trainers' training experience, behaviours, and emotions (see data analysis in Chapter 5) about organisational functioning (Rahman 2017:2). In other words, student teachers had to share their views regarding the value of the programme and their aspirations as a result of being trained as potential TVET teachers.

Additionally, the evaluation of the DTVT programme required the researcher to collect in-depth and detailed information from the research participants through direct interaction with them in order to obtain a better understanding of their work situations. Research methods such as a focus group, individual interviews, and open-ended questionnaires (see section 4.6), which are qualitative, dictated the use of a qualitative research approach in this study. This allowed the researcher to observe, describe, and interpret the relevant settings (Hoepfl 1997:3).

Furthermore, qualitative research was chosen because it is considered an interpretative approach (see also section 4.2), which attempts to gain insight into the

specific meanings and behaviours encountered in a particular social or cultural phenomenon through the subjective experiences of the research participants (Palmer and Bolderston 2006:2). The research methods applied in this study include document analysis, a focus group, interviews, open-ended questionnaires, and observation, which are all mainly qualitative. The qualitative case study approach will be expanded on in section 4.5.

4.5 CASE STUDY METHODOLOGY

This study employed a case study methodology, as briefly discussed (see section 1.9.4). Simons (2009), cited by Starman (2013:32), defined a case study as "an in-depth exploration from multiple perspectives of the complexity and uniqueness of a particular project, policy, institution, program or system in real life". Merriam (1998), however, as cited by Yazan (2015:139), defines a case study as an "intensive, holistic description and analysis of a bound phenomenon such as a programme, an institution, a person, a process, or a social unit". This study's bound phenomenon is the evaluation of the DTVT programme offered at NUST in Namibia (see also section 1.9.4). Thus, case studies focus on the phenomenon's particular situation, event, or programme. Moreover, they are descriptive; they provide a detailed and thick description and illuminate the reader's understanding of the phenomenon under investigation (Yazan 2015).

McCombes (2019) states that a case study is an appropriate research methodology when the researcher wants to gain concrete, contextual, and in-depth knowledge about a specific real-world subject, such as the design and implementation of the DTVT programme at the NUST. The case study approach allowed the researcher to explore the DTVT programme's implementation challenges and interacting factors and identify the programme's transformational aspects. Therefore, a case study approach was selected because of the contextual nature of the DTVT programme and how lecturers and student teachers experienced its implementation. Moreover, a case study design was chosen because the researcher wished to gain new insights, discover new ideas, and increase knowledge or experience on how to improve quality DTVT programme delivery (see also section 1.9.4). Therefore, the researcher entered the research field with curiosity and provided new data regarding the DTVT

programme within the university context (Burns and Groove 2003). The case study design was also chosen because an accurate and authentic description of the participants' experiences with the implementation challenges of the DTVT Teacher Education Diploma at NUST was compulsory for quality improvement purposes.

4.6 RESEARCH POPULATION AND SAMPLING

The population of interest for the study was NUST lecturers in the TVET department, staff from the NTA, student teachers from NUST who are enrolled in the DTVT programme, and qualified TVET teachers (see also section 1.9.5). This study involved the following diverse participants:

- Two FGDs (see Appendix B) with six NUST lecturers (four full-time and two part-time);
- Five NTA managers were individually interviewed (see Appendix C);
- Five student teachers enrolled at NUST completed an open-ended questionnaire (see Appendix D); and
- Five employed TVET teachers completed an open-ended questionnaire (see Appendix D).

A total of 21 research participants were sampled for this study (i.e., six NUST lecturers, five NTA managers, five enrolled NUST student teachers, and five employed TVET teachers). These groups of participants were purposively sampled to allow the researcher to interact with research participants who were knowledgeable about or had a vested interest in the TVET phenomenon. However, these purposively selected experts should simultaneously also be available to participate in the study and be capable of communicating their experiences and opinions in an articulate, expressive, and reflective manner (Palinkas et al. 2015:3). The following inclusion criteria were applied for participation in the research study:

- NUST (DTVET) lecturers (full-time and part-time)
- NTA managers
- Enrolled student teachers with relevant work experience and close to two years of study experience were selected to be part of this selected sample group.

These student teachers also included those who, for the first time, had work placements throughout their two-year programme of study. Research participants were required to be in their final year of study to provide rich information that affected the introduction of CBET for the new technical teacher training programme and training environment at different Vocational Education Centres.

- Employed TVET teachers at the VTCs and studying at NUST, with a minimum of three years' working experience in a CBET environment, were selected to be part of this sample group.

The above participants were identified and regarded as appropriate examples of "information-rich cases" (Coyne 1997:624). Moreover, they showed advanced and voluntary interest in participating and were accessible both during the week and on weekends, knowledgeable about programme implementation, and open to discussing TVET programme issues without fear.

Additionally, the main objective of the purposive sampling of the selected groups in this study is to have a target sample that is interested and knowledgeable in the subject of the study and stands a better chance of appropriately answering the research questions (see section 1.4). Furthermore, purposive sampling was applied in this study because it is a technique that provides the researcher with additional leverage to extract the most relevant information from the samples. Purposive sampling was also selected as it is less costly and time-consuming.

4.7 INSTRUMENTS AND TECHNIQUES FOR DATA COLLECTION

As mentioned in section 1.9.6, various sites, instruments, and techniques were applied in conducting this qualitative research. According to Merriam and Tisdell, "the researcher is the primary instrument for data collection and analysis" in qualitative research studies (Merriam and Tisdell 2016: 5). For this reason, the qualitative approach was deemed the most appropriate technique for this study since it allows for greater openness and flexibility during the data collection process. Since data was collected from multiple sites, these cases share common characteristics in the CBET-based Technical Teacher Training Programme. Additionally, this study applied the

following data generation strategies: document analysis (see sections 1.9.6–1.9.7 and 5.2.1), two focus group discussions with NUST (DTVET) lecturers (see section 4.7.2 and Appendix B, 5.3), semi-structured interviews with NTA managers (see section 4.7.3 and Appendix C, 5.4), open-ended questionnaires (see section 4.7.4 and Appendix D, 5.5) and observations (see Tables 5.4 and 5.6).

4.7.1 Document analysis

Various steps were followed to conduct the document analysis of this study. The following five documents were identified as the most recent and relevant for the Namibian TVET context: the UNESCO (2016) report (see section 5.2.1.1); the Ministry of Higher Education, Training and Innovation Strategic Plan (2017/18–2020/21) (see section 5.2.1.2); the National Technical and Vocational Education and Training (TVET) Policy (Ministry of Higher Education, Training and Innovation 2021) (see section 5.2.1.3); the NUST Diploma in Technical, Vocational Education and Training (NUST 2018) (see section 5.2.1.4), and the Windhoek Vocational Training Centre's job description (WVTC 2022) (see section 5.2.1.5).

The second step was to determine the background of the documents and how they could assist to bridge the contextual research gaps of this study within the Namibian TVET sector. The proposed questions about the documents included the following:

- Who wrote, researched, or created the document?
- What is this document about?
- When was this document written?
- Where did this document come from?
- Why do I think this document is helpful in the research?

The last step was to evaluate the documents by identifying the adequate, appropriate, effective, and relevant aspects in Namibian TVET, extracting useful information and determining how it applies to the related research question (see section 1.4). Finally, the findings were interpreted and utilised to answer some of the third secondary research questions (see sections 5.2.1.1–5.2.1.5).

4.7.2 Focus group discussions – FGDs (see Appendix B)

It was previously mentioned that two FGDs had been conducted (see sections 1.9.3, 1.9.5–1.9.7, and 4.7). Thus, it is important to conceptualise what focus groups are and explain why they were chosen for this study. Saunders, Lewis and Thornhill (2012:403) define a focus group as "a group interview that focuses upon a particular issue, product, service or topic by encouraging discussion amongst participants and sharing perceptions in an open and tolerant environment". In the focus group discussions, research participants were encouraged to discuss and share their perspectives and views without intimidation in order to reach a consensus.

In this study, FGDs were chosen because of the following reasons:

- Allowing in-depth interviews, dialogue, and obtaining the appropriate answers to the research questions
- Promoting intensive participation and generating ideas and perspectives
- Permitting richness and flexibility in data generation
- Observing research participants' non-verbal communication
- Allowing appropriate data generation in a reasonably short period
- This study acknowledges co-researchers' ownership and expertise on matters such as TVET TE (Morgan 2010:20).

In this study, the schedule for the two focus groups is presented in Table 4.1. The time for the FGDs ranged between 45 and 60 minutes per session. Thus, FGDs (through the FGD interview schedule – see Appendix B) were chosen as they allow the researcher to explain complex questions, if necessary, to the research participants (i.e., the NUST lecturers). Additionally, these FGDs took place in appropriate and safe settings that are conducive to yielding accurate responses (see Table 4.1).

Table 4.1: Schedule for the FGDs with NUST (DTVET) lecturers

Phase	Dates 4–5/11/2021	FGD Participants	Sites/locations
1	**4/11/2021** **Focus Group 1**	NUST Full-time lecturer one = L1 (FGD 1) NUST Full-time lecturer two = L2 (FGD 1) NUST Full-time lecturer three = L3 (FGD 1) NUST Full-time lecturer four = L4 (FGD 1)	DTVET Building NUST
	5/11/2021 **Focus Group 2**	NUST Part-time lecturer five = L5 (FGD 2) NUST Part-time lecturer six = L6 (FGD 2)	DTVET Building NUST

All the NUST participants, except L5 and L6 (i.e., part-time lecturers), had been involved with NUST for longer than five years. The groups have been divided into two FGDs (full-time in Group 1 and part-time in Group 2). After the FGDs were conducted, the researcher followed a systematic and rigorous process of analysing the FGDs in this research study. First, the researcher transcribed all the FGDs in their entirety, ensuring that the participants' responses were accurately documented. After completing the transcription process, the researcher read through the narratives of the discussions to gain a comprehensive understanding of the content. This step allowed the researcher to become familiar with the participants' perspectives and the overall context of the data. During the analysis phase, the researcher searched for common themes among the responses from all six participants (full-time and part-time lecturers). This involved systematically examining the data to identify recurring ideas,

patterns, or topics that emerged across the participants' answers. Subsequently, the identified themes (see Table 5.1) from the FGDs were compared with the findings from the literature review (Chapters 2 and 3) of this study. This step was crucial to validate and contextualise the results within the subject's existing body of knowledge. As supporting evidence for the identified themes, the findings were substantiated by quotes from the participants' responses. Integrating direct quotes from the FGDs adds credibility and strengthens the validity of the research findings. By following this approach, a robust methodology has been employed to analyse and interpret the data, ensuring that the research outcomes are well grounded and aligned with both the participants' perspectives and existing scholarly literature on the topic.

The following identifiers were used in the coding of the FGDs:

Participants:

NUST full-time lecturer 1 = L1

NUST full-time lecturer 2 = L2

NUST full-time lecturer 3 = L3

NUST full-time lecturer 4 = L4

NUST part-time lecturer 5 = L5

NUST part-time lecturer 6 = L6

Additional coding markers:

Focus Group Discussion: FGD inter

Page number of narrative: p.

These identifiers were applied when reporting the data generated from the FGDs. For example: "A response from a FGD quoted from the narrative of the discussion on page 2" was coded as: L1, inter, p.2 (i.e., L1 represents the first full-time lecturer at NUST;

inter indicates that the response is from the first lecturer in the study's FGD; and p.2 indicates the page number of the group transcripts where the quoted response of the NUST lecturer can be found).

The relevant data obtained from the FGDs are only discussed according to the four themes in Chapter 5 (see Table 5.1).

The use of FGDs was deemed appropriate in this study because it allowed for increased depth of a group's responses, flexible structure to increase coherence, and follow-up questions and paraphrasing for clarification purposes (see FGD schedule in Table 4.1). The researcher also asked each question according to the FGD schedule (see Tables 4.1 and 5.1) and allowed ample time for participants to respond. Additional probes, clarifications, and encouragement were provided to help a group expand on the required information as the need arose. Details on analyses, discussion, and interpretation, focusing only on four identified themes, are addressed in Chapter 5 (see sections 5.3–5.6.).

4.7.3 Semi-structured interviews (face-to-face interviews – see Appendix C)

This study applied semi-structured interviews as one of the sources of multiple qualitative datasets (see sections 1.9.3, 1.9.5–1.9.7, 4.4, and 4.7.3). During the face-to-face semi-structured interviews, the researcher met the research participants in person to conduct the interviews. Thus, face-to-face interviews (through the semi-structured interview schedule – see Appendix C) were chosen, as they allow the researcher to explain complex questions, if necessary, to the research participants. Additionally, these semi-structured interviews took place in appropriate and safe settings that are conducive to yielding accurate responses (see Table 4.2).

In this study, the researcher utilised face-to-face semi-structured interviews (see Appendix C) with one purposive target group (see section 4.6), namely the NTA managers. The interview time ranged between 45 and 60 minutes per session, and the semi-structured interviews were conducted according to the following schedule (see Table 4.2) below.

Table 4.2: Schedule for the semi-structured interviews with the NTA managers

Phase	Dates 1–3 December 2021	Medium of interviews Individual semi-structured interviews (face-to-face) with five NTA managers	Sites/locations
2	Wednesday 1/12/2021	NTA manager 1 = (M1)	NTA head office, Windhoek
	Thursday 2/12/2021	NTA manager 2 = (M2) NTA manager 3 = (M3)	NTA head office, Windhoek
	Friday 3/12/2021	NTA manager 4 = (M4) NTA manager 5 = (M5)	NTA head office, Windhoek

**NTA managers = M1–M5*

After the semi-structured interviews were conducted, the researcher followed a systematic and rigorous process to analyse them. First, all the interviews were transcribed in their entirety, ensuring that the participants' responses were accurately documented. After completing the transcription process, the researcher read through the narratives to gain a comprehensive understanding of the content. This step allowed the researcher to become familiar with the participants' perspectives and the overall context of the data. During the analysis phase, the researcher searched for common themes among the responses from all five participants. This involved systematically examining the interview data to identify recurring ideas, patterns, or topics that emerged across the participants' answers. Thereafter, the researcher compared the identified themes (see Table 5.2) from the semi-structured interviews with the findings from the literature review (see Chapters 2 and 3) of this research study. This step was crucial to validate and contextualise the results within the study's

existing body of knowledge. As supporting evidence, the findings were substantiated by using quotes from the participants' responses as evidence for the common themes identified. Integrating direct quotes from the semi-structured interviews adds credibility to and strengthens the validity of one's research findings. By following this approach, the researcher employed a robust methodology to analyse and interpret the interview data, ensuring that the research outcomes are well grounded and aligned with both the participants' perspectives and the existing scholarly literature on the topic.

The following identifiers were used in the coding of the semi-structured interviews:

Participants:

NTA manager 1: M1

NTA manager 2: M2

NTA manager 3: M3

NTA manager 4: M4

NTA manager 5: M5

NTA manager 6: M6

Additional coding markers:

Interview: inter

Page number of narrative: p.

These identifiers were applied when reporting the data generated from the semi-structured interviews. For example: "A response from NTA manager 1 quoted from the narrative of the interview on page 2" was coded as: "M1, inter, p.2" (M1 represents the first NTA manager, indicating that the response is from the first interview [inter] in the study, while p.2 indicates the page number of the interview transcripts where the quoted response of the NTA manager can be found).

The data obtained from the semi-structured interviews are discussed according to the four themes in Chapter 5 (see Table 5.2).

Semi-structured interviews were deemed appropriate for this study, because it allows for increased depth of interviewee responses, flexible structure to increase coherence, and follow-up questions and paraphrasing for clarification purposes (see semi-structured interview schedule – Table 4.2). The researcher also asked each question according to the interview schedule (see Tables 4.2 and 5.2) and allowed ample time for participants to respond. Additional probes, clarification, and encouragement were provided to help interviewees expand on the required information as the need arose. Only relevant details on the analyses, discussion, and interpretation of the semi-structured interviews, focusing on the identified four themes, are addressed in Chapter 5 (see section 5.3 –5.6.).

4.7.4 Open-ended questionnaires (see Appendix D)

In this study, five student teachers enrolled at NUST (see Appendix D) and five employed TVET teachers completed the open-ended questionnaires (see Appendix D). These research participants are employed by the following VTCs: the Windhoek Vocational Training Centre (WVTC), in the Khomas region - the Namibia Institute of Mining and Technology (NIMT-WC) in Arandis, Erongo region, the Community Skills Development Centre (COSDEC) in Swakopmund, Erongo region, and Eenhana VTC in the Ohangwena region (see details in Table 4.3). Due to time constraints and travel costs, both the open-ended questionnaires' completion and observations were conducted during the selected time periods as indicated below (see Table 4.3). The main aim of the interviews was to arrive at a comprehensive understanding of the DTVT programme from 2020 to present. The face-to-face interviews with the NTA managers and the FGDs with the NUST lecturers were digitally recorded and transcribed as a narrative.

Table 4.3: Schedule for the open-ended questionnaires with employed TVET teachers (ETTs) and enrolled student teachers (ESTs) as well as observation of the physical facilities

Phase	Dates	Activities and Participants	Sites/Locations
3	23–26 February 2022	Actual data collection Open-ended questionnaires (ESTs) and observations	WVTC Windhoek NUST
4	3–5 March 2022	Actual data collection open-ended questionnaires (ETTs) and observations	NIMT-WC Arandis
5	5–7 March 2022	Actual data collection open-ended questionnaires (ETTs) and observations	COSDEC Swakopmund
6	4–6 April 2022	Actual data collection open-ended questionnaires (ETTs) and observations	Eenhana VTC

The following identifiers were used in the coding of the open-ended questionnaires:

Participants:

Enrolled student teacher 1: EST1

Enrolled student teacher 2: EST2

Enrolled student teacher 3: EST3

Enrolled student teacher 4: EST4

Enrolled student teacher 5: EST5

Employed TVET teacher 1: ETT1

Employed TVET teacher 2: ETT2

Employed TVET teacher 3: ETT3

Employed TVET teacher 4: ETT4

Employed TVET teacher 5: ETT5

Additional coding markers:

Page number of narrative: p.

These identifiers were applied when reporting the data generated from the open-ended questionnaires. For example: “A response from an enrolled student-teacher 1 quoted from the narrative of the question on page 2” was coded as “EST1, p.2” (EST1 represents the first enrolled student teacher, indicating that the response is from the first participant [open-ended questionnaires] in the study, while p.2 indicates the page number of the transcript where the quoted response of the enrolled student teacher can be found).

The data obtained from the open-ended questionnaires are only analysed, discussed, and interpreted according to the four themes in Chapter 5 (see Tables 5.2 and 5.3–5.6).

4.7.5 Observation of physical facilities (classrooms, workshops, and resources)

In this study, observations were made to check the locations of the various centres being investigated, identify the courses offered by each centre and the conditions of the teaching facilities (e.g., classrooms and workshops), engage with the centre management and staff during data collection, and identify the resources available at the centres (see Table 4.3 for details). This allowed the researcher to observe the TVET teachers’ commitment, teaching approaches, and trainees’ interactions with the teachers during the actual data collection (see also Table 5.4) at the four VTCs, namely WVTC, NIMT-WC, COSDEC Swakopmund, and Eenhana VTC. The discussion of these observations of the physical facilities are attended to in Chapter 5 (see section 5.6.).

The combination of these five diverse data collection methods (see sections 4.7.1–4.7.5) enabled the researcher to triangulate data generation and thus gain clarity on more effective problem-solving strategies (MacDonald 2012:41). Additionally, these methods helped to validate and triangulate the information that emerged in the FGDs with NUST (DTVET) lecturers, in the semi-structured interviews with NTA managers, in the open-ended questionnaires with employed TVET teachers at the VTCs and the

student teachers enrolled by NUST, and in the observations of teaching facilities (see section 5.6). Moreover, these methods strengthened the credibility (see sections 4.10 and 5.1) of the study's results.

4.8 RESEARCH STUDY SETTINGS

This research was conducted at multiple sites, including: DTVET at NUST in the Faculty of Commerce, Human Sciences and Education; Namibia Training Authority (NTA); Windhoek Vocational Training Centre (WVTC); Namibia Institute of Mining and Technology (NIMT-WC); COSDEC in Swakopmund; and Eenhana VTC in Ohangwena region. These centres are located across geographical regions of Namibia. At NUST, one TVET teacher training programme and one TVET management programme are offered. The student teachers were enrolled for a two-year DTVT and some of the graduates of the DTVT were enrolled for a two-year Diploma in TVET Management. The training was provided through full-time, part-time, and blended or distance education modes. The country's private and public Vocational Education Centres had approximately 260 instructors, trainers and teachers, most of whom were trained at NUST. The data for this study was collected during office hours at the various sites.

4.9 DATA ANALYSIS

As indicated in section 1.9.7, data analysis can be defined as "the systematic study of data so that its meaning, structure, relationships, origins, etc., are understood" (Kumar 2018:16). Thus, thematic analysis is considered a good approach if the researcher is attempting to discover something about people's views, opinions, knowledge, experiences, or values from a set of qualitative data (Caulfield 2019). Thematic analysis was used to analyse the data gathered from the focus group and semi-structured interviews with the aim of discovering main themes, sub-themes, and categories, which help to describe the findings and answers to the research questions (see section 1.4) from the already stipulated participants.

The following theories were used to guide the analysis of data:

(i) The literature review perspectives and research participants' reflections were used to interpret Objective 1 – to support the application of the CIPP model and CA to evaluate the DTVT programme (see Chapter 2).

(ii) Stufflebeam's CIPP model was used to interpret Objective 2 – to determine the historical perspectives on the TVET-based programmes for training vocational teachers and trainers, particularly in Namibia (see Chapter 3). The CIPP is an appropriate model with which to assess higher education programmes and includes the following (see Chapter 5):

- Context evaluation: The holistic picture
- Input evaluation: The mission, goals, and plan of the programme
- Process evaluation: The programme's implementation
- Product evaluation: The outcomes of the programme

(iii) The CA was used to structure the understanding of Objective 3 – to determine how adequate, appropriate, effective, and relevant the DTVT programme is to individuals and society in terms of its value and services provided (i.e., being an accredited programme, human resource development and individual learning, employment, and personal aspirations), through the use of the CA (see Chapter 5).

(iv) The thematic analysis will further address Objective 4 to make recommendations on transforming future vocational teachers' education in Namibia (see Chapter 6).

4.10 TRIANGULATION

As previously indicated (see section 1.9.7), triangulation in research means using diverse datasets, methods, theories, and/or investigators to address a research question. Additionally, triangulation serves as a research strategy that can assist to improve the validity and credibility of one's findings and limit the presence of any research biases in one's work. For the purpose of this study, both data and theory triangulation were applied (see also sections 1.9.7 and 5.3–5.4). This study's data triangulation (see section 5.3–5.5.7) applied five qualitative data sources to answer the research question (see also sections 1.4 and 6.2). This qualitative data collection was conducted across time (during 2021 and 2022) within the Namibian TVET higher

education space with diverse participants including NUST lecturers, NTA managers, employed TVET teachers and student teachers enrolled at NUST. Data management is the set of practices and policies that control, protect, and enhance the value of data assets and information which are challenged due to increase in volume and the integration of the concept/phenomenon through illustration (McMillan and Schumacher 2001:62). Furthermore, the theory of triangulation in this study implies applying dual theoretical frameworks (i.e., CIPP and CA) in this qualitative research instead of approaching a research question from just one theoretical perspective.

4.11 ETHICAL CONSIDERATIONS

The researcher obtained ethical clearance to conduct the research on 16 June 2021 (see also section 1.9.8). The ethical clearance (UFS-HSD2017/0556) from the UFS, South Africa, to conduct this research was renewed and approved for 2022, and an ethical report would be submitted for 2023. The researcher requested and obtained consent from the NTA, NUST, MHETI, and all the research participants (see Appendices F, G and H).

The research participants were informed that their participation was voluntary and that they were free to withdraw at any time during the research. Research participants were requested to complete the consent form (see Appendix J). The participants were assured that they would remain anonymous, as codes would be used instead of their actual names. The data was stored safely and disposed of in accordance with the university's policy for collecting research data (Chetram 2017; Kadhila 2012).

4.12 CONCLUSION

This chapter covered all areas related to research design, methodology, research paradigms, sampling, data collection techniques and instruments, ethical considerations, and data analysis. The research paradigm applied in the study was based on pragmatic constructivism (PC) (see sections 1.9.1 and 4.2). The meaning and the rationale for choosing PC were discussed in detail. A qualitative research approach (see sections 1.9.3 and 4.4) was used to improve understanding of the

phenomenon (e.g., the case study), and the rationale for this choice was also provided. This study employed a case study methodology (see sections 4.5 and 4.6) and the reasons for this were provided.

The population of interest for the study consisted of the full-time and part-time DTVET lecturers at NUST (see Appendix B), NTA managers (see Appendix C), student teachers enrolled for the DTVT at NUST, and employed TVET teachers at various VTCs (see Appendix D). A sample of 21 research participants was drawn from the population.

Qualitative research data was collected through interviews (FGDs and individual interviews), open-ended questionnaires, and observations. Six NUST lecturers were interviewed through two FGDs (see Appendix B), and five NTA managers were individually interviewed (see Appendix C). Five enrolled student teachers at NUST completed the open-ended questionnaire, while five TVET teachers employed at the various VTCs and who were studying at NUST also completed an open-ended questionnaire (see Appendix D).

Ethical considerations included obtaining an ethical clearance certificate (see Appendix E) from the UFS and consent to conduct research from NUST, NTA, MHETI, and all the research participants (see Appendices G,H, I, and J). The research participants were assured of confidentiality, anonymity, and voluntary participation and the freedom to withdraw from participation at any time.

The following chapter focuses on data presentation, analysis, and interpretation, and discusses the findings of the study of the DTVT programme implementation (see Chapter 5).

CHAPTER 5
QUALITATIVE INQUIRY PRESENTATION, ANALYSIS, AND REPORTING

5.1 INTRODUCTION

This qualitative Namibian TVET case study was based on dual theoretical frameworks, namely the CIPP model (see also sections 1.8.1, 2.2, 2.2.3, 4.9, and 4.10) and the CA (see also section 1.8.2, Chapter 2 and section 4.10). The descriptive research strategy steered this study through the literature review (see Chapter 3) in order to add new perspectives to the qualitative research enquiry, while the document analysis (see section 5.2.1) provides the context in which further research takes place (i.e., the Namibian TVET).

This chapter focuses on the previously stated (see section 1.4) main research question, namely: How adequate, appropriate, effective, and relevant is the current DTVT programme in transforming vocational teachers and trainers in Namibia? To address this question, the third secondary question (see section 1.4) – how adequate, appropriate, effective, and relevant is the DTVT programme to individuals and society in terms of the value and services provided (i.e., as an accredited programme; for human resource development and individual learning; and for employment and personal aspirations) using both the CIPP model and CA? – will also be addressed.

To answer these questions, multiple qualitative research instruments were applied (see Appendices B, C, D and Table 5.3) during the data collection phase. The analysis, synthesis, discussion, and interpretation in these qualitative findings will now be discussed (see section 5.2), whereafter the triangulation provides a holistic representation of the qualitative research (Bhandari 2022). As previously indicated, both data and theory triangulation were applied (see also sections 4.10 and 5.3–5.6) to address the third secondary research question (see section 1.4).

This chapter will start with the presentation, discussion, and interpretation of the diverse datasets of the document analysis (see section 5.2.1), focus groups (see section 5.3), semi-structured interviews (see section 5.4), open-ended questionnaires (see section 5.5), and observations (see section 5.6). Stipulated categories and sub-

categories will serve as the foundation for the qualitative inquiry (see details in section 5.2). Thereafter, the review of the qualitative data triangulation (see section 5.3) and theory triangulation (see section 5.4) are demonstrated. Additionally, these dual triangulation types were applied to enhance the validity and credibility of the findings and mitigate the presence of any bias in the research (Bhandari 2022).

5.2 QUALITATIVE INQUIRY AND DISCUSSION, ANALYSIS, AND INTERPRETATION OF COLLECTED DATASETS

The data will be discussed and analysed as derived from various critical documents (see sections 5.2.1.1–5.2.1.5) and experts and participants (see sections 5.3–5.5.7). Thus, the document analysis is presented according to the identified documents, while the stipulated headings below serve as the foundation on which the qualitative inquiry, conducted with selected participants, will be structured and displayed. The responses of the research participants – i.e., NUST lecturers, NTA managers, enrolled student teachers (ESTs), and employed TVET teachers (ETTs) – will be discussed under the headings that follow.

The analysis, discussion, and interpretation of the diverse datasets collected will follow the document analysis (see sections 5.2.1.1–5.2.1.5).

5.2.1 Document analysis of Namibian TVET

According to Bowen (2009:5–6), document analysis can serve various purposes, such as providing background and context, additional questions, supplementary data, tracking change and development, and verifying findings. In this study on the Namibian TVET context (see also section 4.7.1), document analysis was done to expand on the contextual aspects in Namibian TVET (see also sections 1.9.6–1.9.7), providing supplementary data due to lacking literature perspectives (see Chapter 3) on the Namibian TVET and verifying findings through triangulation (see sections 5.3–5.4) to complement the empirical research methods. In addition, authors (O'Leary 2014, as cited by Asdaque, Rizvi and Ahmad 2018:4), are of the view that document analysis entails "gathering texts, annotating documents, assessing the authenticity of

documents, exploring background information/contents, and selecting the complete and precise data". As previously stated (see section 4.7.1), the following five critical documents (see sections 5.2.1.1–5.2.1.5) were identified to answer the main research question and the third secondary question (see sections 1.4 and 5.1): How adequate, appropriate, effective, and relevant is the current DTVT programme in transforming vocational teachers and trainers in Namibia? The five documents included in this study's analysis include UNESCO's (2016) report (see section 5.2.1.1); the Ministry of Higher Education, Training and Innovation's Strategic Plan (2017/18–2020/21) (see 5.2.1.2); the National Technical and Vocational Education and Training (TVET) Policy (Ministry of Higher Education, Training and Innovation 2021) (see section 5.2.1.3); the NUST Diploma in Technical, Vocational Education and Training (NUST 2018) (see section 5.2.1.4); and the Windhoek Vocational Training Centre's job description (WVTC 2022) (see section 5.2.1.5).

5.2.1.1 TVET, Higher Education, Innovation Policy Review (UNESCO 2016)

The first document analysed was the research study report for the Ministry of Higher Education prepared by UNESCO in 2016, titled "TVET, Higher Education and Innovation Policy Review". This document focused on the following categories that are relevant for this research: provision of inadequate TVET teachers, instructors, and trainers (see section 5.2.1.1a) and provision of inadequately trained TVET teachers (see section 5.2.1.1b).

a) Provision of inadequate TVET teachers, instructors, and trainers

According to UNESCO (2016), research findings showed that institutions of learning were not producing ***adequate TVET instructors/trainers***, whether it be TVET providers who are public or private, including formal and non-formal centres. This was stated as follows: *"Initial qualifications and **training of instructors/trainers** appear inadequate. NUST does not offer training in vocational skills as such and reckons that this should be the responsibility of the Windhoek VTC. However, the trainer training programme VTC used to conduct training in cooperation with German institutions was discontinued after the creation of NUST"* (UNESCO 2016:60). This quotation shows that the training of TVET instructors/trainers and the related qualifications are

inadequate, which will likely affect the quality of annual TVET trainee intake at vocational training centres and other institutions. Consequently, the demand for more properly trained artisans will remain problematic (see also section 5.2.1.1b).

b) Provision of inadequately trained TVET teachers

The UNESCO (2016) research findings further highlighted challenges related to TVET teachers who are not adequately skilled or trained. This was stated as follows: *"For public, formal centres, training is the responsibility of NUST, whose Faculty of Human Science, through its Department of Education and Languages, runs courses in teaching methodology and management. NUST does not offer training in vocational skills and reckons that this should be the responsibility of the Windhoek VTC"* (UNESCO 2016:60). This quote demonstrates that learning programmes offered by NUST, including the DTVT programme, specialise only in teaching methodology and management. As a result, vocational skills are excluded, leading to inadequate training (UNESCO 2016:60).

5.2.1.2 Ministry of Higher Education, Training, and Innovation Strategic Plan (2017/18–2020/21)

The second document analysed was the 2017/18–2020/21 Strategic Plan prepared by MHETI (see section 5.2.1.2). This document is valuable to this research with special reference to the shortage of adequate TVET instructors/trainers.

a) Provision of inadequate TVET instructors/trainers

The Ministry of Higher Education confirmed the shortage of qualified TVET teachers in the country in its Five-Year Strategic Plan of 2017, and this was stated as follows: *"inadequately qualified vocational education and training instructors"* (Ministry of Higher Education, Training, and Innovation 2017:8). The need for a greater number of vocational instructors in any education system is generally likely to put the burden on existing training TVET institutions, which results in overcrowded classes or limited trainee intake. This document is important, because it guides the MHETI's decisions over the next five years (i.e., from 2017–2021) on how to allocate its resources to attain strategic goals. Furthermore, the document also extended the control mechanism for guiding the implementation of the strategic plan.

5.2.1.3 National TVET Policy (Ministry of Higher Education, Training and Innovation 2021)

The third document analysed was the National TVET Policy prepared by the MHETI in 2021, titled “National TVET Policy”. This document also emphasised (as in 5.2.1.1) the following two categories: the provision of inadequate TVET instructors/trainers and the provision of ineffective, incompetent TVET teachers.

a) Provision of inadequate TVET instructors/trainers

Furthermore, the new TVET Policy (2021) showed that the shortage of TVET teachers remains a severe problem in the country. This was reflected in the following quote: *“The implementation of the TVET reform process faced diverse challenges such as high failure and drop-out rates, leadership, governance and management challenges at VTCs, unresponsive curricula, poor-quality training,* ***a shortage of proficient technical teachers/trainers****, poor and obsolete facilities and equipment, and under-funded VTCs”* (Ministry of Higher Education, Technology and Innovation 2021:10).

In the above quote, the MHETI expanded on the additional challenges within the higher education context; in addition to the relevant institutions providing inadequate trainers, the trainers themselves were also not adequately trained (this is further confirmed in the statements below; see 5.2.1.2b).

b) Provision of inadequately trained TVET teachers

Apart from the limited provision of TVET teachers, the TVET policy further outlined concerns regarding the poor-quality training of TVET teachers as expressed in the following statement, namely: “*While the TVET sector recorded great strides over the years, many challenges still need to be addressed in leveraging the sector to better respond to the country’s socio-economic demands, among other things:*

- *Inadequately trained TVET teachers;*
- *Graduates often do not meet the changing skills demands of the world of work.”* (Ministry of Higher Education, Technology and Innovation 2021:11)

Since the MHETI is not satisfied with the status of TVET TE in the country, this document is imperative. The policy implementation will steer both current and future skills development to build a knowledge-based citizenry to improve Namibia as an

industrialised nation and a globally competitive country.

5.2.1.4 NUST Diploma in TVET

The fourth document analysed was the NUST's DTVT for the training of TVET teachers and trainers. The programme was prepared by the DTVET at NUST in 2018 and phased in in 2020 (see Appendix A). The analysis of this document focused on the effectiveness of the DTVT programme in transforming artisans into qualified TVET teachers and trainers.

a) Effectiveness of the DTVT programme

The NUST DTVT curriculum document identified the programme goals as follows: "*This programme aims at equipping in-service and pre-service vocational trainers with instructional competencies required at entry level for a career as a trainer in a Technical and Vocational Education and Training (TVET) environment. On completion, graduates should be able to actively participate in instructional activities and assessment of performance standards within a formal training environment such as vocational training centres and, thereby, contribute to the national economy's development*". In addition, NUST's DTVT programme aims to *"ensure that a broader knowledge base is created to enable the student teachers to achieve the outcomes in an integrated manner. Upon completing this diploma, graduates can conduct training and provide mentorship at the entry-level of their specialised fields of vocational education"* (NUST 2018:1–2). The programme's objectives are expected to be fulfilled, but it does not mean that they will primarily focus on acquiring knowledge and instructional skills. Furthermore, no specific emphasis on technical skills is evident, which might affect their effectiveness in serving as competent graduates in the world of work. Technical and functional skills training is likely to result in graduates knowing how to teach (i.e., being trained on how to guide) but they need to understand what to teach, which requires more practical and technical skills (Department of Higher Education and Training 2008). Thus, if TVET graduate competencies do not meet the requirements of the world of work, programme effectiveness and graduate contribution towards the national economy, then this also becomes challenging.

5.2.1.5 Windhoek Vocational Training Centre job description

The fifth document analysed was the job descriptions of the TVET teachers and instructors at WVTC prepared by its management in 2022. The analysis of this document focused on the appropriateness of the DTVT programme in order to determine whether there is alignment between the programme's learning outcomes and the tasks executed by the TVET teachers.

a) The appropriateness of the DTVT programme

As indicated in the above critical documents (Windhoek Vocational Training Centre job descriptions), NUST does not offer technical skills in their TVET training programmes. The absence of technical skills training in the DTVT programme shows that the programme is only partially appropriate for the world of work. The world of work, as per the job description of a vocational training instructor, requires the following technical/practical skills and trade theory knowledge competencies: *"... demonstrate and apply trade knowledge and skills at least a level higher than that of the final qualification of trainees* (i.e., Level 6), [such as] *Teaching/Training (Pedagogic and Andragogic) skills, Honesty and Integrity, Assertiveness and Communication skills"* (Windhoek Vocational Training Centre Job Description 2022:2). This document explicitly emphasises the necessity that student trainers need to gain trade knowledge and skills at a level higher than that of the final qualification of trainees. This is important because it guides and informs the student teachers and TVET teachers/trainers to acquire a higher level (i.e., 6) of trade and skills knowledge than their trainees and thus to gain sufficient industrial experience to be able demonstrate and transfer technical skills to their trainees (see section 6.4.4).

5.3 FGDs WITH NUST LECTURERS

This section discusses the analysis of the data collected in two FGDs with six NUST lecturers (see also section 4.7.2, Appendix B). These include four full-time and two part-time lecturers at NUST (see section 4.6). The NUST lecturers were divided into two focus groups (Group 1 and 2). The full-time lecturers were in Group 1 and the part-time lecturers in Group 2. As stipulated (see section 5.1), this study was based on the main research question (see section 1.4): How adequate, appropriate, relevant, and effective is the current DTVT programme in transforming vocational teachers and

trainers in Namibia?

In the analysis of the interviews, the evaluation of the DTVT programme was based on the four core themes: adequacy, appropriateness, relevance, and effectiveness and their related sub-themes. Table 5.1 below highlights the four main themes, sub-themes, and the questions related to the sub-themes.

Table 5.1: Themes and sub-themes: NUST lecturers' FGD interviews (Appendix B)

Themes	Sub-themes	Questions related to the sub-themes (Appendix B)
5.3.1 Adequacy	**5.3.1.1**	a) Are the programme's minimum and maximum numbers of credits adequate for the Namibian standards?
5.3.2 Appropriateness	**5.3.2.1** **5.3.2.2** **5.3.2.3** **5.3.2.4**	a) What is your opinion of the current process that is used for the development, designing and implementation of academic and training programme? Please focus on possible successes and challenges? b) Why is it important for NUST lecturers to understand the CBET curriculum for TVET teachers? c) "What graduate attributes should a TVET trainer graduate have (i.e., on completion of this programme?" d) "To what extent have you attended staff development programmes to enhance your skills and knowledge on implementing the CBET curriculum for TVET teachers?" e) "Is the stakeholders' collaboration suitable for the DTVT programme's successful implementation?
5.3.3 Relevance	**5.3.3.1**	a) To what extent do you think the current CBET programme for TVET trainers addresses the vision as set by the NTA?
5.3.4 Effectiveness	**5.3.4.1**	a) How best can we amend or improve the current CBET training programme to ensure that NTA and NUST maintain the quality of the programme's teaching and learning?

The purpose of the colours used above is to indicate the separation of the different themes. The pink section falls under the central theme of "adequacy" (see section 5.3.1) and its related sub-theme (see section 5.3.1.1). The green designates the central theme of "appropriateness" (see section 5.3.2) and the sub-themes (see sections 5.3.2.1–5.3.2.4), while the yellow section represents "relevance" (see section

5.3.3) as the central theme with its sub-theme (see section 5.3.3.1). The blue designates the central theme of “effectiveness” (see section 5.3.4) and sub-theme (see section 5.3.4.1). The four main themes were identified with their respective sub-themes based on the third secondary research question (see section 1.4).

5.3.1. Theme: Adequacy

5.3.1.1 Sub-theme: Adequacy of learning programme credits

The six research participants (i.e., L1 through to L6) were divided into two FGDs (i.e., four full-time lecturers in Group 1 and two part-time lecturers in Group 2) and both groups were asked the following question: “*Are the programme’s minimum and maximum numbers of credits adequate for the Namibian standards?”* (see Table 5.1).

The research participants (L1, FGD inter, p.2; L3, FGD inter, p.2; L4, FGD inter, p.2; L5, FGD inter, p.2; and L6, FGD inter, p.2) were all of the view that the current 240 credits were not adequate to fully equip student teachers for the world of work. They identified the need for student teachers to acquire practical skills through work-integrated learning (WIL), where industry could play an essential role in training interventions. Training workshops and laboratories must be established to ensure internal practical skills training. The provision of practical skills training at NUST (i.e., provision of training workshops) and within the industry will require additional credits to ensure that the programme offered meets the dual professional nature of TVET TE.

According to researchers (Ismail et al. 2018:9; Jafar et al. 2020:8), student teachers must be equipped with technical skills and innovation competencies to execute their duties diligently (see section 3.6). They are further of the view that, within the context of TVET TE, student teachers should acquire industry experience, research skills, and workshop management, hence the need to increase the number of credits to make provision for courses such as WIL and research methodology. Additionally, the perspective of research participants that adequate credits were needed corroborates with Ismail et al.’s (2018) and Jafar et al.’s (2020) view that TVET TE should cover all significant competency categories (e.g., the categories of Teaching and Learning and Training; Technical and Innovation; Personal Attributes and Professionalism; Motive; and Physical and Mental Fitness).

5.3.2 Theme: Appropriateness

5.3.2.1 Sub-theme: Programme development, design, and implementation process

In the FGDs, it was important for the researcher to include a question that would determine the knowledge gaps in programme development, design, and implementation. The first question (see Table 5.1) posed to the participants was "*What is your opinion of the current process that is used for developing, designing, implementing and revising academic and training programmes? (Please focus on possible successes and challenges)*". The aim here was to identify the knowledge and skills of NUST DTVET lecturers in programme development.

The research participants (L2, FGD inter, p.4; L3, FGD inter, p.4; L4, FGD inter, p.4; L5, FGD inter, p.4; and L6, FGD inter, p.4) were of the view that it is important to be aware of the integrity, transparency, and competency displayed during and throughout the development, design, and implementation process of a programme. L1, FGD inter, p.4; L3, FGD inter, p.4; and L4, FGD inter, p.4 also emphasised that the programme design should be research-based and that the curriculum should be designed in the Namibian context. Most of the participants also highlighted the involvement and collaboration of various stakeholders in the development of the curriculum. All the research participants (L1, FGD inter, p.4; L2, FGD inter, p.4; L3, FGD inter, p.4; L4, FGD inter, p.4; L5, FGD inter, p.4; and L6, FGD inter, p.4) in the FGDs were of the view that knowledge and skills in programme development are essential. They also believe that staff orientation and training in programme development is necessary to understand the nature and different strategies of programme development and to reconceptualise the new strategies that lecturers need to adopt in the different processes.

The views of the research participants were incongruent with the findings found in the literature review (see section 3.2), as it is stated by the European Commission (see also Figure 3.1) that TVET programme design and implementation should be based on relevant context and stakeholder involvement, where cooperation is promoted between TVET institutions and employers to the extent that student teachers' internships and industrial exposure are secured (European Commission 2014).

In addition to the literature review and the interview responses outlined above, the theory triangulation (see Table 5.11) found that the CIPP model and CA show that a research-based approach, industry involvement and direct engagement with employers, and the use of an approved competency framework, should guide TVET programme design and implementation. Document analysis (see section 5.2.1.5) also showed that programme appropriateness entails providing technical skills training for such programmes to be appropriate for the world of work.

The above shows that, in order for programme design and development to be appropriate, it requires vital stakeholders' involvement (especially industry and employers), a research-based approach to programme design and a context-focused process. It is also clear that the programme design, development, and implementation should be of such a nature that student teachers secure an internship and industrial exposure during their training.

5.3.2.2 Sub-theme: Competencies of lecturers

This sub-theme, "Competencies of TVET lecturers," included six research participants (L1, FGD inter, p. 5; L2, FGD inter, p.5; L3, FGD inter p.5; L4, FGD inter, p.5; L5, FGD inter, p.5; and L6, FGD inter, p.5) who were asked two critical questions (see Table 5.1):

(i) What graduate attributes should a TVET trainer graduate have (i.e., upon completion of this programme)?

(ii) Why is it essential for lecturers to understand the CBET curriculum for TVET trainers?

Most of the research participants (L1, FGD inter, p.5; L2, FGD inter, p.5; L3, FGD inter, p.5; L4, FGD inter, p.5; and L5, FGD inter, p.5) were in agreement that graduates of the TVET programme should possess the following attributes upon completion of their studies: the transfer of knowledge and technical skills; adequate classroom management knowledge and skills; knowledge of curriculum USs; skill in the design of training materials; and the analysis of and connection with different learning tool skills. These five identified competencies correlate with similar competencies outlined in the literature review (see section 3.6) and in the TVET teacher professional

competency framework (see Figure 3.2).

Additionally, these research participants (L1, FGD inter, p.5; L2, FGD inter, p.5; L3, FGD inter, p.5; L4, FGD inter, p.5; FGD inter p.5; L5, FGD inter, p.5) have confirmed the lack of technical skill competencies as one of the attributes required by the DTVT programme graduates, which is also revealed in the literature review (see section 3.6).

In response to the second question (see Table 5.1), the research participants (L1, FGD inter, p.5; L2, FGD inter, p.5; L3, FGD inter, p.5; L4, FGD inter, p.5; L5, FGD inter, p.5; and L6, FGD inter, p.5) had to assess the extent to which they were knowledgeable about the CBET curriculum or were competent in the teaching of the CBET curriculum through the DTVT programme. Although most research participants (lecturers) were unaware of all the reasons for introducing the CBET system in Namibia and TVET in particular, most of them were optimistic about the future of CBET and the TVET sector in Namibia in general. The research participants only had a problem with the fact that the CBET programme was introduced without providing adequate training interventions to all the key stakeholders, particularly the TVET lecturers. However, some of the research participants (L1, FGD inter, p.5; L2, FGD inter, p.5) were under the misconception that the CBET's emphasis is on training instead of training outcomes (e.g., that a student teacher was to be found either Competent [C] or Not Yet Competent [NYC]).

5.3.2.3 Sub-theme: Staff development

The FGDs with the research participants aimed to explore their experiences of attending staff development programmes which were targeted at enhancing their skills and knowledge in implementing the CBET curriculum for VET trainers. These participants were asked the following question (see Table 5.1): *To what extent have you attended staff development programmes aimed at enhancing your skills and knowledge on how to implement the CBET curriculum for VET trainers?* Their responses regarding staff development programmes in the context of NUST's TVET TE programme include the following key points:

Research participants' views: Half of the research participants (L2, FGD inter, p.5; L4, FGD inter; p.5, L3, FGD inter, p.5) expressed a positive attitude towards attending staff development programmes. They were interested in upskilling themselves and

acquiring new competencies through workshop training interventions.

Opposition to staff development: On the other hand, the remaining 50% of the research participants did not see the need for staff development. This means that they were not interested in participating in such programmes.

Importance of CPD: In 2014, the European Commission emphasised the significance of continuous professional development (CPD) for TVET educators, including TVET lecturers. CPD is crucial in influencing TVET TE and the development and delivery of TVET programmes.

Inconceivability of non-participation: Despite the importance of CPD, the ever-changing landscape of TVET TE, and the technological advancements in various industries, some TVET lecturers still fail to recognise the value of upskilling themselves.

Relevance of industry exposure: Graduates in TVET programmes are expected to complete internship programmes and gain industry exposure. This highlights the practical and real-world relevance of continuous learning and professional development for TVET educators.

Overall, the importance of staff development programmes and CPD for TVET educators is partly confirmed to keep up with the evolving demands of TVET TE and industry advancements. However, there is still a portion of TVET lecturers who do not fully appreciate the need for upskilling themselves despite its evident significance.

5.3.2.4 Sub-theme: Stakeholder collaboration and engagement

This study's two FGDs regarding the potential benefits of collaboration between NUST's TVET department and various stakeholders aimed to determine whether such collaboration would improve TVET programme performance and outcomes. Most of the research participants (L1, FGD inter, p.6; L2, FGD inter, p.6; L3, FGD inter, p.6; L4, FGD inter, p.6; and L6, FGD inter, p.6) expressed a strong belief in the importance of collaboration between the NUST TVET department and different stakeholders (such

as the NTA in this study).

Overall, the research participants' views highlight the critical role of collaboration with stakeholders in enhancing TVET programme performance and outcomes. Moreover, the emphasis on providing in-service training opportunities for TVET teachers shows the potential for broader educational improvement that could positively influence TVET TE programmes.

5.3.3 Theme 3: Relevance

The relevance of the NUST TVET teacher programme was addressed through the needs/vision of key stakeholders and the world of work.

5.3.3.1 Sub-theme: Needs/vision of key stakeholders

The six research participants in the two FGDs were asked the following question (see Table 5.1):

(a) Does the current CBET programme for TVET teachers address the needs/vision of the department?

Most of the research participants (L2, FGD inter, p.6; L3, FGD inter, p.6; L4, FGD inter, p.6; L5, FGD inter, p.6; and L6, FGD inter, p.6) are convinced that the CBET programme was meeting the needs of the NTA department, which also included the needs of the student teachers (e.g., the programme was designed to accommodate both full-time student teachers and full-time employed trainers who attended as part-time student teachers). Additionally, the research participants recognised the value of the TVET teacher programme in contributing to various aspects of societal development, including socioeconomic development, empowerment, and economic growth. This indicates that the programme mentioned above was not only regarded as beneficial for the individual stakeholders but also for the broader community and economy.

These research participants (L1, FGD inter, p.6; L2, FGD inter, p.6; L3, FGD inter, p.6; L4, FGD inter, p.6; L5, FGD inter, p.6; and L6, FGD inter, p.6) were also requested to

answer a similar research question (see Table 5.1), i.e., *(b) To what extent does the current CBET programme for VET trainers address the needs of the industry/workplace?*

Most of the research participants (L1, FGD inter, p.6; L3, FGD inter, p.6; L4, FGD inter, p.6; L5, FGD inter, p.6; and L6, FGD inter, p.6) were of the opinion that the DTVT programme was not offering essential entrepreneurial skills required by the Namibian workforce for long-term growth. On the other hand, only two of the research participants (L5, FGD inter, p.6 and L6, FGD inter, p.6) indicated that the DTVT programme prepared trainers adequately with skills that aligned with the needs of the industry or workplace.

Overall, the research participants' perspectives indicated that there are shortcomings in the CBET programme for TVET teachers. They feel that greater emphasis should be placed on providing technical skills and entrepreneurial training in order to better prepare student teachers for the workforce. Additionally, the TVET teacher programme's relevance to the needs of the industry and workplace should be improved, including opportunities for practical industry experience. Chapter 3 (see section 3.4) and UNESCO–UNEVOC (2012:5) reinforce these concerns and highlight the need for comprehensive and well-structured TVET teacher training programmes. Thus, the importance of integrating theory and practice in TVET training programmes, with a focus on lifelong learning to holistically enhance the quality of training and professionalism, is emphasised. The integration of theory and practice, supported by continuous learning, enables TVET educators to effectively prepare student teachers for the demands of the workforce and contribute to socioeconomic development and empowerment.

5.3.4 Theme: Effectiveness

5.3.4.1 Sub-theme: Programme improvement

The six focus group participants who responded to the question in Table 5.1 (*How best can we amend or improve the current programme and ensure that we can enhance this programme for the better?*) regarding NUST's TVET teacher programme made the following recommendations:

Most of the participants (L1, FGD inter, p.7; L2, FGD inter, p.7; L5, FGD inter, p.7; and L6, FGD inter, p.7) believed that there was a need to improve the DTVT programme,

especially in the acquisition of technical skills by student teachers and the upskilling of trainers to acquire industry experience and knowledge. The research participants understood that the DTVT programme could be delivered effectively if the right technical skills were offered for the student teachers and the trainers (i.e., part-time students attending the DTVT programme) and if they could be exposed to the industry's latest practical skills training. The participants argued that there was a need to evolve from intense theoretical training to more practical TVET training.

As stated in Chapter 3 (see section 3.2 and Figure 3.1) and mentioned by the European Commission (2014:21–22), TVET TE programme effectiveness is influenced by the type of TVET institution, the kind of TVET educators recruited, the internal quality assurance arrangements, educators' CPD, and the kind of TVET education programmes that can be developed and delivered. The European Commission (2014:21–22) further argued that the effectiveness of a TVET programme is influenced by policies (i.e., national policies on TVET and TVET TE), systems (i.e., the TVET system and TVET TE system), and strategies that are either inadequate or unclear. The participants' view that an effective programme can be actualised if more technical skills are offered is confirmed by the European Commission (2014), which advocates for, among other things, the right policies, systems, strategies, and type of training programme. In this case, the DTVT programme is a theory-oriented programme that lacks practical and technical skills training.

5.3.5 Summary of the FGDs

In the FGDs, data was generated and analysed, revealing that NUST lecturers played a significant role in training TVET teachers in Namibia, particularly during the introduction of the CBET curriculum. Although some lecturers were unsure about the reasons behind implementing CBET in TVET training, they remained hopeful about the future of CBET and the TVET sector in Namibia.

These findings align with the findings of the document analysis, emphasising the importance of providing technical skills training to equip TVET graduates for the workforce. However, the views expressed by the research participants differed from the literature review, specifically, the European Commission's recommendations, which emphasised the significance of relevant context, stakeholder involvement, and cooperation between TVET institutions and employers. This involvement was

considered crucial in securing internships and industrial exposure for student teachers. In summary, the FGDs highlighted the significant influence of NUST lecturers in TVET teacher training and their optimism about the CBET system. However, there was a contrast between the research participants' views and the literature review, particularly regarding the importance of stakeholder involvement and cooperation in designing and implementing effective TVET programmes.

5.4 INDIVIDUAL INTERVIEWS WITH NTA MANAGERS (SEE APPENDIX C)

As previously indicated (see sections 1.9.6, 1.9.7, and 4.7.3), to investigate the third objective (see section 1.5), the study conducted face-to-face semi-structured interviews with five NTA managers (see Appendix C). Qualitative methods were applied for the analysis of these semi-structured interviews (see the semi-structured interview schedule in Appendix C and Table 4.2 as well as the core themes in Table 5.2) as they allowed the researcher to explain necessary complex questions to the research participants. Thus, the discussion and interpretation of the evaluation of the DTVT programme was based on the four main themes, namely adequacy, appropriateness, relevance, and effectiveness as well as their related sub-themes (see Table 5.2). Table 5.2 below highlights the main themes (column 1), sub-themes (column 2), and the questions related to the sub-themes (column 3).

Table 5.2: Themes and sub-themes: Interviews with NTA managers (Appendix C)

Themes	Sub-themes	Questions related to the sub-themes (Appendix C)
5.4.1 Adequacy	**5.4.1.1**	a) Are the programme's minimum and maximum numbers of credits adequate for the Namibian standards?
5.4.2 Appropriateness	**5.4.2.1** **5.4.2.2** **5.4.2.3**	a) What is your opinion of the current process that is used for the development, design, and implementation of academic and training programmes? (Please focus on possible successes and challenges.) b) What graduate attributes should a TVET trainer graduate have (i.e., on completion of this programme?) c) Do you have any suggestions on how best the different stakeholders (including the NTA) might overcome these challenges d) From a TVET regulator's point of view, how much do you know about the current CBET framework for the training of TVET trainers?
5.4.3 Relevance	**5.4.3.1**	a) To what extent do you think the current CBET programme for TVET teachers addresses the vision as set by the NTA? b) To what extent do you think the current CBET training programme for TVET teachers can maintain the quality of the programme teaching, learning, and assessment?
5.4.4 Effectiveness	**5.4.4.1**	a) How best can we amend or improve the current CBET training programme to ensure that NTA and NUST maintain the quality of the programme's teaching and learning?

The intent of applying colours in Table 5.2 is to signify the separation of the different themes. The pink section highlights the central theme "adequacy" (see section 5.4.1) with the sub-theme "learning programme credits" (see section 5.4.1.1). The green designates the pivotal theme "appropriateness" (see 5.4.2) with the sub-themes (see sections 5.4.2.1–5.4.2.3), while the yellow section represents "relevance" (see section 5.4.3) as the key theme with the sub-theme "the reputation of the TVET programme" (see section 5.4.3.1). The blue section signifies the predominant theme "effectiveness" (see section 5.4.4) with the sub-theme "programme improvement" (see section 5.4.4.1). Four themes were identified, with their respective sub-themes, based on the third secondary research question (see section 1.4), which are discussed in the

following section.

5.4.1 Theme: Adequacy

5.4.1.1 Sub-theme: Learning programme credits

The purpose of this question (see column 3 and Appendix C) is to determine the opinions of the NTA managers regarding the minimum and maximum credits for this training programme for TVET teachers. As stated in Chapter 1 (see section 1.2.1), teachers who are looking to teach practical skills are required to have the necessary technical qualifications recognised in the workplace. Additionally, all college lecturers are required to complete a 30-credit Vocational Educator Orientation Programme (VEOP), which takes approximately 300 hours to complete. These prerequisites are similar to those in the UK, which primarily offers a vocational TE model that emphasises classroom methodology and didactics. However, there is a need for a stronger focus on subject-directed didactics, as mentioned in a critique by the UK inspectorate Ofsted in 2004. All the research participants (M1, inter, p.4; M2, inter, p.4; M3, inter, p.4; M4, inter, p.4; and M5, inter, p.4) were of the view that both the minimum and maximum credits should be increased to align with international standards.

Additionally, based on the information provided in the literature review (Chapter 3), the two components that should be included in high-quality and relevant TVET TE programmes, which are also relevant in this sub-theme, are work-based learning (UNESCO 2015) and methodological knowledge (Ismail et al. 2018; Jafar et al. 2020). This suggests that student teachers should not only focus on teaching methods but also on acquiring industry experience, research and innovation skills, and workshop management abilities. By including these competencies, the programme can produce well-rounded and innovative TVET teachers who can adapt to the dynamic demands of the vocational sector. Implementing the additional skill, technical, and innovation competency categories may require increasing the number of credits required for the TVET TE programme beyond the current 240 credits. This adjustment is necessary to provide sufficient time and opportunities for student teachers to acquire the necessary skills and knowledge in both teaching methodology and vocation-specific competencies. Increasing the current number of credits (from 240 to 360 or higher) was confirmed by all five research participants (M1, inter, p.4; M2, inter, p.4; M3, inter, p.4; M4, inter, p.4; and M5, inter, p.4). These participants unanimously agreed that

increasing the credits will ensure that student teachers are more prepared for the world of work by adding increased amounts of industrial exposure and technical skills training to the curriculum. Thus, the research participants' views of increasing the credits above 240 corroborate the opinions presented in the literature that a TVET TE should include critical competencies such as industry experience, research and innovation, and workshop management. By including these competencies, the programme can produce well-rounded and innovative TVET teachers who can adapt to the dynamic demands of the vocational sector.

5.4.2 Theme: Appropriateness

5.4.2.1 Sub-theme: Programme development, design, and implementation process

This sub-theme interrelates with the previous one (see section 5.4.1.1) in terms of programme design and development issues, but it takes a broader view on the question, namely: *What is your opinion of the current process for developing, designing and implementing academic and training programmes? (e.g., focusing on possible successes and challenges)*.

In responding to the above interview question, Table 5.3 below highlights some of the demonstrative responses in this regard.

Table 5.3: Diverse views of NTA managers on Namibian TVET teacher programmes' development, design, and implementation

Motivation: NUST DTVT Programme: Was not designed in a manner that allows student teachers to acquire technical skills-oriented experience	**Illustrative Quotes**
NUST TVET Teacher Programme: No TVET technical skills-oriented experience	*"There is an absence and lack of coordination amongst TVET experts in the development and design of the training programme, and it denies the trainees from skill-oriented experience." (M1 and M4, inter, p.6)*
NUST TVET Teacher Programme: Obtain additional stakeholder inputs and establish the curriculum advisory committee	*The training institution (NUST) should intend to lead in developing and designing the training programme and present it to the TVET stakeholders for inputs and advice. Curriculum Advisory Committees must also be established for guidance and direction (M2, inter, p.6; M3, inter, p.6; and M5, inter, p.6).*

As demonstrated in Table 5.3, two of the research participants (M1 and M4, inter, p.6) were clearly of the view that the DTVT programme was designed and developed in a manner that did not allow students to acquire technical skills and experience, and, by implication, it was not offering any WIL. On the other hand, three other research participants (M2, inter, p.6; M3, inter, p.6; and M5, inter, p.6) suggested that NUST should consult stakeholders during curriculum development for their input and advice. Additionally, the latter research participants further indicated that there was a need to establish a curriculum advisory committee to guide and advise the curriculum design and development process. Based on the evidence presented, it is evident that there are significant concerns regarding the quality and effectiveness (see also section 5.4.4.1, which overlaps with this sub-theme) of the TVET TE programme offered by NUST in collaboration with the NTA. This echoes the literature (European Commission 2014), which has identified key success factors in curriculum design, development, and implementation, such as involving industry stakeholders to align the curriculum with the latest technologies, employment practices, and industry trends. Additionally, providing internships within the TVET TE programme is essential to offer technical skills training and hands-on experience in preparing graduates for real-world challenges. Collaboration between TVET institutions and employers is vital to develop relevant and up-to-date training programmes. Thus, involving employers in the

curriculum development process ensures that the skills taught in the programme are aligned with the needs of the industry and job market. Lastly, establishing a feedback loop with employers allows for continuous improvement of the TVET TE programme. Moreover, input from employers helps to identify areas that need enhancement and ensures that graduates are well prepared for the demands of the workforce.

The evidence presented suggests that NUST may be failing to adequately address these key factors, particularly in terms of exposing student teachers to industry experiences and consulting with industry stakeholders during curriculum development. The lack of WIL opportunities is also concerning, as it deprives student teachers of practical training in the latest industry technologies and practices. Such improvements are essential to maintain the relevance and quality of TVET graduates and foster stronger connections between academia and industry.

In brief, the NTA was generally not convinced that NUST was sufficiently exposing their student teachers to industry experiences and stakeholder consultation with industry and employers. The student teachers also echoed the views of the NTA regarding the lack of WIL as an area which requires attention if the TVET TE is to remain relevant and if quality graduates are to be produced for the demanding future world of work.

5.4.2.2 Sub-theme: Competencies of lecturers

The document analysis (see section 5.2.1.1) and UNESCO's 2016 review emphasised the difficulties faced by TVET teachers who lack sufficient skills and training. In response to this concern, NTA managers were asked the following question: *What graduate attributes should a TVET trainer graduate have upon completion of this programme?*

The NTA research participants responded as follows:

- *"Transfer trade knowledge, technical skills using CBET system."* (M1, M2, M3, M4, and M5, inter, p.8)
- *"Demonstrate an understanding and knowledge of USs, exit level outcomes of the curriculum."* (M3 and M5, inter, p.8)
- *"Critically evaluate and apply different learning theories to promote learning."*

(M2, inter, p.8)

- *"Design and develop learning materials at the appropriate level as prescribed by the curriculum."* (M3 and M4, inter, p.8)
- *"Demonstrate the knowledge and skills to guide and counsel vocational trainees to improve learning outcomes."* (M4 and M5, inter, p.8)
- *"Demonstrate knowledge and understanding of a range of teaching, learning and assessment strategies (which includes technology enhanced)."* (M1, inter, p.8)

It is evident from the NTA research participants and document analysis (see sections 5.4 and 5.2.1) that the NUST DTVT programme should prioritise both andragogical and technical skills training. NUST is responsible for providing formal public centres with andragogy and management training through its Faculty of Commerce, Human Sciences, and Education through the DTVET (see section 5.2.1.4) instead of pedagogy which is the teaching of children or dependent personalities. Thus, vocational skills training is not included in their curriculum responsibilities (see Appendix A), while Windhoek VTC should handle this duty based on UNESCO's recommendation in 2016.

All five research respondents were very clear that the transfer of trade knowledge and acquisition of technical skills are required graduate attributes. These proposed graduate attributes also echo the opinions of the NUST student teachers (see section 5.5) that there is currently a lack of technical skills and WIL in the NUST TVET teacher programme.

5.4.2.3 Sub-theme: Stakeholder collaboration and engagements

In following up on the previous sub-theme (see section 5.4.2.1) that confirms a lack of stakeholder involvement, the NTA research participants had to suggest improvements for stakeholder collaboration and engagements by answering the following question: *Do you have any suggestions on how best the different stakeholders (including the NTA) might overcome the various challenges within the TVET sector?* The participants' responses were as follows:

- *"Engage in TVET conferences, workshops and public debates."* (M1 and M4, inter, p.9)

- *The majority of the NTA managers indicated that "there is currently a lack of regular follow-up development opportunities to provide support to all the TVET stakeholders."* (M1, M2, M3, M4 and M5 inter, p.9)
- *"Industry and TVET institutions collaborate to explore growing employment opportunities."* (M2, inter, p.9)
- *"NUST should focus on re-training academic staff in CBET theories and frameworks."* (M3 and M5, inter, p.9)

The findings from the interviews and the literature review (see section 3.6; UNESCO 2015, 2020) provide compelling evidence regarding the need for improved collaboration and stakeholder engagement within the Namibian TVET sector, particularly in the context of the NUST DTVT teacher programme. The research participants also emphasised the importance of coordination among all TVET stakeholders, including workshops and TVET conferences, to enhance the success of TVET and challenge the perception that TVET is a second option in Namibia. The research participants' views imply that NUST, as a training institution, may not adequately reach key stakeholders, especially employers and industry representatives. This lack of involvement may hinder the effectiveness and relevance of the DTVT programme. The literature review cited UNESCO's recommendations for successful TVET TE by highlighting the significance of establishing appropriate governance structures that involve relevant local stakeholders and the private sector. Effective stakeholder coordination is essential for improving the relevance and quality of the training and professional development of TVET teachers.

Based on the evidence presented, it is clear that there is consensus among the research participants, and in UNESCO's recommendations, that collaboration among TVET stakeholders, including employers and industry representatives, is crucial for improving the quality and relevance of TVET teacher programmes.

5.4.3 Theme: Relevance

5.4.3.1 Sub-theme: Reputation of the TVET programme

During the research, the NTA managers shared their thoughts on how well the current CBET programme for TVET trainers aligns with the NTA's overall vision. The responses of the research participants are shared below:

- *"Reports in Namibia have repeatedly shown evidence of low-level public awareness of TVET as a viable educational pathway for socioeconomic development."* (M1, M2, and M3, inter, p.10)
- *"…however, there is sufficient evidence that supports the hypothesis that; effective awareness and understanding of the CBET leads to changes in attitude towards TVET."* (M3 and M4, inter, p.10)
- *"NTA intends to assist efforts to change TVET general public perception through funding and institution engagement."* (Both M4 and M5, inter, p.10).

The data presented above, and the literature reviewed (see sections 3.5 and 3.8.2), underscore that the perception of TVET and its TE has been challenging, but there is potential for positive change. This centres around two main points:

1. **Vision and potential of TVET:** According to the NTA managers (M1, M2, and M3, inter, p.10), there is a strong belief that TVET can significantly improve the socioeconomic well-being of many people. The NTA envisions a sustainable TVET system that produces competent and quality graduates. Despite TVET's current perception, this vision implies that TVET, particularly TVET TE, has considerable potential for growth and development.
2. **Low status of TVET TE:** This is a prevalent concern reflected both in the interviews and the literature review. Grollmann (2008:3) characterises TVET TE as having a low status, which contributes to the fragmentation of the profession. Similarly, the second Presidential Commission Report (1999), as cited by Brunette (2006:84), recognises the low status of technical education and suggests programmes to increase its quality and popularity.

In response to these concerns, the literature emphasises that the responsibility for transforming the perception of TVET TE rests with the institutions that deliver these programmes. They must strive to offer high-quality programmes and actively work to promote TVET TE. By doing so, they can help change negative perceptions and enhance the status of TVET TE. In conclusion, while the perception of TVET TE has been of concern, there is optimism about its potential for improvement. This requires

concerted efforts by TVET institutions and stakeholders to improve the quality of programmes and enhance the visibility and attractiveness of TVET as a viable career pathway.

5.4.4 Theme: Effectiveness

5.4.4.1 Sub-theme: Programme improvement

The data generated from the interviews with five NTA managers provided valuable insights into ways to improve and enhance the current DTVT teacher programme. The research participants' responses focused on key areas for improvement, and their suggestions aligned with recommendations from scholars in the field.

Focus on technical skills and industry experience: The participants emphasised that the programme should prioritise *"helping student-teachers acquire technical skills and trainers gain industry experience and knowledge"* (M1, M3, M4, and M5, inter, p7). This suggests a need to bridge the gap between theoretical knowledge and practical application. By providing more opportunities for hands-on training and industry exposure, student teachers can develop the technical competencies required for effective TVET teaching.

CBET training for academic staff: One of the suggestions made by the participants was to provide CBET training to the academic staff of NUST. CBET is an approach that focuses on delivering training based on the specific skills and competencies required by industries and the job market. Retraining the academic staff on the latest exit level outcomes and USs ensures that they are equipped to deliver up-to-date and industry-relevant content to student teachers.

Shifting to practical, skill-oriented training: The participants highlighted the need for a shift from intense theory-oriented training to more practical TVET training. This aligns with the recommendations from scholars (Ismail et al. 2018:9; Jafar et al. 2020:8) who emphasise the importance of providing student teachers with technical knowledge, skills, and innovation competencies, including via WIL opportunities.

The alignment between the research participants' suggestions and the literature review further strengthens the validity of the findings. It indicates a consensus on the

importance of integrating practical skills, industry experience, and innovative competencies into the TVET TE programme. By implementing these recommendations, the DTVT programme can be enhanced to produce graduates who are better prepared for the demands of the job market and equipped with the necessary skills to excel as TVET teachers.

5.4.5 Reflecting on the NTA interviews

The interviews conducted (see Appendix C) revealed that NTA as the regulator of all TVET activities in Namibia, played a crucial role in creating and implementing the DTVT programme for TVET teachers. This is consistent with the findings in the document analysis discussed in section 5.2.1. The interviews also highlighted that the NTA managers possess extensive experience, which contributes to the partnership between NUST and NTA as important stakeholders in TVET teachers' training. These findings are in line with the literature presented in Chapter 3 (see section 3.2).

To effectively evaluate TVET TE and training, it is essential to consider the two interconnected systems: the TVET system (in which TVET teachers work) and the higher education system (in which TVET teachers receive training for their teaching careers). These systems can be analysed at various levels, such as the national, policy, operational, institutional, or school level. This comprehensive analysis allows for a better understanding of the factors that influence the quality and effectiveness of TVET TE. Figure 3.1, provided in the literature (European Commission 2014:21–22), summarises the factors influencing the quality and effectiveness of TVET TE. The left side of the figure provides an explanation of TVET systems, offering context for greater understanding of the development and delivery of TVET teacher training.

Overall, the integration of interviews, document analysis, and a literature review yielded a comprehensive and multi-dimensional approach to evaluating TVET TE and training. This holistic perspective allows for a deeper understanding of the key stakeholders' roles, the interconnectedness of different systems, and the factors that contribute to the quality and effectiveness of TVET TE and training in Namibia.

5.5 OPEN-ENDED QUESTIONNAIRES: EMPLOYED TVET TEACHERS (ETTS) AND ENROLLED STUDENT TEACHERS (ESTS)

As previously indicated (see section 4.7.4), this study has made use of open-ended questionnaires (see Appendix D). Five employed TVET teachers (ETTs) at the following VTCs – WVTC in Windhoek, NIMT-WC in Arandis, COSDEC in Swakopmund, and EVTC in Eenhana in Namibia (see section 4.7.4 and Table 4.3) – and five enrolled student teachers (ESTs) at NUST completed the open-ended questionnaires (see Appendix D) in Windhoek. The ETTs' and ESTs' responses to these open-ended questionnaires indicated that they appreciated the opportunity to air their views and opinions. They also pointed out that this opportunity made them feel that the programme developers cared, which reiterated the importance of personal monitoring and evaluation.

The open-ended questionnaires were managed and administered according to a schedule (see Table 4.3). The number of participants was very small (five ETTs at VTCs and five ESTs at NUST). It was thus deemed inappropriate to identify minor or major patterns for making generalisations but rather to discuss the results. The analysis of the questions on the evaluation of the DTVT programme was based on the four core themes, namely: adequacy, appropriateness, relevance, and effectiveness (as well as their related sub-themes).

5.5.1 Theme: Adequacy

5.5.1.1 Sub-theme: Challenges experienced with learning programmes

The two groups being referred to are ESTs (i.e., Enrolled Student Teachers) and ETTs (i.e., Employed TVET Teachers) who are all studying on either full-time, part-time, or distance basis. The following question was asked to the ETTs and ESTs (see Appendix D): "*What challenges did you experience or are you continuing to experience as a student at NUST with the CBET training programme for TVET teachers?*" The experiences and perspectives shared by the ESTs and ETTs studying at NUST offer valuable insights into the challenges faced within the CBET training programme for TVET teachers. Three key challenges were identified from their responses:

Need for trade-specific training and technological advancements: Both the ESTs and ETTs expressed a need for the programme to cater to specific trades and adapt to technological advancements within those fields. For example, *"The TVET trainer program has its advantages, but it would be more efficient if it catered to specific trades … adapted to technological advancements within those trades. It would be beneficial for this course to train trainers to upgrade their technical skills in the near future".* This comment was emphasised and extracted from the open-ended questionnaires completed by EST1, p.2; EST4, p.2; EST5, p.2; ETT2, p.2; ETT4, p.2; and ETT5, p.2. They believe that upgrading technical skills is essential for the efficiency and relevance of the TVET trainer programme.

Technological challenges: The COVID-19 pandemic not only underscored the importance of technology in education but also highlighted the technological challenges faced by the students, including issues with "*Wi-Fi and computer equipment*" (EST2, p.2 and ETT3, p.2). These challenges have impacted their ability to attend classes and complete assignments.

Need for study guides: Some ETTs and ESTs reported difficulties due to the lack of study guides for many of their courses. *"I have a challenge of needing a study guide for many of my courses, making it very difficult for me."* (ETT1, p.2; ET3, p.2; EST2, p.2). These resources can play a vital role in facilitating understanding and learning.

These insights suggest that improvements are needed in the delivery of the DTVT programme, particularly concerning the provision of technology, the availability of study guides, and the adaptation of the curriculum to cater to specific trades and technological advancements. Addressing these challenges might necessitate additional courses and practical exposure through WIL, potentially leading to an increase in the number of credits required for the programme beyond the current 240 credits.

The literature review reinforces these findings, with scholars such as Ismail et al. (2018:9) and Jafar et al. (2020:8) emphasising the importance of technical knowledge and skills (see also section 3.6), as well as innovation competencies, for effective TVET teaching. They also point out the necessity of proper training resources,

including adequate learning equipment and materials, to prepare students for the workforce. These claims were substantiated by the document analysis (see section 5.2.1), NTA interviews (see section 5.4), and observations (see section 5.6) in the current study.

In summary, the DTVT programme at NUST may benefit from improvements that address the identified challenges, ensuring that it equips TVET teachers with the necessary skills and knowledge to meet the demands of the workforce and the evolving landscape of vocational education.

5.5.2 Theme: Effectiveness

5.5.2.1 Sub-theme: Programme improvement

According to CEDEFOP (2016:1), as presented in the literature review (see section 3.5), TVET educators or teachers should – in addition to their many other responsibilities – also ensure the quality and relevance of all teaching and learning (i.e., in classrooms, workshops, laboratories, and simulated learning environments or the workplace). This means that TVET TE should include two courses: a trade-skill training course (i.e., promotion of practical skills in workshops) and WIL in the workplace. UNESCO (2015) (see section 3.6) also believes that TVET TE must have a course based on work-based learning, which could be promoted in various forms such as in-service training, attachments, apprenticeships, and internships.

The views of the research participants (the DTVT programme students) are in support of the position of UNESCO (2015) and CEDEFOP (2016) that TVET TE must include work-based learning and practical skills training. This is demonstrated in the responses to the following question that was asked: *How much do you know about the current CBET curriculum for TVET teachers? (please motivate your answer)*. The various research participants responded as follows:

- *"The previous technical skills we were doing it in a modular system, having started introducing CBET in our VTCs, it requires an upgrade and understanding to how to deal with CBET curriculum and its assessments processes."* (EST3, p.3; EST4, p.3; EST5, p.3; ETT1, p.3; ETT2, p.3; and ETT4, p.3)

- *"Most of the content is delivered through assimilation. CBET curriculum should promote the experiential learning, and which involves the addressing of skills-oriented learning."* (EST3, p.3; ETT5, p.3)

The above statements were extracted from responses to the open-ended questionnaires and show that the research participants (both the ESTs and ETTs) felt that they had limited knowledge about CBET and how to assess by using a CBET approach. The DTVT students needed WIL and technical skills training to gain industry and workshop training exposure within the NUST setup.

5.5.3 Theme: Relevance

5.5.3.1 Sub-theme: Reputation of the TVET programme

The research participants who completed the open-ended questionnaires were asked the following question: "*Does the CBET programme for TVET teachers address the needs/vision of the VTCs and the industry/workplace?*" Some of the ESTs and the ETTs responded as follows to the above question, focusing on the following key issues:

- **Industry Focus:** *"Yes, they focus more on industry needs, and once you are not completed on a certain unit, you will not get your qualification until you complete it."* (EST 3, p.3; EST4, p.3; EST5, p.3; ETT2, p.3; ETT3, p.3; ETT4, p.3; ETT5, p.3). Many respondents mentioned that the CBET programme has a greater focus on industry needs. This implies that the programme is designed to equip TVET teachers with the relevant skills and knowledge required in the job market. It indicates an alignment between the curriculum and the demands of the industry, which is essential for producing competent and job-ready graduates.
- **Practical skills emphasis:** *"But the Ministry of Education needs to be more involved and recognise the qualification as we struggle to get employment in schools" (EST1, p.3).* Some participants expressed the need for practical skills in TVET education. Practical skills are vital for trainers to upgrade their capabilities and effectively transfer their knowledge to students. This highlights

the importance of hands-on training and real-world application in the CBET programme.

- **Ministry of Education involvement:** *"Not really because practical levels are needed in TVET, for example, practical skills for a trainer to upgrade their skills"* (EST2, p.3). One of the respondents raised concerns about the involvement of the Ministry of Education in recognising the CBET qualification and its impact on employment opportunities. This suggests that there might be challenges in gaining recognition and acceptance of the qualification in certain settings.
- **Vision of VTCs:** *"Yes, because nowadays we are faced with the industrial revolution" (EST1, p.3). Yes, VTCs vision is to promote the quality of individuals' life through skill development and industrialised markets"* (EST2, p.3; EST5, p.3). Some participants recognised the vision of Vocational Training Centres, which is to promote the quality of individuals' lives through skills development and to cater to industrialised markets. This aligns with the goals of the CBET programme, as it aims to produce skilled individuals who can contribute to the workforce and overall economic development.

The research participants in the DTVT programme recognise the significance of catering to the demands of the industry and believe that the programme meets those needs. Most of the ESTs share the concern that practical skills are necessary to become a trainer and find employment. This aligns with the findings of the literature review discussed in the previous section (see section 5.5.2.1), which emphasises the crucial role of practical skills training. The document analysis (see section 5.2.1.5 and 6.3.1.2a) has revealed that the TVET TE programmes require practical skills training, and most NUST lecturers confirmed that the DTVT programme could be more effective if it had a greater focus on practical skills and if the enrolled student teachers and the employed TVET teachers were more frequently exposed to the industry's latest technical training (see 5.3.4.1 and 6.3.1.3). The research participants, particularly those from the NTA (see section 6.3.1.2d) and enrolled student teachers (see section 6.3.1.4), believed that the DTVT programme was less relevant in the absence of courses such as practical skills training and teaching practice.

5.5.4 Theme: Appropriateness

5.5.4.1 Sub-theme: Methodology of teaching and learning

The following question was asked to the research participants in the open-ended questionnaire: "*Do you support the principle that education and training for educators must concentrate more on the (methodology of teaching) functional tasks and supporting knowledge of practitioners?*"

Moving on to the theme of teaching and learning methodology, it appears that most of the participants support the principle that education and training for educators, including TVET teachers, should have a greater focus on the methodology of teaching and on supporting practitioners' practical tasks and knowledge. The following are the key points extracted from their responses:

- **Enriching teaching:** Participants mentioned that expanding knowledge and expertise regarding various instructional approaches can enrich teaching. This highlights the importance of CPD for TVET teachers to enhance their teaching practices.
- **Promoting innovation:** Some respondents emphasised that education and training should enable the discovery of knowledge and skills to improve lives and promote innovation. This indicates a recognition of the role of education in fostering creativity and problem-solving abilities in students.
- **Methodology focus:** Most participants agreed that education and teaching should be more strongly concentrated on methodology as highlighted in the following responses from some of the ESTs and ETTs:

1: *"TVET trainees must balance career growth and learning various skills with technological information. Expanding the knowledge and expertise regarding various instructional approaches can enrich teaching."* (EST 3, p.4; EST5, p,4; ETT1, p.4; ETT2, p.4)

2: *"Fully agreed because provisions of learning keyed out the most discovery of knowledge and skill to improve the lives of Namibians and promote innovation at large."* (EST1, p.4 and ETT4, p.4)

3: *"Yes, because the principal for education and teaching should concentrate more on methodology."* (ETT5, p.4)

4: *"Yes, because this will help the trainer to transfer their skills and knowledge easily."* (EST 2, p.4)

5: *"Education must find a method that best works for their students."* (ETT3, p.4)

This implies that there is a desire for a stronger emphasis on effective teaching strategies and techniques within the CBET programme. A further opinion was raised that *"education must find a method that best works for their students* (ETT3, p.4), that highlights the fact that diversity and flexibility need to be taken into account.

Overall, the responses indicate a generally positive perception of the CBET programme for TVET teachers, with an acknowledgment of its alignment with industry needs and the importance of focusing on teaching methodologies to enhance the quality of education and training in the vocational sector. However, there may be some challenges in terms of recognition and employment opportunities that need to be addressed by relevant stakeholders, including the Ministry of Education.

5.5.5 Theme: Relevance

5.5.5.1 Sub-theme: Identification of new learning areas

In the literature review (see section 3.6) of the current study, certain courses were proposed for the DTVT programme. For example, Ismail et al. (2018:9) and Jafar et al. (2020:8) were of the view that TVET TE should provide technical skills training, industrial experiences, and mental and physical fitness. The provision of basic guidance and counselling could be interpreted as one way of improving the DTVT programme and helping students to be mentally and physically fit to learn and undergo their practical training. These claims were confirmed by the ESTs and ETTs in response to the question: *Are there any specific key learning areas or topics that you think should be covered in the CBET programme for TVET trainers?*

- *"Yes, TVET trainers have to be trained in basic guidance and counselling in order to offer support in personal and academic growth for their trainees by helping each trainee to identify their strengths."* (EST4, p.5)
- *"Area of knowledge, understanding and reasoning and the depth of technical knowledge."* (EST5, p.5 and ETT3, p.5)

- *"How the trainer should present his or her trade. This refers to the practical aspect of the trade."* (EST2, p.5)

Based on the responses from the ESTs and ETTs, it is evident that there are specific key learning areas and topics that they believe should be covered in the CBET programme for TVET trainers. These areas are considered crucial for enhancing the competence and effectiveness of TVET trainers. Some of the key areas and topics suggested by the participants include the following.

Based Guidance and Counselling: The ESTs highlighted the importance of training TVET trainers in basic guidance and counselling skills. This aspect is essential for trainers to provide support in the personal and academic growth of their trainees. By helping trainees identify their strengths, trainers can offer valuable guidance to promote their overall development.

Depth of technical knowledge: Both ESTs and ETTs emphasised the significance of technical knowledge and understanding. TVET trainers need to have a comprehensive understanding of their respective fields to effectively impart practical skills and theoretical concepts to their students.

Practical aspects of the trade: EST2, p.4 specifically mentioned the importance of training trainers in how to present their trade practically. This indicates the need for trainers to possess hands-on skills and expertise in their trade, which is essential for effective delivery of practical training.

Additionally, the South African Department of Higher Education and Training (2013) also emphasises the acquisition of various types of knowledge in TVET TE, including disciplinary, pedagogical, practical, situational, and fundamental learning. Practical learning, such as WIL, plays a crucial role in developing the technical skills associated with the subject and how to effectively teach them.

In summary, the suggestions from the ESTs and ETTs, as well as their alignment with existing literature (see section 3.8.3), indicate that the CBET programme for TVET trainers should encompass a well-rounded approach that includes technical knowledge, practical skills training, guidance and counselling, and an emphasis on physical and mental fitness. These aspects are considered essential for producing

competent and effective TVET teachers/trainers who can successfully meet the demands of the industry and the vocational training sector. The TVET teacher training profession is considered a dual one, as teachers are expected to be experts in both their subject and vocational fields as well as in teaching itself. This means that TVET teachers need to continuously develop their knowledge and skills in these areas to provide the best learning outcomes for their trainees.

5.5.6 Theme: Effectiveness

5.5.6.1 Sub-theme: Programme improvement

Both the ESTs and ETTs study on a part-time or distance basis while also working. In response to the question, "*How best can we improve the CBET curriculum and ensure that NUST maintains the quality of the programmes, teaching and learning?",* they stated the following:

- *"The entry requirements should be very strict, and candidates to enrol on this programme must have five years of teaching experience in one of the VTCs plus a diploma in TVET."* (EST1, p.6; EST2, p.6; EST3, p.6; EST5, p.6; ETT2, p.6; and ETT4, p.6)
- *"We can improve the learning model through skills-based learning and make sure that visual learning is compulsory."* (EST4, p.6)
- *"Teach a trainer on practical skills."* (ETT4, p.6 and ETT5, p.6)
- *"Current model should apply to technology so that the trainers can live with new technology."* (ETT3, p.6)

Based on the responses from the ESTs and ETTs, it is evident that there are several suggestions for improving the CBET curriculum and ensuring the quality of the programmes, teaching, and learning at NUST. Some of the key suggestions for improvement include:

Strict entry requirements: The participants proposed that the entry requirements for the CBET programme should be more stringent. They recommend that candidates should have at least five years of teaching experience at one of the Vocational Training Centres (VTCs) and hold a diploma in TVET. This would ensure that only experienced

and qualified individuals become TVET teachers, which can lead to better quality education and training.

Skills-based and visual learning: The participants emphasised the importance of skills-based learning and suggest making visual learning compulsory in the CBET curriculum. Skills-based learning focuses on practical applications and hands-on training, which is essential for producing competent and job-ready graduates. Visual learning can enhance the understanding and retention of concepts, making it a valuable addition to the teaching and learning approach.

Technology integration: The participants suggested that the current model should incorporate technology to ensure that TVET trainers are equipped to deal with new technological advancements. Integrating technology into the curriculum can help trainers stay up to date with industry trends and prepare students for the digital workplace.

Emphasising practical skills training: Both ESTs and ETTs highlight the need for practical skills training for TVET trainers. This suggests a strong emphasis on WIL and hands-on experience, which are crucial for producing skilled and competent TVET educators.

TVET diploma qualification: The participants proposed that students should have a TVET diploma to qualify for a TVET TE programme. This qualification is regarded as being of a higher standard than the current artisan qualifications obtained at the Namibian VTCs, and it is believed to better equip individuals with the necessary skills and competencies for the role of TVET teachers.

In summary, the research participants' suggestions (see section 5.3.2.2) support the idea of a more practical and skill-based approach to TVET TE. This can be achieved by prioritising hands-on learning, utilising visual aids, integrating technology, and setting higher entry qualifications. By implementing these strategies, NUST can improve the quality of its CBET programmes (see section 5.5.3.1) and effectively equip TVET trainers to meet industry demands and contribute to the development of a skilled workforce.

5.5.7 Theme: Appropriateness

5.5.7.1 Sub-theme: Learning outcomes

The following question was asked to both the ESTs and ETTs: "*What should TVET teachers know about the TVET TE curriculum?*" Some of their responses were as follows:

- *"The TVET trainers have to know the CBET curriculum, a flexible modular-based system where a trainee can obtain as many modules as they wish to lead to the certification they need. Trainees also have to know that CBET focuses on what the trainee should be able to do at the end of the learning experience."* (ETT4, p.6 and EST2, p.6)
- *"In order for trainees to carry out their duties effectively and comply, trainees' readiness as well."* (EST1, p.6; EST2, p.6; and ETT3, p.6)
- *"One of the pillars is to make Namibia an industrial country Vision 2030; hence, the training should speak to the country's demand and new technological trends."* (EST5, p.6 and ETT2, p.6)
- "*Appreciating the learning centres on real-world skills and competency development is essential. Also, help students to develop and demonstrate mastery over the content and build cultural equity*." (EST1, p. 7 and ETT3, p.7)
- *"Using a comprehensive set of learning objectives, content, materials, and methods to evaluate participant attainment of the training goals relevant to a specific topic."* (ETT1, p.7; ETT2, p.7; and ETT3, p.7)
- *"The curriculum should fulfil the industry needs because you must train in the industry needs."* (EST1, p.7; EST2, p.7; EST3, p.7; EST4, p.7; EST5, p.7; ETT1, p.7; ETT2, p.7; ETT3, p.7; ETT4, p.7; and ETT5, p.7)

Based on the responses from the ESTs and ETTs, it is clear that they have a good understanding of the TVET TE curriculum, particularly the CBET approach. The following are key points from their responses:

Flexible modular-based system: The participants mentioned that the CBET curriculum is based on a flexible modular system, where trainees can obtain as many modules as needed to lead to the certification they desire. This highlights the learner-

centric nature of CBET that allows individuals to tailor their learning paths to their specific needs and career goals.

Focus on skills and competencies: The participants emphasised that CBET focuses on what trainees should be able to do at the end of the learning experience. This indicates that the curriculum is outcome-oriented, with an emphasis on developing practical skills and competencies that are relevant to the industry and workplace.

Industry relevance and technological trends: The respondents highlighted the importance of aligning the curriculum with industry needs and technological trends. This ensures that TVET teachers are equipped to meet the demands of the workforce and contribute to the development of an industrialised country as envisioned in Namibia's Vision 2030.

Real-world skills and competency development: The participants stressed the significance of the curriculum being centred on real-world skills and competency development. This implies that the curriculum should prepare trainees to excel in practical and real-life scenarios, fostering their ability to apply knowledge effectively.

Comprehensive learning objectives and evaluation: The participants mentioned that a comprehensive set of learning objectives, content, materials, and evaluation methods should be used to assess participant attainment of training goals. This suggests that the curriculum should be well structured with clear learning outcomes and assessment criteria.

Fulfilling industry needs: The participants strongly advocated that the curriculum should align with industry needs. They emphasised that training must be relevant and meet the requirements of the job market and industrial sectors.

The responses indicate that the research participants possess a thorough knowledge of the CBET curriculum, particularly in relation to practical skills, competencies, and industry relevance (see section 5.3). The participants acknowledge the significance of staying updated on technological developments and ensuring that the curriculum equips TVET teachers to fulfil their responsibilities efficiently. Additionally, they emphasise the necessity of sufficient resources (as stated in section 5.6) to facilitate the effective delivery of the curriculum.

5.6 OBSERVATION OF PHYSICAL FACILITIES (CLASSROOMS, WORKSHOPS AND RESOURCES) AT NUST AND THE FOUR VTCS

The researcher used the opportunity during the data collection period to conduct an observation of the physical facilities (e.g., classrooms and workshops) (see Table 4.3). This allowed the researcher to appraise the standard and quality of the classrooms and workshops at NUST and the VTCs as well as the TVET teachers' commitment, teaching approaches, and student trainers' interactions during presentation and class teaching with their trainees at the four VTCs, namely WVTC, NIMT-WC, COSDEC Swakopmund, and Eenhana VTC.

5.6.1 Conditions of the physical facilities at NUST

The researcher's observation of the facilities at NUST was that the student teachers are experiencing similar challenges to the VTC trainees. The existing TVET facilities at NUST are inadequate to accommodate the envisaged increase in student intake and expanded programmes foreseen during the NSP 5 period. Furthermore, the urgent call by the MHETI for accelerated programme development and diversification of services to include under-skilled in-service teachers renders the review of the current training facilities at NUST an even more urgent priority.

The negative influence of space constraints has been decreased student enrolment and capacity to recruit staff and provide diversified programmes, including trades, due to the lack of dedicated and fit-for-purpose workshops, laboratories, and other workspaces needed for an effective and efficient TVET ecosystem. The DTVET lecturers at NUST are reported to be continuously absent from classes and unavailable to provide student teachers with guidance and learning support. Some of the lecturers also reportedly arrive at the training classrooms late and at times do not show up at all.

5.6.2 Observation of the physical facilities at the VTCs

Based on findings from the literature (see Chapter 2), the researcher drafted a schedule to record all the main aspects of his observations (see Table 4.3). The existing physical facilities at the VTCs representing the various regions of Namibia shows that the classrooms and workshops are inadequate for accommodating the envisaged increase in student intake and expanded programmes foreseen during the NSP 5 period. Two of the institutions have only two classrooms for every trade and one workshop for every trade (Levels 1–3) (OV1/CW1 & OV4/CW1). During the data collection process, some student teachers, TVET teachers in particular, also raised serious concerns that the learning resources and facilities were inadequate and affected the quality of teaching and learning (see section 6.4.2). Apart from the computer laboratories, the mathematics laboratory is the only other class with a computer (OV2/R1). The classroom is well equipped with desks, chairs, a blackboard, and textbooks (OV4/R1). The classroom is well equipped with desks, chairs, a blackboard, and textbooks but inadequate for all the trainees (OV1/R3). Furthermore, the urgent call by the MHETI for accelerated programme development and diversification of services to include under-skilled and in-service trainees make it even more urgent to review the current training facilities at VTCs. TVET needs to grow both in terms of quantity (staff and students) and quality (curriculum review and infrastructure). For this to happen, the VTCs will require state-of-the-art equipment and infrastructure to increase the envisaged enhanced intake in future. The conditions at the VTCs highlight the negative influence of the lack of space on the expansion of TVET in Namibia. There is only one laboratory for every department in the institution, but there is sufficient space for all the trainees in the class. The desks are arranged in such a way that group work is promoted, and some of the institutions have sufficient space in the other classrooms to accommodate students. The visual environment in class enhances teaching and learning; there are various trade-related posters on the walls, identifying it as the particular trade/occupation class (OV2/CW3). The trainees can be seated at working stations arranged in groups of three (OV2/CW2). Based on the findings from the literature review (see Chapter 2), the researcher drafted a schedule to record all the main aspects of his observations (see Table 4.3). The table below shows the different kinds of information collected during observation, referred to as OV.

Table 5.4: Observation Matrix

Vocational Training Centre	Location	Courses	Classrooms/ Workshops	Resources
1. Windhoek Vocational Training Centre (WVTC) ***OV1**	The WVTC is located in Windhoek, the capital city of Namibia. WVTC is a flagship institution in the TVET cluster.	1. Information & Technology Computer Fundamentals. Networking 2. Civil & Construction Bricklaying & Plastering. Joinery and Carpentry 3. Electrical & Electronics Electric General Electronics 4. Mechanical Engineering Auto Mechanics Boilermaker	1. The institution has two classrooms for every trade and one workshop for every trade (Levels 1–3). **OV1/CW1** 2. One laboratory for every department in the institution. There is not sufficient space for all the trainees in the class. The desks are arranged in such a way that group work is promoted. The trainees can be seated at work stations arranged in groups of three. There is more than enough space in the other classrooms. The visual environment in class enhances teaching and learning. Various trade-related posters on the walls identify it as the particular trade/occupation class. **OV1/CW2**	1. The classrooms and workshops have an interactive whiteboard and computer connection. **OV1/R1** 2. Apart from the computer laboratories, the trades laboratory is the only other class with a computer *__OV1/R2.__ 3. The classroom is well equipped with desks, chairs, a blackboard, and textbooks, but it is inadequate for all the trainees. *__OV1/R3__
2. Namibia Institute of Mining and Technology (NIMT) ***OV2**	The NIMT-WC is situated at the entrance of the mining town of Arandis in the heart of the Namib Desert in the Erongo Region of Namibia.	The campus offers approximately six engineering trades full-time, and special type for some, which are essential to equip trainees with the much-needed practical and technical skills necessary to take up positions within the mining and building and civil sectors as artisans and supervisors. The different trades taught at the NET Campus are: 1. Air-conditioning and Refrigeration 2. Boilermaking and Welding 3. Electrical 4. Fitting and Turning	1. The institution has three classrooms for every trade and two workshops for every trade (Levels 1–3). **OV2/CW1** 2. One laboratory for every department in the institution. There is sufficient space for all the trainees in the class. The desks are arranged in such a way that group work is promoted. The trainees can be seated at work stations arranged in groups of three. **OV2/CW2** 3. There is also sufficient space in the other classrooms. The visual environment in class enhances teaching and learning. There are various trade-related posters on the walls, identifying it as the particular trade/occupation class. **OV2/CW3**	1. All the classrooms, workshops, and the main laboratory have interactive whiteboards and connected computers. Apart from the computer laboratories, the mathematics laboratory is the only other class with a computer. The classroom is well equipped with desks, chairs, a blackboard, and textbooks. **OV2/R1**

		5. Instrumentation 6. Petrol and Diesel Mechanic		
3. Community Skills Development Centre (COSDEC) Swakopmund *OV3	In the middle of a township in a Swakopmud town in the Erongo region. The courses are offered at the training facilities in Mondesa and Mahetago, Swakopmund.	1. Business Services (Office Administration and Computing) 2. Hospitality and Tourism (L3) 3. Joinery and Cabinet Making 4. Plumbing and Pipe Fitting 5. Welding and Metal Fabrication 6. Bricklaying and Plastering 7. Clothing Design and Textile Production	1. COSDEC is supported by the Community Skills Development Foundation (COSDEF). The centre has one classroom each for their seven trades and one workshop each for their trades. There is also a Business Development Support Centre which provides different support services to SMEs. There are not enough classrooms and workshops for the trainees, and the desks are arranged for group work. **OV3/CW1**	1. The Office Administration Laboratory has an interactive whiteboard and connected computers. Apart from the computer laboratories, the Business Development Centre is the only other room with a computer. The classroom is well equipped with desks, chairs, a blackboard, and textbooks. **OV3/R1**
4. Eenhana Vocational Training Centre (EVTC) *OV4	The EVTC is located at Eenhana in the Ohangwena region in northern Namibia.	1. Office Administration 2. Bricklaying and Plastering 3. Plumbing and Pipefitting 4. Joinery and Cabinet Making 5. Vehicle collision Repair and Spraypainting 6. Welding and Fabrication 7. Solar Installation and Maintenance	1. The institution has two (2) classrooms for every trade and one workshop for every trade (Levels 1–3). There is not enough space for all the trainees in the class. The desks are arranged in such a way that group work is promoted. The trainees can be seated at working stations arranged in groups of three. There is also more than enough space in the other classrooms. The visual environment in class enhances teaching and learning. There are various trade-related posters on the walls, identifying it as the particular trade/occupation class. **OV4/CW1**	1. All the classrooms, workshops, and main laboratory have interactive whiteboards and connected computers. Apart from the computer laboratories, the mathematics laboratory is the only other class with a computer. The classroom is well equipped with desks, chairs, a blackboard, and textbooks. **OV4/R1**

5.7 A REVIEW OF THE DIVERSE DATA TRIANGULATION RESULTS

As indicated previously (see section 4.10), the data management of the diverse datasets forms an integral part of the analysis. Data management is complex and challenging, because one must first comprehend the data and subsequently locate it within a description to illustrate a concept/phenomenon (McMillan and Schumacher 2001:62). This section focuses on the data triangulation of primary qualitative datasets (see sections 5.3–5.5.7) and thereafter on the theory triangulation results. This section aims to present an overview of the results and compare and contrast the findings through the triangulation process.

Data triangulation (see Table 5.5) entails comparing qualitative data from the document analysis, two FGDs, interviews, open-ended questionnaires, and observations (see sections 5.2.1–5.6.3) in this study, while theory triangulation focuses on the data analysed by means of the CIPP model and CA approach (see sections 5.8 and 5.9). In this study, the researcher decided to handle data management as a display of the triangulation process, which results in a matrix. This summarises the results and identifies common themes in various datasets to generate the triangulated results.

Table 5.5: Data triangulation of diverse datasets

Themes of Study	Doc Analysis	Focus Group	Interviews	Open-ended Questionnaires
Appropriateness	5.2.1.5 Windhoek Vocational Training Centre job description (WVTC 2022) a) The appropriateness of the DTVT programme	*5.3.2.1 Sub-theme: Programme development, design, and implementation process* *5.3.2.2 Sub-theme: Competencies of lecturers* *5.3.2.3 Sub-theme: Staff development* *5.3.2.4 Sub-theme: Stakeholder collaboration and engagement*	*5.4.2.1 Sub-theme: Programme development, design, and implementation process* *5.4.2.2 Sub-theme: Competencies of lecturers* *5.4.2.3 Sub-theme: Stakeholder collaboration and engagements*	*5.5.4.1 Sub-theme: The methodology of teaching and learning* *5.5.7.1 Sub-theme: Learning outcomes*

Adequacy	5.2.1.1 TVET, Higher Education and Innovation Policy Review (UNESCO 2016) a) Provision of inadequate TVET instructors/trainers b) Provision of inadequately trained TVET teachers 5.2.1.2 Ministry of Higher Education, Training and Innovation Strategic Plan (2017/18–2020/21) a) Provision of inadequate TVET instructors/trainers 5.2.1.3 National Technical and Vocational Education and Training (TVET) Policy (Ministry of Higher Education, Training and Innovation 2021) a) Provision of inadequate TVET instructors/trainers b) Provision of inadequately trained TVET teachers	*5.3.1.1 Sub-theme : Adequacy of learning programme credits*	*5.4.1.1 Sub-theme: Learning programme credits*	*5.5.1.1 Sub-theme: Learning programme experienced challenges*
Relevance		*5.3.3.1 Sub-theme: The needs/vision of key stakeholders*	*5.4.3.1 Sub-theme: The reputation of the TVET programme*	*5.5.3.1 Sub-theme: The reputation of the TVET programme* *5.5.5.1 Sub-theme: Identification of new learning areas*

Effectiveness	*5.2.1.4 NUST Diploma in Technical, Vocational Education and Training (NUST 2018)* a) The effectiveness of the DTVT programme	*5.3.4.1 Sub-theme: Programme improvement*	*5.4.4.1 Sub-theme: Programme improvement*	*5.5.2.1 Sub-theme: Programme improvement* *5.5.6.1 Sub-theme: Programme improvement*

**Highlighted sub-themes indicated the data triangulation of the diverse datasets*

Table 5.5 shows that the research participants of the FGDs and face-to-face interviews seem to have the same views regarding the effectiveness of the DTVET programme. They also share the same view (see sub-themes 5.3.1 and 5.3.4.1) that the DTVET programme is relevant to the needs of industry (i.e., including the VTCs). On the contrary, the TVET teachers and TVET student teachers were of the view that the programme was not fully relevant to the needs of the VTCs, particularly as there was a need to upgrade the pedagogical and technical skills of the DTVET programme. The table shows that the direct beneficiaries (TVET teachers and TVET student teachers) held different views among themselves regarding the relevance of the programme.

The table also shows that most of the stakeholders in the TVET sector (i.e., MHETI, UNESCO etc.), including the political leadership in the MHETI (see sub-themes 5.2.1.1–5.2.1.4), are all in agreement that NUST does not provide adequate TVET teachers/trainers (i.e., theme 1) to enter higher education. In the DTVT-trainer learning programme, the lack of provision for technical skills (as mentioned in sub-theme 2) may impact the graduates' level of competency. The TVET teacher training profession is considered a dual one, as teachers are expected to be experts in both their subject and vocational fields, as well as in teaching itself. This means that TVET teachers need to continuously develop their knowledge and skills in these areas to provide the best learning outcomes for their trainees. However, in the context of the NUST DTVET: Trainer programme, TVET teachers are not adequately prepared for this dual profession, which could negatively affect their performance in higher education.

5.8 DUAL THEORY TRIANGULATION

In this Namibian TVET case study, two different theoretical frameworks, namely the CIPP model (see also section 1.8.1 and Chapter 2) and CA (see also section 1.8.2 and Chapter 2), were applied to address the previously related research questions/objectives (see sections 1.4 and 1.5).

5.8.1 Evaluation of the DTVET: Trainer (NQF Level 6) programme (see third objective in section 1.5)

For the evaluation of the DTVT: Trainer qualification, Stufflebeam's CIPP model was used as a framework to guide the evaluation (see third objective in section 1.5). These four components of the CIPP model are also used as the basis for the structure of the discussion.

5.8.2 CIPP model

As previously stipulated in the literature review (see section 2.2.1), Stufflebeam's CIPP model is a comprehensive framework that guides formative and summative evaluations of programmes, projects, and systems (Stufflebeam 2003:31). The model was selected because it considers both the broader context and the details of the specific programme being evaluated (see more detail on justification in section 2.2.3). This makes it appropriate for analysing an educational programme positioned within the TVET system. In this study, the CIPP model was used retrospectively to assess the DTVT programme and thus inform decisions about future programmes for TVET TE in Namibia. As previously indicated (see sections 2.2.1 and 2.2.2), the model's main components (see Figure 5.1) are context, input, process, and product (Kellaghan and Stufflebeam 2003:31).

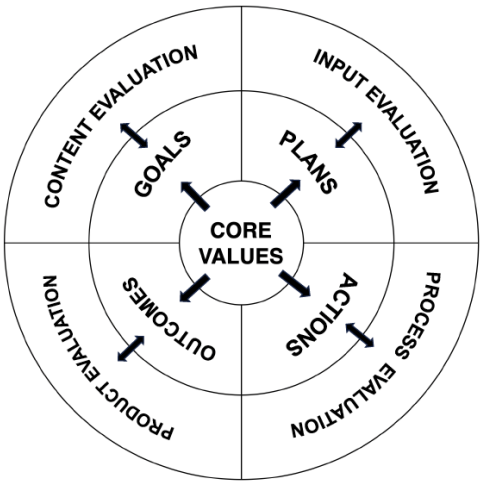

Figure 5.1 Key Components of the CIPP Model and associated relationships with Programme *(Source: Adopted from Kellaghan and Stufflebeam 2003)*

The essential elements of the CIPP model are depicted in three concentric circles. The inner circle shows the core values that should be defined and used to "ground" the evaluation (which includes ideals held by student teachers [see section 5.5], NUST lecturers (see section 5.3), the university, or society at large). The wheel surrounding the values is divided into the four evaluation foci of a programme evaluation: Goals, plans, actions, and outcomes. The outer wheel indicates the types of assessment used for each of the four evaluative foci (i.e., context, input, process, and product evaluation). The bidirectional arrows illustrate the reciprocal relationship between evaluative stress and the type of evaluation (Kellaghan and Stufflebeam 2003:31).

Context evaluations (see also section 2.2.1) consider the history and background of the programme as well as the defined goals, needs, problems, assets, and opportunities (Kellaghan and Stufflebeam 2003:31).

5.8.3 Context evaluation (goals)

5.8.3.1 Post-school education and training

Based on the context evaluation provided, it is evident that Namibia is facing significant challenges in post-school education and training, particularly in the TVET sector. Despite the country's commitment to becoming an industrialised and knowledge-based economy by 2030, there are limitations that remain in producing a skilled and capable workforce.

The TVET sector in Namibia, as represented by public and private VTCs and COSDECs, primarily offers training at the lower levels of the NQF, specifically at NQF Levels 1–3. This means that these training institutions mainly focus on producing artisans with basic skills and qualifications. However, the evaluation points out that there is currently no institution in the country, including NUST, that is specifically training technicians. This implies that there is a gap in the TVET offerings at higher NQF levels (see section 3.8.3), particularly for technical skills development. TVET TE is experiencing several challenges globally, such as limited policy and legal frameworks, shortage of well-qualified TVET educators, inadequate

professionalisation of TVET educators, and ineffective and inappropriate TVET educator training programmes (see section 3.9). The absence of institutions providing technician-level training could have implications for the country's ability to meet its vision of becoming an industrialised economy. Training technicians is crucial for building a competent workforce capable of addressing the technical demands of various industries and driving economic growth.

The evaluation identifies a need for higher-level TVET programmes that focus on technical skills and competencies. This claim has been confirmed by the MHETI's 2017/18–2020/21 Strategic Plan. Addressing this gap is crucial to ensure that Namibia's TVET sector can produce a workforce that meets the demands of the economy and contributes to the realisation of Vision 2030.

5.8.3.2 DTVT programme

Based on the information provided in this study, it appears that there are certain gaps and deficiencies in the design and development of the DTVT qualification programme. The NQA and NQF requirements emphasise the importance of stating the rationale for a qualification and conducting a needs assessment to ensure that the programme meets the demands of the training offerings and stakeholders.

The following key points should be noted:

Rationale of the qualification: The DTVT programme should have a clear rationale that justifies its existence and outlines its purpose (see Appendix A). This rationale should demonstrate why there is a need for this qualification and how it addresses the skills and knowledge gaps in the country, particularly concerning TVET teachers.

Needs assessment: Evidence of a needs assessment is crucial in designing a relevant and effective programme (see section 1.2.2). The new TVET Policy has provided some provisions for the development of TVET standards for technical teachers, for the development and implementation of an ongoing professional development strategy, and for conducting training needs assessments of specialised teachers and trainers (MHETI 2021:18). It should identify the specific needs of

industry, vocational training centres, and other stakeholders. This helps to align the programme with the current demands of the job market and ensures graduates are equipped with the necessary skills and knowledge.

Programme learning outcomes: The learning outcomes of the qualification should be based on the needs identified in the needs assessment. These outcomes should reflect the skills, knowledge, and competencies (see Table 5.10) required by TVET stakeholders and the general public.

Programme values: The curriculum should be grounded in essential values that shape the overall learning experience and the development of students. The values mentioned by Duse and Duse (2015:75-77) are relevant examples, and incorporating these values into the curriculum can foster a holistic and well-rounded approach to education. These values include critical and divergent thinking, positive attitudes towards others, curiosity, tolerance, initiative and implication, coherence and rigour, truth, dialogue, independence, self-confidence, perseverance, health (cultivating a healthy life), aesthetic taste, responsibility, environmental health (cultivating ecological values), and human rights.

Alignment with NTA standards: The DTVT curriculum is informed by USs developed by the NTA, which is positive. However, it is essential to ensure that these USs are up to date, relevant, and aligned with the identified industry needs, because the curriculum should fulfil industry needs (see section 5.5.4.1).

Stakeholder involvement: In the absence of documented needs, it is essential to engage with TVET stakeholders and the general public to gather their input and requirements for the qualification. This involvement ensures that the programme meets real-world demands and prepares graduates for meaningful employment.

In conclusion, for the DTVT qualification to be effective and relevant, it should undergo a thorough needs assessment to identify the specific requirements of stakeholders. The programme should also clearly state its rationale, align its learning outcomes with the identified needs, and be guided by essential programme values to shape a well-

rounded education. Stakeholder involvement and collaboration are vital throughout the curriculum development process.

5.8.3.3 TVET

The information provided in this current study highlights some significant challenges and issues within Namibia's TVET system. Despite the critical role that TVET institutions play in providing technical skills and vocational training, several obstacles hinder the effectiveness and attractiveness of these institutions.

Key challenges and issues include:

- **Insufficient training of graduates:** There is a perceived need for TVET institutions to produce higher-level graduates (artisans). However, graduates often face difficulty finding employment or pursuing further training opportunities both locally and internationally.
- **Perceived poor quality and relevance:** TVET institutions under the control of the NTA are perceived to offer poor quality and less relevant training (UNESCO 2016). This perception may discourage potential students from enrolling, and it can impact the employability of graduates. In brief, the NTA was generally not convinced regarding the above-mentioned statement and felt that NUST was not exposing their student teachers to industry experience, and the perception was that stakeholder consultation with industry and employers needed to be more adequately and effectively done (see section 5.4.2.1).
- **High dropout rates:** The TVET system experiences high dropout rates, which further reduces the supply of skilled workers. Dropout rates may be indicative of various issues within training programmes and support systems. According to the UNESCO report (2016:60–61), the high dropout rates are due to a lack of foundation skills among trainees, inadequately trained instructors, and, in some instances, deficient and outdated training equipment.

- **Fragmented TVET system:** The TVET system in Namibia is fragmented, with various providers offering different models of training. This lack of consistency and coherence may lead to confusion among stakeholders and students.
- **Slow transition to CBET:** The CBET model, promoted by the government, faces resistance from some stakeholders and limited understanding from others. The slow transition to CBET can hinder efforts to improve the quality and relevance of TVET programmes (UNESCO 2016).

Despite these challenges, TVET institutions have the potential to address the acute deficiencies in technical and vocational skills in the country. They can play a vital role in bridging the skills gap and increasing access to post-school education, especially for the youth facing unemployment or who are not in education, employment, or training (NEET). To address these issues and enhance the TVET system's effectiveness, the following measures can be considered:

Improve training quality: TVET institutions should focus on improving the quality and relevance of their training programmes to meet the demands of the job market and industries. Collaboration with industries and employers can help ensure that the skills taught are aligned with the actual needs of the workforce.

Enhance CBET implementation: The government and stakeholders should work together to address concerns and barriers to successful implementation of the CBET model. Effective communication and training can help clarify the benefits and methodologies of CBET.

Strengthen partnerships: Collaboration between TVET institutions, industries, and other stakeholders can lead to better internship and job placement opportunities for graduates. Partnerships can also provide support in updating training content to align with industry trends.

Address dropout rates: Identify and address the factors contributing to high dropout rates, such as inadequate support systems, financial challenges, or curriculum-related issues.

Improve perceptions and promotion: Raise awareness about the importance and value of TVET education through effective communication and marketing strategies.

Highlight success stories of TVET graduates to demonstrate the potential benefits of pursuing vocational training.

By addressing these challenges and implementing strategic reforms, TVET institutions can enhance their role in addressing Namibia's technical and vocational skill deficiencies and contribute to reducing youth unemployment and the NEET population.

5.8.3.4 DTVET: Trainer

In 2019, NUST combined two certificates (i.e., the CTVET: Trainer and the HCTVET: Trainer) into the DTVET: Trainer. The DTVET: Trainer programme aims to develop the pedagogical skills of individuals pursuing a career as TVET teachers, and its focus is on vocational andragogical studies. This training programme is offered in full-time, part-time, and distance education modes. The programme is assessed using the examination-based evaluation system. The teaching practice component is included in the DTVET: Trainer programme, where student teachers are placed at various VTCs and assessed on their performance by the staff members. The first enrolment of full-time DTVT student teachers took place in 2020. The first full-time cohort to graduate from the programme at Level 6 completed the course at the end of 2020. The details of the revised DTVT programme are available in Appendix A.

The following are key points about the revised NUST DTVET Trainer programme:

Combination of certificates: The programme combined two certificates, the CTVET: Trainer and the HCTVET: Trainer, into a single diploma programme.
Purpose: The main goal of the DTVET: Trainer programme is to develop the pedagogical skills of individuals aspiring to become TVET teachers. The focus is on vocational andragogical studies.
Modes of study: The programme offers multiple modes of study to accommodate different learners, including full-time, part-time, and distance education.
Assessment system: The programme uses an examination-based evaluation system to assess students' performance and knowledge.

Teaching practice component: The DTVET: Trainer includes a teaching practice component. Student teachers are placed at various VTCs to gain practical teaching experience. Their performance during this teaching practice is assessed by staff members.

First cohort: The first full-time cohort of the DTVT programme started in 2020, and they completed the course at Level 6 by the end of 2022.

5.8.4 Input (plans)

5.8.4.1 General structure of the DTVT qualification

The DTVT qualification consists of 20 compulsory courses, 10 for Year 1 and 10 for Year 2. The first semester of each year has six classes, while the second semester has four. Appendix A, which shows the programme's exit learning, clearly demonstrates that no technical skills training is provided.

The DTVT programme, in terms of good practice (e.g., compared to the TVET lecturers' professional qualifications in South Africa) lacks technical skills training and practical learning or WIL). The absence of technical/functional skills training is likely to result in graduates knowing how to teach (i.e., being trained on how to guide) but not being able to understand what to teach, which means that they will lack both practical and technical skills (Department of Higher Education and Training 2008). Table 5.6 below shows the TVET teacher qualifications and entry requirements in selected African countries.

Table 5.6 TVET teacher qualifications and entry requirements (Namibia, South Africa, Kenya, and Tanzania)

(Source: Adapted from NUST Yearbook, 2021)

Country	Name of Qualification and NQF Level	Minimum Entry Requirements	Number of Credits	Theoretical Training	Technical Skills Training and/or WIL
Namibia	Diploma in Technical Vocational and Training: Trainer: NQF Level 6. Courses pegged at Levels 4 (10 credits), 5 (116 credits), and 6 (116 credits).	Artisan (NQF Level 3 and three years of industrial experience.	242 (two-year period)	Yes	No
South Africa	Diploma in Technical Vocational Teaching: NQF Level 6. Courses only pegged at Levels 5 and 6.	Academic qualification at NQF Level 6.	360 (three-year period)	Yes	Yes

Kenya	Diploma in Technical Teacher Education: Level 6.	Higher Diploma in a technical course or Bachelor of Education in Technology / BSc degree in any relevant technical subject/course.		Yes	
Tanzania	Vocational Teacher Certificate Course: Level 5 or Diploma in Vocational Education and Training (Two-year programme – Level 6).	Full Technician Certificate: Level 5 plus two years' industrial experience. A minimum of Trade Test Grade 1 or Competency-based Education and Training (CBET): Level 3 plus two years of industrial experience.		Yes	

The minimum qualification requirements to become a TVET trainer are also below the requirements of acceptable practices in Africa. A DTVET in South Africa consists of 360 credits (see Table 5.6), while the DTVT in Namibia consists of only 251 credits (see Appendix A). The Namibian artisans are produced at NQF Level 3 and qualify to be trained at a Diploma Level 6, provided they have three years of industrial experience. With the absence of WIL, the TVET teachers, after two years of theoretical/pedagogical training, will need more skills to produce competent and qualified artisans. In other countries, there are higher requirements for training as a TVET teacher, trainer, or lecturer. In other words, the level of complexity of the DTVT must increase.

One of the NQF's practice elements is that a qualification should be "meaningful, useful and used". As identified above, the lack of critical competencies brings the meaningfulness and usefulness of the DTVT's qualification design into question. A qualification should be challenging as part of good practice, requiring effort and sacrifice to attain. The absence of practical learning (through, for example, WIL) compromises the DTVT qualification (Ministry of Education 2006).

The DTVT programme is expected to be underpinned by the following objectives of the NQF:

- "Redress of past injustices through, amongst other methods, the recognition of prior learning,
- Enhance the relevance of education and training by relating standards to the competencies required to fulfil a job's roles and functions,
- Promote recognising an individual's right and desire to access lifelong learning by providing different pathways to success,
- Integrate the education and training systems to facilitate the movement of learners both horizontally and vertically in the framework and to prevent learners from being locked into dead-end programmes,
- Enhance quality in education and training through the development of standards-based qualifications that will recognise outcomes, no matter how achieved, and

- Democratise the education and training system by providing for the stakeholders to participate in the system in a meaningful manner" (Ministry of Education 2016:58).

All student teachers are assessed through continuous assessment and summative assessment. Each course has a minimum of four assessment tasks for recording continuous assessment marks. Courses assessed by means of a combination of continuous assessment and a final end-of-semester examination must have at least three continuous assessments. To be admitted to the final examination in any course, a minimum semester mark of 40% must be obtained. Such continuous assessment should be conducted through tests, assignments, seminars, practicals, and tutorials. The semester mark and examination mark will be used in a 40:60 ratio, respectively, to determine the final mark. A student must obtain a minimum average of 50% as a final mark to pass a course, subject to a sub-minimum of 40% in the examination mark (see Appendix A and NUST 2023:109).

5.8.5 Process evaluation (actions)

5.8.5.1 DTVT Curriculum Overview

The process evaluation stage mainly investigates the quality of the programme's implementation. Harden (2001:124) provides a valuable curriculum map for analysing a curriculum, which focuses primarily on what is taught, how it is taught and when, and the measures used to determine whether the student has learnt. A curriculum is a complicated interaction of, among other things, learning outcomes, teaching and learning strategies, assessment strategies, course content, teaching and learning experiences, and assessment. Harden suggests using ten windows to view a curriculum (2001:127). These windows can be arranged according to how they relate to each other within a particular programme, and the representation of the windows is thus unique and dynamic. Figure 5.2 below shows the basic curriculum map.

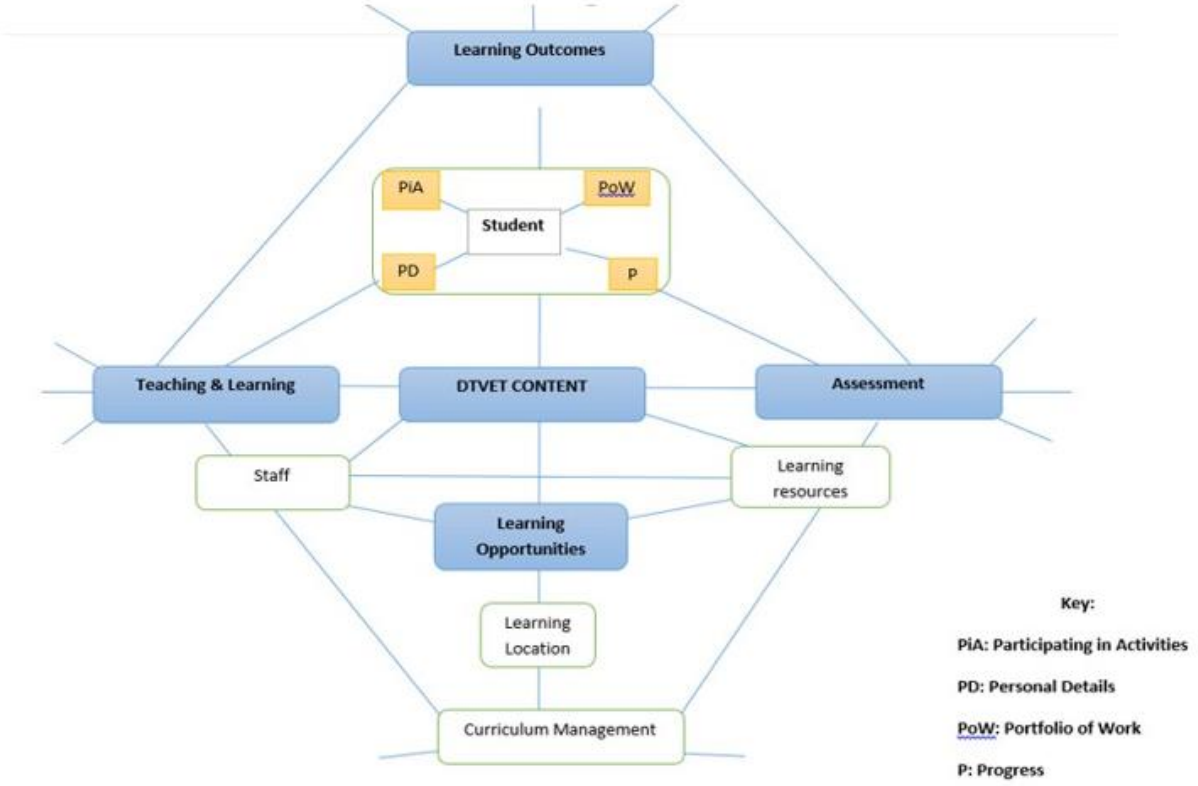

Figure 5.2: Representation of DVET Curriculum (Source: Adopted from Harden, 2001:126)

Figure 5.2 shows the basic curriculum map for how the researcher considers the interaction between the DTVT programme windows. The content of the curriculum has been placed at the centre as it was the first point of interaction with the curriculum. The interlinked interactions between student teachers and staff around teaching, learning, and assessment within the learning environment are depicted. Each window will have sub-windows, which are not depicted here, but each window will be discussed in as much detail as possible. By using these ten windows, educators and curriculum developers can gain a comprehensive and dynamic view of the curriculum, allowing for better analysis and evaluation, and in so doing, improvement of the programme's quality and effectiveness.

5.8.5.2 DTVT Curriculum Content

Twenty courses are required to obtain the DTVT programme (refer to Appendix A). This section will focus on the vocational pedagogical courses, but it is essential to highlight some elements of the fundamental subjects. The course content is as follows:

5.8.5.2.1 Fundamental courses

Two English-related courses are offered (i.e., Principles of the English Language and English in Practice) to allow student teachers to improve their speaking and writing abilities in English, which is advantageous. A good command of English undoubtedly helps with verbal and written reporting and communication in settings where there is diversity, which is typical in Namibian work settings.

The third fundamental course offered is Computer User Skills. This course aims to help student teachers acquire both practical and technical skills to effectively use the basic functionalities of a personal computer and widely used software as tools to solve problems and improve personal and organisational productivity. This will also prepare them for work- and study-related obligations.

5.8.5.2.2 Vocational pedagogic courses

It is essential to specify whether the 17 vocational pedagogic courses are appropriate to offer and whether there are gaps in the DTVT programme. There are no professional competencies for TVET educators/trainers in Namibia apart from the fundamental competencies for a diploma qualification at NQF Level 6, which are inadequate to present professional competencies holistically. The South African TVET Professional Competencies for lecturers, as outlined in Appendix I, and the types of learning associated with the acquisition, integration, and application of knowledge for teaching will be used to evaluate the curriculum. The types of learning are as follows: Disciplinary knowledge (i.e., the study of education and its foundation and the study of specific and specialised subject matter), pedagogical learning, practical learning,

situational learning, and fundamental learning (Department of Higher Education and Training 2013). To view the Professional Competencies document, see Table 5.10.

Table 5.7: DTVT courses aligned to the types of learning *(Source: Adapted from the Department for Higher Education and Training, 2013, South Africa)*

Types of Learning	DTVT Courses
Pedagogical learning	● Psychology of Learning (A & B) ● Assessment in TVET (A & B) ● History of TVET ● Counselling and Career Guidance ● Introduction to Curriculum Studies ● Reflective Teaching and Practice ● Educational Technology ● Professional Development and Practice ● Classroom and Workshop Management
Practical learning (or WIL): Practice – theoretical and practical/technical	● Introduction to Teaching Practice (A & B) ● Teaching Practice (A & B)

skills	
Situational learning	Education for Sustainable Development (ESD) (1A & 1B)
Fundamental learning	● Principles of English language ● English in Practice ● Computer User Skills

The DTVT courses, as shown in Table 5.7, are to some extent aligned with the above-mentioned four learning types, although they were not designed according to these types of knowledge. The course design was duplicated from higher education institutions outside Namibia. Eleven (55%) of the DTVT courses are within the pedagogical learning category, four methods (20%) are within the practical learning category, two courses (10%) are within the situational knowledge category, and three courses (15%) are within the fundamental learning category. The method of duplicating the curricula of other institutions is not appropriate as it compromises the Namibian contextualisation as well as the needs of stakeholders, such as industry and vocational training institutions in Namibia.

TVET teachers/educators are expected to have up-to-date knowledge of their courses' application in, and relevance to, the workplace. Best practice dictates that TVET teachers who teach vocational or technical courses' practicals, or workshop components, must offer WIL. The provision of WIL ensures that student teachers learn the technical skills associated with the trade course and how to teach it. The absence of WIL in the DTVT programme is a serious omission, especially since most of the student teachers are NQF Level 3 trade training graduates.

5.8.5.3 DTVT Exit Programme Learning Outcomes

The DTVT programme consists of 13 exit level outcomes. TVET teacher/trainer education is a dual profession, which, as per best practice, requires that the following competencies be acquired by TVET teachers (for more details, see Figure 3.2 and Appendix A): teaching, learning, and training competencies; personal attributes and professional competencies; motivation competencies; mental and physical competencies and skills; and technical and innovation competencies (Ismail et al. 2018; Jafar et al. 2020). The question arises as to what extent the DTVT qualification addresses the expected competencies of a TVET educator in the Fourth Industrial Revolution. Based on the information provided in the study, it appears that the DTVT qualification in Namibia may have some limitations in equipping a TVET educator

within the context of the Fourth Industrial Revolution. The following are some key points to consider:

Competency coverage: The mapping of TVET professional competencies to the DTVT programme's exit level outcomes shows that a significant majority (about 77%) of the outcomes fall under the Teaching and Learning and Training competency category, while a smaller portion (approximately 23%) falls under the Skill, Technical, and Innovation competency category. This indicates a potential imbalance in addressing various essential competencies that TVET educators should possess.

Missing competency categories: The DTVT programme seems to lack explicit exit level outcomes related to essential competency categories such as Personal Attributes and Professionalism, Motivation, Physical and Mental Fitness, and Technical Competencies. This shortfall may limit the preparedness of trained trainers to address TVET TE issues holistically and effectively.

Theoretical emphasis: The Teaching Practice courses in the DTVT programme are primarily theoretical, lacking sufficient emphasis on advancing technical skills. Practical learning experiences and opportunities for promoting technical skills appear to be inadequate, potentially compromising the competency of Namibian artisans to be certified as qualified and competent TVET educators.

Subject specialisation knowledge: The DTVT programme does not seem to adequately address the importance of TVET educators having a sound knowledge base of their subject specialisations, which is considered essential.

Integration of knowledge, practice, and affective attributes: The DTVT curriculum might prepare student teachers to understand how to teach subjects and adapt content based on learner needs, but it may not sufficiently integrate the teaching of knowledge, practice, and affective attributes. Affective attributes refer to the emotional and attitudinal aspects of teaching, which are crucial for effective TVET education.

Lack of stated graduate attributes: The DTVT does not have any stated graduate attributes that could serve as a basis for developing the exit level outcomes. Graduate attributes typically define the qualities, skills, and values that graduates should possess upon completion of their studies.

To address these shortcomings and ensure that the DTVT qualification better aligns with the expected competencies of TVET educators within the context of the Fourth Industrial Revolution, it may be necessary to consider the following steps:

Conduct a comprehensive review: Conduct a comprehensive review of the DTVT to identify gaps and areas for improvement in terms of competency coverage and integration.

Enhance practical learning opportunities: Introduce practical learning experiences and opportunities within the programme to promote technical skills development and real-world application of knowledge.

Incorporate graduate attributes: Define and incorporate explicit graduate attributes that reflect the qualities, skills, and values expected of successful graduates.

Consider holistic TVET educator competencies: Ensure that the programme addresses a broader range of competencies, including personal attributes, professionalism, motivation, and physical and mental fitness, in addition to teaching and technical skills.

Emphasise subject specialisation: Strengthen the focus on subject specialisation knowledge for TVET educators to enhance their expertise in specific vocational areas.

By addressing these aspects, the DTVT qualification can better equip TVET educators with the necessary competencies to thrive within the context of the Fourth Industrial Revolution and meet the evolving demands of the TVET sector.

5.8.5.4 Teaching and learning

There is no national policy framework or professional standards for TVET teachers that could guide the design and development of TVET TE programmes and teaching and learning within TVET institutions. As a result, an institution such as NUST trains trainers through accredited, and occasionally non-accredited, programmes and qualifications. There are no explicitly stated types of learning, except problem-based learning, to guide and promote quality TVET TE (Ministry of Higher Education,

Technology and Innovation 2021). The intention to use problem-based learning is encouraging, but it is limiting to identify only one instructional approach. Problem-based learning is a “student-centred educational method which aims to develop problem-solving skills through self-directed learning as a lifetime habit and teamwork skills” (Ali 2019:1). Problem-based learning is a student-centred educational method aiming to develop problem-solving skills through self-directed learning as a lifelong habit and teamwork skills. Additionally, Tusting and Barton (2003:23-30) stated that there are several adult learning methodologies which include informal learning, self-directed learning, experiential learning, and transformative learning. They emphasized that these methodologies should be considered for practical applications and that they are not mutually exclusive. In fact, instructions often blend them to create more effective learning environments for adult learners.

Figure 3.1 shows that the quality and effectiveness of TVET TE, which has a component of teaching and learning, is influenced by the type of national policies on TVET, national policies on TVET TE, the TVET system and the TVET TE system (European Commission 2014:21–22). The absence of national policies on TVET TE and a TVET TE system that is not articulated in terms of a clear framework influences the type of teaching and learning that can be expected in higher education institutions training TVET teachers. The South African Department of Higher Education and Training (2013) posits that, within the context of TVET education, competent teaching and learning is mainly feasible if there is a blend between the theoretical and practical. It is further argued that teaching and learning depend on the acquisition, integration, and application of different types of knowledge, which entails disciplinary, pedagogical, practical, situational, and fundamental education (DHET 2013). The absence of specific types of learning in the DTVT programme will likely impede the concerted efforts to train trainers optimally.

The information provided highlights the lack of a national policy framework or professional standards for TVET teachers in Namibia, which can have significant implications for the design and development of TVET TE programmes and the teaching and learning within TVET institutions. As a result, an institution such as NUST

is left to train TVET teachers/trainers through accredited, and occasionally non-accredited, programmes and qualifications without clear guidelines or standards to follow.

The following are some key points to consider:

Absence of national policy framework: The absence of a national policy framework for TVET teachers creates challenges in setting clear guidelines and standards for TVET TE programmes. This can lead to inconsistencies and variations in the quality and effectiveness of the training provided.

Limited types of learning: The lack of explicitly stated types of learning, except problem-based learning, can limit the variety of instructional approaches used in TVET TE. Emphasising only one instructional approach may not cater to the diverse needs and preferences of learners and can hinder the development of a well-rounded set of competencies in prospective TVET educators.

Importance of theory and practice: The South African Department of Higher Education and Training (2013) emphasises the importance of combining theoretical and practical elements in TVET education. Qualified teaching and learning in TVET depend on the acquisition, integration, and application of various types of knowledge, including disciplinary, pedagogical, practical, situational, and fundamental education.

Need for a clear framework: To train TVET educators most competently, it is essential to have a clear framework that defines the types of learning and instructional approaches to be used. A comprehensive framework would help ensure that TVET TE programmes cover the necessary knowledge, skills, and competencies required by TVET educators.

Role of national policies: National policies on TVET TE can play a crucial role in guiding institutions in designing effective teacher training programmes. Such policies can set standards for curriculum development, teaching methods, and assessment practices, ensuring consistency and quality in TVET education.

To address these issues and promote the effectiveness of TVET TE, it is essential for Namibia to develop a comprehensive national policy framework and professional

standards for TVET teachers. This framework should include guidelines for different types of learning approaches, emphasise the integration of theory and practice, and outline the competencies expected of qualified TVET educators. By establishing clear standards and guidelines, Namibia can strengthen the TVET TE system and ensure that TVET educators are well prepared to meet the demands of the education sector and contribute effectively to the development of a skilled workforce.

5.8.5.5 Assessment

This section will examine the assessments of the pedagogical courses of the DTVT programme. Overall, the assessment approach described here aims to ensure that student teachers are continually evaluated, that their progress is monitored, and that they have opportunities to demonstrate their understanding and competence. The use of make-up assessments allows students who may have faced challenges during the course to improve their performance and achieve the required level of competency (NUST Yearbook 2021).

Written assessments were based on the learning outcomes for each course. Student teachers are assessed according to five levels of competence. The overall performance in a system shall be evaluated on a percentage scale divided as follows:

Table 5.8: Scale of achievement of pedagogical courses *(Source: NUST Year Book, 2021)*

RATING	MARKS %
Distinction	**75 ≥**
Merit	**70–74**
Credit	**60–69**
Pass	**50–59**
Fail	**0–49**

The university has a system known as examination opportunities, which are offered at the end of each semester. Student trainers are encouraged to utilise the first opportunity provided immediately following the semester in which the course is taught, but they may also choose to use only the second opportunity offered in July for first-semester courses and January for dual-semester systems. Supplementary examinations are re-examinations that are written together with the second opportunity examination. A student teacher who fails a course in the first opportunity examination shall be entitled to sit for a supplementary examination. A minimum of 50% constitutes passing a course, provided that a student teacher has a continuous assessment mark of 40% and a minimum final examination mark of 40% (NUST 2021).

The above assessment approaches present a fair process for student trainers, and student trainers should find it challenging to complete the qualification.

5.8.5.6 Student teachers

Most student teachers have between three and five years' work experience, and they are enrolled either on a full-time, part-time, or distance mode.

5.8.5.7 Learning opportunities

Learning opportunities in this study are analysed from two perspectives: Practical learning and articulation arrangements for advanced learning opportunities in high-level qualifications. Through its Curriculum Framework document, the university has made provision for the offering of at least 36 WIL credits.

The most significant criticism of the DTVT programme has been that there must be industry exposure for student trainers in real-life settings, apart from Teaching Practice – for which student trainers felt the time slot provided was inadequate.

5.8.5.8 Practical learning and Work-Integrated (WIL)

The university (i.e., NUST) has two Teaching Practice courses, which are offered in the second semester of the first year and the fourth semester of the second year. The purpose of teaching practice, although not explicitly expressed, can be deduced from the expressed comprehensive course learning outcomes as follows:

> *Interpret teaching and learning activities through a comprehensive and systematic approach in a simulated teaching environment.*
>
> *Conduct and manage training and assessment activities in a vocational education and training environment.*

It is positive that Teaching Practice courses are offered. Teaching Practice is done through the first simulation approach and only after the fieldwork approach. Teaching Practice for TVET teachers aims to provide student teachers with the opportunity to express their educational philosophies, theories, and understandings. It aims to create a chance for student trainers to experiment and test their knowledge and skills in teaching and learning (Abongdia, Adu and Foncha 2015).

The Teaching Practice offered in the DTVT programme is a practicum or a type of internship of a practical nature. Its learning outcomes stated above show that it aims to enable student teachers to practise and test what they have learnt in the lecture

rooms and thereby gain practical teaching experience. It helps student teachers to obtain teaching skills. The absence of WIL prevents student trainers from acquiring the practical/technical skills they need to be effective and productive trainers.

The biggest concern of student teachers and trainers regarding employment is the lack of technical skills advancement and hands-on experience in their teaching fields, which they could gain from companies during their training as a kind of internship. The purpose of such exposure is for the student teachers to become acquainted with the work environment of their subject matter. This helps the student teachers gain first-hand information about the world of work. The university makes provision for WIL, but such opportunities still need to be fully utilised, which affects the quality of the graduates and the entire programme offering.

In terms of the best practices around the world, the literature (ILO 2022: UNESCO 2018), suggests that, given the multifaceted role of TVET teachers/trainers, pre-service programmes should develop pedagogical, technical, and practical skills and competences among student teachers. Rawkins (2019) added that TVET teachers' pre-service training should provide similar experiences and learning in all three areas. These skills and competencies could be obtained through lecturing (i.e., acquisition of pedagogical skills), internship/WIL (i.e., the addition of technical skills) and Teaching Practice fieldwork (i.e., purchasing of practical skills).

5.8.5.9 DTVT programme articulation arrangements

The DTVT programme, as per the NQA quality assurance, must be designed to allow for articulation arrangements. In other words, the programme should facilitate the horizontal and vertical movement of learners in the framework and prevent learners from being locked into dead-end programmes. Currently, the DTVT programme does not articulate any qualification that allows graduates to further their studies. The only provision available is for student teachers to apply for transfer of credits through the Recognition of Prior Learning (RPL) policy.

Programme articulation arrangements require integration of the education and training systems to facilitate the horizontal and vertical movement of learners in the qualification framework and to prevent learners from being locked into dead-end programmes.

5.8.5.10 Learning location (full-time, part-time, and distance offerings)

The full-time and part-time offerings took place in Windhoek at NUST's Main Campus, which is equipped with library resources and internet facilities. Distance student teachers were supported through Moodle e-resources.

5.8.5.11 Curriculum management

The lecturers and administrative staff employed in the TVET department managed the curriculum. For distance students, curriculum management was done through the support of the COLL Department. The lecturers and full-time administrative staff supported both full-time and part-time student trainers. All assessment matters were managed by the Assessment and Examination Unit.

5.8.6 Product evaluation (outcomes)

The outcomes of the DTVT programme are considered in terms of overall positive and negative effects. The annual examination results in terms of pass rates will also be examined, and the part-time offering results will be compared to these (i.e., full-time and part-time will be compared as effectively as possible).

5.8.6.1 DTVT programme outcomes

The positive and negative aspects of the DTVT programme and the intended and unintended outcomes were considered. Positive themes that emerged included hope and appreciation of the offerings. Negative themes such as frustrations and criticism of the programme were evident.

5.8.6.2 Student trainers' results in the DTVT programme

At the beginning of the first semester of every year, in all the academic years, the DTVET experienced challenges with many student teachers registering for the TVET programmes. More than 300 student teachers registered for these programmes, which demonstrates how TVET has become the driving force of Namibia's economy. This has put the department under tremendous pressure to cater to all these student teachers, and the department is understaffed. It is challenging to secure a qualified and competent TVET practitioner, especially for full-time teaching. The delayed resumption of classes results in lecturers rushing through the curriculum and assessment tasks as a CBET approach is used with four assessment tasks per subject.

Another challenge is marking many distance students' assessments, which leads to a lack of engagement and makes it challenging for them to produce quality work in their assessment tasks. As per the Excel sheet (see section 6.2), many distance students performed poorly due to the lack of face-to-face engagement and the requirement to complete three assessment tasks per course, which totals 42 assessment tasks per semester. However, the FPL student teachers performed satisfactorily with an overall average of 87% pass rate.

In brief, one solution to the challenges is to increase the number of engagements with distance students. Another possible solution is to fill more positions for lecturers to cater to the large numbers of student teachers. This will help to reduce the lecturer–student ratio and minimise the workload. Increasing the facilities for TE will also have

a positive impact on planning for the semester and allocating venues for classes. Classes will then begin on time, as set by the institutional calendar, and lecturers will be able to complete the curriculum and assessment tasks on time. Allowing the permanent staff to have part-time contracts will also encourage them to work harder towards attaining optimal results.

5.8.7 Contribution of the DTVT programme

This section considers the first objective, which deals with programme adequacy, effectiveness, appropriateness, and relevance. Nevertheless, it is addressed through three aspects: i) how the DTVT programme contributed to producing competent and qualified artisans; ii) how the programme developed human resources; and iii) how it developed personal learning and guided aspirations.

Vocational teachers or trainers are an essential cadre of TVET educators and workers in Namibia. The negative perceptions about TVET in Namibia, mainly that it produces artisans who are perceived as inadequate and incompetently trained, remain a daunting concern.

The key to developing quality TVET TE is the sufficient preparation of TVET teachers in their pre-service training; hence, adequate and quality education and training is essential. The CA helps to guide discussions about how best to train TVET teachers.

The following sections will attempt to address Objective 3 by considering critical thoughts around the capabilities of TVET teachers; the qualifications required for TVET teachers to, indeed, be invaluable to education and training service delivery; and how TVET education and training can be structured around these capabilities.

5.8.8 The Capabilities Approach (CA)

As already stated in the literature review (see also sections 2.2.7–2.2.8), the CA originated from Amartya Sen, who defined capability as “a person’s ability to do

valuable acts or reach valuable states of being; [it] represents the alternative combinations of things a person can do or be" (Sen 1993, as cited by Kuhumba 2018:5). The CA asserts that human beings are defined by "functioning", which is made up of "beings" and "doings," i.e., what you are and what you do. Furthermore, this functioning is being and doing what people value and have reason to love, e.g., being literate and employed (Alkire and Deneulin 2009). "Capabilities" are the opportunities or potential to achieve and enjoy those beings and doings (Robeyns and Morten 2021; Alkire and Deneulin 2009). Using the options for being and doing, or the ability to pursue and realise valued goals is "agency" (Alkire and Deneulin 2009). The interaction between functioning, capabilities, and agency determines well-being, and there is freedom when this interplay is optimal (Robeyns and Morten 2021; Alkire and Deneulin 2009).

The CA situates people as active participants in development. However, the agency depends on social, economic, and political arrangements (Walker and Unterhalter 2007). Thus, the CA allows for a deeper understanding of the complexities of completing vocational education and training TVET teachers for TVET system reform.

5.8.8.1 Considering the capabilities of TVET teachers

a) Roles and competencies of TVET teachers

The job of a TVET teacher/trainer (commonly known as an instructor at a VTC) is crucial in delivering quality training to trainees in their specific subject or area of specialisation. The main purpose of their role is to prepare and equip trainees with the necessary skills and knowledge required for their chosen vocation or trade.

The following are key aspects of the job of a TVET teacher/trainer:

Quality training delivery: TVET teachers/trainers are responsible for planning and delivering high-quality training to the trainees. They design and implement instructional strategies to facilitate effective learning experiences.

Classroom/workshop management: They carefully manage the learning environment, whether it is a classroom or a workshop, to ensure an atmosphere that is conducive for effective learning.

Progress assessment: TVET teachers/trainers continuously and formally assess the progress of trainees to identify strengths and areas for improvement. This assessment process helps in providing timely feedback and support to help trainees succeed in their training.

Final assessment readiness: The ultimate goal of TVET teachers/trainers is to prepare trainees for the final assessment, where they demonstrate their competence in their chosen field.

Requirements for TVET instructors/trainers: Minimum Trade Qualification: TVET instructors/trainers should have at least an artisan-level trade qualification in their area of specialisation. This ensures that they possess the necessary technical expertise and practical experience in their field.

TVET Level 5 Vocational Training Instructor Diploma Certificate: Additionally, they are expected to hold a Vocational Training Instructor Diploma Certificate at TVET Level 5. This qualification equips them with the pedagogical knowledge and teaching skills necessary for effective instruction.

Work experience: TVET instructors/trainers must have a minimum of five years of work experience in the same industry, with at least three years of experience in the same sector or two years in a related sector with facilitation skills. This industry experience enhances their credibility and ability to relate theoretical concepts to real-world applications.

Computer literacy: Computer literacy is essential in today's digital age, as it enables TVET instructors/trainers to integrate technology into their teaching methods and instructional materials.

Health and Safety Certificate: Holding a Health and Safety Certificate is vital to ensure a safe and secure learning environment for both instructors/trainers and trainees.

Overall, TVET instructors/trainers play a crucial role in the skills development and vocational training of individuals, preparing them to be competent professionals in their

chosen fields. The combination of their technical expertise, pedagogical knowledge, and practical experience contributes to the success of TVET programmes and the overall growth of skilled workers in various industries.

The core roles of TVET teachers include the following: Planning and delivering training, managing classrooms and workshops, conducting internal and external assessments, engaging in training and development of assistant instructors, ensuring and promoting personal effectiveness and teamwork, engaging in personal training and development for professional growth, supervising trainees and assistant instructors, conducting training, and performing general administration work (e.g., preparing requisitions for purchase orders for custom jobs and workshop supplies and obtaining quotations for workshop supplies).

In other words, TVET teachers must provide theoretical and technical skills training, manage various resources, supervise junior staff, and participate in professional development interventions and activities. The VTCs, for example, stipulate both core and generic competencies that are required for TVET teachers to fulfil their roles. These are shown in Table 5.9 below.

2

Table 5.9: Core and generic competencies of TVET teachers *(Source: Adapted from the Windhoek Vocational Training Centre's Job Description, 2022)*

COMPETENCY PROFILE					
1 = Basic; 2 = Intermediate; 3 = Advanced					
Knowledge	**Proficiency Level**	**Skills**	**Proficiency Level**	**Attributes / Attitudes**	**Proficiency Level**
TVET Principles and approaches	2	**Communication (oral and written)**	3	Honesty and integrity	3
Respective trade (e.g., building, joinery)	3	**Teaching/Training (pedagogic and andragogic) skills**	2	Assertiveness	3

TVET framework and regulations	2	Analytical	3	Commitment	3
Knowledgeable on compliance and risk matters relating to TVET	2	Management skills (e.g., planning, organising, reviewing, controlling, and reporting)	3	Demonstrate and apply trade skills at least at a level higher than the final qualification of trainees	3
Industry knowledge	3	Interpersonal	3		
Technical trade knowledge	3	ICT skills	2		

The competencies (see Table 5.9) stated seem disjointed; they need to follow a logical order and, in some cases, reflect more competency categories rather than competencies themselves. The competencies in Table 5.9 are grouped into skills, knowledge, and attributes/attitudes, while ability is omitted. This in itself shows that competency is only occasionally completely defined.

If these roles and competencies, as stated in Table 5.7 and Table 5.9, are expected from TVET teachers/instructors, then the question arises as to what this means in terms of training. How do we train competent TVET instructors? The CA provides a structure for deeper analysis of these roles and competencies.

In Table 5.10 below, the generic competencies are expanded on in terms of functioning (i.e., “being” and “doing”) and capability (i.e., what is required to achieve the being and doing). Generally accepted components of the competency are accessed from literature and written in italics, along with the researcher’s comments, based on experience, around what is required (not in italics). These are used to help answer the question of what is needed to achieve capability for the generic competencies in the fourth column (although these are certainly not exhaustive and can be amended).

Table: 5.10 Job Description, Competencies, Functioning, and Capabilities ***(Source: Adapted from the Windhoek Vocational Training Centre's Job Description, 2022)***

Job Description	Intermediate and Advanced Competencies (What is required to do the job?)	Functioning (Being and Doing) (Related to the core/generic competencies)	Capabilities (Freedom to Be and Do) (What is required to be able to **Be** and **Do** the competencies?)
● Guided by the Lesson Plan and Activity Plan, timeously delivers training to trainees. Using different training approaches, techniques, training aids, and training projects identified as appropriate to impact learning at all times. ● Uses the Scheme of Work to prepare activity plans and lesson plans in line with respective USs or syllabus. ● Participates in external assessments for other VTCs as and when appointed by the NTA.	Intermediate Competency: Teaching/Training Advanced Competency: Communication (oral and written)	**Being**: Teacher – being a teacher **Doing**: Teaching trainees **Being**: Communicator – being a good communicator	For example: ● Have adequate knowledge and skills in TVET ● Understand the importance and benefits of TVET ● Identify trainee, industry, and societal needs ● Convey information accurately, appropriately, and respectfully ● Facilitate understanding and behaviour change For example: (University of Victoria) ● Communicate in a respectful tone and manner
● Instruct trainees on the safe and proper use of tools, equipment, and software and protective clothing, ensuring that they understand and follow laid-		**Doing:** Communicate effectively	● Listen actively and communicate effectively with others ● Write clearly and accurately in a variety of contexts and formats ● Listen and ask questions to understand other people's

down procedures when using such equipment and protective clothing. ● Informs Senior Instructor in the absence of Assistant Instructor to have alternative arrangements made to ensure that trainees receive the required support. ● Keeps up to date with developments in the field through research and attending relevant workshops and seminars to improve performance.			viewpoints ● Communicate issues on time ● Be aware of and responsive to verbal and non-verbal communication styles ● Recognise cultural differences in communication ● Use effective cross-cultural communication skills
● Collaborates with Senior Instructors in adequately equipping the workshop with the required machines, tools, and equipment by checking against the USs/Syllabus for the respective trade and ordering such equipment on time. ● Collaborates with Senior Instructors in assessing available facilities and equipment to determine the number of trainees for the coming intake.	Teamwork	**Being:** Team worker – being a valuable team member **Doing:** Teamwork – working as a team	For example: (University of Victoria) ● Work within the dynamics of a group ● Show commitment to the team's purpose and goals ● Accept and provide feedback in a constructive and considerate way

● As requested, participate in other activities such as group work or meetings to promote teamwork within the centre	.		● Share information and encourage others to do the same. ● Support and motivate the group to perform at its best. ● Recognise the role of conflict when appropriate. ● Build professional relationships. ● Show accountability to the team and follow through on commitments. ● Work effectively with different personalities across a variety of social and professional situations. ● Consider diverse, cross-cultural perspectives and working styles.
● Regularly reviews trainee results/performance to identify areas of improvement in relation to methods, media of training, learning and teaching materials, and general classroom management. ● Observes and evaluates trainees' work to determine progress and provide feedback.	***Advanced Competency:*** Analytical	**Being:** Be an analyst **Doing:** Analysing training content and trainees' projects. Analysing research activities	For example: (University of Victoria) ● Recognise the human, interpersonal and technical sides of a problem ● Access, analyse, and apply knowledge and skills from various disciplines ● Think critically and strategically ● Apply knowledge and skills from past experiences to new situations ● Assess situations and identify problems ● Explore possible solutions innovatively and creatively

			● Evaluate solutions to make decisions
● Develops training materials / learning elements by undertaking research online or by using books and journals where current training manuals/materials are inadequate.	***Advanced Competency:*** Demonstrate and apply trade skills at least at a level higher than the final qualification of trainees	**Being: trainer** – be a competent subject-specific trainer **Doing: Training** – Training competently	For example: ● Identify the skills needs of the trainees ● Have adequate trade (subject) skills ● Convey technical information accurately, appropriately, and respectfully ● Facilitate understanding and behaviour change ● Have adequate knowledge and skills in industry developments

In setting out the competencies in terms of functioning and capabilities, there is much more clarity regarding what is required of a TVET teacher/instructor to execute their functions and tasks. One can also better contemplate the value of the roles of the TVET instructor. The capabilities can thus be used to guide the education and training curriculum of TVET TE, as well as the teaching and learning opportunities.

For example, “analytical” is one of the advanced competencies for TVET teachers/instructors and includes research activities. However, the acquisition of research skills is not considered in the DTVT programme content or qualification. The functioning and capabilities framework helps to identify the possible gaps in a qualification that might have been missed during the design or review. The lack of technical competencies in the DTVT programme signifies the unsuitability of the staff as it does not address the needs of the industry, VTCs, and the student teachers. Equally, preparing student teachers without solid technical skills compromises the qualification’s relevance. For example, the job market requires student teachers to have a certificate in safety and health, but such a course is not offered within the DTVT qualification.

5.8.8.2 TVET TE and capability

When considering human development and capability, education and training are instrumental, empowering, and redistributive (Unterhalter 2009). TVET TE and its outcomes thus have value.

The instrumental process role of education and training helps to facilitate people’s capacity to participate in their household and work as well as in other forms of societal decision-making. The empowering and distributive role reduces the ability of the disadvantaged and the voiceless to access centres of power. Education and training have an interpersonal impact because people can use the benefits of education to help others as well as themselves and can therefore contribute to democratic freedoms and the overall good of society as a whole (Unterhalter 2009). Ideally, the training of TVET teachers/trainers should be concerned with building human capabilities and using those human capabilities optimally through an

enabling framework for growth, employment, and well-being. Robeyns and Morten believes that the degree to which a person can transform a resource (such as education) into a functioning one is called a “conversion factor” (Robeyns and Morten 2021). Conversion factors are either social (e.g., public policies, social norms, hierarchies, power relations, patriarchy, race), personal (e.g., physical condition, intelligence, metabolism), or environmental (e.g., the built environment in which a person lives/works) (Robeyns and Morten 2021). These conversion factors can either facilitate or constrain opportunities. There needs to be a conscious and deliberate understanding of the contexts in which TVET teachers/instructors work and live when thinking about TVET TE.

Throughout this study, student teachers expressed aspects of their realities (conversion factors) that either facilitated or hindered their growth. Moreover, observations were made with the other part-time lecturers to enhance clarity and depth. This information proved valuable in better understanding the interplay between the opportunities for further education and training and the lived realities of the student trainers. In other words, more than the mere opportunity to obtain a qualification is required. Everything that affects accessing and maintaining change needs to be considered. The challenges that affect the student teachers, especially the distance students, included limited internet connectivity and, as a result, struggling to access teaching and learning resources; difficulties with balancing the responsibilities of studying and working; part-time student teachers’ family commitments affected their class attendance; part-time student teachers’ transport challenges resulted in their either not attending classes or arriving late; and some of the part-time and distance student teachers struggled with limited funds. Adult education must be balanced with adult responsibilities, so there were times when part-time student teachers could not attend class because they had a sick child who needed to be taken to the clinic or an elderly parent who needed care.

The reality of the conversion factors can be seen especially in the assessment of TVET teachers’ capabilities. Do the assessments measure the TVET teachers’ power? Typically, TVET teachers are of varying ages and come from diverse backgrounds. Some have been TVET instructors or artisans employed in the industry for many years, and they have a wealth of experience and knowledge.

Currently, assessments are done in all the offerings that are theory-based and practical through Teaching Practice. The challenge is that no evaluation is conducted to assess the student trainers' technical subject skills. Thus, it is difficult to properly assess the student trainers' capabilities without evaluating their technical skills during Teaching Practice or the end-of-semester examination.

Freire's concept of critical consciousness is vital to guide those involved in TVET TE. *Who* is teaching, *who* is being taught, and *how* they are being taught matter as much as *what* is being taught (Walker 2009). It is through dialogue that critical thinking and hope can emerge (Davis 2018).

Training and assessment must be based on an understanding of the inherent value of the TVET TE and TVET trainees. This value cannot be determined only in a list of statistics of enrolled trainees at VTCs, the number of trainees on internships, and the number of trainee graduates. However, determining how best to do this takes work. Sen stated that it is almost always easier to observe and measure functioning than capabilities (Robeyns and Morten 2021). It is likely to be an iterative process and inevitably varies between scenarios. However, not doing this is counterproductive and not conducive to valuing the contribution of the TVET teachers/instructors. Using the CA in the training of trainers/instructors is liberating, as it helps us to love who they are, what they do, and what they – and the industry and communities they serve – can become.

5.9 SUMMARY

Chapter 5 provided an in-depth examination of the assessment of the DTVT programme's adequacy, practicality, relevance, and appropriateness. This evaluation was conducted through the lens of three key aspects: the programme's influence on the delivery of TVET education in VTCs, its influence on the development of human resources for TVET education, and its ability to fulfil the aspirations of the programme participants. The CIPP model and the CA were employed as theoretical frameworks to gain deeper insights into the challenges faced by TVET teachers operating in resource-constrained environments.

Chapter 6 expands on the analysis and addresses the fourth research question. This question explores additional facets related to the DTVT programme to provide a comprehensive evaluation of its effectiveness, strengths, and limitations. In the ensuing chapter, the research culminates in a summary of findings from all the research questions. Based on the evidence presented, the researcher will put forward recommendations to enhance the DTVT programme, address any identified deficiencies, and capitalise on its strengths to better align it with the needs of TVET education and its stakeholders.

Chapter 6 will provide a succinct overview of the entire study, reiterating the main findings and their implications. It also offers insights into the broader implications of the research for the field of TVET education and suggests possible areas for future research to build upon the current study's foundation. In conclusion, the research has undertaken a comprehensive examination of the DTVT programme, aiming to provide valuable insights for improving the quality and effectiveness of TVET education and fostering the development of human resources in the vocational sector. The application of the CIPP model and the CA has allowed for a deeper understanding of the challenges faced by TVET teachers operating in resource-constrained settings, elucidating areas for improvement and growth. The forthcoming chapter will further enrich the researcher's analysis and culminate in a well-rounded set of recommendations and a meaningful conclusion.

CHAPTER 6

CONCLUSIONS OF A NAMIBIAN COMPETENCY-BASED TVET TEACHER TRAINING PROGRAMME EVALUATION

6.1 INTRODUCTION

Chapter 5 presented the thematic analysis of the qualitative data obtained through document analysis (see section 5.2.1.1), focus groups (see section 5.2.1.2), interviews (see section 5.2.1.3), open-ended questionnaires (see section 5.2.1.4), and observations (see section 5.2.1.5) regarding the phenomenon of interest – the evaluation of a Namibian competency-based TVET teacher training programme's adequacy, appropriateness, effectiveness, and relevance in transforming technical vocational education trainers/instructors and teachers.

In this chapter, answers are provided to the overarching research question (see next paragraph). Thereafter, conclusions (see section 6.3) are drawn and the study's contributions (see section 6.5) from the literature review and empirical study findings are discussed. Subsequently, recommendations (see section 6.4) for further research are made, which suggest actions to be taken or possible solutions to the problems uncovered by the study. The limitations (see section 6.6) of the study are also discussed in this chapter.

The overall objective of this study was to evaluate the DTVT qualification to determine its adequacy, appropriateness, effectiveness, and relevance as training for vocational teachers and trainers in Namibia. This objective was addressed in Chapter 3 (literature study) and Chapter 5 (empirical study) in the search for answers to the main research question, namely:

> *How adequate, appropriate, effective, and relevant is the current DTVT programme in transforming vocational teachers and trainers in Namibia?*

The following secondary research question also guided the study and is answered in the chapter reflected in parentheses: To what extent are the CIPP model and CA suited for the Namibian DTVT programme evaluation? (see Chapter 2).

This was followed by the question: What are the historical perspectives on the TVET programmes for training vocational teachers and trainers, particularly in Namibia? (see Chapter 3).

The third secondary question was as follows: How adequate, appropriate, practical, and relevant is the DTVT qualification in terms of the value and services provided (i.e., as an accredited programme; for human resource development and individual learning; and for employment and personal aspirations) using both the CIPP model and CA? (see Chapter 5).

The final secondary research question will be discussed in Chapter 6: How might the DTVT be enhanced and amended to transform vocational teachers' education in Namibia?

6.2 SUMMARY OF THE RESEARCH

The study's central argument revolves around evaluating a TVET TE programme at a Namibian university. The study emphasises four key aspects – *adequacy*, *relevance*, *appropriateness*, and *effectiveness* – to determine if the TVET TE programme produces competent and effective TVET trainers/instructors/teachers who can meet the demands of the industry, job market, and higher education context.

1. *Adequacy*: The study highlights the importance of evaluating the adequacy of the TVET TE programme. Adequacy here refers to the extent to which the programme's effectiveness and relevance align with the world of work and the needs of the students. A well-designed evaluation process helps to maintain high standards, improve programme quality, and ensure that graduates possess the necessary skills demanded by the job market. Identifying areas

requiring improvement allows for the efficient allocation of resources to support educators, infrastructure, and other essential aspects of the programme.

2. *Relevance*: Evaluating the relevance of the TVET TE programme is crucial to ensure that it meets the current and future needs of the industry, job market, and society. This relevance is vital in producing highly skilled and competent TVET teachers who can contribute effectively to workforce development and economic growth. The study highlights the importance of identifying emerging trends and industry demands and adapting the curriculum to equip graduates with sought-after skills. Aligning the programme with specific employer requirements enhances graduates' employability and supports economic growth.
3. *Appropriateness*: The appropriateness of the TVET TE programme refers to its suitability, fit, and alignment with various key factors, including the needs of student teachers as well as the industry, job market, and educational context. A well-balanced and relevant curriculum, qualified faculty, practical training opportunities, continuous improvement mechanisms, and a focus on ethics and professionalism are essential to an appropriate TVET TE programme.
4. *Effectiveness*: Best practice indicates that the effectiveness of a TVET TE programme lies in its ability to achieve its intended outcomes and produce competent, skilled, and successful TVET teachers. Beyond merely delivering content, an effective programme equips future TVET teachers with the necessary knowledge, skills, and attitudes to excel in their profession. The presence of a well-designed curriculum, qualified faculty, practical training opportunities, continuous improvement efforts, and stakeholder engagement are critical elements of an effective TVET TE programme.

Overall, the study emphasises the importance of evaluating and continuously improving the TVET TE programme to ensure its adequacy, relevance, and appropriateness in preparing highly skilled and effective teachers who can meet the demands of the workforce and contribute to the overall development of the country (with specific reference to Namibia in this case).

6.3 FINDINGS AND CONCLUSIONS

6.3.1 Adequacy, appropriateness, effectiveness, and relevance of the DTVT programme

6.3.1.1 TVET programme adequacy

The adequacy of a TVET TE programme can be interpreted as referring to a programme's sufficiency (see section 1.6), appropriateness, and capability to meet the essential requirements and standards necessary for preparing competent and effective TVET teachers.

The document analysis within the Namibian context has shown the necessity to produce adequate TVET trainers/instructors and teachers through vocational training centres and institutions (see sections 5.2.1.1, 5.2.1.2, and 5.2.1.3). Additionally, higher education institutions were not producing TVET teachers who were adequately trained or skilled in executing their roles and functions as expected in the world of work (see sections 5.2.1.2, 5.2.1.3, and 5.2.1.5). Possible reasons provided include high failure and dropout rates; leadership, governance, and management challenges at VTCs; unresponsive curricula; poor-quality training; a shortage of proficient technical teachers/trainers; poor and obsolete facilities and equipment; and underfunding (National TVET Policy, Ministry of Higher Education, Training and Innovation 2021) (see section 5.2.1.3).

From the empirical study, it was evident that most of the NUST lecturers who participated in the FGDs (see section 5.3) were of the view that the DTVT programme did not have adequate credits to provide a fully-fledged programme which included practical training for student teachers within NUST and in the industry to ensure that they are prepared for a dual profession. All five NTA managers interviewed (see section 5.4.1.1) agreed with the NUST lecturers that student teachers need industry exposure (hence the need to increase the credits to 360 or more) to provide them with the technical skills and knowledge to align with other institutional qualifications and to provide adequate training.

On the other hand, the enrolled student teachers (EST) and the employed TVET teachers (ETT) were mainly concerned with the inadequate technical/practical skills that needed to be improved in the DTVT programme. They also indicated insufficient study guides, particularly for the employed TVET teachers, including training in technical skills (see section 5.6.2.1). According to Robeyns (2005:8), as per the CA, enrolled student teachers and employed TVET teachers cannot entirely do and be what they value in life if there is a shortage of training inputs and skills such as technological, research, and technical skills in the DTVT programme offering. In other words, the DTVT programme is not entirely placing graduates in a functioning position (i.e., the various doings and beings that humans have reasons to value).

The views of the NUST lecturers, ESTs, ETTs, and NTA managers that the DTVT programme with 240 credits was not adequate to cover the core competencies needed by professionally qualified TVET teachers were supported by the literature review, which revealed that TVET teachers require competencies such as industry experience, research and innovation, and workshop management (see section 3.6), which were not part of the current DTVT programme.

In summary, the empirical study supported by document analysis shows that NUST's TVET TE programme requires amendments (see section 6.4) for quality purposes to prepare teachers holistically for the world of work.

6.3.1.2 TVET programme appropriateness

The appropriateness of a TVET TE programme can be interpreted as referring to the extent to which a programme's design, content, and delivery are aligned with the faculty's educational objectives and the needs and expectations of the targeted students and stakeholders (see section 1.6). The programme's appropriateness refers to whether it is well suited to achieving its intended outcomes and catering to the diverse needs of the student teachers and the university community. It also

helps the university maintain the quality and relevance of its offerings, leading to better educational outcomes for student teachers and fulfilment of the institution's mission and commitment to academic excellence.

6.3.1.2a Programme design and development

The document analysis (see section 5.2.1.5) revealed that TVET TE programmes require technical/practical skills training and that the DTVT programme needs more offerings. Within this context, the programme was considered inappropriate for achieving the outcomes of a dual profession (i.e., graduates possessing expertise in both technical/vocational subjects and teaching methodology [teaching methods and principles]).

The CIPP model revealed that (see section 5.4.5.3) the absence of explicit exit level outcomes related to the Personal Attributes and Professionalism category, the Motive category, the Physical and Mental Fitness category, and the Technical Competencies category reflect a shortcoming and inappropriateness in the programme in the sense that the trainee might not be ready for and sufficiently competent to deal with TVET TE issues holistically and meet the employers' expectations and needs.

Apart from the document analysis and CIPP, the CA was also used as it advocates for education based on people's development (see section 1.8.2). The empirical study has shown that NUST lecturers, NTA managers, and student teachers (i.e., ESTs and ETTs) had concerns about some areas of the DTVT programme needing to be more appropriate by, for example, introducing a technical department and WIL to upskill the prospective TVET teachers. The role of education in achieving growth from the CA is considered to fulfil three functions: the instrumental, empowering, and redistributive. Through the instrumental aspect, education promotes literacy, allowing people to become involved in public debates and dialogue on sociopolitical issues (see section 1.8.2).

The empirical study found, as outlined by the NUST lecturers, that all the lecturers valued the importance of programme design and development and that all lecturers should be capacitated in such through staff induction and development. Half of the research participants indicated that programme design and development should be research-based and that curriculum design should be contextualised to suit the Namibian environment and circumstances. By implication, this means that programme design and development must be more fully appropriate in terms of being well structured, coherent, and up to date with the industry and training institutions, covering essential and relevant topics.

The NTA managers believed that curriculum design should include technical skills-oriented exposure. In contrast, other participants believed that curriculum design and development should involve stakeholder consultation through well-structured curriculum advisory committees. The absence of WIL and limited (or lacking) stakeholder consultation in the curriculum design and development process were considered inappropriate.

Most of the research participants (student teachers) thought that “education and training” should focus on the teaching methodology, while other participants had different opinions. In other words, their view was that TVET TE should focus on teaching methodology. At the same time, the literature review shows that the focus should be on promoting a dual profession, where andragogy and technical skills training are equally promoted.

Within this context, the appropriateness of a TVET TE programme focuses on the extent to which the needs of the student teachers, employers, and industry are addressed as well as the type of strategies employed to deliver the desired learning outcomes. The empirical study shows that the absence of technical skills training in the DTVT programme, the lack of research-based and local contextualised approaches, the lack of WIL, and the limited stakeholder participation in curriculum development negatively influences programme appropriateness. Using only a methodological approach is considered significantly limiting in achieving the

desired outcomes of a competent and well-rounded graduate who is ready for the modern world of work.

Other components considered in the assessment of programme appropriateness, identified by NUST lecturers and NTA managers, included the competencies of lecturers, staff development, and stakeholder collaboration and engagement (see sections 5.3.2.2–5.3.2.4 and 5.4.2.2–5.4.2.4).

6.3.1.2b Lecturer competencies

Most of the research participants, including the NUST lecturers and NTA managers, showed that they were competent enough to understand the attributes that TVET TE graduates needed to have. They identified the following qualities: the transfer of knowledge and technical skills to their trainees (also reflected in the literature review; see section 3.6); adequate classroom management knowledge and skills; curriculum USs knowledge; skills with which to design training materials; and skills to analyse and use different learning tools (see section 5.3.2.2). Furthermore, all five research participants knew that the transfer of trade knowledge and the acquisition of technical skills was a significant priority (see section 5.4.2.2).

Although most research participants (NUST lecturers) were unaware of all the reasons for introducing the CBET system in Namibia, and TVET in particular, most of them were optimistic about the future of CBET and the TVET sector in Namibia in general. Their biggest concern was that the CBET was introduced without providing adequate training to them (see section 5.3.2.2).

6.3.1.2c Staff development

The empirical study showed that only 50% of the research participants (NUST lecturers) were positive about attending staff development programmes to upskill themselves and acquire new competencies through workshop training

interventions. The other 50% did not see the need for staff development (see section 5.3.2.3).

The CIPP, through its process evaluation, has shown that 11 (55%) of the DTVET courses fall within the pedagogical learning category, four methods (20%) fall within the practical learning category, two studies (10%) fall within the situational knowledge category, and three courses (15%) fall within the fundamental learning category. NUST might have borrowed similar curricula from other institutions, which was inappropriate as it compromised the Namibian contextualisation and needs of the local stakeholders, such as industry and vocational training institutions (see section 5.4.5.2).

6.3.1.2d Stakeholder collaboration and engagement

The empirical evidence revealed that most of the research participants (NUST lecturers) supported the importance of stakeholder involvement, while a minority of the research participants were not in support of it. The critical stakeholders identified to support the DTVT programme delivery were the TVET regulators (i.e., NTA and NQA), VTCs, and NIED/CED. The minority of the research participants did not clearly outline their objections to stakeholder collaboration. This omission reflects a possible lack of commitment to transforming the DTVT programme to include WIL, which could allow the student teachers to search for practical skills training at companies that support skills training and development (see section 5.3.1.1).

The NTA managers acknowledged shortcomings within the TVET sector, especially in stakeholder collaboration concerning NUST's curriculum design and development processes, including programme delivery, by involving the industry. The empirical study shows that stakeholder collaboration and engagement must be appropriately done in order to obtain optimal results.

As a whole, considering the appropriateness aspects of programme design and development, competencies of lecturers, staff development, and stakeholder

collaboration and engagement (see sections 6.3.1.2.1, 6.3.1.2.2, 6.3.1.2.3, and 6.3.1.2.4), it can be concluded that the programme design, development, and delivery was not adequately appropriate as the needs of key stakeholders (student teachers, vocational training institutions, and industry) had not been fully addressed. Employing only a methodological approach to training was considered limiting in empowering graduates to become competent and professionally qualified to deal with challenges and issues of the world of work now and in the future.

6.3.1.3 TVET programme effectiveness

As indicated in section 1.6, the effectiveness of a study programme refers to its ability to achieve its intended goals and objectives in enhancing learning outcomes, academic performance, and overall educational experiences of the student teachers. A practical study programme should facilitate and support students' intellectual, emotional, social, and experimental development, enabling them to acquire essential knowledge, skills, and competencies that align with the programme's stated objectives.

The document analysis (see section 5.2.1.4) and empirical study (i.e., the views of the majority of NUST lecturers) confirmed that the DTVT programme could be effective if technical skills and exposure to, or training in, the industry's latest practical skills were offered to the ESTs and ETTs (see section 5.3.4.1). These sentiments, along with others, were echoed in the literature review, which stated that the TVET TE programme's effectiveness was influenced by the type of TVET institution, the kind of TVET educators recruited, internal quality assurance arrangements and educators' CPD, and the type of TVET TE programmes developed and delivered (see section 3.2).

The empirical study found that most of the NTA managers echoed the same views as the NUST lecturers regarding the need for technical skills training and WIL exposure to ensure programme effectiveness (see section 5.4.4.1).

The literature review revealed the importance of technical skills training, WIL operationalisation, research skills acquisition, and workshop management abilities to secure programme effectiveness. Equally, the need to balance theory-oriented skills training and technical skills training in TVET (see section 3.6) was identified as being critical in producing an effective programme (Ismail et al. [2018:9] and Jafar et al. [2020:8]).

6.3.1.4 TVET programme relevance

The literature review and document analysis revealed that both globally and locally in Namibia, TVET teachers were not adequately trained and lacked practical/technical skills and professional training, mental and physical fitness, programme articulation, and WIL, which usually resulted in programmes that were of limited to no relevance (see section 3.4).

The research participants (NUST lecturers) generally believed that the DTVT programme met the needs of the faculty and the student teachers in the sense that all potential student teachers could enrol on either a part-time or full-time basis. The research participants also indicated that the internal stakeholders understood the programme's value in terms of socioeconomic development, personal empowerment, and economic growth (see section 5.3.3.1).

Regarding programme relevance, most NTA managers indicated that TVET teacher programmes could have been better perceived, and their potential to improve the socioeconomic well-being of many people had not been sufficiently exploited. The ESTs in particular believed that the DTVT programme was less relevant in the absence of courses such as essential guidance and counselling, practical skills training, and the teaching of practical skills courses.

6.4 RECOMMENDATIONS FOR TRANSFORMING FUTURE VOCATIONAL TEACHERS' EDUCATION IN NAMIBIA

The recommendations focus on the following areas: TVET TE policy and legislative framework; qualifications and programme design and development; programme content and delivery, and stakeholder engagement and collaboration.

6.4.1 TVET TE policy and legislative frameworks

The document analysis of the Namibian TVET Policy (Ministry of Higher Education, Technology and Innovation 2021) (see section 5.2.1.3) shows that there needs to be an institutional policy and procedures on TVET TE and on how best to regulate the TVET TE sub-sector. The literature review revealed that TVET TE effectiveness is best achieved by setting in place explicit policies, systems, strategies, and types of training programmes (i.e., dual profession-based programmes) (see section 3.6).

It is therefore recommended that the TVET Policy of 2020 be amended to reflect strong policy provisions aimed at professionalising TVET TE in terms of advocating for the development of professional qualifications and the licensing of TVET teachers. Best practices such as the TVET qualification policy of South Africa, titled "Policy on Professional Qualifications for Lecturers in Technical and Vocational Education and Training" could be incorporated as an additional guideline for the formulation of a contextualised institutional Namibian policy and procedures. Similarly, it is recommended that professional standards for TVET teachers be developed to regulate the licensing of TVET teachers to qualify as TVET dual professionals (i.e., TVET teaching qualification and trade qualification).

6.4.2 TVET qualifications and programme design and development

The empirical study (see section 5.2.1–5.6) revealed problems in how the DTVT programme's design and development were conceptualised. According to the document analysis and empirical study, the relevance, effectiveness, and appropriateness of the DTVT programme were questionable in some respects, especially in the absence of promoting technical skills (derived from trade) and practical skills (through training workshops at NUST and industry training exposure), research skills, health and safety (see section 5.8.8.1), practical teaching, and guidance and counselling (see 5.5.5.1 and 6.3.1.4).

There was a perceived lack of a research-based approach in the design of the qualifications and programmes (see section 5.2.1.5; 5.3.2 and Table 5.9), which could be used to improve the identification of key stakeholders' current and future needs. Such a research-based approach should address the following issues: needs assessment; review of existing research to identify best practices; successful models; evidence-based strategies; defining holistic programme objectives and learning outcomes; curriculum development (i.e., integrating relevant research findings and evidence-based teaching strategies into the curriculum design); pedagogical approaches, including the utilisation of active learning techniques; project-based learning; real-world simulation and other evidence-based pedagogical practices; continuous improvement; professional development; and collaborative partnership, especially with industry.

It is argued that a research-based approach in designing TVET TE programmes can produce better-prepared graduates with the relevant skills and knowledge to succeed in their chosen vocational fields. Such an approach could also help the university adapt to changing industry demands, thus increasing the overall effectiveness and relevance of its programmes.

6.4.3 TVET programme content and delivery

The empirical study and document analysis have shown that the programme content and course type needed improvement, and additional classes were required for comprehensive and relevant programme delivery. It is within this context that a research-based approach (e.g., as outlined in section 6.4.2), through the recommended courses and training, should be explored for programme delivery purposes, to increase the qualification's number of credits and level of complexity. Collaborating with the country's industry and vocational training centres is essential for effective programme delivery.

The biggest challenge observed through the empirical study is that the DTVT programme was more focused on the pedagogically oriented training approach at the expense of both the theoretically and technically oriented approaches. It is therefore recommended that the curriculum design, development, and delivery should integrate the following approaches:

- A pedagogically oriented teaching and learning approach (focused on student-teacher engagement, effective teaching and learning strategies, and skills transfer)
- The theoretically oriented process (emphasis on conceptual understanding, adaptability, and continued education)
- The technically oriented approach (focused on job readiness, industry relevance, and hands-on experience).

Programme design and development that incorporates a balanced focus on these three approaches is essential for creating comprehensive and effective educational programmes, especially within the context of TVET. For example, each course brings unique benefits and contributes to producing well-rounded and skilled graduates (Sirelkhatim and Gangi 2015; Kapur 2020).

It is further recommended that courses be categorised into theoretically, technically, and pedagogically oriented courses. For theoretically oriented

systems, lecturers should consider lecture-based approaches, discussions, and case studies. Technically oriented course teaching should encourage hands-on training, practical workshops, and simulations. In contrast, pedagogically oriented courses should be taught by focusing on student-centred approaches, collaborative learning, and reflective practices.

6.4.4 TVET stakeholder engagement and collaboration

The research participants valued the importance of stakeholder collaboration and engagement, which are also supported by the literature reviewed from various scholars. The document analysis shows that no policy framework guides the practical involvement of employers in TVET TE curricula design and programme delivery or the type of partnership that should exist between training institutions and key stakeholders. It is therefore recommended that a public-private partnership policy and legislative framework be established to ensure collaboration in the following areas:

- Conducting a comprehensive needs assessment to identify the industry's specific requirements and skill gaps in the workforce;
- Establishing advisory committees composed of representatives from various stakeholder groups. These committees can provide valuable insights during the programme design and implementation stages, ensuring that the curriculum remains relevant and up to date;
- Involving industry experts in curriculum development to ensure that the content aligns with current industry practices and technologies, and integrating real-world case studies, industry projects, and workplace simulations into the curriculum to enhance students' practical skills;
- Facilitating industry partnerships to offer internships, work placements, or apprenticeships for TVET teacher candidates. This practical experience enriches their understanding of the vocational sector, enabling them to better guide and support their student teachers;

- Conducting research and evaluation of the TVET TE programmes' effectiveness and incorporating feedback from stakeholders, as well as using evidence-based insights to make data-driven decisions for programme improvement;
- Creating mechanisms for gaining regular feedback from employers and industry representatives about the performance and readiness of TVET graduates; and using this feedback to improve the programme and continually address any identified gaps;
- Engaging current TVET lecturers and vocational training centres' instructors in CPD opportunities that keep them updated on industry trends, teaching methodologies, and best practices. This ensures that TVET educators are equipped to deliver high-quality instruction;
- Collaborating with relevant government bodies and organisations to advocate for the recognition and value of TVET education. This highlights the importance of TVET teachers' role in building a skilled workforce and contributing to economic growth, promoting a positive perception of TVET across the country. By fostering strong collaboration and coordination, NUST and other TVET institutions can work towards elevating the status of TVET in Namibia and demonstrating its value as a viable and promising career path for students;
- Emphasising to the TVET stakeholders the importance of stating the rationale for a qualification and conducting a needs assessment to ensure that the programme meets the demands of the training offerings and stakeholders;
- The Windhoek Vocational Training Centre job description (2022:2) emphasises the necessity that student trainers need to gain trade knowledge and skills at at least a level higher than that of trainees' final qualification. This is important because it guides and informs the student teachers and TVET teachers/trainers to acquire a higher level (i.e., 6) of trade and skills knowledge than their trainees, thereby gaining sufficient

industrial experience to be able to demonstrate and transfer technical skills to their trainees (see section 5.2.1.5 a).

- Training workshops and laboratories must be established to ensure internal practical skills training at TVET institutions across the country (see section 5.3.1.1).

By actively engaging stakeholders throughout the design and implementation of TVET TE programmes, NUST can ensure that their offerings meet industry demands, provide relevant and quality education, and produce well-prepared and job-ready TVET teachers.

6.5 RECOMMENDATIONS FOR FURTHER RESEARCH

This research focused on only one TVET TE programme: the DTVT. However, in-depth comparisons of various TVET TE programmes implemented in Namibia could deliver further valuable insights on best practices for TVET curriculum design and development. Moreover, expanding pre-service education and in-service training for teachers/trainers would constitute worthwhile research, especially if it is not confined to CBET approaches and viewed through the lens of capability.

This research study did not include perspectives from the industry and employer organisations or from VTC managers and VTC boards. However, in future research, these important stakeholders can provide perspectives and inputs about the education and training of TVET teachers.

Recurring matters that became evident when evaluating the Namibian TVET TE programme constitute the poor quality of TVET teacher training (i.e., gaps in the curriculum and technical skills) that resulted in a lack of graduate attributes that counteract world of work opportunities. Further research on these issues can contribute to devising solutions and promote advocacy for improvement in the TVET context.

The analysis through the CA demonstrated an absence of research and technical vocational skills courses that compromises the acquisition of analytical and

practical trade skills, respectively, thus limiting programme relevance (see section 5.4.8.1).

6.6 CONTRIBUTION OF THE STUDY

This empirical study (see Chapter 5) on the DTVT TE programme has significantly contributed to the understanding of the programme's adequacy, appropriateness, effectiveness, and relevance as well as to the actions proposed for addressing this. The study's findings have provided valuable insights and evidence-based recommendations to assist Namibian TVET stakeholders to reconsider tangible improvements in various aspects of the programme. The study has made the following key contributions:

- **Programme strengths and weaknesses**: The empirical study identified the programme's strengths and weaknesses, highlighting areas where the programme excels and areas that require further attention and enhancement. By recognising the strengths of the pedagogical approach, the programme can build upon successful elements and replicate effective practices to improve the overall quality of the programme. The weaknesses of the programme are found in the vocational skills training and the absence of WIL in the curriculum of the DTVT programme.
- **Alignment issues with industry and employers:** In this study, it appeared that the TVET teacher programme has limited alignment with the current conditions and demands of the industry and employers. Based on this shortcoming, the programme could make targeted improvements to ensure that graduates possess the necessary skills and competencies for a competitive job market.
- **Teaching approaches:** The evaluation of the Namibian TVET TE programme indicated gaps in the effectiveness of the programme's pedagogical approach. The study has ascertained the need for a greater

focus on theoretically and technically oriented approaches, which can improve the alignment of TVET teacher graduates with the world of work.

- **Programme content and course appropriateness:** Identifying necessary courses constitutes the best opportunity for improving the programme design and delivery and advancing student teachers' employment opportunities in vocational training institutions and the industry. Understanding graduates' employability assists the programme to strengthen its focus on preparing students for successful entry into the job market.
- **Industry partnerships and collaborations:** The empirical study assessed the ineffectiveness of industry partnerships and collaborations, creating opportunities for the university to improve in this area. The findings inform the programme's efforts to strengthen existing partnerships and establish new ones to ensure ongoing industry engagement.
- **Recommendations for continuous improvement:** The empirical study generated evidence-based recommendations for programme enhancement based on the data collected and analysed. These recommendations serve as a roadmap for continuous improvement, guiding the programme's efforts to adapt to changing educational and industry needs.

In short, the empirical study has played a crucial role in pinpointing the strengths and weaknesses of the TVET TE programme. By using the study's results, the programme can improve its quality, effectiveness, and relevance, making it a better educational option for those aspiring to become TVET teachers. The study's impact goes beyond the programme itself, benefiting graduates, industries, and the TVET sector as a whole. It contributes to the creation of a skilled and capable workforce that is ready to meet the challenges of the continuously changing vocational landscape.

6.7 CONCLUSION

In conclusion, the evaluation of the DTVT TE programme through a literature review, document analysis, and empirical study has yielded valuable insights into its strengths and areas for improvement. The study highlighted the need for the programme to meet adequacy standards by enhancing its curriculum to be more comprehensive and well structured, balancing theoretical knowledge with practical skills development so that student teachers can become competent TVET instructors.

The study also emphasised the importance of programme appropriateness, suggesting that collaboration with relevant stakeholders, such as employers and industry experts, is essential to ensure its relevance and responsiveness to the evolving needs of industries and the TVET sector. The absence of technical skills courses in the programme indicated a gap that is evident when reflecting on emerging trends and advancements in vocational fields.

Furthermore, the study focused on the effectiveness of the programme, revealing that, while it successfully nurtured a pool of skilled and qualified TVET teachers with pedagogical knowledge, the lack of technical and practical skills remained a significant concern for most research participants.

In essence, the findings from the document analysis and empirical study provide a strong foundation for ongoing improvements and growth of the DTVT TE programme. By addressing the identified areas for improvement and leveraging the study's insights, the programme can better equip its student teachers to meet industry demands and contribute to the development of a competent and job-ready workforce in the vocational sector.

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APPENDIX A

NAMIBIA UNIVERSITY OF SCIENCE AND TECHNOLOGY

PART A: PROGRAMME DOCUMENTATION

DIPLOMA IN TECHNICAL AND VOCATIONAL EDUCATION AND TRAINING: TRAINER (NQF LEVEL 6) (REVISED PROGRAMME)

ONLY RELEVANT ASPECTS FOR THIS STUDY WERE INCLUDED HERE - SEE FULL DETAILS:
https://www.nust.na/programmes/diploma-vocational-education-and-training-management

1. Awarding Institution:
Namibia University of Science and Technology

2. Faculty and Department:
Faculty of Human Sciences
Department of Education and Languages

3. Programme/Qualification Title:
Diploma in Technical and Vocational Education and Training: Trainer (NQF Level 6)

4. NQF Level of Qualification:
NQF Level 6

5. NQF Credits of Qualification:
Total credits available: 251
Minimum credits required 251

	Compulsory	**Elective**
level 4 credits:	10	**-**
level 5 credits:	113	-
level 6 credits:	128	-
minimum total credits required:	251	-

6. Field and Subfield of Learning
Field: Education, Training and Development
Sub-field: Technical and Vocational Education and Training

7. Programme Aims/Purpose:
This programme aims at equipping in-service and pre-service vocational trainers with instructional competencies required for a career as a trainer in a Technical and Vocational Education and Training (TVET) environment. The programme recognises the major attributes that a TVET trainer must possess at a foundational level that would enable him/her to transfer knowledge and skills to vocational trainees in a student-centred manner. The programme provides an opportunity for artisans who wish to pursue further studies in the field of TVET and become competent trainers in their respective occupations. Additionally, students will be able to demonstrate the skills and knowledge relevant to facilitate competency-based training to individuals as well as groups, work effectively within the legislative and regulatory imperatives applicable to education and training in Namibia, and comply with the requirements of competency-based assessment. Upon completion, graduates should be able to actively participate in instructional activities and

assessment of performance standards within a formal training environment such as vocational training centres and, thereby, make a contribution to the development of the national economy.
The programme aims to ensure that a broader knowledge base is created to enable the students to achieve the outcomes in an integrated manner. Upon completion of this diploma, graduates will be able to conduct training and provide mentorship at the entry level of their specialised fields of vocational education.
Overall, the Programme aims at:

- Preparing students to undertake their essential and demanding teaching, training and assessment tasks within the context of the NQF;
- Transforming students into effective professionals in delivery, designing, developing, implementing and managing of TVET curricula in appropriate teaching and learning settings;
- Enhancing their professional competence and performance which is deservedly held in high regard nationally and internationally; and
- Creating a community of competent trainers dedicated to providing education and training of high quality with a high level of performance as well as ethical and professional standards of conduct.

The programme was presented for endorsement by members of the Board of Studies, Programme Advisory Committee (PAC) and SENEX while academic peers were consulted for purposes of international benchmarking (attached, please find evidence of consultations, benchmarking and support).

8. Programme Rationale:

In keeping with Namibia's Vision 2030's goal to become an industrialised and knowledge-based economy by 2030, TVET in Namibia must be strengthened and expanded to serve current and emerging developmental needs. This entails the development and support of skilled human resources in the country. Namibia, like other African countries, has undertaken TVET legal and policy framework decisions aligned to the country's socio-economic development agenda espoused in the Vocational Education and Training (VET) Act, National Development Plan 5 (NDP5) and the Harambee Prosperity Plan (HPP). Currently, Namibia has several public and private Vocational Training Centres (VTCs) and Community Skills Development Centres (COSDECs) that provide training in a wide range of occupations mostly at the National Qualification Framework (NQF) Levels 1-3.
NUST being a responsive university that develops and offers demand driven qualifications that are central to creating a knowledge economy is well suited to drive the creation of qualifications that create a well-trained, skilled, competent and efficient workforce in the TVET sector. In so doing, NUST will respond to national and regional skills needs, within the context of industrial demands and standards. As the sole TVET Trainer training provider in Namibia, NUST is strategically placed to rise to this challenge through excellent education, applied research, innovation and service in collaboration with stakeholders.
The Diploma in Technical and Vocational Education and Training: Trainer (NQF Level 6) is a result of the revision of the Certificate in Vocational Education and Training: Trainer (NQF Level 4) and the Certificate in Vocational Education and Training (VET): Trainer (NQF Level 5) programmes currently offered by NUST. The content in this programme is informed by consultation with various stakeholders for training TVET trainers including the Namibia Training Authority (NTA) and Ministry of Higher Education, Training and Innovation (MHETI) This programme is fully aligned with the requirements of the National Qualifications Framework (NQF) and NUST Curriculum Framework.
This programme is fully aligned with the requirements of the National Qualifications Framework (NQF) and NUST Curriculum Framework.

9. Exit Programme Outcomes (Qualification Outcomes):

Upon successful completion of this programme, graduates should be able to:

- Demonstrate their ability to transfer knowledge, skills and values in their specific occupation areas to TVET trainees;
- Evaluate and apply effective classroom and workshop/technical laboratories strategies and various learning theories to promote learning;
- Design and develop learning materials at the appropriate level as prescribed by the curriculum;
- Demonstrate the knowledge and skills to guide and counsel TVET trainees to improve learning outcomes;
- Demonstrate knowledge and understanding of a range of teaching, learning, assessment and moderation strategies including the use of technology;
- Facilitate student-centred learning by applying interactive teaching, learning and assessment and moderation strategies;
- Demonstrate an understanding of curriculum design which includes the planning, designing, delivery and evaluation of a unit of curriculum;
- Develop authentic assessment tools that foster various authentic learning performances and products;
- Apply new ideas and approaches in reflective practice in own teaching and learning context;
- Reflect on own professional practice and how it promotes education for sustainable development; and
- Demonstrate an in-depth knowledge, understanding and awareness of the national and international contexts within which TVET operates and the implications for professional development and practice.

10. Criteria for Admission:

Applicants will be considered for admission to this programme provided they meet the General Admission Requirements of the Namibia University of Science and Technology (NUST) (GI2.1 in Part 1 of the Yearbook).

Mature age applicants will be considered provided they meet the requirements and pass the mature age entry examinations of NUST (GI2.2 in Part 1 of the Yearbook).

Additionally, potential candidates must be qualified in a designated trade, with at least three years relevant industrial experience. Prerequisites for admission to this programme must first be obtained before registration for the programme can take place.

11. Articulation Arrangements:

Transfer of credits will be dealt with according to the NUST Regulations on Recognition of Prior Learning (RPL). These provide for course-by-course credits as well as credit transfer by volume under certain academic conditions. Maximum credits that can be granted are 50% of the credits for a qualification.

This Diploma provides opportunities for students to progress to higher qualifications in Technical and Vocational Education and Training, or studies in a related cognate area at NQF level 7.

12. Mode of Delivery:

This programme will be offered on full-time, part-time and eLearning modes of study in accordance with NUST rules and regulations.

13. Requirements for Qualification Award:

The Diploma in Technical and Vocational Education and Training: Trainer (NQF Level 6) will be awarded to candidates credited with a minimum of 251 NQF credits. In addition, students must meet the administrative and financial requirements as spelt out in the Yearbook (Part 1) of NUST.

Below is a summary of the revised curriculum:

Semester 1		**Semester 2**	
Course Title	***Compulsory or Elective (C or E)***	***Course Title***	***Compulsory or Elective (C or E)***
Principles of English Language Usage	C	Management of TVET	C
Computer User Skills	C	Psychology of Learning B	C
Fundamentals of TVET Assessment and Moderation	C	Education for Sustainable Development (ESD) A	C
History of TVET	C	Teaching Practice A	C
Psychology of Learning A	C		
Microteaching A	C		
Semester 3		**Semester 4**	
Course Title	***Compulsory or Elective (C or E)***	***Course Title***	***Compulsory or Elective (C or E)***
Professional Development and Practice	C	Counselling and Career Guidance	C
English in Practice	C	Introduction to Curriculum Studies	C
Classroom and Workshop Management in TVET	C	Education for Sustainable Development (ESD) B	C
Educational Technology	C	Teaching Practice B	C
Reflective Teaching and Practice	C		
Microteaching B	C		

APPENDIX B

FOCUS GROUP DISCUSSION WITH NUST DTVET FULL AND PART-TIME LECTURERS

UNIVERSITY OF THE FREE STATE
UNIVERSITEIT VAN DIE VRYSTAAT
YUNIVESITHI YA FREISTATA
UFS UV

Qualitative focus group discussion schedule for NUST DTVET (Full and Part-time) lecturers

Purpose: This focus group discussion is the first part of my doctoral research that seeks to investigate the **COMPETENCY-BASED EDUCATION AND TRAINING FOR TECHNICAL AND VOCATIONAL EDUCATION TRAINING IN NAMIBIA: AN EVALUATION OF THE TECHNICAL TEACHER TRAINING PROGRAMME**

Focus: The focus group discussion relates to NUST DTVET lectures current experiences, challenges and perceptions on how adequate, appropriate, effective and relevant is the current Diploma in Technical Vocational Training: Trainer (DTVT) programme transforming vocational teachers and trainers in Namibia?

Ethical clearance and considerations: This study obtained ethical clearance (Ethical clearance number: UFS-HSD2017/0556/21) from the Faculty of Education (UFS). Additionally, permission has been obtained to conduct the research from NTA (see Appendix F), NUST (see Appendix G), and The Ministry of Higher Education and Training and Innovation (MHETI) (see Appendix H). The reporting of the responses to these focus group questions will adhere to confidential and anonymous principles. Any participant is free to withdraw at any stage during the focus group.

Before you start, please complete and sign the informed consent forms (see Appendix J).

Do you perhaps have any questions before we continue?

Please indicate the appropriate answer

SECTION A: BACKGROUND INFORMATION (LECTURERS ARE REQUIRED TO INDICATE THE FOLLOWING ANSWERS BY RAISING THEIR HANDS)

1. Gender

Male	
Female	

2. At which section are you currently employed?

Vocational	
Educational	

3. What type of employment?

Full-time	
Part-time	

4. How long have you been teaching in the CBET programme for TVET trainers?

Teaching experience	
Less than a year	
More than one year	
Two to four years	
More than 4 years	

5. Do you have a CBET qualification to train TVET trainers?

Yes	
No	

6 How many modules do you teach per semester? (Specify the number of courses being taught per semester).

Number modules taught per semester	
One	
Two	
Three	
More than three	

7. Please indicate your highest academic qualification.

Qualification	

Doctoral degree	
Master's degree	
Bachelor honours degree	
Bachelor degree	
Diploma	

SECTION B: RELEVANCE OF THE CBET BASED - DTVT PROGRAMME FOR TVET TEACHERS

Questions	**Remark/Comment**
8. Does the current CBET programme for TVET teachers address the needs/vision of the DTVET? (Please motivate your answer)	
9. To what extent does the current CBET programme for TVET teachers address the needs of the industry/workplace? (Please motivate your answer)	
10. How can the current NUST TVET teacher programme be amended for quality assurance purposes? (Please motivate your answer)	
11. What graduate attributes should a TVET teacher have on the completion of the programme? (Please motivate your answer)	
12. What is your opinion of the current process for designing, developing, and implementing academic and training programmes? (Please focus on possible successes and challenges)	
13. What is your opinion on the minimum and maximum credits for the NUST TVET teacher programme? (In other words, what challenges does this imply)?	
Question	**Remark/Comment**

14. Do you have any suggestions to overcome the challenges mentioned above?	
15. What is your opinion of whether the NUST TVET teachers implement the knowledge and skills they obtained at NUST in their classrooms?	
16. How much do you know about the current CBET framework for training TVET teachers at NUST?	
17. Why is it essential for lecturers to understand the CBET curriculum for TVET teachers?	

SECTION C: LECTURER'S EPISTEMOLOGICAL FACTORS - KNOWLEDGE

18. To what extent have you attended staff development programmes to enhance your skills and knowledge on implementing the CBET curriculum for TVET teachers?

Please provide a short motivation for your answer.

Thank you for taking the time to participate in this focus group!

Your response is highly appreciated.

APPENDIX C

QUALITATIVE INTERVIEW FOR NTA MANAGERS

Purpose: This interview is the first part of the doctoral research that seeks to investigate the **COMPETENCY-BASED EDUCATION AND TRAINING FOR TECHNICAL AND VOCATIONAL EDUCATION TRAINING IN NAMIBIA: AN EVALUATION OF THE TECHNICAL TEACHER TRAINING PROGRAMME**

Focus: The interview relates to NTA managers' current experiences, challenges and perceptions on how adequate, appropriate, effective and relevant is the current Diploma in Technical and Vocational Education and Training: Trainer (DTVT) programme transforming vocational teachers and trainers in Namibia?

Ethical clearance and considerations: This study obtained ethical clearance (Ethical clearance number: UFS-HSD2017/0556/21) from the Faculty of Education (UFS). Additionally, permission has been obtained to conduct the research from NTA (see Appendix F), NUST (see Appendix G), The Ministry of Higher Education and Training and Innovation (MHETI) (see Appendix H). The reporting of the responses to these focus group questions will adhere to confidential and anonymous principles. Any participant is free to withdraw at any stage during the focus group. With your permission, I would like to audio record the discussion to ensure that I do not miss any important fact you might raise.

Before you start, please complete and sign the informed consent forms (see Appendix J).

Do you perhaps have any questions before we continue?

Please indicate the appropriate answer.

SECTION A: BACKGROUND INFORMATION

1. Gender

Male	
Female	

2. At which NTA department are you employed?

PDU	
ACD	

3. In which section of the NTA department are you employed?

Academic	
Technical	

4. How long have you been employed at NTA?

NTA experience	
Less than a year	
More than one year	
Two to four years	
More than 4 years	

5. Are you familiar with the current CBET curriculum for TVET teachers offered by NUST?

Yes	
No	

SECTION B: KNOWLEDGE REGARDING CBET PROGRAMME AND CURRICULUM FOR TVET TRAINERS

Questions	**Remark/Comment**
6. To what extent do you think the current CBET programme for TVET teachers addresses the vision set by the NTA? (Please motivate your answer)	
Questions	**Remark/Comment**
7. How can the current CBET training programme ensure that NTA and NUST maintain the TVET teacher programme's teaching and learning quality?	
8. What graduate attributes should a TVET teacher have on the completion of the programme? (Please motivate your answer)	
9. What is your opinion of the current process for designing, developing, and implementing academic and training programmes? (Please focus on possible successes and challenges)	
10. What is your opinion on the minimum and maximum credits for the NUST TVET teacher programme? (In other words, what challenges does this imply)?	
11. What particular challenges have you encountered with these processes at NTA level?	
12. Do you have any suggestions on how the different stakeholders (including the NTA) might overcome these challenges?	
13. What is your opinion of whether the TVET teachers trained by NUST indeed implement the knowledge and skills they have obtained during	

their training in their classrooms at the VTCs?	
14. From a TVET regulator's point of view, how much do you know about the current CBET framework for the training of TVET teachers?	

Thank you for taking the time to participate in this interview!

Your response is highly appreciated.

APPENDIX D

OPEN-ENDED QUESTIONNAIRE FOR ENROLLED STUDENT TEACHERS AT NUST AND EMPLOYED TVET TEACHERS AT THE VTCs

Purpose: This interview is the first part of the doctoral research that seeks to investigate the **COMPETENCY-BASED EDUCATION AND TRAINING FOR TECHNICAL AND VOCATIONAL EDUCATION TRAINING IN NAMIBIA: AN EVALUATION OF THE TECHNICAL TEACHER TRAINING PROGRAMME**

Focus: The interview relates to employed TVET teachers at VTCs and enrolled student teachers at NUST's current experiences, challenges and perceptions on how adequate, appropriate, effective and relevant is the current Diploma in Technical and Vocational Education and Training: Trainer (DTVT) programme transforming vocational teachers and trainers in Namibia?

Ethical clearance and considerations: This study obtained ethical clearance (Ethical clearance number: UFS-HSD2017/0556/21) from the Faculty of Education (UFS). Additionally, permission has been obtained to conduct the research from NTA (see Appendix F), NUST (see Appendix G), and The Ministry of Higher Education and Training and Innovation (MHETI) (see Appendix H). The reporting of the responses to these focus group questions will adhere to confidential and anonymous principles. Any participant is free to withdraw at any stage during the focus group. With your permission, I would like to audio record the discussion to ensure that I do not miss any important fact you might raise.

Before you start, please complete and sign the informed consent forms (see Appendix J).

Do you perhaps have any questions before we continue?

Please indicate the appropriate answer

SECTION A: BACKGROUND INFORMATION

1. Gender

Yes	
No	

2. In which section are you currently employed?

Academic	
Technical	

3. What type of employment?

Full-time	
Part-time	

4. How long have you been employed at the VTC?

VTC experience	
Less than a year	
More than one year	
Two to four years	
More than 4 years	

5. What is your highest TVET qualification?

Highest TVET qualification	
Diploma in TVET Management	
Higher Certificate: TVET trainer	
Certificate: TVET Trainer	
Other (please specify)	

Section B:

6. For what subjects are you responsible for in your teaching/training position?

_____

_____

7. How many years of teaching/training experience?_____

8. Is there an adequate supply of CBET qualified teachers in your VTC for the following subject areas?

Subject areas	
Plumbing	
Mathematics	
Bricklaying	
Entrepreneurial Skills	
Air-condition & Refrigerator	
Auto and Diesel Mechanics	

Please provide any additional information regarding the above subjects

9. What challenges did you experience during your studies at NUST with the CBET programme for TVET teachers? (Please motivate your answer)

10. Does the CBET programme for TVET teachers address the needs/vision of the VTCs and the industry/workplace? (Please motivate your answer)

11. **How much do you know about the current CBET curriculum for TVET teachers ? (Please motivate your answer)**

12. **Do you support the principle that education and training for educators must concentrate more on the (methodology of teaching) functional tasks and supporting knowledge of practitioners? (Please motivate your answer)**

13. **Do you think there could be a need to amend, enhance and/or replace the current CBET programme for TVET teachers to focus more on the (methodology) functional tasks of educators? (Please motivate your answer)**

14. **Are there any specific key learning areas or topics that you think should be covered in the CBET programme for TVET teachers? (Please motivate your answer)**

15. **If your response to questions 11 and 12 was yes, will you support the implementation of a new TVET teacher programme at the NUST? (Please motivate your answer)**

16. **How can NTA ensure that NUST maintains the quality of teaching and learning in the current TVET teacher programme? (Please motivate your answer)**

17. **Do you have any suggestions to overcome the challenges?**

SECTION C: TRAINER'S EPISTEMOLOGICAL FACTORS - KNOWLEDGE

18. What determines whether or not TVET teachers implement the intended CBET curriculum in their classrooms? (Please motivate your answer)

20. What should TVET teachers know about the CBET curriculum? (Please motivate your answer)

Thank you for taking the time to participate in this open-ended questionnaire!

Your response is highly appreciated.

APPENDIX E

ETHICS COMMITTEE

UNIVERSITY OF THE FREE STATE
UNIVERSITEIT VAN DIE VRYSTAAT
YUNIVESITHI YA FREISTATA

UFS UV

GENERAL/HUMAN RESEARCH ETHICS COMMITTEE (GHREC)

30-Jul-2021

Dear Mr Lance Hamunga

Continuation/Report Approved

Research Project Title:
Competency-based education and training for vocational education trainers in Namibia: a programme evaluation

Ethical Clearance number:
UFS-HSD2017/0556/21

We are pleased to inform you that the application to extend your ethical clearance has been approved. Your ethical clearance is valid for twelve (12) months from the date of issue. We request that any changes that may take place during the course of your study/research project be submitted to the ethics office to ensure ethical transparency. furthermore, you are requested to submit the final report of your study/research project to the ethics office. Should you require more time to complete this research, please apply for an extension. Thank you for submitting your proposal for ethical clearance; we wish you the best of luck and success with your research.

Outcome: Approved

Please note that this is only valid for 12 months

Yours sincerely

Dr Adri Du Plessis
Chairperson: General/Human Research Ethics Committee

205 Nelson Mandela Drive
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South Africa

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duplessisA@ufs.ac.za
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APPENDIX F

NTA LETTER OF PERMISSION

NAMIBIA TRAINING AUTHORITY

Enquiries: Mildred Wolf
Tel: 061 207 8573
Email: mwolf@nta.com.na

23 November 2016

Mr. Lance Hauuanga
P.O. Box 81145
Olympia
WINDHOEK

Dear Mr. Hauuanga,

RE: REQUEST FOR PERMISSION TO CONDUCT RESEARCH IN SAMPLED NAMIBIA VOCATION TRAINING CENTRES AND THE PROGRAMME DEVELOPMENT UNIT OF THE NTA

Your letter of 15 November 2016, on the above subject, bears reference.

This letter serves to inform you that permission has been granted for you to conduct the evaluative research study in order to collect data from VET trainers from our Vocational Training Centres (VTCs).

Please note, however, that you are kindly requested to share the draft research instruments with me for review before they are administered.

I trust that you will find the above in order.

Yours Sincerely,

Jerry Beukes
Chief Executive Officer

NAMIBIA TRAINING AUTHORITY
PO Box 70407
Khomasdal, Windhoek
Website: www.nta.com.na
E-Mail: info@nta.com.na
Tel: 061-2078550
Fax: 061-2078551
OFFICE OF THE CEO

Established in terms of Section 6 of the Vocational Education and Training Act, Act No. 1 of 2008

Board Members: Mr. Otto Shikongo (Chair), Ms. Loide Shaanika (Deputy Chair), Ms. Florentia Amienye, Mr. Tim Parkhouse, Mr. Erastus Hoveka, Mr. Kosmas Muyenga, Dr. Gilbert Likando, Mr. Franz Gertze, Dr. Adv. Sakeus Akweenda, Mr. Jerry Beukes (Ex Officio) (CEO)

PO Box 70407, Khomasdal, Windhoek, Namibia. NTA Village, Rand Street, Khomasdal. Switchboard: +264 (0) 61 207 8550. Fax: +264 (0) 61 207 8551
Website: www.nta.com.na. Email: info@nta.com.na

"All Official Correspondence must be addressed to the Office of the CEO"

APPENDIX G

NUST LETTER OF CONSENT

NAMIBIA UNIVERSITY
OF SCIENCE AND TECHNOLOGY

Office of the Registrar

13 Storch Street
Private Bag 13388
Windhoek
NAMIBIA

T: +264 61 207 2118
F: +264 61 207 9118
E: registrar@nust.na
W: www.nust.na

13 December 2016

Mr Lance Hauuanga
Windhoek
NAMIBIA

Dear Mr Hauuanga

RE: CONSENT TO CONDUCT RESEARCH WITH THE NAMIBIA UNIVERSITY OF SCIENCE AND TECHNOLOGY STAFF AND STUDENTS

The letter with approval date 15 November 2016 has reference.

Approval is hereby granted for you to conduct the research on "*Investigation into the experiences, challenges and perceptions of the TE lecturers regarding the CBET curriculum*" in the Namibia University of Science and Technology. Any information gathered during the research is to be used for the purpose of the study only and must be treated as confidential. The results of the study should be shared with the University. Individual information of staff and students will not be made available, nor will biographical information of students be made available in such a way that individual students can be identified.

You are advised to contact the Department of Education and Languages to compile a list of possible respondents to your data collection instrument.

I wish you all the best with your research.

Yours sincerely,

Corneels H. Jafta
REGISTRAR

NAMIBIA UNIVERSITY OF SCIENCE AND TECHNOLOGY
P/Bag 13388
Windhoek
NAMIBIA
2016 -12- 13
REGISTRAR
OFFICE OF THE REGISTRAR

CC: Deputy Vice-Chancellor: Academic Affairs
Assistant Registrar: Academic Administration
HoD: Education and Languages

APPENDIX H

MINISTER OF HIGHER EDUCATION PERMISSION

REPUBLIC OF NAMIBIA

MINISTRY OF HIGHER EDUCATION, TRAINING & INNOVATION

Tel: + 264 61 2933511
Fax: + 264 61 402706
Enquiries: Dr. Raimo Naanda
Email: raimo.naanda@mheti.gov.na

Independence Ave. & Luther Street
Private Bag 13406
Windhoek

Our reference: 13/R
Your reference:

15 November 2016

Mr. Lance Hauuanga
Namibia University of Science and Technology
Private Bag 13388
WINDHOEK

Dear Mr. Hauuanga,

APPROVAL TO CONDUCT EDUCATIONAL RESEARCH ON SAMPLED VOCATIONAL TRAINING CENTRES

Your letter dated 15 November 2016 on the above caption bears reference.

With this letter, we would like to inform you that approval has been granted for you to conduct educational research on a sampled vocational training centres (VTCs), to determine the current experiences, challenges and perspective of VET trainers with regard to the implementation of the CBET Curriculum.

In light of the above, you are advised to approach the Chief Executive Officer of the Namibia Training Authority to assist in identifying respective Centre Managers for the purpose of your research investigation.

We will appreciate if you could share with us your research findings upon successful completion of your studies.

Sincerely Yours,

.....

Dr. Raimo Naanda
Deputy Permanent Secretary

Cc: Dr. Alfred Van Kent – Permanent Secretary, MHETI
Mr. Jerry Beukes – Chief Executive Officer, NTA

All official correspondence must be addressed to the Permanent Secretary

APPENDIX I

BASIC COMPETENCIES FOR PROFESSIONAL QUALIFIED TVET LECTURERS: SOUTH AFRICA

An Evaluative study of the implementation of the secondary school curriculum in Namibia

Region_____

School Name_____

Gender: Male/Female_____

Grade taught_____

Date_____

Start time_____ End time_____

Introductions: My name is Lance Hauuanga. I am currently studying with the University of the Free State in South Africa. The researcher assures the research participant of ethical issues regarding

Informed Consent: purpose of the research, sponsors of the study research (self-sponsored study), voluntary participation (participant may withdraw if encounters a question that is uncomfortable with), confidentiality (use of pseudo-name for real names of research participants), obtain permission to tape-record interview, assure privacy from disclosure of interview discussions to the third party, and assure anonymity of the research.

Section A: Teachers' demographic factors

1. Now first of all, would you like to tell me a little bit about yourself? Does age, teaching experience and professional qualification of teachers influence how teachers implement the curriculum? How likely do you think the place or region where you work determines whether or not you implement the curriculum?

Section B: Teacher's epistemological factors

Teacher's knowledge

2. What then determines whether or not teachers implement the intended curriculum in their classrooms?
3. How much do you know about the current curriculum framework from which you are teaching? Probe
4. Do you have a copy of the 2010 Curriculum Framework? Did you receive a copy of the National Curriculum Framework for 2010?
5. Do you think being aware that there is a new curriculum is enough for teachers to be able to implement it as designed by policy makers? So what should have happened in order to ensure that teachers know and implement the curriculum as designed by policy makers?
6. Why should teachers know the contents of the curriculum? What is the importance of knowing the curriculum? Or what should teachers know about the curriculum?

Attitude

7. How do you feel about the National Curriculum for Basic Education? So if the curriculum is "just fine" do you mean that it is 100% or perfect and it doesn't require any changes or amendments in some areas? What do you mean by the curriculum is "just fine"? What is your attitude towards the current curriculum from which you are teaching?
8. According to you, why do you think the curriculum should be amended? Do you think the 2010 Curriculum should be changed or amended or revised? IN your view what should be changed in the 2010 National Curriculum Framework?

Beliefs

9. What are your views about the learner centred philosophy which you are implementing in your classroom?
10. Do you believe that you are implementing the curriculum based on the learner centred philosophy on which it is based? What are your personal beliefs about the learner centred philosophy that you are using in conduction your teaching?
11. Why are you finding it difficult to teach according to LC principles? Are you finding it difficult to teach according to learner-centred principles?

Self-efficacy/behaviour

12. How would you describe your ability to teach in a learner centred manner?
13. On average, how much learning do you teach in your largest class?
14. How does the issue of the number of subjects taught and the teacher-learner ratio impact on the curriculum implementation as you are experiencing it?

Section C: Internal school support factors

Learner characteristics

15. I want us to talk about learners' characteristics in your school and specifically in your classroom. Our next discussion is about the characteristics of the learners in your school and specifically in your classroom.
16. In your opinion what learner related factors play a role in whether or not you are not able to implement the curriculum? Probe: Ok. You say learners in your school are not scared of teachers, whom then are they scared of? Why are learners in your school not scared of their teachers?
17. How does the school location of the learner affect the curriculum implementation of your teaching?
18. Are you suggesting that the problem of inadequate communication in English affects learners only? In other words, what about their teachers?
19. You speak about the fact that some teachers cannot speak English and that that affects the implementation of the curriculum. What about the children's parents? Do the parents of the learners in your class speak English? Probe: tell me whether or not the parents of your learners can communicate in English.

Professional development

20. Did you do training on how to implement the curriculum change?
21. Why haven't you been attending staff development programmes aimed at enhancing your skills and knowledge on how to implement the curriculum? Probe: So given this situation what are you doing to improve implementation of the curriculum or the subjects that you are teaching? Do you think you require further training? In which curriculum areas do you need further professional development?
22. We have just discussed the role of teacher beliefs on curriculum implementation, how can you describe the leadership in your school? Probe: why are you not able to implement the curriculum as expected of you? Why is assistance not forthcoming from your principals? If according to you principals do not understand and know the curriculum, then who is responsible for the monitoring and supervision of the implementation of the curriculum?

School leadership

23. How are decisions made in your school? Who makes decisions in your school? Probe: Could you please give examples of a situation or cases in which the principal or school leadership took decisions without involving teachers? Could you please give examples of a situation or cases in which you as a principal or school leadership team took decisions without involving teachers? Probe" So what does that mean on how the decisions are and implemented and to you as a teacher?

Section D: External school support factors

Resources

24. What factors outside your school system do you think have an influence on whether or not you implement your curriculum in your classroom situation? The factors could be positive or negative or both. Probe: You are saying that your school does not have resources such as textbooks for your learners, why don't you have resources? What causes the problem of not having enough resources or textbooks? What do you suggest should happen in improving the supply of resources? Who should improve the supply of resources?

Stakeholder support

25. In your opinion is there anything/something that the national government is not doing to enhance the implementation of the curriculum?
26. How are different stakeholders in your area supporting the implementation of the intended secondary school curriculum? What about support from government directorates? Probe: So what do you feel about your experience/situation with the lack of support from various stakeholders?

Teacher involvement

27. Were you involved in the curriculum development process of the 2010 national curriculum? You say you were not involved, who then took part in the development of the curriculum? Probe: Why should teachers be involved in the development process of the curriculum?
28. Any comments?

Thank you for your time.

APPENDIX J

CONSENT FORM

CONSENT TO PARTICIPATE IN THIS STUDY

I, _____ (participant name), confirm that the person asking my consent to take part in this research has told me about the nature, procedure, potential benefits and anticipated inconvenience of participation. I would like to give permission to be audio recorded during the discussion to ensure that the researcher does not miss any important fact he might raise.

He explained that I understood the study as described in the information sheet. I have had sufficient opportunities to ask questions and am prepared to participate in the study. I know that my participation is voluntary and that I can withdraw without penalty. I am aware that the findings of this study will be anonymously processed into a research report for a Doctoral study at UFS.

I agree with recording the qualitative interview as a means to specific data collection methods.

I have received a signed copy of the informed consent agreement.

Full Name of Participant: …….

Signature of Participant: _____ Date:

Name of the researcher: Lance Hauuanga

Signature of Researcher: …….  Date: 16 March 2020