PREDISPOSING FACTORS INFLUENCING THE ADOPTION OF COMPETENCY-BASED APPROACHES TO TECHNICAL AND VOCATIONAL EDUCATION TRAINING WITHIN THE CARIBBEAN

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Abstract

PREDISPOSING FACTORS INFLUENCING THE ADOPTION OF COMPETENCY-BASED APPROACHES TO TECHNICAL AND VOCATIONAL EDUCATION TRAINING WITHIN THE CARIBBEAN

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This study explores the predisposing factors that influence the adoption of competency-based approaches in Technical and Vocational Education and Training (TVET) within the Caribbean context. Despite global recognition of the value of competency-based education and training (CBET), implementation in the region remains uneven. CBET, which emphasizes the acquisition of practical skills, knowledge, and attitudes aligned with labour market needs, has the potential to transform Caribbean TVET. However, lingering societal stigma, limited institutional readiness, and unclear policy directives often impede progress. The study is framed around the central research question: What predisposing factors shape stakeholders' readiness and commitment to adopt CBET in the Caribbean?

A qualitatively driven mixed-methods design was employed to investigate the lived experiences, perceptions, and attitudes of key stakeholders. This design enabled the integration of in-depth qualitative insights with supportive quantitative data. Secondary school TVET teachers were selected through simple random sampling, while administrators were identified using convenience and snowball sampling. Sixty-one teachers completed a 47-item electronic questionnaire (45 Likert-scale, 2 open-ended), and 20 administrators participated in semi-structured interviews. This combination of data sources captured multiple perspectives on CBET implementation, particularly regarding readiness, constraints, and systemic challenges.

Findings indicate that goal orientation is a stronger predictor of CBET adoption than perceived social support. Quantitative analysis revealed statistically significant relationships for both variables, with regression results showing a greater contribution from stakeholders' intrinsic motivation, values, and commitment toward TVET. Qualitative content analysis highlighted several barriers to adoption: persistent negative perceptions of TVET, inadequate resourcing, scheduling and implementation challenges, and fragmented policy enforcement across institutions.

This study contributes to the growing CBET research base in the Caribbean by clarifying how specific predisposing factors, such as stakeholder goal orientation and perceived support, shape readiness for adoption. Its findings offer actionable insights for policymakers, including the development of targeted interventions, awareness campaigns, and operational guidelines. Curriculum developers can use the findings to better align training with industry needs. Teacher training programmes may also be designed to address readiness and resistance using models such as the Concerns-Based Adoption Model (Hall & Hord, 2019), while researchers may build on this work through comparative or longitudinal studies.

Declaration

I declare that this thesis has been composed solely by myself and that it has not been submitted, in whole or in part, in any previous application for a degree. Except where stated otherwise by reference or acknowledgment, the work presented is entirely my own.

AI Acknowledgment

Use of AI:

I acknowledge the use of ChatGPT (https://chat.openai.com/) in the preparation of this dissertation. The tool was used solely for support with non-substantive tasks, specifically:

- Proofreading my reference list for compliance with APA 7th edition formatting.
- Clarifying conceptual differences between theories, such as the distinction between transfer of training and transfer of learning.

These interactions occurred on 20 August 2024 and were limited to the following types of prompts:

"Proofread the following list of references to ensure proper APA 7 formatting, making corrections where necessary."

"Differentiate between transfer of training and transfer of learning theories."

At no point was the AI used to generate original content, perform data analysis, or write sections of the dissertation. The final interpretations, analysis, and scholarly writing are entirely my own.

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To the participants in this study, thank you. Without your contributions, this research would not have been possible. I also extend my appreciation to the Unicaf School of Doctoral Studies team, including my supervisor, for your patience, guidance, and understanding throughout this process.

This thesis stands as a true declaration of God's faithfulness, as captured in Numbers 23:19 (KJV):

"God is not a man, that he should lie; neither the son of man, that he should repent: hath he said, and shall he not do it? or hath he spoken, and shall he not make it good?"

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List of Abbreviations

Acronym	Meaning
ACP	Africa Caribbean and Pacific
AS	Agricultural Science
B&FT	Building and Furniture Technology
CANTA	Caribbean Association of National Training Agencies
CAPE	Caribbean Advanced Proficiency Examinations
CARICOM	Caribbean Community and Common Market
CBAM	Concerns Based Adoption Model
CBET	Competency Based Education and Training
CBETA	Competency Based Education, Training and Assessment
CBE	Competency-based Education
CBT	Competency Based Training
CMC	Caribbean Media Corporation
COSHOD	Council of Human and Social Development
COL	Commonwealth of Learning
CPA	Cotonou Partnership Agreement
CSME	Caribbean Single Market Economy
CQF	CARICOM Qualifications Framework
CVQ	Caribbean Vocational Qualifications
E&ET	Electrical and Electronic Technology
EFA	Education for All
EDPM	Electronic Document Preparation and Management
EU	European Union

F&RM	Family and Resource Management
FN&H	Food, Nutrition and Health
GNVQs	General National Vocational Qualifications
IC	Innovations Configuration
HEART Trust	Human Employment and Resource Training Trust
HIV/AIDS	Human Immunodeficiency Virus/ Acquired Immune Deficiency Syndrome
ILO	International Labour Organization
IMF	International Monetary Fund
IPEC	International Programme on the Elimination of Child Labour
ICT	Information and Communication Technology
LoU	Levels of Use
MDGs	Millennium Development Goals
MET	Mechanical Engineering Technology
MMR	Mixed Methods Research
MMPR	Mixed Methods Phenomenological Research
NDICI	Neighbourhood, Development, and International Cooperation Instrument
NTAs	National Training Agencies
OA	Office Administration
OBE	Outcomes Based Education
OCTs	Outermost Countries and Territories
oeSoC	Open ended concerns statement
OLI	One-legged Interview
PA	Phenomenological Approach

PBTE	Performance-Based Teacher Education
PISA	Programme for International Student Assessment
POA	Principles of Accounts
POB	Principles of Business
RQF	Regional Qualifications Framework
RVQF	Regional Vocational Qualifications Framework
QUAL	Qualitative
SoC	Stages of Concern
SoCQ	Stages of Concern Questionnaire
SDGs	Sustainable Development Goals
TALIS	Teaching and Learning International Survey
TC&F	Textile Clothing and Fashion
TD	Technical Drawing
TVET	Technical and Vocational Education and Training
UDHR	Universal Declaration of Human Rights
UK	United Kingdom
UN	United Nations
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNICEF	United Nations International Children's Emergency Fund
VA	Visual Arts
quan	Quantitative
UNDP	United Nations Development Programme
UNHCR	United Nations High Commissioner for Refugees

UNV	United Nations Volunteers
UN Women	United Nations Entity for Gender Equality and the Empowerment of Women
VoIP	Voice over Internet Protocol

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CHAPTER 1: INTRODUCTION

Education has long been recognized as a fundamental human right and a crucial driver of social and economic development. The phrase "the fundamental cure for poverty is not money, but knowledge" originates from the 1950s work of Saint Lucia's first Nobel laureate, Sir William Arthur Lewis, whose discussions emphasized the critical role of human capital, education, and knowledge in alleviating poverty and fostering economic development particularly in labour-abundant economies such as the West Indies at the time. This phrase encapsulates the longstanding relationship between education and economic prosperity, a connection that had already been acknowledged in earlier periods when colonizers introduced their education systems to the colonized.

Against this backdrop, the structure and orientation of technical and vocational education systems have come under increasing scrutiny. Traditional TVET models in the Caribbean have historically relied on rigid, time-based instruction, often emphasizing theoretical content with limited alignment to real-world workplace demands. In contrast, Competency-Based Education and Training (CBET) adopts a more flexible, learner-centred, and outcomes-driven approach. CBET prioritizes the mastery of specific occupational competencies, assessed through continuous practical evaluations, rather than fixed curricula or time-based progressions. It is explicitly designed to improve the relevance, responsiveness, and effectiveness of training by directly involving industry stakeholders in defining the competencies required for employment. As such, CBET offers a targeted strategy for bridging the skills gap and enhancing the employability of TVET graduates across the region.

Building on these evolving models, Mundy et al. (2016), modern history is replete with many examples of this transfer, as missionaries, traders, and conquerors carried their values, cultures, and systems of education on their global quests. This trend became even more

prominent during the 19th and early 20th centuries, with colonial powers disseminating Western educational models across the world. Mundy et al. (2016) further noted that education spread rapidly due to growing demand from citizens and communities who saw it as a pathway for individual and collective advancement. Initially, education systems were funded and man-aged by religious organizations or local communities, but over time, these systems were ab-sorbed into national public structures. This allowed governments to control education re-sources, define national and sub-national curricula and standards, hire and pay teachers, struc-ture their work, and assume ownership of schools.

Mundy et al. (2016) also explained that cross-national policy borrowing became a common practice from the early 19th century, as policymakers and reform advocates actively examined educational developments in other countries, particularly in Western Europe and North America, to identify both cautionary examples and desirable practices for adoption. By the mid-20th century, there was a notable shift in global education priorities, influenced by the creation of the United Nations (UN) and its specialized agencies, including UNESCO, UNICEF, and the International Labour Organization (ILO), all of which continue to shape the global education landscape. In the Caribbean, institutions such as the World Bank and the European Union (EU) also play significant roles. Although their mandates may differ, these organizations share a common thread of shaping education policy, directly or indirectly, and their influence must be acknowledged and understood in the context of ongoing educational change in the region.

Global Organizations and the Shaping of Education Policy

According to the UNESCO website, the organization was established in 1946 to foster peace and security by promoting international cooperation through education, science, and culture (UNESCO, n.d.). Its adoption of the Universal Declaration of Human Rights (UDHR),

which proclaims education as a universal right, and its leadership in the Education for All (EFA) movement, which aimed to meet the learning needs of all children, youth, and adults, have been pivotal in shaping global education agendas. The subsequent Millennium Development Goals (MDGs) and Sustainable Development Goals (SDGs) further reinforced the global commitment to universal education. SDG 4, in particular, is dedicated to ensuring inclusive and equitable quality education and promoting lifelong learning opportunities for all (UNESCO, 2015).

UNICEF, guided by the 1989 Convention on the Rights of the Child, was tasked by the United Nations General Assembly with promoting children's rights, ensuring their basic needs are met, and enhancing their opportunities to reach their full potential (UNICEF, n.d.). As such, UNICEF views education as a fundamental human right and works to ensure that every child has access to quality education. Its efforts include advocacy and public awareness, technical support for education policy development, capacity building through training programmes, research to inform policy decisions, mobilization of financial resources, and rigorous monitoring and evaluation to improve programme outcomes.

The International Labour Organization (ILO), established in 1919 as part of the Treaty of Versailles and later designated in 1946 as the UN's first specialized agency, was founded on the principle that lasting peace depends on social justice. As a unique tripartite agency, it includes representatives from governments, employers, and workers. While the role of education in achieving social justice was acknowledged early on, it became a more explicit focus through key conventions and initiatives. Notably, the 1951 Convention No. 100 on equal remuneration highlighted education's importance in advancing gender equality in the workplace. The 1975 Convention No. 142 emphasized vocational guidance and training in social and economic development. This focus deepened with the 1992 launch of the International Programme on the

Elimination of Child Labour (IPEC), which made education a core component of its strategy. The ILO's 1999 Decent Work Agenda further underscored the central role of education and skills development in achieving decent work for all.

The Organisation for Economic Co-operation and Development (OECD), formed in 1961, is not a UN agency but operates as a UN observer with 38 member states, primarily high-income economies such as Finland, the United Kingdom, the United States, Australia, and Switzerland. One of its aims is to support sustainable economic growth in both member and non-member countries during their development efforts (OECD, n.d.). The OECD collaborates with international organizations such as UNESCO, the World Bank, and the European Union to promote global education goals. It works closely with national governments and non-governmental organizations to support the implementation of education policies and reforms.

Through initiatives such as the Programme for International Student Assessment (PISA), the Teaching and Learning International Survey (TALIS), and the Education Policy Outlook, the OECD conducts extensive research and collects data on education systems worldwide. This comparative data and analysis provide valuable insights into best practices and common challenges, while also offering targeted recommendations in areas such as curriculum development, teacher training, and education financing. Additionally, through the development of the OECD Skills Strategy, the Education Policy Outlook, and the Framework for Policy Coherence for Sustainable Development, the organization supports countries with policy tools, guidelines, and indicators to assess and strengthen their education systems.

In the Caribbean, institutions such as the World Bank and the European Union have played influential roles in shaping the region's education systems, primarily due to the region's dependence on foreign financial aid for educational and other developmental initiatives. According to Edwards et al. (2023), the World Bank is not only the largest financier of education

through loans but also one of the most influential creators of global education policy knowledge. Although education was not originally part of its mandate, Mundy and Verger (2016) observed that the World Bank's involvement has grown since the 1960s, evolving into one of the most dominant forces in education for development. Over the past five decades, the Bank has emerged as a central authority in managing social policies in developing and low-income countries and remains the leading international source of development funding for governments. As noted by Marshall (2008, as cited in Mundy & Verger, 2016), other providers of international development assistance often regard the World Bank as the primary source of policy research and guidance, holding near-exclusive control over development business models despite being part of a broader transnational and interstate network (p. 9).

The Caribbean's relationship with the European Union formally began with the 1975 signing of the Lomé Convention. According to Lodge and Remy (2022), this bilateral arrangement provided preferential, non-reciprocal access to European markets, with Caribbean exports such as bananas, sugar, and rum benefiting from above-market prices that helped stabilize regional economies. The Cotonou Partnership Agreement (CPA), which replaced the Lomé Convention in 2000 marked the shift toward conditional aid, introducing political values, structural adjustment programmes administered by the World Bank, market-driven reforms, and tariff liberalization intended to promote the integration of African, Caribbean, and Pacific (ACP) countries into the global economy (Lodge & Remy, 2022). The 2021 post-Cotonou agreement introduced a new framework based on equality, resulting in more balanced benefits for both the EU and ACP regions. This update also led to the replacement of the European Development Fund, which was previously dedicated exclusively to ACP countries and EU-associated Outermost Countries and Territories (OCTs), with the "Global Europe: Neighbourhood,

Development, and International Cooperation Instrument (NDICI)," which now falls under the EU's general budget (Lodge & Remy, 2022, p. 6).

History has shown that no aid is truly 'free'. The Caribbean's reliance on foreign assistance, including support from the EU, the World Bank, and other international donors, has made the region increasingly susceptible to external pressure. Such aid often comes with conditions that require recipient countries to implement specific education and social reforms, regardless of local readiness or contextual relevance. In 1984, acknowledging the failure of the structural adjustment programmes imposed by the World Bank and the International Monetary Fund (IMF) to stimulate economic growth as envisioned, the Caribbean Community and Common Market (CARICOM) introduced the Nassau Declaration on Structural Adjustment. This marked the beginning of a more deliberate regional effort to reform education systems in a way that responded to the Caribbean's specific needs. This was followed by subsequent regional initiatives, including the Grand Anse Declaration in 1989, the 2001 Revised Treaty of Chaguaramas, and the 2006 establishment of the Caribbean Single Market and Economy (CSME). These steps signaled the region's intention to assert greater control over the development and implementation of its educational policies by promoting harmonization across member states. The goal was not to oppose global education agendas but rather to ensure that policy borrowing was adapted appropriately to the Caribbean's unique socio-cultural and economic contexts. By incorporating regional mandates into national policies, Caribbean governments aimed to improve the relevance and effectiveness of reforms, increasing the likelihood of successful adoption and implementation of policies that may have worked well elsewhere but required local adaptation.

Building on the earlier contrast between traditional TVET and CBET, recent global and regional education priorities have increasingly endorsed competency-based models as strategic

responses to labour market demands. In recent years, there has been a growing global move-ment toward Technical and Vocational Education and Training (TVET) and competency-based education (CBE) as strategies to improve educational outcomes and better prepare learners for the demands of the 21st-century workforce. However, as BroekBroek et al. (2015) noted, TVET has been of significant interest to the United Nations, particularly through UNESCO, since the early 1960s. The International Labour Organization (ILO) described TVET as a broad concept that includes "the study of technologies and related sciences, and the acquisition of practical skills, attitudes, understanding and knowledge relating to occupations in various sec-tors of economic and social life" (UNESCO & ILO, 2002, p. 7).

Competency-based education is a learner-centred instructional model that emphasizes mastery of clearly defined competencies. These competencies include knowledge, skills, and attitudes, and are taught within specific learning units. According to the Commonwealth of Learning (2023), this model prioritizes the learner's ability to demonstrate mastery and often allows for flexibility in the pace, timing, and setting of instruction. It frequently incorporates real-world applications to promote more authentic learning experiences. TVET is increasingly regarded as essential to the survival and competitiveness of many economies, particularly those in developing regions. Marope et al. (2015) observe that many countries see TVET as a central tool for addressing pressing issues such as slow economic growth, poverty, inequality, and unemployment, particularly among youth and women. It is also viewed as critical to combating human underdevelopment and responding to global challenges such as climate change.

The United Nations has reinforced the importance of TVET through its 2030 Agenda for Sustainable Development, which guides development priorities among member states. Goal 4 of the Agenda, which focuses on inclusive and equitable quality education, directly references TVET by calling for equal access to quality technical and vocational education and increased

skill development for youth and adults, particularly in relation to employment and entrepre-neurship. CARICOM has also emphasized TVET, beginning with its first regional TVET strat-egy in 1990. This strategy was later revised, and the region is now guided by the CARICOM Regional TVET Strategy for Workforce Development and Economic Competitiveness, adopted in 2014. In line with this strategy, several regional policies and initiatives have been implemented, including the launch of the Caribbean Vocational Qualifications (CVQ) and the adoption of a revised regional qualifications framework, both of which will be explored later in the literature review.

Statement of the Problem

The employability of graduates from secondary and tertiary-level institutions has long been a pressing concern for education systems across the Caribbean. Employers frequently express dissatisfaction with the quality of graduates, citing a lack of practical, job-ready skills necessary to thrive in the contemporary labour market. At the same time, educational institutions continue to grapple with the challenge of aligning their programmes with industry needs, while also contending with limited resources and competing mandates. This disconnect has contributed to a widening skills gap between training outcomes and labour market expectations, raising serious questions about the effectiveness of current education and training models.

The issue is particularly urgent in the Caribbean, where the structure of the economy makes the region especially vulnerable to disruptions in workforce readiness. Key industries such as tourism, agriculture, construction, and the services sector are central to economic stability, employment, and growth. These industries are increasingly reliant on workers who not only possess technical competencies but also demonstrate a range of soft skills, including critical thinking, teamwork, and communication. However, these competencies are not always

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prioritized or effectively taught within existing education frameworks. A mismatch has emerged between the competencies that employers value and those that graduates bring with them, creating an environment where many young people find themselves unemployable, underemployed, or engaged in informal work.

This reality is reflected in a number of studies. Prada and Rucci (2023) have highlighted the Caribbean's limited capacity to produce a workforce aligned with employer needs, noting that such misalignment undermines employer confidence in training systems and contributes to a cycle of underinvestment in human capital. They also point to the region's high levels of informal employment and low rates of tertiary education access as indicators of systemic weaknesses in workforce development. More than half of the labour force in many Caribbean countries operates within the informal sector, lacking access to structured skills training, labour protections, or opportunities for upward mobility. These issues are compounded by persistent inequities in access to quality secondary and postsecondary education, especially in rural and marginalized communities.

The implications of this skills mismatch are not just educational they are economic and social. An underprepared workforce results in lower productivity, diminished competitiveness, and a reduced capacity for innovation. It also affects the social fabric of Caribbean societies, with unemployed or underemployed youth more likely to experience long-term economic hardship, social exclusion, and disengagement from civic life. The World Bank (2007) had already warned that the region's education systems were not sufficiently preparing youth for participation in a rapidly evolving, knowledge-based global economy. More than fifteen years later, these concerns remain valid. Recent analyses by the World Bank, UNESCO, and the ILO (2023) reaffirm that the skills mismatch is widening, with Caribbean education systems still

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struggling to keep pace with the transformations occurring across global labour markets due to climate change, technological disruption, shifting demographics, and globalization.

Globally, education systems are seeking to respond to these changes by transforming traditional training models into more responsive, industry-aligned frameworks. One of the most widely endorsed models in this regard is Competency-Based Education and Training (CBET). The International Labour Organization (2018) defines skills mismatch to include overqualification, underqualification, and employment in jobs unrelated to one's training—all of which result from systems that fail to keep pace with the evolving needs of the economy. CBET responds directly to this challenge by emphasizing measurable, job-relevant competencies that reflect real-world tasks and workplace standards. This model requires close collaboration between educators and industry to ensure that curricula remain relevant, flexible, and demand-driven.

Evidence from a range of international contexts supports the effectiveness of CBET in enhancing employability. Manase and Nyamu (2023) found that CBET methodologies significantly improved graduate readiness in Kenya, while Lamb and Huo's (2022) meta-analysis of over 40 studies concluded that CBET-aligned programmes yielded stronger employment outcomes, particularly in economies experiencing rapid technological shifts. Nguyen et al. (2021, as cited in Manase & Nyamu, 2023) reported that vocational students in Vietnam enrolled in CBET programmes demonstrated greater adaptability and job security. Similarly, Raza and Khan (2022) noted that CBET trainees in Pakistan exhibited stronger interpersonal and technical skills than their traditionally trained counterparts. In Turkey, Arslan and Demir (2023) observed increased innovation capacity among CBET students, and in Australia, CBET-trained graduates displayed greater flexibility and problem-solving abilities in the workplace (Baker & Brown, 2021). Although each of these contexts differs from the

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Caribbean in scale and structure, the core lesson is consistent: CBET provides a flexible and relevant model for preparing learners to meet the demands of the modern workforce.

These international examples underscore the potential of CBET to improve TVET systems in the Caribbean. However, the region's experience with CBET, while not new has been inconsistent. The adoption of the Caribbean Vocational Qualification (CVQ) in 2007 was a major regional milestone. It sought to harmonize standards and facilitate the free movement of certified workers under the CARICOM Single Market and Economy (CSME). Several countries, notably Jamaica with its HEART Trust/NTA, began integrating CBET principles even earlier, recognizing the need for reforms that would better prepare learners for employment. CARICOM's regional TVET strategy, launched in the 1990s and updated in 2014, also aimed to promote system-wide competency-based training.

Despite these efforts, implementation across CARICOM member states has remained uneven. Some countries have successfully developed institutions and programmes aligned with CBET principles, while others, including Saint Lucia have struggled to move beyond policy declarations into sustainable practice. Among the persistent challenges are weak institutional capacity, limited funding, fragmented national training systems, and an ongoing stigma against vocational education. The perception that TVET is a second-tier option for low-performing students continues to discourage participation and investment. Additionally, industry involvement in curriculum development and assessment remains limited, weakening the feedback loop necessary to keep programmes current and effective.

These challenges are both technical and cultural. On the technical side, many institutions lack the infrastructure, equipment, and human resources required to deliver quality CBET programmes. Teacher training often lags behind, and many educators remain unfamiliar with competency-based assessment methodologies. On the cultural side, attitudes toward

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TVET continue to reflect outdated hierarchies that value academic pathways over skills-based learning. This cultural resistance, coupled with weak policy enforcement and inconsistent stakeholder engagement, contributes to the gap between CBET's promise and its actual impact in the Caribbean.

The situation in Saint Lucia illustrates this broader regional pattern. Although national policy supports the CVQ and CBET principles, integration at the institutional level has been slow and uneven. Some schools and training centres have piloted CBET programmes, but scaling these efforts has proven difficult. Stakeholders often operate in silos, with limited cross-sectoral collaboration or shared ownership of reform efforts. Teachers may support CBET in theory but feel underprepared to implement it in practice. Employers may express interest in competency-based frameworks but remain disengaged from programme design and evaluation. These conditions reflect a complex interplay of psychological, institutional, and environmental factors that influence how reform is experienced and enacted.

It is within this context that the present study was undertaken. The research seeks to explore the predisposing factors, both internal and external, that shape the adoption of CBET within Caribbean TVET systems. Rather than focusing solely on structural barriers, the study examines how individual motivation, stakeholder belief systems, institutional environments, and broader socio-political dynamics influence implementation. By foregrounding the lived experiences of those tasked with enacting reform, the research aims to offer a more nuanced understanding of how CBET adoption unfolds on the ground.

The ultimate goal is to inform practical strategies for strengthening CBET implementation in Saint Lucia and, by extension, in other small island developing states. By identifying the conditions that support or inhibit adoption, the study contributes to a growing body of knowledge that seeks to align education systems more closely with economic realities.

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It is hoped that the findings will help bridge the persistent divide between training and employment, and position CBET not as a one-time initiative, but as a long-term strategy for workforce resilience and inclusive development in the Caribbean.

Purpose of the Study, Research Aims, and Objectives

The main purpose of this mixed-methods, cross-sectional study anchored in a phenomenological approach, is to explore the key factors influencing the adoption of competency-based education and training (CBET) in Technical and Vocational Education and Training (TVET) institutions across the Caribbean. The study was conceived against a backdrop of persistent challenges in aligning TVET offerings with industry needs, despite regional efforts such as the Caribbean Vocational Qualification (CVQ). The goal is not only to understand the barriers to adoption but also to generate meaningful, actionable insights that can enhance alignment between training and employment outcomes in the region. Although the CVQ represents one manifestation of CBET, this study adopts a broader lens, examining the philosophical, operational, and institutional foundations that influence adoption.

Research Aims

This study seeks to identify the major influences shaping institutional adoption of competency-based education and training (CBET) practices, with particular attention to the psychological and contextual variables that may support or hinder reform. It further aims to determine whether a correlation exists between stakeholders' goal orientation, perceived social support, and the adoption of CBET. In addition, the research aspires to propose evidence-based, actionable recommendations to improve the CBET adoption process within the Caribbean context.

These aims encompass both systemic and institutional levels, offering a holistic view of the various forces that influence educational reform. The research is situated within ongoing

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concerns about the effectiveness of TVET reform initiatives and reflects the need to better understand how stakeholder dynamics shape educational innovation. This study is grounded in the recognition that reforms, particularly shifts toward outcome-based models such as CBET, are deeply embedded in socio-political realities. Institutions are often expected to implement such reforms without the necessary resources, capacity-building, or stakeholder engagement.

Despite this, limited research exists on how variables such as goal orientation and perceived social support may influence CBET adoption decisions within Caribbean TVET systems. It is precisely this gap that the present study addresses. Drawing on empirical data and the lived experiences of actors in the field, the research aims to present a nuanced understanding of the internal and external factors shaping CBET adoption. The overarching objective is to contribute to a more coherent and contextually relevant understanding of CBET implementation by foregrounding the perspectives of those directly involved in its rollout. Through a combination of qualitative and quantitative data collection and analysis, the study will explore how institutional dynamics, interpersonal relationships, and broader policy environments intersect to either support or impede the adoption of CBET. These aims guide the inquiry and provide the foundation for addressing the broader research problem.

Research Objectives

This study seeks to explore the lived experiences of individuals engaged in Technical and Vocational Education and Training (TVET), including educators, institutional administrators, and national or regional oversight officials, as they encounter the introduction and adoption of competency-based education and training (CBET) frameworks such as the Caribbean Vocational Qualifications (CVQs). These perspectives offer critical insight into the enablers and barriers to adoption within institutional settings. Understanding these lived realities is essential for identifying the contextual factors that influence both implementation

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and acceptance. The study also examines the socio-political, institutional, and psychological conditions that shape an institution's willingness and capacity to adopt CBET. These include levels of institutional autonomy, the availability of professional development opportunities, the degree of policy alignment between national and regional bodies, and cultural attitudes toward change and innovation. Stakeholder engagement, leadership commitment, and perceived institutional and social support are also investigated as potential indicators of readiness and institutional capacity.

The research further investigates the constraints and challenges institutions encounter during the transition to CBET. These may include limitations in infrastructure, shortages of adequately trained instructors, staff resistance to change, and the pressure of competing administrative demands. By identifying common patterns and points of friction across institutions, the study aims to highlight leverage points for targeted intervention. A more grounded understanding of these obstacles will support the development of future capacity-building strategies tailored to the needs of small island developing states.

In addition to institutional and contextual considerations, the study assesses whether a relationship exists between individual goal orientation, perceived social support, and the degree of CBET adoption across different institutional settings. Goal orientation is defined here as the extent to which individuals set and pursue achievement-oriented goals in their professional roles, while perceived social support encompasses the encouragement, assistance, and resources provided by colleagues, supervisors, and the wider professional community. Investigating the interplay of these psychological factors with adoption behaviours may offer valuable insight into how individual motivation and workplace dynamics influence broader processes of educational change.

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Finally, the research seeks to formulate a set of practical, context-sensitive recommendations aimed at policymakers, institutional leaders, and regional stakeholders seeking to strengthen CBET implementation in the Caribbean. These recommendations, grounded in the study's empirical findings and stakeholder perspectives, may address institutional capacity, policy coherence, stakeholder engagement, and strategies for building momentum within systems of technical and vocational education. The intention is not only to generate evidence-informed guidance, but also to ensure that such guidance remains realistic and responsive to the distinctive challenges of small island developing states.

Through the pursuit of these objectives, the study aims to develop a more comprehensive understanding of the factors influencing the adoption of CBET in the Caribbean. The research reflects a deliberate effort to move beyond abstract theorising to generate actionable knowledge that can support institutional practice, inform both regional and national policy, and contribute to the development of a more resilient, responsive, and future-ready TVET system.

Nature and Significance of the Study

This study is best described as a qualitatively driven mixed-methods research project with a cross-sectional design and a phenomenological foundation. A phenomenological approach is particularly relevant to this research as it enables in-depth exploration of how participants experience and interpret the adoption process. It provides more than a surface-level understanding of barriers, allowing for the uncovering of complex stakeholder engagement patterns, institutional dynamics, and the sociocultural realities underpinning CBET adoption. It places participants' voices at the center of the research process and prioritizes the interpretation of meaning as constructed by those directly involved.

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Nature of Study

The cross-sectional nature of the study allowed for data collection at a single point in time, making it well-suited for identifying perceptions and patterns during a specific phase of CBET integration. This snapshot approach provided insight into the status of implementation across a range of institutional contexts, capturing both progress and stagnation in real time. It is especially valuable in the Caribbean context, where institutional maturity in CBET adoption varies widely. Mixed-methods research integrates qualitative and quantitative data collection and analysis to provide a more comprehensive understanding of complex problems. In this study, a qualitative emphasis is blended with quantitative elements. Qualitative methods are used to explore the lived experiences and perspectives of participants, while quantitative data offer measurable insights into relationships among key variables, particularly goal orientation and perceived social support. This design allows for both subjective interpretation and empirical validation, enriching the analysis. The design aligns with Morse and Niehaus' (2016) framing of mixed methods as the intentional combination of qualitative and quantitative components to deepen understanding and improve validity. Triangulating multiple sources of evidence strengthens methodological rigor and ensures more meaningful conclusions.

Data were collected using interviews, questionnaires, and document analysis. Interviews captured rich, descriptive narratives of stakeholder experiences, while the questionnaires provided quantifiable data related to participants' perceptions and behaviours. Document analysis added contextual depth by incorporating national and institutional reports, policy briefs, and other relevant materials. This triangulation supports both validation of findings and the identification of contradictions or points of divergence. Qualitative data were thematically analyzed using LIGRE, a computer-assisted qualitative data analysis software. Quantitative data were analyzed using PSPP, LibreOffice Calc, and SPSS. Descriptive statistics were used to

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identify patterns and trends, while correlation analysis tested relationships among selected variables, such as perceived support and goal orientation in relation to CBET adoption. This integration of analytical techniques provides a robust interpretive framework, situated within the broader educational context of the Caribbean. The mixed-methods design allowed for a holistic investigation of the phenomenon, enabling the researcher to uncover both nuanced individual experiences and broader systemic factors influencing adoption. Moreover, the phenomenological lens facilitated a rich understanding of institutional culture, policy alignment, and the personal and professional motivations behind CBET uptake.

Significance of Study

This study holds significant value in several ways. First, it contributes to filling a critical research gap. While the benefits of CBET have been widely discussed in the literature, there is a noticeable lack of research on the experiential aspects of its adoption, particularly from the perspective of stakeholders within Caribbean TVET institutions. This research addresses that gap by exploring the lived realities of those directly involved in the implementation and oversight of CBET. Their insights are expected to enrich the conversation on TVET reform, especially within the context of regional integration and education policy. Second, the findings can inform both policy and practice. Identifying the socio-political, economic, and institutional factors that facilitate or hinder CBET adoption can help policymakers and institutional leaders develop more effective, context-sensitive strategies. This is particularly important in a region where a longstanding disconnect persists between training systems and labour market needs. Understanding these dynamics at both the macro (policy) and micro (institutional) levels is crucial for sustainable reform.

Third, the study has the potential to enhance the operational efficiency of TVET institutions. By identifying challenges related to infrastructure, staffing, funding, and pedagogical

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approaches, educational leaders can make more strategic decisions about resource allocation. The findings may also promote stronger partnerships with industry to co-design relevant training programmes, support upskilling in emerging technologies, and expand dual-delivery systems that integrate classroom instruction with workplace experience. These collaborations are vital to keeping training programmes responsive to evolving sectoral demands. Fourth, curriculum developers stand to benefit from insights into how to make TVET programmes more responsive to labour market needs. The study's emphasis on modular, flexible, and stackable learning pathways, including micro-credentials and virtual simulations, aligns with global trends in competency-based training. It also advocates for improved mechanisms to ensure transfer of training into the workplace. Embedding regular industry feedback into curriculum design cycles can strengthen the coherence between academic instruction and practical skill development.

Fifth, the study may support efforts to improve public perception of TVET and reduce associated stigma. Increasing awareness of CBET's role in promoting employability, economic growth, and alignment with global labour market trends can contribute to more inclusive educational planning. The findings could also strengthen advocacy for public-private collaboration to close the region's persistent skills gap. As TVET becomes increasingly central to national development agendas, transforming how it is perceived and valued by society is essential to expanding participation and investment. Sixth, this study contributes to theory by enriching the broader discourse on educational innovation and change management. Through its examination of CBET adoption, the research sheds light on how institutional culture, leadership practices, and external pressures interact to influence reform. These insights extend beyond the Caribbean and may be applicable to similar education systems in other developing regions. The study also

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has implications for understanding innovation in resource-constrained environments, where disconnects between policy and practice are common.

Seventh, the study provides a valuable foundation for future research in education reform, curriculum innovation, and workforce development. The combination of stakeholder perspectives, institutional analysis, and regional policy context creates a base upon which comparative and longitudinal studies can be developed. This is especially relevant for researchers working in or alongside small island developing states, where contextualized insights from the Caribbean may have broader applicability. Eighth, the study contributes to regional knowledge sharing by documenting context-specific experiences with CBET implementation. These findings can foster greater collaboration across Caribbean nations, promoting shared learning, capacity building, and the development of a regional knowledge base for TVET reform and best practices.

Finally, the study holds deep personal significance for the researcher. As a TVET educator in Agricultural Science, a trained CVQ instructor and assessor, and someone actively involved in curriculum development within a small island developing state, the researcher brings both professional expertise and lived experience to this inquiry. This dual perspective not only deepens the study but also underscores the urgency of addressing the gap between investments in TVET and the tangible outcomes of skills development. By foregrounding these personal insights, the study establishes a meaningful link between academic inquiry and practitioner relevance. It is grounded not only in scholarly rigor but also in the day-to-day realities faced by educators, administrators, and trainees across the region.

This study is positioned to make a meaningful contribution to the ongoing efforts to strengthen and reform TVET systems in the Caribbean. It is hoped that the findings will help guide policy decisions, inform institutional practices, and deepen appreciation for the role of

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competency-based education in building inclusive, responsive, and sustainable education systems. By focusing on real-world experience, institutional dynamics, and structural challenges, the research adds an essential dimension to the regional dialogue on TVET development and skills transformation.

Research Questions

Since this study employed an inductive approach, the research questions were developed with what Creswell (2012) described as an "open-ended stance" (p. 129). This approach reflects a flexible and exploratory mindset, allowing for the emergence of new data, insights, and themes throughout the research process. Such flexibility permitted the modification or refinement of the questions based on participants' responses and the evolving understanding of the phenomenon under investigation.

The central research question guiding this study is "What are the predisposing factors influencing the adoption of competency-based approaches to Technical and Vocational Education and Training (TVET) in the Caribbean region?"

To support this overarching inquiry, the following sub-questions were developed:

RQ1.What are the competency-based approaches to TVET among countries within the Caribbean region?

RQ2. What is the level of adoption of competency-based approaches to TVET?

RQ3.What is the level of goal orientation of stakeholders involved in TVET?

RQ4. Are stakeholders perceived as being supportive of TVET?

RQ5. How does the goal orientation of stakeholders influence the adoption of competency-based approaches to TVET?

RQ6. How does perceived social support from stakeholders influence the adoption of competency-based approaches to TVET?

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RQ7. How do goal orientation and perceived social support from stakeholders jointly influence the adoption of competency-based approaches to TVET?

RQ8. What are the relative contributions of goal orientation and perceived social support of stakeholders to the adoption of competency-based approaches to TVET?

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CHAPTER 2: LITERATURE

Introduction

The purpose of this study is to discover the predisposing factors influencing the adoption of competency-based approaches to TVET within the Caribbean. The study specifically aims to (1) identify the main factors impacting institutions' adoption of the CBET methodology in TVET delivery, and (2) determine the correlation, if any, among goal orientation, perceived social support, and the adoption of competency-based approaches to TVET. To achieve these goals, it is important first to define what is meant by competency-based education and training (CBET) within the context of TVET. CBET emphasizes the ability of learners to demonstrate mastery of skills aligned with occupational standards, shifting the focus from traditional time-based education to outcomes-based learning.

In addition to grounding the study in the definition of CBET, it is necessary to explore the evolution of education within the Caribbean region as well as the development of both the vocational education movement and the competency-based education movement globally and regionally. Furthermore, it is important to examine studies conducted within the Caribbean and in other developing countries with similar educational trajectories, highlighting TVET development and the common challenges faced. Finally, literature from developed countries recognized as leaders in TVET innovation must be reviewed to identify best practices and lessons that could inform Caribbean improvements, while avoiding costly missteps.

Literature searches were conducted using ProQuest, Google Scholar, and EBSCO Host search engines, accessing databases such as ERIC, Sage Journals, Science Direct, various university libraries, the Digital Library of Commons, Semantic Scholar, Academia.edu, ResearchGate, and other open-access repositories. The sources included peer-reviewed journal articles, books, organizational websites, news articles, videos, and interviews with practitioners

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involved in TVET across different capacities. As much as possible, searches were limited to publications from the last five years to ensure currency; however, where contemporary sources were unavailable, seminal older works were included, particularly when these foundational studies continue to inform current TVET practices.

Some key search terms included, but were not limited to, “competency-based TVET,” “factors influencing TVET delivery,” “factors impacting the development of TVET in the Caribbean and other developing countries,” “perceptions of TVET,” “how to improve TVET delivery,” “competency-based approaches to TVET in the Caribbean,” “factors impacting CBET,” “CARICOM regional TVET strategy,” “leaders in competency-based TVET,” and “outcomes-based learning.” Other search terms related to methodological approaches included “phenomenological studies on TVET adoption,” “CBET in the Caribbean,” “TVET in Jamaica,” “TVET in Barbados,” “TVET in Trinidad and Tobago,” “TVET in Saint Lucia,” “Saint Lucia Human Capital Resiliency Project,” “mixed methods research methodologies,” and “differences between grounded theory and phenomenology.” As the literature review progressed, additional search terms and specific article titles were incorporated as new themes emerged. The search process was therefore iterative, with continual refinement of terms to ensure a comprehensive and contextually relevant review of the literature.

Theoretical Framework of this Study

Since this study sought to discover the factors influencing the adoption of competency-based approaches to TVET, it was necessary to examine relevant change theories, particularly those applicable within educational settings, to establish a robust theoretical foundation. Given that the CBET methodology represents a departure from traditional, content-driven instruction toward a learner-centered, competency-focused model, it was equally important to explore theories related to the transfer of learning into real-world environments. In other words,

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this study draws upon theoretical frameworks that collectively examine both the processes of educational change and the mechanisms that support the successful application of training outcomes.

Although a variety of change and transfer theories could potentially inform this research, three change theories were selected for their particular relevance to educational innovation, while two transfer theories were chosen to guide the discussion on applying learned competencies within educational settings. These selections were based on their constructivist foundations, which align closely with the learner-centered principles of competency-based education and training (CBET). The change theories include Rogers' Diffusion of Innovation Theory (DOI), Fullan's Educational Change Theory, and Hall and Hord's Concerns-Based Adoption Model (CBAM). The transfer theories guiding this study are Baldwin and Ford's Transfer of Training Theory and Perkins and Salomon's Teaching for Transfer Theory. Together, these theoretical perspectives offer a comprehensive lens through which to understand the adoption of CBET within Caribbean TVET institutions, addressing both the internal processes of institutional and individual change and the external challenges associated with transferring newly acquired competencies into workplace settings. The following subsection begins by examining the three selected change theories, starting with Rogers' Diffusion of Innovation, to explore how educational innovations like CBET are adopted within institutional contexts; this will be followed by a discussion of the two key transfer theories that address how competencies gained through such innovations are applied in practice.

Change Theories

Understanding the dynamics of change is essential when examining the adoption and implementation of competency-based approaches in Technical and Vocational Education and Training (TVET). Multiple theoretical frameworks have been developed to explain how

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innovations are introduced, adopted, and sustained across complex systems. These change theories offer critical insights into the behaviors, perceptions, and structural conditions that influence reform in education. This section explores three widely applied and complementary models of change: Everett Rogers' Diffusion of Innovation (DOI) theory, which focuses on how innovations spread through social systems; Michael Fullan's Educational Change Theory, which emphasizes the human and systemic complexities of educational reform; and Hall and Hord's Concerns-Based Adoption Model (CBAM), which highlights individual experiences, behavioral engagement, and the need for targeted support during innovation adoption. Together, these theories provide a multifaceted understanding of the conditions that shape the success or failure of educational change initiatives.

Rogers' Diffusion of Innovation. Everett Rogers' Diffusion of Innovation (DOI) theory, first introduced in 1962, is widely recognized as a reliable model for explaining the process of innovation adoption. It outlines the how, why, and at what rate new ideas and technologies spread through cultures. Rogers (2003) defined diffusion as a communication process through which information about new ideas or innovations is shared among members of a population over time via specific channels. He further described diffusion as a form of social change—the process by which changes occur in the structure and function of a social system. This change arises as new ideas, often accompanied by uncertainty, are introduced, disseminated, and ultimately either accepted or rejected, leading to particular outcomes or changes. Diffusion, therefore, encompasses both the planned and unplanned spread of innovations that contribute to broader societal change. According to Rogers (2003), four core elements underlie the diffusion process: (1) the innovation itself, (2) communication channels, (3) time, and (4) the social system.

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The first element, innovation, is defined as an idea, object, or practice that an individual or other unit of adoption perceives as new, irrespective of its actual "newness." The perception of newness lies in the interaction between the individual or adopting unit and the idea or practice. That is, to a potential adopter who may have some knowledge of the idea, object, or practice but has not yet formed an opinion about whether to adopt or reject it, the idea remains new.

The second element, communication channels, concerns how individuals create and share information about the new idea, object, or practice in order to develop mutual understanding. The communication channel refers to the means by which messages move from one individual to another or the information exchange relationship between individuals. It also determines the conditions under which the innovation is communicated between sender and receiver, as well as the impact of this transfer. These channels may include mass media, interpersonal communication, and other mediums that facilitate the exchange of information. The effectiveness of these channels significantly influences both the speed and extent of the diffusion process. This is particularly important given that most individuals, with the exception of initial adopters who base their decisions on scientific research, tend to rely on the subjective assessments of peers who have already adopted and experienced the innovation in informing their own choices.

Time is the third critical element in Rogers' theory and encompasses three dimensions: (1) the innovation-decision process, (2) the relative speed of adoption, and (3) the overall time it takes for the innovation to spread through a social system. The innovation-decision process refers to the series of steps that an individual or other decision-making unit follows. This process begins with initial awareness of the innovation, progresses to the formation of an attitude toward it, involves making the decision to adopt or reject it, includes implementation and use of the new idea, and concludes with the reaffirmation of that decision. These stages

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are: (1) knowledge, (2) persuasion, (3) decision, (4) implementation, and (5) confirmation. Based on the duration of time for adoption to occur, Rogers introduced the concept of innovativeness, which refers to the extent to which an individual or other unit of adoption is relatively earlier than others in adopting a new idea. From this, five adopter categories were established: (1) innovators, (2) early adopters, (3) early majority, (4) late majority, and (5) laggards. The third dimension of time, rate of adoption, refers to the speed at which adoption occurs and is typically assessed by the amount of time it takes for a certain percentage of members within a system to adopt an innovation. Thus, the rate of adoption is evaluated at the system level, such as a community, organization, or similar structure rather than at the individual level, which pertains more directly to innovativeness.

The fourth element, the social system, is defined as a set of interrelated units, including individuals, informal groups, organizations, or subsystems, that collaborate for joint problem-solving toward the achievement of a common goal. The structure of the social system impacts the rate of diffusion. Structure refers to the formal and informal patterns and arrangements of units within the system, which enable behavioral predictions with some level of accuracy, thereby reducing uncertainty. Depending on its features, the structure of a social system can either support or hinder the spread of innovations.

Building on the earlier overview, Rogers (2003) offered a detailed explanation of the five stages of the innovation-decision process, highlighting its role in reducing uncertainty and guiding adoption. It begins with knowledge, where the individual is first exposed to the innovation and gains an understanding of how it functions. This is followed by persuasion, in which a favourable or unfavourable attitude is formed based on the information obtained and how it is interpreted. The third step, decision, involves choosing to adopt or reject the innovation. If the choice is to adopt, the implementation stage follows, during which the

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innovation is put into practical use. Finally, the confirmation stage involves seeking reinforcement for the decision made; depending on the feedback, the adopter may either continue or discontinue its use.

In addition to these stages, Rogers identified five key characteristics of innovations that, as perceived by potential adopters, significantly influence adoption outcomes. The first characteristic, relative advantage, refers to the degree to which the innovation is seen as superior to what it replaces. The second characteristic, compatibility, speaks to the extent to which the innovation aligns with existing values, experiences, and needs. The third characteristic, complexity, relates to how difficult the innovation is perceived to be in terms of understanding and use. The fourth, trialability, refers to the degree to which the innovation can be tested on a limited basis before full adoption. The fifth characteristic, observability, concerns how visible the results of the innovation are to others within the system. Rogers concluded that innovations perceived to offer greater relative advantage, compatibility, trialability, and observability, while being low in complexity, are more likely to be adopted rapidly. Among these, relative advantage and compatibility are particularly influential in determining the rate of adoption.

Rogers (2003) also elaborated on the five categories of adopters, mentioned earlier, based on their level of innovativeness. The first category, innovators, are characterized by their venturesome nature and willingness to take risks; they are the first to adopt an innovation. The second category, early adopters, follow closely. These individuals are respected opinion leaders who adopt new ideas early, but carefully. The third category, the early majority, comprises about one-third of the social system. They are deliberate decision-makers who take time to consider the innovation before adopting; they are neither the first nor the last to do so. The late majority, also representing one-third of the social system, consists of more skeptical individuals

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who adopt only after the majority has already done so. Lastly, laggards are traditionalists who are the last to adopt an innovation, often due to reluctance or resistance to change.

Rogers also emphasized the critical role of diffusion networks in the spread of innovation. These consist of individuals or units linked by social relationships that facilitate the exchange of information and influence concerning an innovation. Interpersonal networks support the modelling, imitation, and subjective evaluations of peers' experiences, which can greatly shape potential adopters' decisions. Within these networks, two influential roles are identified: (1) opinion leaders and (2) change agents, both of whom contribute significantly to the diffusion process by shaping attitudes and behaviours. Opinion leaders are individuals who are respected and trusted within their communities; their endorsement or rejection of an innovation can heavily influence others. Change agents, by contrast, are typically professionals or experts who actively promote the adoption of innovations. They often work directly with individuals or groups, guiding and supporting them through the adoption process.

Finally, Rogers' theory considers the consequences of innovations, which can be positive or negative, intended or unintended, and may occur at the individual, organizational, or societal level. These consequences are categorized as: (1) desirable or undesirable, (2) direct or indirect, and (3) anticipated or unanticipated. Desirable consequences are positive outcomes that benefit individuals or the broader system, while undesirable consequences produce harm or negative impacts. Direct consequences are the immediate, expected outcomes of adopting the innovation, whereas indirect consequences are secondary effects that were not the primary focus. Anticipated consequences refer to intended or predicted results that may have motivated the change, while unanticipated consequences are unexpected or surprising outcomes that emerge only after adoption.

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This theory, therefore, offers a comprehensive framework for understanding how new ideas, technologies, or practices spread within a social system. At its core, it posits that the adoption of innovations follows a generally predictable process, as explored through the innovation-decision model, and is shaped by several critical factors. These include (1) the perceived attributes of the innovation, such as relative advantage, compatibility, complexity, trialability, and observability; (2) the communication channels through which information about the innovation is disseminated; (3) the structure of the social system; and (4) the time required for different adopter categories within the system to embrace the innovation. The innovation-decision stages describe how individuals or organizations move from initial exposure to the innovation through to final confirmation of its adoption. Collectively, these elements help explain not only how innovations spread, but also why some are adopted more rapidly and widely than others.

Implications for CBET. Rogers' Diffusion of Innovation theory provides a robust foundation for understanding the dynamics surrounding the adoption of Competency-Based Education and Training (CBET) within Caribbean TVET institutions. Its emphasis on how innovations are communicated, adopted, and institutionalized offers direct parallels to the challenges and opportunities faced in implementing CBET across diverse educational and sociocultural settings in the region.

First, the perceived attributes of CBET such as its relevance to workforce needs, alignment with modern pedagogical standards, and its potential to improve student outcomes must be clearly communicated to all stakeholders. Emphasizing the relative advantage of CBET over traditional content-based approaches, its compatibility with regional goals such as employability and skills certification, and its potential for measurable impact may help accelerate adoption among teachers, administrators, and policymakers.

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Second, the importance of communication channels suggests that CBET reforms will be more successful when supported by both formal structures (e.g., ministry-led initiatives, institutional directives) and informal networks (e.g., peer mentorship, teacher communities of practice). Stakeholders often rely on trusted colleagues or opinion leaders when forming attitudes toward educational innovations. Therefore, early adopters and respected TVET champions can play a crucial role in modelling effective CBET practices and influencing others through interpersonal dialogue and shared experiences.

Third, Rogers' focus on time and adopter categories highlights the need for differentiated support strategies. Innovators and early adopters may require minimal encouragement, but the early and late majority are likely to need sustained engagement, technical training, and evidence of successful outcomes before embracing the shift. Laggards, though resistant, may still be brought on board through long-term efforts that involve trust-building and demonstration of CBET's positive impacts.

The role of the social system is also significant, as the organizational culture, administrative structure, and stakeholder relationships within TVET institutions can either hinder or enhance diffusion. Institutions with flexible leadership, shared governance models, and inclusive decision-making processes may provide a more fertile ground for CBET adoption. Conversely, hierarchical or rigid systems may impede the innovation's spread unless change agents intervene strategically to reduce resistance and facilitate gradual transformation.

Finally, Rogers' discussion on the consequences of innovation is particularly instructive. CBET reforms, while often introduced with clear intended outcomes, may produce unexpected effects at the institutional or classroom level. Ongoing monitoring, feedback loops, and adaptive strategies are therefore essential to ensure that positive impacts are amplified while undesirable outcomes are addressed early. Understanding that some unanticipated

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consequences are inevitable can help institutions plan for flexibility and encourage reflection throughout the implementation process. Overall, Rogers' theory reinforces the importance of deliberate planning, strategic communication, and stakeholder engagement in the adoption of CBET. It encourages policymakers and institutional leaders to consider both the human and structural dimensions of change, recognizing that successful diffusion requires not only technical preparation but also the cultivation of trust, shared vision, and long-term commitment.

Michael Fullan's Educational Change Theory. The second change theory explored was Michael Fullan's educational change theory. According to Fullan (2007), because change is an inherent part of life, little attention is often given to its meaning at the personal level for those experiencing it. He emphasized that individuals' (stakeholders') adaptation to and acceptance of change lies at the heart of the change process. Educational change, therefore, is inherently complex, multifaceted, and dynamic. It involves a wide range of stakeholders, including teachers, administrators, students, and the community, and requires a fundamental rethinking of how teaching and learning are carried out. Marris (1975, as cited in Fullan, 2007) explained that change can be initiated either through imposition or voluntary engagement. Imposed change typically stems from external forces, such as policy mandates or natural events, while voluntary change arises when individuals or institutions recognize a need for improvement due to dissatisfaction with the current situation. Regardless of its source, the significance of the change is often unclear at the outset, and the transition period is commonly marked by uncertainty and doubt. Fullan asserted that these principles are fundamental to understanding both the meaning and process of change.

In attempting to define the meaning of change, Fullan (2007) found that many change initiatives failed to address the critical component of teacher learning and "reculturing", that

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is, the need for teachers to question and potentially revise their beliefs and values in alignment with the proposed change (p. 25). Drawing on multiple studies (Ball & Cohen, 1999; Cohen & Hill, 2001; Cross City Campaign for Urban School Reform, 2005; Oakes et al., 1999; Stigler & Hiebert, 1999; Timperley & Parr, 2005), he explained that this reflective and cultural aspect is often overlooked. Fullan (2007) concluded that successful educational change initiatives are dependent on active teacher engagement in the development of new knowledge, skills, and understanding, particularly since change frequently requires new instructional approaches. Change, he argued, is "multidimensional," often involving shifts in goals, behaviours, skills, and philosophies (p.29). This multidimensionality helps explain the varying responses to acceptance, adoption and implementation of change initiaitves.

Fullan (2007) identified three core components or dimensions that any educational change initiative, whether it involves changes in policy or programme, must address in order to be successful or long lasting. These components are (1) curriculum materials or technologies, (2) teaching approaches or methodologies, and (3) pedagogical beliefs (p. 30). He maintained that while the introduction of new curriculum materials may be relatively straightforward, changes in instructional methods are more difficult and often necessitate retraining. Changes in pedagogical beliefs are the most challenging but also the most crucial, as without a conceptual understanding of the reasons behind the change and its intended outcomes, stakeholders are unlikely to develop the necessary buy-in. Therefore, addressing all three dimensions is essential for achieving meaningful, sustainable change. Ultimately, Fullan (2007) asserted that the success of educational change should be measured by its positive impact on student learning.

To support the study of educational change, Fullan (2007) proposed two non-mutually exclusive approaches: (1) the innovation-focused approach and (2) the capacity-building

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approach. The innovation-focused approach centres on examining specific innovations to identify factors that contribute to their success. In contrast, the capacity-building approach focuses on cultivating an institutional culture of continuous innovation and improvement, enabling sustained change over time. Within the innovation-focused approach, Fullan identified three non-linear, interactive dimensions of the change process, each influencing and being influenced by the others. The first phase, initiation (also called mobilization or adoption), involves the lead-up to the decision to adopt or reject a change. The second phase, implementation, focuses on the initial efforts to integrate the change into practice. The final phase, institutionalization (also referred to as incorporation or continuation), determines whether the change becomes embedded in the system or fades away, either through deliberate abandonment or natural attrition (Fullan, 2007, citing Berman & McLaughlin, 1977; Huberman & Miles, 1984).

Fohgerty and Pete (2017) expanded on this model by describing initiation as the stage of planned awareness, in which the context, goals, process, and timeline of the change are clearly communicated to stakeholders. During this phase, stakeholders are encouraged to ask questions, express concerns, and indicate their level of commitment to the proposed change. The implementation phase marks the shift from discussion to action, as stakeholders begin applying the change in practice. This phase involves professional development, the use of models, and support structures such as coaching and feedback to guide adoption. In the institutionalization phase, the change becomes part of the organization's ongoing principles, practices, and policies. This embedding process is typically long and challenging, requiring sustained financial, emotional, and professional support to succeed. Fullan and Stiegelbauer (1991, as cited in Fohgerty & Pete, 2017) warned that too much emphasis on the initiation phase can lead to stakeholder burnout. If participants feel overwhelmed during the early stages, they may

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become negative or resistant by the time implementation begins, which can ultimately undermine the overall change effort.

Fullan (2007) identified eight factors that influence the initiation phase: (1) the existence and quality of innovations, (2) availability of information and access to the innovation, (3) external change agents, (4) new policies and funding, (5) problem-solving and bureaucratic orientations, (6) administrator advocacy, (7) teacher advocacy, and (8) community pressure, support, or apathy. These factors demonstrate that change can be initiated by a variety of sources, both internal and external to the institution, acting either individually or collectively. For the implementation phase, Fullan outlined nine influencing factors grouped into three broad categories: (1) characteristics of the innovation, (2) local characteristics, and (3) external factors. Within the first category, the characteristics of the innovation include: (a) the perceived need for the innovation; (b) clarity regarding its goals and the means of implementation; (c) the complexity of the change required; and (d) the overall quality and practicality of the innovation. The second category, local characteristics, refers to the institutional environment in which the change is to occur, including (a) district-level conditions, (b) teacher attributes, and (c) administrator characteristics. The third category, external factors, encompasses the roles of (a) government and (b) other external agencies. Fullan emphasized that successful implementation requires a shared sense of purpose, focus, and commitment across both internal and external actors.

With regard to the final phase, continuation or institutionalization, Fullan (2007), drawing on the work of Berman and McLaughlin (1977), Huberman and Miles (1984), Datnow and Stringfield (2000), and Berends et al. (2002), argued that successful implementation does not automatically lead to sustained change. Instead, continuation is influenced by several factors, including (a) the level of interest and continued funding, (b) availability of professional

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development, and (c) staff and administrative turnover, which he identified as one of the most significant threats to sustaining change. This innovation-focused approach explains that effective educational change depends on a clear understanding and strategic management of factors across the three phases: (1) identifying the need for change, (2) implementing the change, and (3) sustaining the change. Importantly, these phases are not linear; rather, they interact dynamically, with developments in one phase affecting progress in the others.

Fullan's (2007) capacity-building approach to change focuses on developing the abilities, skills, and expertise of the individuals, particularly teachers, involved in the change process, with an emphasis on sustaining the change over time. While not as systematically detailed as the innovation-focused approach, it addresses the conditions that support or inhibit professional growth. Huberman (1983, as cited in Fullan, 2007), described the phenomenon of "classroom press" (p. 24), in which the demands of teaching environments suppress teacher learning and innovation. He also criticized the overemphasis on infrastructure and formal professional development activities, arguing that these often fail to engage with the deeper institutional culture that must shift for meaningful change to occur. As such, Fullan (2007) concluded that effective change initiatives must be grounded in a deep understanding of the school's culture and context. They must also include structures and processes that support teacher capacity-building, not only through technical training, but through opportunities for authentic, sustained engagement with new teaching and learning approaches within their own environments.

This theory provides a comprehensive framework for understanding and guiding the complex process of implementing and sustaining meaningful change in educational settings. A central tenet of the theory is that educational change is not a simple or linear process, but rather a multifaceted and dynamic one that demands careful attention to diverse factors and stakeholder roles. It emphasizes the interplay between leadership, teacher engagement, the

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characteristics of the innovation, and the broader systemic context. Most importantly, it underscores the value of collaboration, adaptability, and a deep commitment to continuous improvement as essential to achieving successful and sustainable educational change.

Implications for CBET. Fullan's Educational Change Theory offers several relevant insights for the adoption and implementation of Competency-Based Education and Training (CBET) in the Caribbean. Central to his theory is the understanding that change is not linear or superficial but rather complex, dynamic, and deeply rooted in both personal and institutional contexts. This perspective reinforces the notion that successful CBET adoption requires more than curriculum revisions or technical training; it calls for sustained cultural transformation within TVET institutions.

First, Fullan's emphasis on the multidimensional nature of change highlights the need to concurrently address curriculum content, instructional methods, and pedagogical beliefs. In the context of CBET, this means that reforms must not only introduce competency-based modules but must also provide meaningful support for instructors to develop learner-centred teaching approaches and reevaluate long-held educational beliefs. Without this deeper level of engagement, CBET risks being implemented superficially, without genuine pedagogical transformation. Second, Fullan's three-phase model, which includes initiation, implementation, and institutionalization, underscores the importance of planning for each stage of the change process. For CBET reforms, the initiation phase must move beyond policy directives and include open dialogue with educators, administrators, employers, and other stakeholders to build shared understanding and commitment. During implementation, attention must be given to capacity-building through ongoing professional development, coaching, and peer collaboration. This process must be sensitive to contextual challenges, such as workload, infrastructure limitations, and institutional resistance. Finally, for CBET to become embedded,

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long-term strategies are needed to ensure sustainability, including mechanisms for continuous reflection, policy alignment, and leadership support. Third, Fullan's focus on capacity-building aligns strongly with the needs of CBET reform. He cautions against over-reliance on infrastructure or short-term training efforts, instead advocating for the cultivation of professional learning cultures that support innovation and reflection. In CBET systems, this calls for the creation of enabling environments in which instructors are empowered to experiment with new approaches, share best practices, and access mentoring and support structures. This is particularly important in the Caribbean, where resource constraints may limit formal training opportunities. Investing in collaborative learning communities and context-responsive development pathways may offer a more sustainable route to building instructional expertise. Finally, Fullan's recognition of both external and internal factors, such as policy coherence, leadership advocacy, and teacher agency, offers a valuable framework for identifying the systemic enablers and barriers to CBET adoption.

His theory suggests that CBET initiatives are more likely to succeed when accompanied by coordinated efforts across government, institutional leadership, and classroom practice. Importantly, it affirms that teacher engagement and ownership are critical. CBET reforms must therefore prioritise bottom-up participation and provide educators with not only the tools, but also the time, trust, and autonomy needed to adapt and internalize new approaches. Fullan's theory therefore reinforces that CBET implementation is not merely a technical exercise, but a deeply human and organizational process. It demands thoughtful attention to how change is introduced, supported, and sustained across all levels of the education system.

Hall and Hord's Concerns-Based Adoption Model (CBAM). Hall and Hord (2015), like Fullan (2007) and Rogers (2003), conceptualize change as a process. They describe it as a highly complex and dynamic phenomenon, influenced by numerous factors, regardless of

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whether the change occurs at the level of the individual, the organization, or the broader system. Central to their theory are twelve principles of change, which provide the foundation for understanding their Concerns-Based Adoption Model (CBAM). These principles include the following: (1) change is learning; (2) change is a process; (3) the school is the primary unit of change; (4) while organizations adopt change, individuals implement it; (5) "interventions are key to the success of the change process"; (6) "appropriate interventions reduce resistance to change"; (7) district and school-based leadership is essential to long-term change success; (8) "facilitating change is a team effort"; (9) "mandates can work"; (10) implementation success is influenced by both internal and external factors; (11) "adopting, implementing, and sustaining represent distinct phases of the change process"; and (12) focus is necessary (pp. 10–19).

According to Hall and Hord (2015), the first principle, "change is learning," is grounded in research showing that professional learning is essential for effectively implementing any innovation. The second principle frames change as a process that requires individuals to abandon familiar routines and adopt new practices, a transition that can be emotionally difficult and may resemble a grieving process (citing Bridges, 2009). Whether change is perceived as a one-time event or an ongoing process influences both the design of the change effort and its success. The third principle emphasizes that the school, its staff and leadership, is the core unit of change regardless of whether the impetus comes from internal or external sources. Principle four underscores that although organizations may officially adopt innovations, meaningful change occurs only when individual members implement them. This principle introduces the concept of the implementation bridge, which highlights the need for sustained support during implementation.

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Principles five and six highlight the importance of well-planned interventions in guiding and supporting the change process, and in reducing resistance by addressing the underlying causes of reluctance. Principle seven stresses the role of leadership, especially that of teachers and other frontline implementers, in the planning and success of change. Principle eight complements this by emphasizing that change facilitation must be a collaborative, team-driven effort. Principle nine argues that mandates can be effective when accompanied by ongoing support, communication, and professional learning. Here, the type and quality of support are deemed more critical than the type of mandate itself. Principle ten identifies the role of internal and external factors in influencing implementation outcomes, including school resources, policies, community support, and socioeconomic conditions. Principle eleven aligns with earlier principles by affirming that change is a time-intensive process requiring long-term support. Finally, principle twelve stresses the importance of establishing clear and relevant goals, along with regular monitoring of progress.

Building on these foundational principles, particularly principle four, which emphasizes that organizational change begins with individual change, Hall and Hord (2015) proposed three diagnostic dimensions to guide planning, evaluation, and research. These dimensions are (1) innovation configurations, (2) stages of concern, and (3) levels of use. Innovation configurations refer to the process of clarifying what the innovation entails and what it should look like when implemented as intended. Stages of concern address the emotional and cognitive responses individuals have to the innovation, capturing the evolving nature of their perceptions and readiness. Levels of use, in contrast, focus on observable behaviors, specifically how individuals engage with and implement the innovation in practice.

According to Hall and Loucks (1981, as cited in Hall & Hord, 2015), innovation configurations were introduced to address confusion and inconsistency among policymakers,

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facilitators, and implementers. A lack of shared understanding often led to divergent interpretations and applications of the innovation, with stakeholders creating their own versions based on incomplete or ambiguous guidance. Hall and Hord (2015) observed that users often adapt or mutate innovations, resulting in practice models that differ significantly from the developers' original vision. These inconsistencies often stem from uncertainty, limited guidance, or poor communication about the core components of the innovation. While developers may focus heavily on the philosophical underpinnings and the materials needed to support implementation, they frequently neglect to articulate the practical expectations of what implementation should look like on the ground. To address this, Hall and Hord developed the concept of IC mapping, which identifies and documents the various observable versions or configurations of a given innovation. The result of this process is an Innovation Configurations (IC) map, a diagnostic and planning tool that details each major component of the innovation and its acceptable variations. Ideally, a separate IC map is created for each category of user. These maps define the innovation, specify the user group, and describe the expected components and implementation patterns along a continuum from the ideal configuration envisioned by developers to the minimum acceptable variation. IC maps are designed to be clear and actionable, and they are ideally developed collaboratively by those involved in the adoption process. This ensures clarity, promotes shared understanding, and helps to monitor fidelity and progress in implementing the innovation.

According to Hall and Hord (2015), it is essential to explore the personal side of change, that is, the feelings and perceptions of individuals involved in the change process, as these can either positively or negatively influence the implementation of an innovation. To capture this dimension, they developed the construct known as Stages of Concern (SoC). This construct identified seven distinct yet non-mutually exclusive stages that individuals experience as they

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engage with an innovation. Understanding these stages allows facilitators to diagnose concerns and tailor personalized strategies to support adoption and acceptance.

Hall and Hord (2015) credited Fuller (1969) as the originator of the term "concerns" to describe individuals' emotions, thoughts, and preoccupations related to educational change. Fuller initially classified concerns into four categories: unrelated, self, task, and impact. Building on this framework, Hall and Hord developed an expanded model consisting of seven stages of concern. These include the unconcerned stage, which aligns with Fuller's "unrelated" category; the informational and personal stages, which correspond to the "self" category; the management stage, which reflects the "task" category; and finally, the consequence, collaboration, and refocusing stages, all of which align with the "impact" category. At the unconcerned stage, individuals have little or no awareness of the innovation and express no active concern about it. As the innovation is introduced, attention shifts to the self-related concerns, where individuals begin seeking information about the innovation, what it is, how it works, and what it requires. This is the informational stage, focused on the innovation itself. Next, in the personal stage, individuals consider how the innovation may impact them personally. Questions arise about whether they possess the necessary skills and knowledge, what their roles will be, and how the innovation fits with their current practices and those of their colleagues. As implementation begins, the management stage emerges, during which individuals focus on the logistical and procedural aspects of applying the innovation such as time management, access to resources, and navigating requirements. In the consequence stage, concerns shift toward evaluating the innovation's outcomes and its effects on others, such as students, parents, and the wider community. At this point, individuals begin to seek collaboration, forming communities of practice with others to share ideas, refine implementation, and enhance the innovation's impact. The final stage, refocusing, reflects a

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desire to improve the innovation based on lived experience. Individuals explore modifications to better suit their context, assess what works and what does not, and even consider alternative innovations that may yield better outcomes.

The non-mutually exclusive nature of these stages means that individuals may experience concerns from multiple stages simultaneously. For instance, a teacher at the informational stage may also worry about the innovation's consequences for students. Moreover, Hall and Hord (2015) acknowledged that due to varying contextual factors such as the suitability of the innovation, the presence or absence of support, the speed of implementation, or the number of concurrent innovations, some individuals may not progress through the stages. They may remain static or even regress.

To assess individuals' stages of concern, Hall and Hord (2015) proposed three diagnostic techniques. These are the One-Legged Interview (OLI), which provides a quick and informal way to gauge an individual's immediate concern about a change; the Open-Ended Statement of Concern (oeSoC), which allows respondents to express their thoughts in their own words; and the Stages of Concern Questionnaire (SoCQ), a more structured tool designed to quantify and classify an individual's concerns according to the seven-stage framework (p. 90). The One-Legged Interview is a brief, informal conversation between a facilitator and an implementer in which the implementer shares their experience with the innovation. This approach allows the facilitator to assess concerns, ask probing questions, and suggest ways to address them. Its main strength lies in its personal, relationship-based approach, which makes facilitators appear approachable and supportive. However, its major weakness is the subjectivity involved in interpreting responses and correctly assigning them to specific stages. The Open-Ended Statement of Concern (oeSoC), originally developed by Fuller (1969), involves asking individuals to write out their concerns. These responses are then analyzed to

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identify concern categories. A key strength of this method is that it captures the implementer's voice in their own words. However, difficulties may arise when attempting to categorize concerns accurately, which can affect the reliability of the data. Finally, the Stages of Concern Questionnaire (SoCQ) is described by Hall and Hord (2015) as the most precise and validated tool. This questionnaire comprises 35 items designed to map respondents' concerns onto the seven stages, thereby creating an individual or group concerns profile. Its main advantage is its built-in reliability and validity, but its weakness lies in user resistance as many individuals are reluctant to complete surveys repeatedly, which can limit its utility for tracking changes in concerns over time.

The third construct in Hall and Hord's (2015) model addresses the behavioral dimension of change, specifically how individuals behave during the adoption and implementation of an innovation. This construct is expressed through the concept of Levels of Use (LoU), which delineates eight progressive stages of user engagement. These stages are divided into two broad categories: non-users and users, each characterized by distinct behaviors. Among non-users, Level 0, or non-use, refers to individuals who have no interaction with the innovation. They typically know little or nothing about it and are not actively seeking further information. Level I, orientation, describes individuals who have recently become aware of the innovation and are gathering information to assess its value or relevance. Level II, preparation, refers to those who intend to begin using the innovation and are actively preparing for its implementation, for example, through training or capacity-building efforts. The user category begins with Level III, mechanical use, which marks the early stages of implementation. At this point, the user may lack comfort and fluency and is primarily focused on performing tasks "correctly," often adjusting practices to meet perceived expectations. Level IVA, routine use, is characterized by the development of a consistent pattern of

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implementation, with users typically adapting the innovation to better suit their specific context. Level IVB, refinement, occurs when the user reflects critically on their practices and seeks to improve the innovation's effectiveness based on its impact on clients, such as students. Level V, integration, involves collaboration with others to enhance implementation, plan modifications, and share insights, ultimately promoting collective efficacy. Finally, Level VI, renewal, is the point at which the user has become an expert and is capable of making significant modifications to, or even replacing, the innovation based on experience and contextual understanding. Individuals at this stage often serve as mentors and change leaders within their institutions.

Hall and Hord (2015) emphasized that Levels of Use must be assessed longitudinally, either through direct observation or specially designed interviews with users of the innovation. They described two key diagnostic tools for this purpose: the Level of Use One-Legged Interview (OLU), intended for facilitators, and the LoU-Focused Interview. Both are based on a branching design that incorporates decision points, which are clearly defined behavioural indicators associated with each level of use. These decision points help to identify where individuals fall along the continuum from non-use to expert use. Table 1 below outlines the eight Levels of Use and their corresponding decision points, providing a practical framework for identifying and categorizing user engagement with an innovation.

Table 1

Levels of Use and Associated Decision Points

Type of User	Level of Use	Decision Points
Non-user	0 – Non-use	—
	I – Orientation	A – Seeks detailed information about the innovation
	II – Preparation	B – Sets a timeline or intention to begin using the innovation

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Type of User	Level of Use	Decision Points
User	III – Mechanical Use	C – Makes user-oriented changes
	IVA – Routine Use	D1 – Establishes a routine pattern of use
	IVB – Refinement	D2 – Adjusts use to improve client outcomes
	V – Integration	E – Coordinates use with colleagues
	VI – Renewal	F – Explores alternatives or major modifications

Note. Adapted from Hall and Hord (2015, p. 113)

During one-legged interviews, the process begins with the question: "Are you using the innovation?" (Hall & Hord, 2015, p. 114). Based on the yes or no response, interviewers use branching follow-up questions aligned with the decision points to determine the individual's level of use. The LoU-Focused Interview is a more comprehensive version that applies more detailed descriptors for each level, allowing for greater reliability and richer data (Hall & Hord, 2015). This approach illustrates a broader strength of the CBAM framework. CBAM's emphasis on the experiences of individual implementers, particularly teachers, provides valuable insight into why innovations experience varying levels of success across educational settings. By identifying different stages of concern, levels of adoption, and diverse configurations of innovation use, the model enables change agents to deliver targeted interventions and differentiated support, increasing the likelihood of both initial adoption and long-term sustainability.

Implications for CBET. Hall and Hord's CBAM provides a detailed framework for understanding the personal, emotional, and behavioral dimensions that influence the adoption of educational innovations such as CBET. For stakeholders tasked with implementing competency-based education in technical and vocational settings, this model offers several practical applications. First, the emphasis on "change as a process" aligns with the incremental and often nonlinear journey of CBET implementation. Recognizing that adoption occurs over

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time, rather than through a single decision point, highlights the importance of continuous support structures, including professional development, coaching, and reflective practice. CBET reform cannot be approached as a static initiative. Instead, it requires long-term engagement from both institutions and individuals, with facilitators monitoring progress and adjusting interventions to meet evolving needs.

Second, the diagnostic dimensions of CBAM offer tools that can be adapted to the CBET context. Innovation configuration mapping, for instance, may help address one of the recurring challenges in CBET implementation: inconsistent understanding of what "competency-based" means in practice. By involving instructors, administrators, and curriculum specialists in the development of IC maps, institutions can create a shared vision of expected instructional behaviors, materials, and assessment practices. This helps minimize conflicting interpretations and promotes fidelity to CBET principles.

Third, the stages of concern framework highlights the emotional and cognitive shifts that instructors undergo when introduced to CBET. Facilitators can use this tool to tailor professional learning and support based on where instructors are in their change journey. For example, early adopters may need technical training and reassurance, while more advanced users might benefit from collaborative opportunities to refine and improve their practice. Understanding that individuals can hold multiple concerns at once also explains some of the resistance or hesitation commonly observed in CBET rollouts. Rather than labeling resistance as opposition, CBAM encourages facilitators to treat it as a signal that additional support or clarity is needed.

Fourth, the levels of use construct reinforces the need to observe and support actual instructional practice rather than focusing solely on policy compliance. In CBET systems, where outcomes are measured by learner performance instead of seat time, the quality and

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authenticity of implementation become especially important. Using LoU diagnostic tools such as structured interviews allows administrators and change leaders to distinguish between superficial use and genuine integration of CBET principles. It also helps identify those educators who may be ready to serve as mentors or peer trainers for their colleagues.

Finally, the twelve principles that underpin CBAM emphasize the need for collaborative leadership, goal clarity, sustained interventions, and school-based ownership of change. These align closely with the conditions required for successful CBET adoption. In particular, principles such as "while organizations adopt change, individuals implement it," and "appropriate interventions reduce resistance," speak directly to the realities faced in many Caribbean TVET contexts. CBAM's clear focus on individual-level engagement, paired with actionable diagnostic tools, makes it a highly applicable model for supporting the shift toward CBET.

Transfer Theories

In a study such as this, which explores the adoption of competency-based approaches to TVET, it is appropriate to draw on theories of transfer of learning, particularly those that examine how knowledge and skills acquired in one context are applied to another. Two key theories; Perkins and Salomon's (1988, 1992) transfer of learning theory and Baldwin and Ford's (1988) transfer of training theory are especially relevant because they provide insights into how individuals transfer competencies from training or education into real-world practice. These frameworks have direct implications for understanding the adoption and implementation of competency-based TVET. Each theory is discussed in turn before providing a justification for the framework ultimately adopted in this study.

Perkins and Salomon's Theory of Transfer of Learning. According to Perkins and Salomon (1988), the common challenge in education is that learners often struggle to apply

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knowledge and skills acquired in one context to another. They argued that this issue can be addressed through intentional and well-designed instruction. To illustrate, they used examples such as renting a truck for the first time by relying on previous experience with driving a car, or interpreting the word "lease" in Shakespeare's Sonnet 18 based on prior knowledge of rental agreements. These examples show how previously learned knowledge and skills can be transferred across different contexts. They further asserted that attitudes and cognitive styles may also transfer between situations.

Perkins and Salomon (1988, 1992) emphasized that transfer is central to the purpose of education, which is to prepare individuals to operate in varied and unpredictable contexts. Yet, research has shown that while basic skills often transfer automatically, higher-order thinking skills such as problem-solving and reasoning are more difficult to transfer. This shortfall is largely attributed to the localized nature of instruction, where learning is heavily tied to specific tasks or environments. To address this gap, Perkins and Salomon developed a model that explains the different types of transfer, the underlying mechanisms by which transfer occurs, the conditions that facilitate its success, and the instructional strategies most likely to promote it.

Types of transfer. Perkins and Salomon (1992) defined 'transfer of learning' as the process by which knowledge or skills acquired in one context influence performance in another, whether the conditions are similar or different. They distinguished between two main types of transfer: near transfer and far transfer. Near transfer occurs when the application of learning takes place in a context that closely resembles the original learning situation. For example, this may involve performing a familiar task in a new but related setting. In contrast, far transfer involves applying acquired knowledge in significantly different or unfamiliar contexts, where learners must draw on prior understanding to address novel problems.

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Mechanisms of transfer. In addition to types, Perkins and Salomon (1992) also outlined two primary mechanisms through which transfer occurs: low road transfer and high road transfer. Low road transfer is largely automatic and reflexive. It is triggered by a high degree of similarity between the learning context and the application environment and requires minimal conscious effort. High road transfer is intentional and reflective. It demands that learners abstract general principles from one context and apply them thoughtfully in a different, often more complex, situation. Additionally, they distinguished between positive transfer, where prior learning enhances performance, and negative transfer, where it hinders or interferes with task execution.

Conditions for transfer. Perkins and Salomon (1992) identified several conditions that influence the likelihood of successful transfer of learning. The first is thorough and diverse practice, which strengthens retention and increases flexibility in application by allowing learners to engage with material in varied situations. The second condition is explicit abstraction, where learners are guided to identify and understand the core principles behind concepts rather than relying solely on surface-level features. A third condition involves active self-monitoring, which Belmont et al. (1982, as cited in Perkins & Salomon, 1992) described as encouraging learners to reflect on their thought processes and adapt their strategies for different contexts. A fourth condition is arousing mindfulness, which, according to Langer (1989, as cited in Perkins & Salomon, 1992), involves engaging learners in active observation and critical thinking to help them make meaningful connections. Finally, the use of metaphors or analogies allows learners to relate new material to prior knowledge, fostering deeper understanding and promoting transfer through meaningful association.

Instructional strategies for transfer. To support these conditions, Perkins and Salomon (1992) proposed two complementary instructional strategies: hugging and bridging. Hugging

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involves designing learning activities that closely resemble real-world applications. This approach supports near transfer and low road transfer by aligning learning tasks with workplace tasks and encouraging repetition under similar conditions. In contrast, bridging invites learners to apply their knowledge to new and unfamiliar situations. This strategy supports far and high road transfer by encouraging learners to analyze, reflect, and extend their understanding to adapt to novel contexts. Together, hugging and bridging promote both immediate applicability and long-term adaptability of learning.

Implications for CBET. Perkins and Salomon's theory of transfer offers valuable insight for competency-based education and training (CBET), particularly in understanding how learning can be designed to foster both immediate task performance and long-term adaptability. CBET typically emphasizes near and low road transfer, with learners being trained in contexts that closely mirror real-world job tasks. In these cases, "hugging" strategies are especially effective, as they reinforce direct application through authentic practice and repetition. However, Perkins and Salomon's work underscores the importance of preparing learners not only for procedural fluency but also for critical thinking and adaptability in unfamiliar or evolving contexts. This calls for greater integration of bridging strategies into CBET programmes. Learners should be encouraged to abstract general principles, reflect on the rationale behind tasks, and explore how these insights can be applied in new settings. The deliberate inclusion of far and high road transfer supports the development of adaptable, reflective practitioners who are equipped not only to perform routine tasks but also to respond effectively when circumstances change.

Furthermore, the conditions identified by Perkins and Salomon, including diverse practice, abstraction, mindfulness, and self-monitoring, can inform the design of learning environments within CBET. By promoting these conditions, facilitators can help learners move

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beyond rote application and toward deeper, more flexible forms of knowledge use. In this way, CBET can more fully realize its purpose: not only to certify competence in narrowly defined outcomes, but to foster sustained, transferable learning that empowers graduates to thrive in dynamic work environments.

Baldwin and Ford's Transfer of Training Theory. Another theory that explores the application of knowledge and skills across contexts is Baldwin and Ford's (1988) Transfer of Training Theory. While the terms transfer of learning and transfer of training are sometimes used interchangeably, there is a conceptual distinction between them. Whereas Perkins and Salomon's (1988, 1992) model emphasizes the types, mechanisms, and instructional conditions that support transfer, Baldwin and Ford's theory focuses more directly on the conditions under which training translates into actual workplace performance.

Baldwin and Ford (1988) introduced their model in the seminal article *Transfer of training: A review and directions for future research* to address the growing concern that many organizational training efforts failed to yield practical or lasting improvements on the job. They observed that, in many cases, employees struggled to apply the knowledge and skills learned in training to their real work environments. And even when some measure of transfer did occur, it was often not sustained over time. Their model synthesized findings from existing literature, identified research gaps, and proposed a comprehensive framework for improving the effectiveness of training transfer. They defined transfer of training as the extent to which knowledge, skills, and attitudes (KSAs) acquired during training are successfully applied and sustained in the actual work environment. According to Baldwin and Ford (1988), successful transfer includes not only the immediate application of learning but also its maintenance over time in the job setting. Their model comprises three main components: training inputs, training outputs, and conditions of transfer.

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Training inputs refer to the factors present before or during training that influence the likelihood of transfer. These include training design, trainee characteristics, and the work environment. Training design pertains to how the training is structured, sequenced, and delivered. Effective instructional design ensures alignment with job requirements and supports the generalization of learning. Baldwin and Ford (1988, citing Campbell, 1971; Ford & Wroten, 1984) emphasized the importance of authenticity in training experiences, as well as the integration of established educational principles (citing Bass & Vaughan, 1966), including instructional sequencing and the teaching of foundational concepts (citing Gagné, 1962; Tracy, 1984) to increase the likelihood that trainees would be able to apply their learning across different job contexts. Trainee characteristics include individual factors such as ability, motivation, personality, and prior experience. These characteristics shape both the extent to which a trainee is likely to learn and the probability that this learning will be applied once training ends. The work environment encompasses the organizational context in which training is implemented and includes supervisory and peer support, opportunities for application, and the broader organizational culture. A supportive environment is widely recognized as a necessary condition for transfer to occur and be sustained.

Training outputs refer to the learning that takes place during training and focus on two key elements: learning and retention. Learning refers to the acquisition of knowledge, skills, and attitudes, while retention describes the extent to which that learning is maintained over time. These outcomes are directly influenced by the training inputs and serve as the foundation for the application of training in real workplace settings. Conditions of transfer refer to the factors that influence whether, and to what extent, the KSAs acquired in training are actually applied and sustained on the job. These include generalization, which is the extent to which learning can be transferred across different tasks or environments, and maintenance, which

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refers to the durability of the learning over time. Together, these components represent the ultimate measure of training success, as they reflect the degree to which training translates into lasting, meaningful performance improvements in real-world contexts.

Baldwin and Ford (1988) conceptualized this transfer process using a model that illustrates six key linkages among the three core components: training inputs, training outputs, and conditions of transfer. These linkages demonstrate how various factors present before and during training interact to influence learning and retention, which in turn shape whether and how training is successfully applied in the workplace. That is, their model which is presented in Figure 1 below, illustrates how training design, trainee characteristics, and the work environment influence learning and retention, which in turn affect the generalization and maintenance of training in the workplace..

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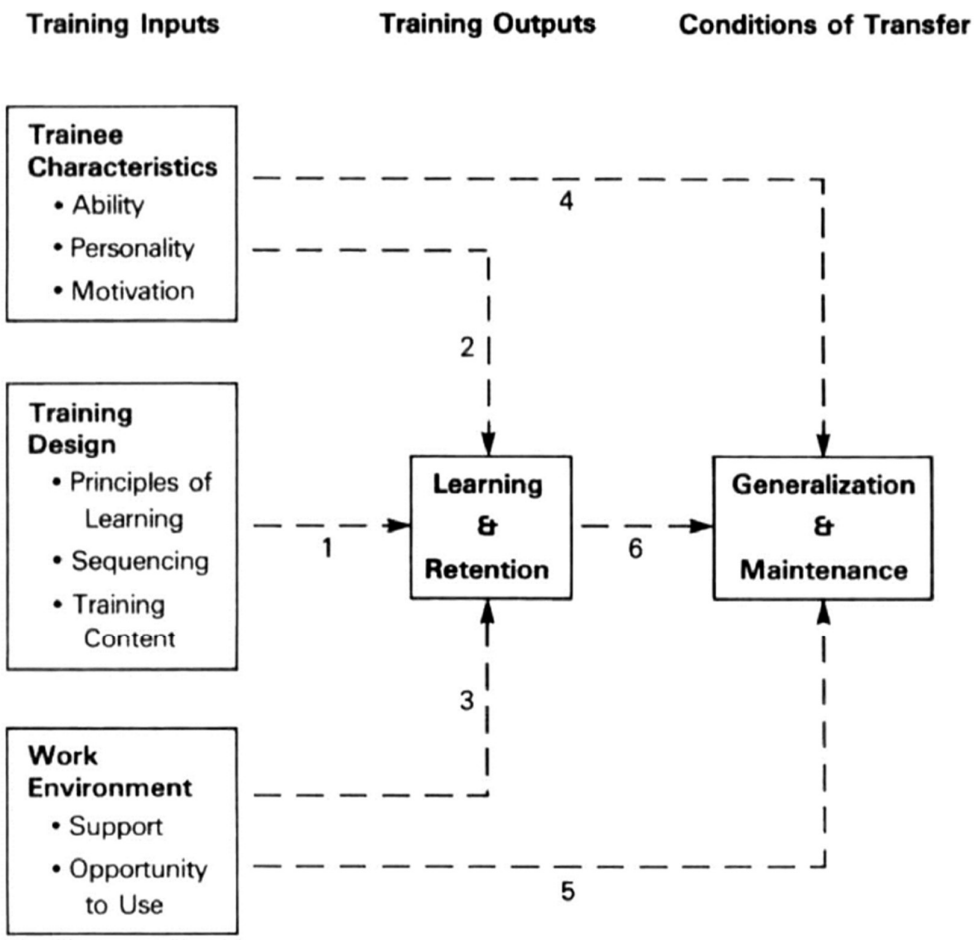
Figure 1

Baldwin and Ford's (1988) Model of the Transfer of Training Process



Note. Reprinted from Baldwin, T. T., & Ford, J. K. (1988). Reprinted under fair use for educational purposes.

As shown in the figure, the first three linkages illustrate that each of the training inputs (training design, trainee characteristics, and the work environment) directly influences the training outputs. These are represented as Linkages 1, 2, and 3, respectively. As indicated earlier, training outputs refer to both the extent of learning that occurs during the training and the degree to which that learning is retained after the training concludes. In addition to

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influencing training outputs, trainee characteristics and the work environment also have direct effects on the conditions of transfer. This is reflected in Linkages 4 and 5, which address the ability of trainees to apply and maintain what they have learned in real-world settings. These relationships acknowledge that even when effective learning has taken place, individual and contextual variables still shape whether transfer will ultimately occur. Linkage 6 represents the connection between training outputs (learning and retention) and the conditions of transfer. In other words, the greater the extent to which trainees have internalized and retained content, the more likely they are to apply it consistently and effectively on the job. The interconnectedness of these six linkages highlight the complex and interactive nature of the transfer process. The model reinforces the understanding that successful transfer is not solely dependent on the quality of training. Rather, it emerges from the alignment of multiple factors, including sound instructional design, learner readiness, and a supportive organizational environment.

Moreover, Baldwin and Ford (1988) emphasized that transfer is not a linear progression. Each training input has both direct and indirect effects on transfer conditions, and the interplay among these variables is essential for successful application and long-term sustainability. For instance, even when trainees demonstrate effective learning, a lack of organizational support, such as feedback, resources, or opportunities to apply new skills, can inhibit transfer. Conversely, a well-supported environment may enable even moderately trained individuals to transfer and refine what they have learned. The model thus reinforces the idea that successful transfer is not merely a function of training quality. Instead, it results from systemic alignment across training design, learner characteristics, and the institutional context. This perspective is particularly relevant to competency-based TVET systems, where transfer into authentic workplace performance is a central objective.

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Implications for CBET. Baldwin and Ford's (1988) model offers a structured framework for enhancing the effectiveness of competency-based education and training (CBET) in the Caribbean. Its emphasis on the interaction among training design, trainee characteristics, and the work environment aligns with CBET's fundamental principles of workplace relevance, learner preparedness, and measurable performance outcomes. First, the model highlights the importance of deliberate training design that reflects real job tasks and supports retention. This aligns with CBET's commitment to authentic, task-based learning, where instructional sequencing and foundational understanding are essential for fostering long-term competence. Trainers and curriculum developers must ensure that learning activities are purposefully constructed to mirror the complexity of workplace demands while scaffolding learners' progress from foundational concepts to more advanced applications.

Second, the model highlights the role of learner characteristics in determining training success. CBET programmes must account for individual differences in motivation, prior knowledge, and aptitude. Doing so requires not only appropriate learner profiling and placement but also the provision of differentiated support strategies. Competency development may be hindered if trainees are either insufficiently prepared or inadequately supported throughout the process. Third, the emphasis on the work environment as a determinant of transfer reinforces the need for strong institutional-industry linkages. Learning institutions cannot operate in isolation from the systems into which learners are expected to transition. Partnerships with employers, coordinated supervision during internships, and opportunities for practice in real-world settings are essential to reinforce and sustain the competencies acquired. Institutions must also advocate for workplace cultures that value training, provision of feedback, and recognition of skill development as an organizational asset.

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Finally, Baldwin and Ford's view that transfer is not automatic or linear has practical implications for CBET monitoring and evaluation. It calls for ongoing assessment of not only learner progress but also the organizational conditions that support transfer. This includes tracking graduate outcomes, evaluating placement effectiveness, and maintaining open communication with industry partners. Ensuring that training inputs align with both immediate outputs and longer-term workplace performance requires a continuous feedback loop between education providers and employers. Ultimately, Baldwin and Ford's (1988) model highlights the foundational elements needed for CBET implementation to result in meaningful workforce outcomes.By integrating principles of effective instructional design, recognizing learner variability, and strengthening post-training environments, Caribbean TVET systems can enhance the likelihood that competencies acquired through competency based training will be transferred, maintained, and expanded in real-world employment contexts.

Recent developments in transfer of training theory. Rahman's (2020) review of the evolution of transfer of training theory from 1901 to 2020 reaffirmed the foundational relevance of Baldwin and Ford's (1988) model while also highlighting more recent advancements. Her research, which focused heavily on Baldwin and Ford's original theory, proposed updated insights aligned with the model's three core components: training inputs, training outcomes, and conditions of transfer. Regarding training design, Rahman (2020) noted a significant shift toward learner-centered approaches, with increased use of technology-enhanced modalities such as e-learning, simulations, and gamified training environments. These developments improve learner engagement and interaction with training content, thereby increasing potential for transfer. In terms of trainee characteristics, contemporary research has expanded the construct to include variables such as cognitive abilities, personality traits, and learning orientations. Furthermore, there is growing recognition of the influence of pre-training

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and post-training factors on both learning and transfer. These factors include the initial decision to pursue training, motivation to learn, goal-setting behaviors, willingness to change, and the quality of interpersonal relationships in the workplace. Rahman also reinforced the critical role of the work environment, confirming Baldwin and Ford's original emphasis on organizational support. However, she introduced additional post-training elements such as timely feedback and real-world opportunities to apply new knowledge, which were shown to enhance the long-term effectiveness of training.

Building on Baldwin and Ford's foundational work, recent developments offer clearer insights into modern training design, trainee diversity, and organizational dynamics. The research presented here supports a more holistic view of transfer, one that extends beyond the training session to include contextual and motivational factors that influence long-term application. Rahman's (2020) synthesis reaffirms the relevance of Baldwin and Ford's (1988) framework while extending it to reflect current realities such as the need for curriculum alignment with both institutional capacity and workplace demands. In the context of CBET, this further concretises the belief that successful adoption hinges not only on instructional design, but also on the broader system's ability to sustain competency development over time.

Rationale for Choice of Theoretical Framework

This section outlines the rationale for selecting Hall and Hord's (2015) Concerns-Based Adoption Model (CBAM) and Baldwin and Ford's (1988) Transfer of Training Theory as the core theoretical frameworks for this study. While multiple change and transfer theories were considered, the decision to adopt these two was informed by their alignment with the study's goals. A brief discussion of each candidate theory is presented below, followed by a comparative table highlighting key similarities and differences to support the justification of the chosen framework.

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Concerns Based Adoption Model (CBAM). Although Rogers' (2003) Diffusion of Innovations Theory and Fullan's (2007) Educational Change Theory are widely cited in studies on educational change, CBAM was determined to be the most appropriate for this study exploring the adoption of competency-based approaches in TVET. Rogers (2003) offered valuable insights into how innovations diffuse through a population, identifying five adopter categories (innovators, early adopters, early majority, late majority, and laggards) and a five-stage innovation-decision process (knowledge, persuasion, decision, implementation, and confirmation). While this model effectively describes the spread of innovations, it does not sufficiently address the individual-level concerns and implementation behaviors critical to educational change at the institutional level. Similarly, Fullan (2007) presented educational change as a complex, system-wide process, emphasizing leadership, collaboration, school culture, and three dimensions of change: curriculum materials, teaching methodologies, and pedagogical beliefs. His framework focuses primarily on organizational transformation and stakeholder dynamics at the macro level. In contrast to Fullan's macro-level approach, CBAM offers a micro-level perspective by focusing on the individual implementer's experience. As previously discussed, it includes dimensions such as Stages of Concern, Levels of Use, and Innovation Configurations, which together provide a process-oriented and context-sensitive framework for understanding how individuals experience and engage with change.

The Concerns-Based Adoption Model (CBAM) was selected for this study for four key reasons. First, it emphasizes the individual as the central unit of change. Second, it offers a detailed, process-oriented framework for examining adoption over time. Third, it is particularly well-suited to the study of educational innovations. Fourth, it includes built-in flexibility, allowing it to be applied effectively across diverse implementation contexts. The primary rationale for choosing CBAM lies in its focus on the individual, which is especially relevant in

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this study, as teachers, administrators, and institutional leaders are responsible for adopting and implementing competency-based approaches within TVET systems. CBET implementation is often an incremental and nonlinear process. CBAM's framing of change as a process aligns with the long-term engagement required for effective CBET adoption. Its emphasis on ongoing professional development, coaching, and reflective practice reinforces the need for continuous institutional support, rather than viewing CBET as a one-time initiative. Moreover, CBAM offers diagnostic tools such as Innovation Configuration (IC) maps and the Stages of Concern Questionnaire (SoCQ), which can be adapted to the CBET context. These tools help clarify the operational meaning of "competency-based" instruction across varied TVET settings, reduce ambiguity, and support fidelity to CBET principles.

The Levels of Use (LoU) interview protocol, whether applied in the informal one-legged format or the structured version, enables researchers to track the extent and nature of stakeholder engagement with CBET and CVQ processes. This offers valuable insight into the implementation process and supports the development of timely and targeted intervention strategies. In particular, LoU data can distinguish between superficial implementation and authentic instructional integration, helping institutions better target support and mentoring efforts. CBAM's flexibility is further demonstrated in its IC component, which is particularly important in the context of TVET, where institutions differ in terms of resources, infrastructure, and leadership capacity. The IC Map tool facilitates the identification of multiple ways in which CBET can be implemented, ranging from ideal to minimum acceptable configurations. This allows institutions to pursue context-sensitive pathways toward adoption while remaining aligned with core CBET values.

Additionally, CBAM's underlying principles emphasize collaborative leadership, goal clarity, and context-based ownership of change. These conditions reflect the systemic and

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institutional requirements necessary for successful CBET reform. By addressing both the emotional and cognitive concerns of implementers and offering tools for evaluating actual usage patterns, CBAM provides a robust and practical framework for examining CBET adoption within Caribbean TVET systems. While Fullan (2007) and Rogers (2003) offer broad conceptual frameworks for understanding educational change, CBAM stands out for its practical orientation and its detailed attention to the experiences of individual implementers. Its diagnostic tools and staged approach to adoption provide a more precise fit for the aims of this study.

Transfer of Training Theory. As discussed earlier, the adoption of a competency-based approach in TVET represents a significant departure from traditional delivery models, shifting toward an outcomes-based system of teaching, learning, and assessment. In this context, it was necessary to examine theories that explore how, and under what conditions, knowledge, skills, and attitudes acquired in learning environments are effectively transferred to the workplace. This section presents the rationale for selecting Baldwin and Ford's (1988) Transfer of Training Theory as the most appropriate framework for this study, following a brief review of alternative models.

Perkins and Salomon's (1988, 1992) Teaching for Transfer framework focuses on how learning can be applied across different contexts. They distinguish among several types of transfer, including near and far transfer, which depend on the degree of similarity between the learning and application environments; low road and high road transfer, which refer to whether the transfer occurs automatically or through deliberate effort; and positive and negative transfer, which are determined by whether prior learning enhances or hinders performance. The framework also highlights instructional strategies and learner conditions that support transfer, such as the use of metaphors, analogies, abstraction, and mindfulness. While this theory offers

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valuable insights into the cognitive processes that underlie transfer, its primary emphasis remains on educational settings and instructional design.

By contrast, Baldwin and Ford's (1988) Transfer of Training Theory provides a more practical, system-oriented framework for analyzing how training translates into meaningful workplace performance. Their model consists of three interrelated components: training inputs, which include training design, trainee characteristics, and the work environment; training outputs, referring to learning and retention; and conditions of transfer, which concern the extent to which training is applied and sustained on the job. The model proposes six linkages that illustrate how training design, individual attributes, and contextual factors jointly shape both learning and transfer outcomes.

Baldwin and Ford's (1988) framework was selected for several reasons. First, it emphasizes instructional design that mirrors real job tasks and supports retention, which is an essential component of CBET, where learning must be both authentic and durable. This aligns with the competency-based approach, which requires well-sequenced instruction and clearly defined performance outcomes based on industry standards. Second, the model accounts for trainee characteristics such as motivation, aptitude, and prior experience. CBET implementation depends heavily on learner readiness, and this model provides a lens for understanding how these individual differences affect the acquisition and application of competencies. Effective profiling and targeted support mechanisms are necessary to ensure equitable outcomes. Third, the inclusion of work environment factors, such as supervisory support, feedback, and opportunities for application, resonates strongly with CBET's emphasis on real-world relevance. The model highlights that even when training is well designed, the absence of institutional or employer support can hinder the application of competencies. This reinforces the need for strong industry linkages, structured internships, and active employer

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engagement to reinforce and sustain skill development beyond the classroom. Finally, Baldwin and Ford's (1988) assertion that transfer is not automatic or linear has direct implications for CBET monitoring and evaluation. It highlights the importance of assessing not only the immediate outcomes of training but also the organizational and contextual conditions that support or hinder transfer. This includes evaluating graduate readiness, measuring placement effectiveness, and maintaining feedback loops between TVET institutions and industry stakeholders.

Overall, Baldwin and Ford's (1988) model provides a comprehensive, system-level perspective that aligns with CBET's core principles of performance, relevance, and learner-centeredness. It offers practical insights into how training inputs must be deliberately structured to support both short-term learning and long-term workforce performance. This makes it particularly well suited for examining how CBET can be successfully adopted, implemented, and sustained across Caribbean TVET systems.

Use of Theories in Similar Studies

Although no studies were found that applied both Hall and Hord's (2015) Concerns-Based Adoption Model (CBAM) and Baldwin and Ford's (1988) Transfer of Training Theory concurrently, several studies were identified that employed each theory independently. This section briefly outlines the research problems, methodologies, and findings of those studies to further substantiate the appropriateness of the chosen frameworks for this research.

Studies Using Hall and Hord's (2015) Concerns-Based Adoption Model (CBAM)

Hassan (2020) explored the concerns and attitudes of vocational educators in the United Arab Emirates (UAE) regarding the adoption of competency-based education (CBE). Grounding his study in the Concerns-Based Adoption Model (CBAM), particularly the Stages of Concern (SoC) and Levels of Use (LoU) constructs, he examined how educators' concerns

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influenced their engagement with CBE. The findings revealed that most educators were primarily focused on understanding and managing the new curriculum. This highlights the importance of targeted professional development and sustained institutional support to effectively facilitate the adoption process.

Nevenglosky et al. (2019) also employed the Concerns-Based Adoption Model (CBAM) to examine the barriers that educators encountered when implementing new curricula, particularly in relation to the adoption and integration of competency-based education and training (CBET). Using interviews, observations, and CBAM tools such as the Stages of Concern (SoC) and Levels of Use (LoU), the researchers identified resistance to change, lack of resources, and inadequate training as key obstacles. Many of these challenges were associated with the early stages of concern. The study highlighted the importance of targeted professional development and strong administrative support to help educators overcome these barriers and successfully adopt new instructional approaches.

In Malaysia, Paramasveran and Nasri (2018) used CBAM to investigate the concerns of primary school teachers implementing the i-THINK program, which was designed to promote higher-order thinking skills (HOTS). Using the Stages of Concern questionnaire (SoCQ) with 153 teachers, they found that most participants were at early stages of concern, particularly around self-management and logistical challenges. The authors concluded that ongoing support and training were critical to successful program implementation.

Mahajan et al. (2022) applied CBAM to assess medical faculty members' concerns about adopting e-learning platforms at a university in India. In addition to the SoCQ, they conducted interviews and focus groups, which revealed that many faculty members held self-focused and management-related concerns, indicating the need for sustained professional development and institutional support. Similarly, Isabirye and Moloi (2019) explored the

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concerns of academics participating in a technology-integration professional development program at a South African university. Through semi-structured interviews, they found that participants primarily experienced informational, personal, and management-level concerns. The study recommended targeted strategies to address these concerns in order to enhance program success.

Studies Using Baldwin and Ford's (1988) Transfer of Training Theory

In Kenya, Muhuha (2019) applied Baldwin and Ford's (1988) model to evaluate how nutritionists transferred training into professional practice. Using surveys, interviews, and observations, she assessed the influence of training design, trainee characteristics, and the work environment in either enabling or hindering the transfer of learning. Her findings indicated that the relevance of training content and the presence of a supportive work environment were critical factors for effective transfer. Based on these results, she advocated for sustained professional support and continuous development, particularly within the context of technical and vocational education and training (TVET).

Bhurtel and Bhattarai (2023) investigated the environmental factors influencing the transfer of training among TVET instructors in Nepal. Although the study did not explicitly adopt Baldwin and Ford's (1988) model, its findings closely align with the model's key components. The researchers identified six environmental factors that impacted transfer: organizational support and resource provision, external monitoring and evaluation, school management practices, management support, social support, and curriculum-related variables such as workload and student–teacher ratios. They concluded that internal and external support and control were the two primary forces driving effective transfer. This focus on organizational culture, feedback mechanisms, and opportunities to apply skills directly reflects the training input and transfer conditions components of Baldwin and Ford's model, reinforcing its

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relevance for studies examining the adoption of CBET. Together, these theoretical applications provide empirical support for the use of Hall and Hord's (2015) CBAM and Baldwin and Ford's (1988) Transfer of Training Theory as the dual theoretical foundation for this study. These models offer complementary perspectives on individual adoption behaviors and the contextual factors that influence transfer, making them especially well-suited for analyzing the challenges and conditions surrounding the implementation of competency-based approaches in Caribbean TVET systems.

Summary of Studies Using CBAM and Transfer of Training Theories

Table 2

Summary of Studies using CBAM and Transfer of Training Theories

Study	Theory Used	Context/Focus	Key Findings
Hassan (2020)	CBAM	Vocational educators' concerns about adopting CBE in UAE	Need for professional development (PD) and institutional support; concerns focused on curriculum understanding and management.
Nevenglosky et al. (2019)	CBAM	Barriers to CBET curriculum implementation	Resistance to change, lack of resources, and inadequate training aligned with early stages of concern.
Paramasveran & Nasri (2018)	CBAM	Primary teachers' concerns about i-THINK program in Malaysia	Self-management and logistical concerns; majority at early concern stages; highlighted need for continued training and support.
Mahajan et al. (2022)	CBAM	Medical faculty concerns about e-learning in India	Self-focused and management-level concerns; need for sustained PD and institutional facilitation.
Isabirye & Moloi (2019)	CBAM	Technology-integration PD for academic staff in South Africa	Informational, personal, and management concerns; emphasized need for targeted strategies to enhance program success.
Muhuha (2019)	Baldwin & Ford (1988)	Transfer of nutritionist training to professional practice in Kenya	Effective transfer depended on training content relevance and a supportive work environment; ongoing support critical in TVET contexts.

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Study	Theory Used	Context/Focus	Key Findings
Bhurtel & Bhattarai (2023)	Baldwin & Ford (1988) (implicitly)	Environmental factors affecting TVET training transfer in Nepal	Internal and external support and control were key to transfer; aligned with Baldwin and Ford's inputs and transfer conditions framework.

Note. Adapted from Mahajan et al. (2022); Isabirye & Moloi (2019); Muhuha (2019); Bhurtel & Bhattarai (2023).

Conceptual Definition of Variables

The primary aim of this study is to examine the predisposing factors influencing the adoption of competency-based approaches to technical and vocational education and training (TVET), with a particular focus on the Caribbean Vocational Qualification (CVQ) framework and methodology. In addition, the study explores the extent to which goal orientation and perceived social support influence this adoption process. Given the central role of these two constructs, it is important to provide conceptual definitions of both social support (including actual and perceived support) and goal orientation, as they are applied within the context of this research.

Social Support and Perceived Social Support

For the purposes of this study, social support refers to the resources and assistance provided by stakeholders in the education system such as parents, government agencies (e.g., Ministries of Education, TVET councils, national training agencies), industry representatives, and fellow teachers, that help educators navigate the challenges of implementing competency-based approaches in TVET delivery. Although widely studied in health-related disciplines, research examining social support in education has predominantly focused on its role in student outcomes, with relatively limited attention paid to its relationship with pedagogical practices. Pearson (1986, as cited in Desombre & Jury, 2021) noted that despite longstanding interest in the concept, there is no single, agreed-upon definition of social support. Similarly, Desombre

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and Jury (2021) observed that although multiple forms of social support have been identified, there is no consensus on the number or classification of its types (citing Barling et al., 1988).

Albrecht and Adelman (1987, as cited in Ko et al., 2013) defined social support as all verbal and nonverbal communication that reduces uncertainty about the self, others, or relationships, thereby enhancing an individual's sense of control. Expanding on this definition, Cutrona and Suhr (1992, as cited in Ko et al., 2013) identified five distinct categories of social support. These include informational support, which involves the provision of advice, knowledge, or feedback; esteem support, which affirms an individual's value, skills, or abilities; emotional support, which conveys care, empathy, and concern; tangible support, which refers to the offering of concrete assistance or resources; and social network support, which fosters a sense of belonging within a larger community. These dimensions provide a useful framework for understanding how different forms of support may influence individuals' motivation and capacity to adopt new practices.

Desombre and Jury (2021), drawing on Langford et al. (1997), focused on instrumental, informational, and emotional support in their study of teachers' attitudes toward inclusive education. Instrumental support included physical resources or help (e.g., teaching assistants or specialized tools), informational support referred to professional guidance and advice, and emotional support addressed psychological encouragement during periods of stress or transition. Similarly, Taylor (2011, as cited in Richter et al., 2024) categorized social support into instrumental, emotional, and informational types. Richter et al. (2024) emphasized the importance of these supports in managing workplace stress and promoting teacher well-being (citing Jolly et al., 2021; Chang, 2009; Montgomery & Rupp, 2005; Papastylianou et al., 2009). However, they also acknowledged research indicating that inadequate support could contribute to teacher burnout (Johnson et al., 2005; Maslach et al., 2001).

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For this study, the definition provided by Albrecht and Adelman (1987, as cited in Ko et al., 2013) is adopted: social support is the verbal and nonverbal communication that assists educators as they navigate the implementation of competency-based TVET. Based on recurring themes across the literature (Ko et al., 2013; Richter et al., 2024; Desombre & Jury, 2021), the study categorizes social support into four key types: informational, esteem, emotional, and instrumental/tangible.

Perceived social support is defined as an individual's belief that social support, whether informational, instrumental, esteem-based, or emotional, is available and accessible from stakeholders within the education system. McDowell and Serovich (2007, as cited in Desombre and Jury, 2021) found that perceived social support, as part of the broader concept of social support may exert a stronger influence on individual well-being than the actual support received. Similarly, Faber and Wasserman (2000, as cited in Ahmadi, 2015) described perceived support as the extent to which individuals recognize that their informational and emotional needs are being met. Although their research focused on women's health, their conclusion that perceived support can have a more direct and positive impact on psychological and physical well-being aligns with the findings of McDowell and Serovich (2007, as cited in Desombre and Jury, 2021). Together, these studies underscore the importance of perception in understanding the effectiveness of social support.

Goal Orientation

Although this study did not seek to directly identify or categorize the specific goal orientations of teachers, it examined the potential influence of goal orientation on stakeholders' attitudes toward adopting competency-based education in TVET. Gaining insight into this construct is crucial, as goal orientation according to Dweck (2002, as cited in Mustaqim et al., 2024) encompasses the emotional, cognitive, and behavioral processes that shape how

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individuals engage with tasks, respond to challenges, and persist in the face of difficulty. These factors, in turn, influence their overall motivation and performance.

Van Yperen and Orehek (2013, as cited in Mustaqim et al., 2024) described goal orientation as a framework through which individuals define, approach, experience and respond to workplace expectations. Similarly, Ames (1992, as cited in Mustaqim et al., 2024) emphasized that goal orientation serves as the motivational force driving task-related behaviors. Schunk (2012, as cited in Mustaqim et al., 2024) supported this view, stating that individuals' actions in pursuit of workplace goals reflect their underlying goal orientation. Pintrich et al. (2003, as cited in Mustaqim et al., 2024), building on the work of Ames (1992 as cited in Mustaqim et al., 2024) referred to it as a set of beliefs that motivate individuals to engage in their work.

Yıldızlı (2021) further clarified that goal orientation shapes how individuals set goals and determine the strategies used to achieve them. Drawing on Pintrich (2000, as cited in Yıldızlı, 2021), she noted that goal orientation influences not only task engagement but also the way individuals assess their own performance and define success. In essence, goal orientation is a motivational belief system that influences why individuals strive for success, how they engage in tasks, and how they judge performance outcomes. In educational settings, it is a critical factor in how teachers respond to change, engage in professional development, and approach reform.

In the context of TVET reform, goal orientation is particularly relevant in understanding how teachers and institutional leaders interpret and act on the expectations associated with adopting the CVQ framework. Two broad types of goal orientation are generally recognized: mastery orientation, where the individual is intrinsically motivated to develop competence and improve over time; and performance orientation, which is driven by the desire to demonstrate

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competence relative to others or avoid failure (Ames, 1992; Dweck, 2002, as cited in Mustaqim et al., 2024). Mastery-oriented teachers are typically more open to adopting innovations like CBET, as they see them as opportunities for professional growth. In contrast, performance-oriented teachers may be more cautious, particularly when innovations challenge established norms of evaluation. In this study, goal orientation is thus considered a predisposing factor that may shape attitudes toward, and ultimately influence, the adoption of competency-based education practices. While this basic distinction provides a useful starting point, the literature reveals that goal orientation is a more nuanced and multifaceted construct than initially suggested. Researchers have proposed a variety of typologies that extend beyond the mastery/performance framework, offering deeper insight into how different goal orientations may support or hinder engagement with educational reform efforts such as CBET.

The literature on goal orientation reveals no unified consensus regarding its typology, with researchers proposing a range of categories. Dresel et al. (2013) noted that goal orientations are often grouped into three core types: learning, performance-approach, and performance-avoidance. They also highlighted a fourth type, work avoidance, originally proposed by Nicholls (1984, as cited in Dresel et al., 2013). Within this typology, learning goals can be further subcategorized based on their focus, such as pedagogical knowledge, subject matter expertise, or a combination of both (Nitsche et al., 2011, as cited in Dresel et al., 2013). Learning orientation is generally associated with active engagement in professional development and help-seeking behaviors, whereas performance orientation and work avoidance have been linked to negative attitudes and increased stress levels (Dresel et al., 2013).

Yıldızlı (2021) emphasized that variations in goal orientation classification are widespread across the literature. Dweck (1986, as cited in Yıldızlı, 2021) distinguished between learning and performance orientations, while Nicholls (1984) and Ames (1992) contrasted task

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versus ego involvement (also referred to as mastery versus performance goals). Elliot and Harackiewicz (1996), along with Butler (2007, 2012), Kucsera et al. (2011), and VandeWalle (1997), (all cited in Yıldızlı 2021) expanded this into a threefold model: learning-approach, performance-approach, and performance-avoidance. The widely adopted 2×2 model by Elliot and McGregor (2001) added the dimension of avoidance within both learning and performance goals, yielding four categories: mastery/learning-approach, mastery/learning-avoidance, performance-approach, and performance-avoidance. This was later refined into a 3×2 model by Elliot, Murayama, and Pekrun (2011), incorporating criteria based on self-, task-, and other-referenced competence evaluations (as cited in Daumiller et al., 2019; Yıldızlı, 2021).

Within the teaching profession, goal orientations have been contextualized in terms of professional capability and motivation. Dresel et al. (2013) described learning orientation as the drive to enhance teaching competence, performance-approach as the desire to demonstrate capability, performance-avoidance as the effort to conceal incompetence, and work avoidance as the minimization of time and effort in task execution. Yıldızlı (2021), applying the 2×2 model, added that mastery-approach is linked to the pursuit of skill development, while mastery-avoidance is often rooted in anxiety or fear of failure. Performance-avoidance typically reflects a deliberate strategy to mask perceived weaknesses, whereas performance-approach is driven by the need for recognition.

Beyond these established frameworks, more nuanced goal orientations have emerged. Ability-approach centers on showcasing skills to earn external recognition, whereas ability-avoidance involves steering clear of difficult tasks to hide deficiencies. Work avoidance captures general disengagement and minimal effort. Relational orientation, on the other hand, focuses on building supportive interpersonal relationships within the learning environment. These dimensions have been explored by scholars such as Butler (2007, 2012), Dickhäuser et

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al. (2007), Kucsera et al. (2011), Meece et al. (2006), Patrick et al. (2001), and Throndsen and Turmo (2012, as cited in Yıldızlı, 2021).

Despite the diversity in terminology and scope, most goal orientation typologies can be classified into two broad categories: mastery or learning orientation, which is associated with intrinsic motivation and a focus on self-improvement, and performance orientation, which is tied to external validation, competition, and, at times, avoidance of failure. This fundamental distinction becomes particularly meaningful when examining how teachers engage with educational reform initiatives such as CBET.

Based on the foregoing discussion on goal orientation, and within the context of this study, goal orientation is defined as an individual's dispositional or situational tendency to adopt particular achievement goals that shape their motivation, behavior, and engagement in tasks (Ames, 1992; Pintrich, 2000; Dweck, 2002). Specifically, goal orientation in this context refers to whether a teacher is primarily driven by a desire to develop competence (mastery orientation), to demonstrate competence in comparison to others (performance-approach), or to avoid demonstrating incompetence (performance-avoidance). Framing goal orientation in this way allows for a nuanced understanding of how underlying motivational beliefs may influence teacher receptivity to educational innovation, particularly in the context of CBET implementation.

Goal orientation theory provides a valuable lens for interpreting teachers' attitudes toward CBET. Although this study does not directly measure goal orientation, it posits that such motivational beliefs significantly shape attitudes, as noted by Onurbodur, Brinberg, and Coupey (2020, as cited in Clipa et al., 2023). Pintrich (2003, as cited in Yıldızlı, 2021) similarly emphasized that attitudes and behaviors emerge from internal belief systems, making goal

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orientation a meaningful construct for understanding resistance or receptivity to educational reform.

CBET requires teachers to adopt a flexible, student-centered model that may challenge long-held pedagogical norms. Teachers with mastery orientations are more likely to embrace this shift, as it aligns with their commitment to continuous learning and professional growth. These educators are also more inclined to perceive learner autonomy and practical assessment not as threats but as opportunities for authentic engagement.

By contrast, performance-oriented teachers, particularly those motivated by avoidance goals, may perceive CBET's reduced emphasis on standardized testing as a threat to traditional benchmarks of success. Since CBET often replaces uniform summative assessments with individualized demonstrations of competency, these teachers may experience uncertainty about how their effectiveness will be evaluated.

Additionally, CBET's focus on long-term learner development over immediate outcomes may frustrate educators who are more attuned to short-term performance metrics or competitive rankings. Ultimately, the successful adoption of CBET in TVET settings may depend not only on training and institutional support, but also on the degree to which teachers' internal motivational frameworks align with the core values of the CBET approach.

History of Educational Development in the Caribbean

This section explores the trajectory of formal education in the English-speaking Caribbean, a region shaped by centuries of British colonial rule. The analysis reveals how historical forces such as the missionary movement, colonial policy, and post-emancipation restructuring deeply influenced educational access, content, and purpose. Drawing on the work of Blouet (1990), Miller (1999), Williams (1968), and others, it demonstrates that educational provision was closely tied to colonial economic and social agendas. Initially driven by religious

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and moral instruction for enslaved populations, education later evolved through successive eras that reflect shifts in governance, ideology, and development priorities. These historical layers continue to affect present-day educational policy and practice in the region.

Colonial Foundations of Education in the English-Speaking Caribbean

The English-speaking Caribbean, also referred to as the Commonwealth Caribbean or the British West Indies, comprises countries in the region that were formerly part of the British Empire. UNESCO (2001, as cited in Coates, 2012) described these countries as a group of democratic island nations located in the Caribbean Sea, unified by a shared history of more than 300 years of British colonization. They exhibit commonalities in cultural heritage, socio-political structures, and educational systems, all of which were modeled on the British formal education framework (Peters, 2001, as cited in Coates, 2012). Roberts (2003, as cited in Coates, 2012) classified the region into three main groups: ten independent small island states, including Antigua and Barbuda, The Bahamas, Barbados, Dominica, Grenada, Jamaica, Saint Kitts and Nevis, Saint Lucia, Saint Vincent and the Grenadines, and Trinidad and Tobago; two mainland territories, namely Belize and Guyana; and four British Overseas Territories, which are Anguilla, the British Virgin Islands, the Cayman Islands, and the Turks and Caicos Islands. This geopolitical classification highlights the shared colonial history and administrative legacies that have influenced the development of the region's educational and governance systems.

Missionary-led education was already underway nearly a decade before Britain passed the Abolition of Slavery Act. As Blouet (1990) noted, British authorities initiated efforts to prepare enslaved persons for eventual freedom through religious education, particularly under the Anglican Church. These efforts aimed not only to promote literacy but also to instill religious values and moral discipline, thereby acculturating enslaved individuals into the

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colonial value system. Hunte (1976, as cited in Coates, 2012) traced the roots of formal, British-style education to the 1834 Emancipation Act, which ushered in mass education funded by the Imperial Government through the Negro Education Grant. As colonial influence deepened, formal education expanded beyond missionary instruction to include grammar schools and secondary institutions. Gordon (1963, as cited in Coates, 2012) explained that grammar schools emerged to serve the children of less affluent whites who could not afford education in Britain, while wealthy planters and merchants funded elite preparatory institutions. Williams (1968) observed that, initially, education for the upper classes took place at home and emphasized social refinement. However, with the rise of "colonial nationalism," the British began establishing formal academic secondary schools modeled on European and American systems. In rural areas, elementary schools provided basic education in subjects such as English and Mathematics, along with compulsory agricultural instruction to align with the colony's economic base. Secondary education in places like Jamaica was legally mandated to deliver a broad curriculum including Latin, literature, science, and modern languages. Despite this breadth, the absence of vocational and teacher training programs remained a significant critique especially given the agricultural foundation of regional economies.

Miller's Four Eras of Educational Development in the Caribbean

The evolution of education in the Caribbean can be further understood through the analytical framework proposed by Miller (1999), who identified four major eras in Caribbean educational development. These historical stages mirror broader educational and political shifts within the British Empire, the Commonwealth, and the wider English-speaking world, and provide valuable insight into how colonial legacies have shaped contemporary systems of learning in the region.

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In the first era, which emerged during the early phase of British colonization, education was initially limited to the laity and the elite. The invention of the printing press, which facilitated the wider circulation of printed books, and the rise of the Protestant Reformation, which emphasized that individuals should read and interpret the Bible independently, gradually broadened the reach of education beyond the clergy. During this period, formal schooling was mostly provided by churches or funded through charitable endowments from wealthy patrons. These schools primarily served white children whose families could not afford to send them to Britain for formal education. Interestingly, many of the institutions established during this early era are still in operation today, bearing witness to their enduring presence in the educational landscape of the Caribbean.

The second era introduced a shift toward shared responsibility between religious and community institutions. Education was increasingly regarded as a communal duty, with churches continuing to play a vital role in school provision. In 1833, an Act was passed that allowed for direct state support of schools, signaling the beginning of formal governmental involvement in education. Additionally, a Negro Education Grant was proposed following the abolition of slavery. This measure was intended to support mass education initiatives across the colonies by equipping formerly enslaved populations with the knowledge and skills needed to function as free citizens. As a result, elementary schools and teachers' colleges were established to serve the children of emancipated slaves, expanding the reach of education beyond its previous social boundaries. Miller (1999) noted that it was only in the decade preceding emancipation that enslaved individuals were granted any meaningful access to formal education.

In the third era, a more structured partnership developed between church and state. While the state assumed responsibility for policy development, financial oversight, and general

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administration, the day-to-day operations of schools remained largely under the control of religious institutions. During this period, elementary education became both free and compulsory, laying the foundation for wider access to basic education. However, the curriculum was strategically aligned with the economic needs of Britain. Colonial subjects were trained primarily in agricultural production, especially in the sugar industry, to supply raw materials for industrial development in the "mother country." A fiscal policy limiting educational expenditure to no more than 10 percent of total public spending further constrained the growth of the sector. This era also saw targeted efforts to expand educational opportunities for women and girls, not necessarily for their personal advancement, but to increase the number of female teachers and free up more men for agricultural labor. Miller (1999) argued that the church and state, once viewed as liberating forces, had by this time become aligned with the interests of plantation owners, acting as instruments of social control and economic exploitation.

The fourth and final era, which began in the aftermath of World War II and continued through the post-independence movements of the 1960s, marked a significant transformation in regional education. National governments assumed full control of education systems, and religious bodies increasingly shifted their focus to private schooling. This period, according to Miller (1999), was defined by the collapse of British colonial authority in the Caribbean and the concurrent rise of United States influence. It was also characterized by the most significant levels of public investment in education to date. The region saw the achievement of universal access to early childhood and primary education, as well as substantial expansion at the secondary and tertiary levels.

A notable transformation during this era was the transition away from a narrowly focused curriculum centered on agriculture and manual labor. Educational programs were

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broadened to include academic, technical, and vocational pathways that better aligned with the social and economic aspirations of emerging postcolonial Caribbean societies. This comprehensive reform laid the foundation for future innovations in education and training, including the adoption of competency-based education and training (CBET) models that are better suited to the region's evolving workforce needs.

King (1999) emphasized that post-emancipation education in the British West Indies largely centered on agriculture, with the goal of preparing the population to support plantation-based economies. Agricultural instruction was embedded at all levels, particularly in elementary schools, where it reinforced colonial labor demands. However, by the late 1800s, the curriculum gradually expanded to include domestic and practical subjects such as needlework, home management, and basic hygiene, especially for girls. Despite this expansion, academic subjects like English, Mathematics, and the sciences remained limited or absent from many school programmes. The primary objective was still to maintain a labor force aligned with the economic interests of the colonial administration. Nonetheless, these early curricular changes signaled the beginning of a shift toward more diversified and inclusive educational offerings that would evolve further in the twentieth century.

Education in Saint Lucia: Colonial Legacies and Post-Independence Shifts

Esnard (2014) explained that prior to 1838, formal schooling in Saint Lucia was re-served for the white elite, reflecting the island's rigid three-tier social structure. This structure included a powerful white minority, a growing free Black and coloured middle class with no political power, and a large lower class of re-enslaved Black and coloured individuals (p. 325, citing Bacchus, 1994; Hamsen et al., 2012; *Saint Lucia Annual Colonial Report*, 1895). The introduction of education in this context led to a two-tiered system: grammar schools for elite children and elementary schools for children of former slaves, the latter offering minimal

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academic advancement and entrenching social immobility. Hamsen et al. (2012, as cited in Esnard, 2014) observed that this early education system unintentionally reinforced existing power structures by promoting social control. The curriculum, developed and delivered primarily through religious institutions such as the Catholic, Anglican, and Methodist churches, favored colonial ideologies over local needs. It emphasized race, class, and language as markers of status while discouraging broader skills development and entrepreneurial aspirations.

Following its independence from Great Britain in 1979, Saint Lucia prioritized the expansion of its education system, particularly at the secondary level, to address growing national development needs. A key focus was on increasing access to technical and vocational education, a shift driven by the rising demand for industry-relevant training (Esnard, 2014). During this period, banana production served as the primary engine of economic growth and enabled significant public investment in the country's educational infrastructure. One of the most notable outcomes of this era was the introduction of technical and vocational subjects into the secondary school curriculum, signaling a formal recognition of the importance of practical skills training alongside academic instruction.

However, despite these gains, Esnard (2014) noted that the education system continued to struggle with deeply entrenched structural and cultural barriers. Persistent issues included the enduring preference for academic over technical and vocational education, inequalities in educational access based on class, race, and gender, and the continued prioritization of foreign examinations and tertiary institutions over local or regional alternatives (Esnard, 2014, p. 330; citing Alleyne, 1995; Baksh, 1986; Miller, 1986; MoE, 2007, 2011; Renee, 1996). These dynamics reflected a broader societal belief that academic credentials were the most valid pathway to social mobility and professional success, thereby marginalizing other forms of learning, including skills-based training and cultural or artistic pursuits.

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Saint Lucia's education sector was further affected by shifts in global trade. The phasing out of preferential banana trade agreements with Britain during the late 1980s and early 1990s, under mounting pressure from globalization, resulted in economic contraction and reduced national revenue. This downturn had direct implications for the education system, which became increasingly reliant on external aid and donor agencies. As a result, educational policy and programme design began aligning more closely with international development agendas and funding priorities.

These experiences in Saint Lucia were not isolated but rather reflective of wider regional developments. Between the 1960s and 1980s, ten former British colonies in the Caribbean attained independence. These included Jamaica, Trinidad and Tobago, Barbados, The Bahamas, Grenada, Dominica, Saint Vincent and the Grenadines, Saint Lucia, Antigua and Barbuda, and St. Kitts and Nevis. This wave of decolonization sparked a regional reassessment of education systems that had long served colonial economic and cultural imperatives. There was a strong desire to create curricula that reflected the identities, aspirations, and development needs of the newly independent states.

In 1968, then Prime Minister of Trinidad and Tobago Eric Williams conducted a landmark review of the education systems across the British West Indies. His recommendations laid the foundation for educational reforms that were gradually implemented across the region. These included the introduction of compulsory education, the expansion of vocational training in key sectors such as agriculture, commerce, and industry, and the need for curricula at all levels to reflect the realities of Caribbean societies. He also advocated for mandatory professional training for teachers and called for the abolishment of the foreign-controlled Oxford and Cambridge examinations in favor of regional alternatives.

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These recommendations culminated in the establishment of the Caribbean Examinations Council (CXC) in 1972. CXC was tasked with developing Caribbean-relevant curricula and administering examinations that were both internationally respected and locally grounded. One of its major innovations was the Caribbean Advanced Proficiency Examination (CAPE), introduced in 1998 to replace the British A-Level system at the post-secondary level. Yet, the transition was slow in some states. Saint Lucia, for example, only formally adopted CAPE in 2013, fifteen years after its launch despite being a founding member of CXC.

This trajectory highlights both the progress made and the challenges that persist in building educational systems that are inclusive, equitable, and aligned with the Caribbean's evolving social and economic priorities. It underscores the long-term legacy of colonial structures in education, while also pointing to the region's commitment to self-determination, cultural relevance, and developmental alignment in educational policy and practice.

External Influences and the Limits of Reform

While national and regional efforts have driven much of the Caribbean's educational reform, international influence has become increasingly significant. Miller (1999) noted that the Commonwealth Caribbean has made meaningful strides in reforming its education sector since the 1960s and 1970s. He emphasized that reforms of the 1990s were not isolated, but rather a continuation of earlier efforts to modernize education. Miller also argued that the Caribbean should not be grouped with other developing or Third World countries in terms of educational achievement. Unlike many of their counterparts, most Caribbean nations have long maintained universal primary education, relatively low dropout and repetition rates, gender parity in access, and widespread secondary education.

However, despite these accomplishments, reform initiatives are still heavily shaped by global education trends. As small island developing states, many Caribbean countries lack

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sufficient internal resources and therefore rely on international lending institutions, donor agencies, and development partners to finance major education programs. These external partnerships often come with conditions, such as becoming signatories to international treaties or adopting frameworks that may not fully reflect local priorities. While many of these treaties promote values like equity and access, there is growing concern that some international reforms are poorly aligned with the socio-economic realities of the Caribbean.

This tension between external influence and local relevance is well-documented. Jules, (2008, as cited in Pemberton 2010), warned that externally driven reform initiatives may actually weaken the capacity of small states to maintain their educational progress. Similarly, Miller (2009) cautioned against the "common practice" of importing and modifying foreign education models without first assessing their suitability for local contexts (p. 12). He called for Caribbean policymakers to engage in deeper contextual analysis before determining whether external reforms would advance or hinder national development goals. This view was reinforced by Crossley et al. (2009), who highlighted the risks of uncritically adopting international models without considering their fit with local conditions. They argued that such practices can undermine intended benefits, particularly in a region as socially, economically, and culturally diverse as the Caribbean. In short, while the region has made substantial progress in education reform, future gains will depend on the ability of Caribbean states to critically assess and meaningfully adapt external frameworks to their own developmental and cultural realities.

Post-Independence Reform; First Generation

Jules and Williams (2015) identified three distinct stages of educational reform and development within the Caribbean following the independence era. These include: (1) the first generation of reforms in the 1970s and 1980s, focused on access, equity, and inclusion; (2) the second generation, spanning 1989 to 2000, which emphasized quality, accountability,

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efficiency, and fiscal austerity; and (3) the third generation, from 2000 to 2015, targeting the development of citizens for the emerging "knowledge-based economy" (p. 272).

During the first generation, educational reform was widely seen by national leaders as a necessary tool for economic development and nation-building, an idea that predated formal independence. Jules and Williams (2015), citing Sherlock (1949, 1950), Springer (1965), and Gordon (1979, 1980), explained that these views shaped public expectations for expanded access to education. However, although population growth increased demand for schooling, many Caribbean states lacked the resources to finance large-scale expansion and were therefore compelled to secure international loans for school construction. Despite the reformist momentum, many education systems continued to mirror Western models, which had long been critiqued for their cultural misalignment with local realities (Selvaratnam, 1988; Bishop, 1964; Schrouder, 2008, p. 273). As Jules (2010, as cited in Jules & Williams, 2015) observed, these early reform efforts were accompanied by four concurrent but distinct institutional mechanisms that shaped education in the region. These mechanisms were identified as "(1) the institutional phase; (2) the oil crisis and structural adjustment phase; (3) the socialist and ideological pluralism phase; and (4) the HIV/AIDS generation phase" (p.273).

The Institutional Phase was marked by the establishment of the Caribbean Examinations Council (CXC), which played a central role in standardizing regional assessments and issuing recognized certifications. This was a foundational move toward regional integration in education. The Oil Crisis and Structural Adjustment Phase emerged in response to the economic turbulence caused by the 1973–1974 oil crisis and the 1977 oil shock. These events severely impacted Caribbean economies and prompted many governments to adopt structural adjustment programs mandated by the World Bank and International Monetary Fund. These structural adjustment programmes disrupted the progress countries had been

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making in restructuring their education systems, often forcing reductions in public spending and slowing efforts to expand access and improve quality. The Socialist and Ideological Pluralism Phase was evident in countries such as Cuba, Jamaica, Grenada, and Guyana, where governments adopted socialist-leaning policies aimed at dismantling entrenched class structures and promoting equality for all citizens regardless of race, colour or background primarily through education. Cuba made significant strides by expanding access for women, introducing polytechnical education focused on technical and scientific literacy, and achieving near-universal literacy by the 1960s. Guyana offered free education from nursery through university. Jamaica undertook reforms to dismantle remnants of the colonial British system, increase access to primary and secondary education, and reduce discrimination based on ability to pay. Grenada introduced five major programs: universal secondary education, adult literacy initiatives, a curriculum inclusive of Grenadian history and values, and skills development in both labor-intensive and technologically advanced sectors (Rose, 2002, as cited in Jules & Williams, 2015).

The final phase, identified by Jules and Williams (2015) as the HIV/AIDS Generation Phase, shaped educational responses to emerging public health crises and broader social issues. During this period, reforms emphasized prevention, the reduction of stigma, curriculum adaptation to reflect contemporary realities, and advocacy for the rights of individuals living with HIV/AIDS (p. 280). These developments signaled a shift in education policy toward increased sensitivity to social and health challenges, broadening the role of education beyond traditional academic and economic objectives. The World Bank (1993, as cited in Jules & Williams, 2015) acknowledged that by the early 1980s, which marked the conclusion of this initial reform wave, many Caribbean nations had built relatively strong education systems, especially when compared with other countries at similar income levels. However, the

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mounting economic and ideological pressures of the global environment soon ushered in a second generation of reforms, characterized by new priorities and distinct challenges.

Second-Generation Reforms and Global Influences

The second generation of educational reform in the Caribbean emerged at the end of the Cold War and, like the first, was shaped by multiple concurrent influences. Jules and Williams (2015) identified three primary mechanisms characterizing this phase: "neoliberalism and education", the expansion of tertiary education, and the alignment of national education goals with international benchmarks (p. 280). The first mechanism, neoliberalism and education, took root in the late 1980s in response to ongoing economic stagnation and the lingering effects of the oil crisis. Caribbean governments continued to rely on structural adjustment programs promoted by the World Bank and IMF, which required fiscal austerity, reduced public sector spending, and greater efficiency in state services. These programs often resulted in significant reductions in funding for primary education, effectively reversing some of the gains achieved in the 1970s and 1980s (World Bank, 1993, as cited in Jules & Williams, 2015). The second mechanism focused on the expansion of tertiary education. During this period, national governments began transforming existing post-secondary institutions into full-fledged tertiary institutions to meet the growing demand for higher education. While these changes improved access, they also introduced new financial burdens. Countries such as Barbados, Trinidad and Tobago, and Guyana, which previously offered free university education, were forced to introduce tuition fees as part of broader cost-sharing measures required under structural adjustment agreements. The third mechanism emphasized international benchmarks and regional consequences. Education systems in the Caribbean began aligning more closely with global frameworks such as the Education for All (EFA) agenda, which prioritized access and equity in education. Within the region, reform efforts

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focused on improving teacher quality and instructional effectiveness, particularly in response to continued underachievement despite high enrollment rates in primary education (Jules & Williams, 2015).

At the same time, according to Jules and Williams (2015) CARICOM introduced the concept of the 'Ideal Caribbean Citizen' (p. 283, citing CARICOM, 1997), envisioning an individual equipped to contribute to both national development and regional integration through the Caribbean Single Market and Economy (CSME). This vision promoted the development of skills, values, and civic responsibility necessary to thrive in a globally competitive and economically interconnected space. Additionally, Caribbean states were expected to fulfill education-related Millennium Development Goals (MDGs), including achieving universal primary education by 2015 and eliminating gender disparities in primary and secondary education by 2005, with full gender parity at all levels by 2015 (Jules & Williams, 2015). These global targets reinforced international accountability but also placed further pressure on national systems already constrained by limited resources. As these second-generation reforms unfolded, they increasingly reflected a dual imperative: responding to local development priorities while aligning with global education targets. Yet, even as the region made important strides in expanding access and institutional reform, it became clear that a new wave of reform would be needed. This new wave was focused not just on participation and infrastructure, but on adaptability, relevance, and human capital development to meet the demands of a globalized knowledge economy.

Third-Generation Reforms: Modernizing for a Globalized Economy

The third and current generation of educational reform, as described by Jules and Williams (2015), began with a renewed commitment to the global Education for All (EFA) initiative. This phase is defined by three key institutional mechanisms: (1) stakeholder

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participatory involvement, (2) regional and national accreditation, and (3) gender issues (p. 285). The first mechanism, outlined by CARICOM (2005, as cited in Jules & Williams, 2015), sought to address several pressing challenges to human capital development in the region. These included limited digital literacy skills needed for emerging technologies, a decline in low-skilled job availability, inadequate multilingual competencies, shifting definitions of employability, and weak systems for continuous upskilling across public and private sectors. Additional concerns included the absence of new public-private partnerships and the need to cultivate a culture of innovation and entrepreneurship. The second mechanism emphasized the development of strong accreditation systems at both regional and national levels, particularly in technical and vocational education. Its central aim was to ensure the portability of regional qualifications, most notably the Caribbean Vocational Qualifications (CVQs), across CARICOM member states. This accreditation framework sought to establish a standardized, competency-based training and certification system that would gain recognition both within the Caribbean Single Market and Economy (CSME) and internationally. Such recognition was viewed as critical to supporting labor mobility and enhancing the credibility of regional qualifications. The third mechanism targeted gender equity in education, with a specific focus on addressing male underachievement and ensuring equal access to educational opportunities across all levels. While significant strides had been made in promoting access and gender parity in primary and secondary education, continued interventions were necessary to redress gender imbalances in achievement and retention, particularly among boys.

These developments underscore the Caribbean's ongoing commitment to increasing human capital as a strategy for achieving sustainable economic development at both the national and regional levels. As demonstrated throughout this section, the focus on quality technical and vocational education is not a recent development but rather a renewed emphasis

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that has been shaped by both regional imperatives and international pressures. The current push toward CVQ adoption and competency-based education across the Caribbean must therefore be understood as part of a broader, historically grounded effort to align education with the evolving demands of globalization, economic integration, and workforce development.

Building on this historical overview, the following section narrows its focus to the evolution of Technical and Vocational Education and Training (TVET) within the Caribbean. Given the region's longstanding commitment to education as a catalyst for social mobility and economic resilience, the development of TVET, particularly through competency-based approaches, has emerged as a strategic response to shifting labor market demands, regional integration goals, and the imperatives of globalization. As educational priorities continue to align with workforce development and economic transformation, TVET occupies an increasingly central role in national and regional education agendas.

Development of Technical and Vocational Education and Training (TVET) in the Caribbean

TVET is increasingly recognized as a vital component of education systems worldwide, particularly for its role in addressing the economic and social challenges associated with globalization, rapid technological advancement, climate change, and demographic shifts. Okoth (2022) described TVET as critical to the growth, development, and sustainability of global economies. This view is supported by Kidega, Zheng, and Haufiku (2023), who emphasized TVET's pivotal role in fostering socio-economic development, enhancing skills, improving productivity, and reducing unemployment based on their analysis of China's integration of TVET into its national development strategies. The importance of TVET is further underscored by the United Nations' inclusion of it in Goal 4 of the Sustainable Development Goals (SDGs), which promotes skills development for employment,

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entrepreneurship, and lifelong learning as part of a global agenda for sustainable development (United Nations, 2015). In the Caribbean, efforts to strengthen TVET systems have been ongoing, with a growing emphasis on aligning regional practices with global standards. This commitment is driven, in part, by the region's obligations as signatories to international frameworks such as the SDGs, which call for inclusive, equitable, and lifelong learning opportunities. These global obligations have influenced the development of regional policy instruments, such as the Revised CARICOM Regional TVET Strategy, which aims to guide TVET advancement in member states.

The International Labour Organization (ILO) defines TVET as a broad term encompassing "the study of technologies and related sciences, and the acquisition of practical skills, attitudes, understanding and knowledge relating to occupations in various sectors of economic and social life" (p. 7). This definition, adopted at the 1999 UNESCO Second International Congress on Technical and Vocational Education in Seoul, was intended to harmonize terminology across countries. For instance, it is referred to as vocational education and training in Australia, technical vocational education in the United Kingdom, and career and technical education in the United States. Historically, TVET in the Caribbean emerged as informal apprenticeship programs designed to meet labor demands in agriculture, construction, and domestic service. Subran (2013) highlighted the early importance of skilled tradesmen who, through ingenuity and resourcefulness, maintained agricultural and transport machinery using minimal tools and basic training. Over time, these practices evolved into more structured pre-independence apprenticeship programs that combined hands-on technical instruction with academic subjects such as Mathematics, English, and Technological Studies, recognizing the need for a theoretical foundation in practical trades. However, in the post-independence period, these apprenticeship programs declined, giving way to institutional TVET programs introduced

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in schools often with limited or no integrated on-the-job training, which had been a hallmark of the earlier model.

Institutionalization and Strategic Milestones in Regional TVET

The institutionalization of technical and vocational education in the Caribbean began to take clearer shape with the establishment of regional frameworks and strategic initiatives aimed at addressing the region's economic and skills development needs. Jules (2015) traced the origins of technical and vocational education and training (TVET) in the Caribbean to the 1942 establishment of the Caribbean Commission. In their 1952 report titled *The Development of Vocational Education in the Caribbean*, the Commission emphasized the region's economic dependence on agriculture and its minimal industrial development, which was constrained by "low productivity" and a lack of "necessary skills" (p. 4, citing Caribbean Commission, 1952). They argued that investment in vocational education was essential to address these challenges. As a result, vocational education and training during the 1940s and 1950s was primarily oriented toward agriculture.

Jules (2015) observed that the momentum gained in expanding mass education during the post-independence period was not sustained in the area of vocational education. It was not until the early 1990s that TVET regained regional prominence, as CARICOM leaders acknowledged the need to prepare citizens for participation in a competitive, technology-driven global economy (citing CARICOM, 1990a, p. 1). This renewed emphasis led to the formulation of the first Regional TVET Strategy in 1999, which was later endorsed by Ministers of Education at the 2013 Council for Human and Social Development (COHSOD) meeting. According to Jules (2015), the strategy framed technical and vocational education not only as a pathway for students to acquire practical and entrepreneurial skills, but also as a foundation for regional development, technological innovation, and modernization. Its overarching aim

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was to cultivate a technically competent, adaptable workforce capable of responding to evolving labor market demands (citing CARICOM, 1993).

Moreover, the strategy positioned TVET as an integral component of a comprehensive human resource development framework across the Caribbean, particularly emphasizing the enhancement of science and technology competencies. According to CARICOM (1993, as cited in Jules, 2015), the Advisory Task Force on Education underscored the urgent need for TVET curriculum development to support smoother school-to-work transitions. This led to the inclusion of TVET courses alongside academic subjects. The Task Force further noted that the effective implementation of the regional TVET strategy would depend on sustained governmental commitment to investing in training at the secondary level, especially in preparation for specialized and para-professional pathways.

According to Jules (2015), the regional TVET strategy also emphasized the need for coordinated regional action, with national governments taking the lead in promoting TVET as a credible and desirable career path. This included strengthening TVET guidance in schools, revising and expanding programs across all educational levels, fostering an entrepreneurial culture, and ensuring greater equity in access to job training opportunities. Achieving these goals required strong national and regional commitments to institutional partnerships and the development of supportive programs.

Regional and International Collaboration on Standards and Reform

Following the completion of the regional strategy, international donors such as UNESCO began funding regional TVET initiatives. CARICOM member states also began to adopt and ratify the Caribbean Model Labour Laws (CMLL), developed in collaboration with the International Labour Organization (ILO). The CMLL addressed four major areas: (a) the Harmonization Act, which promotes equal employment opportunities and workplace fairness;

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(b) occupational safety and health standards; (c) the registration and recognition of trade unions and employers' organizations; and (d) employment termination procedures. These developments reflected national and regional commitments to aligning with international employment and training standards.

Within this context, the concept of cooperative transfer emerged as a guiding framework to accelerate TVET development. This refers to the process by which national education reforms, though influenced by external pressures, are implemented collaboratively to support regional integration. Jules (2015), in his review of TVET-related education policies in 13 CARICOM countries, found that governments consistently framed TVET as critical to both national and regional development promoting it as essential for workforce preparation. This emphasis was also linked to CARICOM's "vision of the ideal Caribbean person," adopted in 1997. According to CARICOM (1997, as cited in Jules, 2015), this vision described the ideal citizen as one who values life, is psychologically secure, embraces diversity, demonstrates a strong work ethic, and possesses multiple literacies, critical thinking, environmental consciousness, and entrepreneurial spirit.

As such, national TVET commitments were driven by regional mandates to (a) decentralize systems by involving more stakeholders and (b) adapt labor markets to evolving workforce demands. Another prominent theme was institutional coordination—specifically, the alignment of national TVET efforts with regional assessment systems such as the CSEC and CAPE administered by CXC, and the adoption of modular accreditation frameworks. These shared features reflected a convergence of regional and national priorities, enabled by common policy language and cooperative regional planning.

Jules (2015) explained that as member states began to develop and reform their national TVET systems, they were compelled to consider how their citizens would participate within

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the Caribbean Single Market and Economy (CSME) and the broader implications this held for educational advancement. To implement the necessary reforms and facilitate effective idea transfer among countries, the region adopted a two-phased approach: (a) member states first established regional institutions to oversee the creation, maintenance, and management of educational standards; and (b) these institutions then trained national agencies to adopt and apply regional competencies. This approach required a shift from nationally confined policy discussions to a regionally coordinated process, involving treaties, declarations, and collective meetings thereby initiating the practice of cooperative transfer. Through this collaborative learning process, shared concepts were institutionalized at the regional level and later reintroduced at the national level for implementation within domestic policy frameworks.

Development and Evolution of Frameworks

Building on the principles of cooperative transfer, regional institutions such as CANTA were established not only to guide policy alignment but also to develop practical mechanisms that would allow for the consistent recognition and transfer of skills across CARICOM member states. One of the most important of these mechanisms was the development of qualifications frameworks that could translate regional goals into concrete outcomes at the national level. These frameworks were intended to support the mutual recognition of occupational competencies, promote labour mobility, and ensure that training programs remained relevant to the evolving needs of the workforce. In doing so, they helped bridge the gap between regional vision and national implementation. What follows is a closer look at how these frameworks were developed and evolved over time—from the early Regional Qualifications Framework (RQF) to the Regional Vocational Qualifications Framework (RVQF), its subsequent revision, and the eventual establishment of the CARICOM Qualifications

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Framework (CQF). Each framework is explored in relation to its purpose, structure, and practical implications for stakeholders across the region.

Before CANTA's establishment, individual CARICOM member states had launched their own skills development and employment programs. Jamaica, for instance, founded the HEART Trust in 1982; Barbados followed with its TVET Council in 1993, and Saint Lucia formally created its TVET Council in 2007, following a proposal in its 1999 Education Act. In 2004, CANTA introduced the Caribbean Vocational Qualification (CVQ), which was structured around five competency-based levels reflecting industry-aligned occupational standards. This structure formed the basis of the Regional Vocational Qualifications Framework (RVQF), developed to promote harmonization of vocational training standards.

The RVQF was preceded by the Regional Qualifications Framework (RQF), a five-tier conceptual structure intended to guide regional efforts toward comparability and portability of credentials. The RQF included levels ranging from semi-skilled workers to advanced professionals. It later influenced the development of both the RVQF and the more comprehensive CARICOM Qualifications Framework (CQF). The CQF, adopted in 2013, marked a significant shift. It subsumed the original RQF and served as a unified reference for all academic, vocational, and professional qualifications. The CQF spans eight levels and functions as a reference point for national qualifications frameworks (NQFs), which are implemented at the country level to align training and certification with regional goals.

In 2020, CANTA revised the RVQF to address emerging economic, technological, and educational needs. The updated framework retained its competency-based foundation but expanded to eight levels, ensuring compatibility with the CQF and facilitating lifelong learning, recognition of informal learning, and credential portability. The Revised RVQF supports both vertical and horizontal progression through vocational education pathways and is particularly

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valuable for structuring the CVQs. These modular qualifications recognize prior learning and workplace experience, thereby increasing access to certification and supporting worker mobility across the Caribbean Single Market and Economy (CSME).

Implications for Stakeholders and Quality Assurance

Although often viewed as technical instruments, the practical implications of the CQF, CVQs, and NQFs are substantial. Educators benefit from clearly defined outcomes that inform curriculum design and guide instructional strategies. For learners, these qualifications validate occupational competence and open up regional employment opportunities. Employers use CVQs to identify skilled workers, and many actively participate in the development of occupational standards to ensure industry relevance.

Despite these advances, implementation remains uneven. Some countries, such as Jamaica (2017) and Trinidad and Tobago (2022), have formalized their NQFs, while others are still in development or transition phases. National Accreditation Bodies (NABs), mandated since a 2002 COHSOD decision, play a central role in ensuring quality assurance and facilitating the recognition of local and international qualifications. By 2014, at least nine CARICOM states had established NABs, reinforcing the region's commitment to standardized quality assurance.

To better understand the distinctions among the various qualifications frameworks that have emerged within the CARICOM region, Table 3 below provides a comparative overview of the key characteristics of the CARICOM Qualifications Framework (CQF), the original Regional Qualifications Framework (RQF), the initial Regional Vocational Qualifications Framework (RVQF), and its revised version. This comparison highlights differences in structure, scope, intended purpose, and alignment with regional and international standards. It

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also clarifies how these frameworks relate to the Caribbean Vocational Qualification (CVQ) system and the broader goals of the Caribbean Single Market and Economy (CSME).

Table 3

Key Differences Among the CQF, RVQF, and the Revised RVQF

Framework	Scope	Levels	Focus	Linked To	Key Use
RQF	Conceptual precursor	5	Early regional alignment	CQF	Initial framework foundation
RVQF	TVET only	5	Occupational standards	CQF, CVQ	Competency certification
Revised RVQF	TVET with modern updates	8	Expanded and flexible TVET progression	CQF, CVQ	Stackable credentials, alignment
CQF	All qualification types	8	Overarching regional reference	NQFs, RVQF	Mobility, comparability, NQF alignment

Note. Adapted from CANTA (2020), CARICOM (2019), and UNESCO (2023).

Expanding on these practical considerations, Subran (2013) argued that in today's postmodern Caribbean society, where workers are increasingly autonomous, technologically engaged, and expected to make creative decisions, a radical reformation of TVET is essential to prepare what he referred to as the "new worker." This worker must be a well-educated, critically reflective thinker who not only understands the scientific and technical principles that underpin work processes but also demonstrates independence, effective collaboration, and an entrepreneurial mindset. To meet these expectations, TVET students must be equipped with both employability and soft skills. According to Vaz (2012), employability skills include being self-directed, ethical, reliable, communicative, committed to lifelong learning, and able to maintain a positive and adaptable personal attitude. Soft skills, by contrast, refer to interpersonal and behavioral competencies such as teamwork, customer service orientation, communication, negotiation, accountability, flexibility, motivation, and time management.

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With rapid technological advancements continuing to reshape work environments, the development of ICT competencies is also increasingly essential for TVET graduates.

Collectively, these demands necessitate a decisive shift away from traditional, didactic TVET models and toward modernized approaches that integrate institution-based instruction with structured, supervised work experience. Subran (2013) advocated for this dual model, contending that outdated systems must be replaced by dynamic, flexible frameworks capable of preparing workers who can contribute meaningfully to productivity, innovation, and economic development. Despite the growing emphasis on modernization and relevance in TVET and ongoing regional reforms, the implementation of competency-based qualifications across the Caribbean remains uneven. The following section examines persistent classification inconsistencies and structural challenges that continue to affect the rollout of CBET in the region.

Competency-Based Qualifications and TVET Classification in the Caribbean

Despite regional recognition of the importance of Technical and Vocational Education and Training (TVET) for sustainable economic development, deep-rooted stigma and systemic inconsistencies continue to undermine its perception and implementation across the Caribbean. Historically shaped by colonial legacies, TVET has often been viewed as a fallback for students perceived as less academically inclined. This stigma remains prevalent today and has been cited by several researchers (e.g., Jules, 2011; Subran, 2013; Hutton, 2013; Mack & White, 2019; Grundall & Mack, 2023; Essel et al., 2014) as a major challenge to TVET uptake in both the Caribbean and similarly postcolonial African contexts.

Compounding these attitudinal barriers are significant classification and implementation inconsistencies, particularly in the rollout of Competency-Based Education and Training (CBET) systems such as NVQs and CVQs. These inconsistencies reflect broader

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structural fragmentation that complicates the coherent adoption of CBET across national and regional education systems. While CBET is endorsed in principle, definitional ambiguities and uneven practices persist in how TVET subjects are categorized and competency-based qualifications delivered.

At the secondary level, the Caribbean Examinations Council (CXC) classifies subjects such as Technical Drawing, Food, Nutrition and Health, and Industrial Technology (Building, Electrical, and Mechanical) as technical, awarding a technical proficiency pass. This designation emphasizes the subject's practical orientation and its alignment with technical post-secondary training. However, other subjects commonly associated with vocational education such as Agriculture, Business, and Visual Arts are categorized under science, business, or creative arts, and awarded a general proficiency pass. This lack of clarity undermines coherence in curriculum planning and policy discourse around TVET (CXC, n.d.-b).

Such inconsistencies are further evident at the national level. In Saint Lucia, for instance, thirteen CSEC subjects including Technical Drawing, Agricultural Science, Office Administration, and Principles of Business are officially recognized by the Ministry of Education as TVET. This national classification differs from CXC's broader categorization and serves as the operational definition adopted for this study.

At the regional level, the shift toward CBET is institutionalized through the Caribbean Vocational Qualifications (CVQs) and national equivalents (NVQs). These qualifications are developed using occupational standards benchmarked against models from the United Kingdom, Canada, and Australia, and approved by CARICOM. The CVQ system includes five levels of certification, ranging from entry-level (Level 1) to advanced professional (Level 5), broadly aligning with the educational stages from secondary through to postgraduate training (CXC, n.d.-c). In the agricultural sector alone, more than 20 occupational standards have been

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developed across Levels one to three. These span a wide range of roles, from agro-processing to specialized maintenance tasks such as cricket pitch preparation, reflecting the diversity of occupational needs within the region. However, many additional national standards are yet to be integrated into the regional framework, suggesting both potential and fragmentation in implementation.

The development of these qualifications follows a structured model guided by the International Labour Organization (ILO, 2016), beginning with sector selection and expert consultations, and culminating in occupational standards, curricula, and assessment frameworks validated by industry. If more consistently adopted, these frameworks could play a transformative role in repositioning TVET as a credible and competitive pathway within regional education systems. While these frameworks lay a strong foundation for competency-based reform, their uneven adoption and definitional inconsistencies across countries highlight the need for clearer classification systems, stronger institutional capacity, and more unified regional coordination. This study addresses these concerns by exploring the behavioral, motivational, and institutional factors influencing CBET adoption within Caribbean TVET systems.

Against this backdrop, the development of TVET in the Caribbean has undergone considerable transformation. This evolution has been marked by increased regional coordination, the adoption of competency-based educational approaches, and concerted efforts to align national qualifications systems with international standards through mechanisms such as the CQF and the revised Regional Vocational Qualifications Framework (RVQF). These initiatives reflect a regional commitment to strengthening human capital, promoting workforce mobility, and enhancing economic resilience. However, despite these notable advances, longstanding challenges continue to impede the full realization of TVET's potential in the

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region. Deep-rooted stigmatization of vocational education, persistent systemic inequalities, resource constraints, and fragmented implementation strategies remain substantial barriers to widespread adoption and impact. Moreover, these constraints are not unique to the Caribbean; they are also reflected in other developing nations that grapple with similar historical, structural, and socio-economic limitations. The following section therefore offers a critical examination of the enduring challenges facing TVET in the Caribbean and comparable developing contexts, with the aim of shedding light on the underlying factors that continue to hinder progress, even amidst growing regional and international recognition of TVET's vital role in driving inclusive and sustainable development.

Challenges to TVET within the Caribbean Region and Other Developing Nations

Although the Caribbean region has consistently demonstrated its commitment to improving TVET, several longstanding and emerging challenges continue to impede its effectiveness. Mack and White (2019), in their investigation of challenges affecting TVET in Trinidad and Tobago, identified several key issues, including stigma, student attrition, inconsistencies in the quality of instruction, low educational attainment among incoming TVET students, political interference, weak regulatory mechanisms, and inadequate funding. Similarly, in her study examining the factors influencing TVET policy and its impact on student development within a community college in the British Virgin Islands, Smith-Thompson (2018) highlighted negative societal attitudes toward TVET as a significant barrier. She noted that vocational training is often perceived as less valuable than academic pathways, a view partly attributed to the lingering effects of colonialism.

At the regional level, the 2012 revision of the 1990 CARICOM Regional Strategy for Technical and Vocational Education and Training also identified key structural and systemic obstacles. These included societal stigma, insufficient training for instructors and career

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counselors, inadequate infrastructure, reduced funding, and a lack of robust monitoring, evaluation, and reporting mechanisms. The strategy further acknowledged that TVET continues to operate within an elitist education system, one that privileges academic over technical pathways and marginalizes non-traditional learners (CARICOM, 2012, p. 4). While the revised strategy attempts to address these deficiencies, its implementation is expected to surface new challenges that the region must be prepared to confront.

In Antigua and Barbuda, similar issues are evident. Grundall and Mack (2023), examining the views of parents and teachers on students' decisions to pursue TVET, reaffirmed many of the challenges noted in earlier studies. Chief among them was the persistent stigma surrounding vocational training, particularly the perception that it is only suitable for "slower" or less academically inclined students. Chronic shortages of both physical and human resources were also identified, including outdated or missing equipment and the inadequate preparation of TVET teachers. Additionally, schools and parents were often expected to absorb the cost of materials for practical subjects such as Food and Nutrition, creating financial strain and limiting hands-on learning opportunities.

The absence of nationally accredited TVET standards, attributed to a non-functional National Training Agency, was cited as a major structural deficiency. Limited exposure to work-based learning, resulting from the lack of a formal apprenticeship program, further constrained the effectiveness of TVET. Grundall and Mack (2023) also found that students' subject selection was shaped by a variety of factors, including parental guidance, peer influence, teacher rapport, the perceived ease of passing certain subjects, and availability of instructors. These findings indicate that local dynamics such as school culture, staffing patterns, and peer relationships can reinforce or exacerbate national-level barriers.

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In Trinidad and Tobago, financial constraints continue to pose serious challenges to institutional capacity. Mack (2024), studying four TVET institutions, emphasized that declining government support has severely limited the sector's ability to function effectively. Budget shortfalls have impaired strategic planning and reduced institutions' ability to execute core initiatives. As a result, these institutions have struggled to recruit and retain qualified personnel, support ongoing staff development, and modernize their infrastructure. The inability to update equipment or revise curricula to keep pace with industry needs further compromises the quality and relevance of training. Mack (2024) argued that such institutional deficiencies contribute to the public perception of TVET as a second-tier, non-prestigious option further entrenching its marginalization within the broader education system.

Continuing beyond the Caribbean, it is clear that the challenges facing TVET systems are not unique to the region. Research from other developing nations, particularly African countries with similar colonial legacies, reveals that they grapple with many of the same systemic issues. Wahba (2011), in his discussion of the barriers confronting TVET in developing contexts, identified stigma as a major obstacle. He explained that vocational education is often seen as a "second-choice" track, perceived as suitable only for those who fail to meet academic standards (p. 4). He further noted that class-based divisions, poor infrastructure, underqualified instructors, underfunding, and limited alignment with labor market needs severely constrain the effectiveness of TVET in such environments.

Nyankov (1996, as cited in Obwoge, 2016) similarly outlined several persistent concerns, including high training costs, poor instructional quality, curriculum misalignment with socioeconomic realities, and an overall neglect of informal sector needs. High unemployment rates among TVET graduates further highlight the disconnect between training

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programs and employment opportunities, compounding skepticism about the sector's relevance.

These concerns are echoed in the global analysis presented by Marope, Chakroun, and Holmes (2015), who emphasized TVET's potential role in addressing youth unemployment and social inequality. However, they also identified systemic weaknesses that continue to undermine the sector globally. These include chronic underinvestment (especially in favor of basic education), outdated curricula and teaching methods, weak research and strategic planning, fragmented governance, and insufficient collaboration among stakeholders. In many instances, short-term, donor-driven reforms and uncritical policy borrowing from external models have failed to deliver sustainable improvements, often due to a lack of contextual adaptation.

Additional insights from the African context further reinforce these themes. Ayonmike et al. (2014) highlighted the critical skills gap in Nigeria, noting that vocational graduates often lack employable competencies. Low enrollment, driven by societal disregard for vocational education, remains a key concern. These authors also pointed to obsolete facilities, poor funding, and weak education–industry linkages as persistent problems. Nwogu and Nwanoruo (2011), Udoka (2010), and Yusuf and Soyemi (2012), as cited in Ayonmike et al. (2014), similarly identified underqualified teachers, poorly prepared lessons, inadequate infrastructure, and a general scarcity of both human and material resources as contributing to weak TVET outcomes.

A comprehensive review by Okoth (2023) further confirmed the sector's importance for sustainable development while outlining multiple constraints across countries. These included underfunding, low program quality, poor alignment with labor market demands, unequal access, and widespread stigma. Drawing on Paryono (2017), Okoth emphasized that

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inconsistent funding severely hampers program delivery, particularly where institutions lack the resources for instructional materials, qualified instructors, and up-to-date equipment (p. 14). This funding gap directly affects the quality of TVET offerings, especially in developing countries where partnerships with industry are limited and infrastructure remains outdated.

Caves et al. (2021, as cited in Okoth, 2023) stressed the importance of continuously updating TVET curricula to reflect evolving labor market needs, noting that this process requires sustained collaboration among governments, institutions, and employers. Similarly, Pavlova (2014, as cited in Okoth, 2023) pointed to access-related barriers—including financial, geographic, and socio-cultural constraints—that restrict participation and reinforce inequities within TVET systems. Finally, Schröder (2019, as cited in Okoth, 2023) reiterated the negative perceptions that surround vocational education, emphasizing how stigma not only discourages student enrollment but also deters qualified individuals from entering the teaching profession limiting the sector's capacity to attract and retain talent.

A detailed case study of Sudan offers a further lens through which to view the structural and systemic barriers hindering TVET advancement. Ramadan and Xiaohui (2019), in their examination of TVET's role in Sudan's economic development, identified a range of challenges that mirror those in other low- and middle-income countries. These included inefficient management systems, underqualified teachers, outdated curricula, inadequate funding, negative societal perceptions, and poor integration of technology (pp. 81–83). The authors observed that TVET management in Sudan is often fragmented and misaligned, with many institutional leaders lacking formal training in educational leadership. Managerial appointments based on seniority rather than competence result in poor decision-making and weak institutional guidance (citing Subotzky et al., 2008).

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Instructor quality was also a key concern. Most TVET teachers in Sudan hold only a diploma or certificate from technical secondary schools, and opportunities for further professional development are scarce. This situation negatively affects instructional quality and student learning outcomes. Similarly, the pedagogical approach and curricular content remain outdated and disconnected from the needs of industry. As Ahmed (2010, cited in Ramadan & Xiaohui, 2019) noted, the absence of consultation with industry experts during curriculum development results in training that fails to prepare students for real-world employment. The lack of practical training materials and under-resourced workshops further reduces the efficacy of experiential learning.

Chronic underfunding compounds these issues. Persistent budgetary constraints affect every facet of program delivery, from infrastructure and teaching materials to the availability of modern equipment (RMoE, n.d., as cited in Ramadan & Xiaohui, 2019). This underinvestment directly undermines both the theoretical and practical quality of TVET offerings. Compounding the structural and instructional issues is the enduring social stigma surrounding vocational education. TVET in Sudan is often viewed as a “second-class” option, less desirable than academic pathways, which limits both enrollment and societal support (p. 84). The limited integration of modern technology is another major challenge, with institutions lacking access to digital tools and staff and students displaying low digital literacy. This gap restricts students' ability to develop relevant skills for the modern workforce.

A comparative summary of key country-specific challenges reinforces the prevalence of common structural weaknesses. In Trinidad and Tobago, high dropout rates, stigma, and inconsistent instructional quality persist alongside budgetary constraints. In the British Virgin Islands, colonial legacies and church-driven curricula have limited TVET’s development and relevance. Antigua and Barbuda continues to experience stigma, resource shortages, and a lack

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of apprenticeship pathways. Nigeria contends with skills gaps, low societal regard for TVET, and limited industry partnerships. Sudan faces compounded challenges, including inefficient management, outdated pedagogy, and technological limitations. Many of these challenges—such as underfunding, outdated infrastructure, and negative societal perceptions—also affect general TVET delivery across Africa and the Caribbean. These systemic issues are further exacerbated by short-term reforms and policy borrowing without proper contextual adaptation. A comparative overview of the challenges identified across these countries is presented in

Table 4

Table Summarizing Challenges in Different Countries

Country/Region	Key Challenges Identified	Unique Observations
Trinidad and Tobago	Stigma, attrition, unqualified teachers, funding, infrastructure, politics, regulation	High dropout rates and low prestige of TVET, strained government budgets impacting training quality
British Virgin Islands	Negative societal attitudes, colonial legacies, inadequate facilities	Colonial education system reinforced class divisions: church-driven curriculum lacked local relevance
Antigua and Barbuda	Stigma, lack of resources, unqualified staff, costs, no apprenticeship, limited subject options	TVET perceived as second-class; costs borne by families/schools limit access and quality
Nigeria	Skills gap, low enrollment, outdated facilities, weak industry links, underfunding	Disconnect between skills acquired and industry needs; strong influence of societal prestige on education choices
Sudan	Inefficient management, unqualified teachers, outdated curriculum, underfunding, stigma, poor tech integration	Majority of teachers underqualified; curriculum not aligned with labor market needs; facilities outdated
General Africa	Poor quality delivery, high training cost, irrelevant curricula, neglect of informal sector, TVET graduate unemployment	Short-term reforms without contextual adaptation; systemic issues in delivery and policy coherence
Caribbean Region (General)	Stigma, colonial elitist system, poor accountability, inadequate infrastructure,	Despite progress, regional strategy implementation hampered by funding and

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Country/Region	Key Challenges Identified	Unique Observations
	policy borrowing without adaptation	political will; high dependency on foreign models

Note. This table synthesizes findings from multiple studies referenced in the literature review, highlighting common and unique challenges facing TVET systems in the Caribbean and selected African countries.

Recognizing these challenges, major global institutions have stressed the urgency of TVET reform. In their 2023 joint report, the World Bank, UNESCO, and the ILO emphasized the need for more adaptable, inclusive, and resilient TVET systems—especially in light of globalization, technological shifts, demographic transitions, and climate change. The report outlined several core priorities for reform: improving access, enhancing quality, ensuring equity, maintaining relevance, and strengthening governance. The authors asserted that TVET holds transformative potential for reducing youth unemployment and catalyzing sustainable economic development in low- and middle-income countries.

However, this potential is severely constrained by persistent structural barriers. Financial and informational constraints, foundational skills gaps, insufficient teacher training, and weak industry–education linkages are among the most pressing concerns. Misalignment between training programs and labor market needs, combined with entrenched social inequalities, continues to limit TVET's transformative impact. As the report argues, successful reform will depend on systems that promote lifelong learning, deliver high-quality and market-relevant training, and ensure equitable access for all learners. These shifts are essential for economic resilience and for achieving targets under the Sustainable Development Goals (SDGs).

A review of the literature discussed throughout this section reveals strong commonalities across developing contexts, particularly in countries with colonial legacies similar to those in the Caribbean. Persistent stigma, chronic underfunding, insufficient teacher

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training, outdated infrastructure and equipment, and poor alignment between training programs and industry needs recur across the Global South. Despite contextual differences, these challenges are remarkably consistent.

Interestingly, such challenges are not confined to the developing world. Wealthier nations, including those often viewed as development partners to the Caribbean, face similar issues. For example, a 2011 Eurobarometer survey commissioned by the European Union explored public perceptions of TVET across member states. Although many respondents acknowledged TVET's economic contributions, significant concerns remained. In countries like the Netherlands and Slovenia, negative perceptions persisted. In Lithuania, respondents feared that vocational qualifications could limit employment prospects. Across the EU, TVET was not widely seen as a vehicle for upward mobility, entrepreneurship, or long-term career success.

Even in Nordic countries, which are frequently cited as global leaders in education, TVET systems face structural challenges. Jørgensen et al. (2018) identified four overarching issues in Sweden, Denmark, Norway, and Finland. These include meeting evolving labor market needs, expanding access to higher-level TVET qualifications, integrating disadvantaged youth, and improving the public image of TVET. Additional challenges were also noted. These included the difficulty of maintaining national qualification standards while ensuring local responsiveness, declining enrollment rates, and weak collaboration between schools and industry particularly in relation to apprenticeships.

It is instructive that countries with strong education reputations continue to face difficulties similar to those experienced in the Caribbean, Africa, and other regions. This reinforces the notion that challenges such as stigma, underinvestment, and misalignment with labor market demands are global in nature. Therefore, the transformation of TVET systems,

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whether in small island developing states or high-income nations, requires sustained political commitment, stable funding, and strategic partnerships among governments, educational institutions, industry stakeholders, and international agencies. Only through such collaboration can TVET be repositioned as a dynamic and credible pathway to inclusive economic growth, resilience, and sustainable development.

Competency Based Education and Training (CBET)

Competency-Based Education and Training (CBET) is an educational approach focused on ensuring that learners master specific competencies essential for workplace success. It has gained traction globally as a more effective means of bridging the skills gap between what labour markets demand and what traditional education systems supply. Additionally, CBET has been positioned as a mechanism to help achieve Sustainable Development Goal 4 of the UN 2030 Agenda, which emphasizes inclusive, equitable, and quality education.

Known by various names including competency-based education (CBE), competency-based training (CBT), outcomes-based education (OBE), or competency-based education, training and assessment (CBETA), this approach is fundamentally outcomes-oriented. In CBET, occupational standards, typically developed in collaboration with industry, form the basis of curriculum design. This makes CBET more demand-driven than traditional academic models, which tend to emphasize theoretical knowledge over applied skills. As a result, learners are expected to acquire not only technical knowledge but also the practical skills, attitudes, and values necessary for success in their occupational fields.

According to Hyland (1994, as cited in Preston, 2017), the competency-based movement originated in the United States during the 1960s, particularly in teacher education. It emerged as a response to growing dissatisfaction with the quality of the education system and sought to establish measurable criteria for evaluating teacher performance. Initially

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referred to as “performance-based education” or “performance-based teacher education” (PBTE), its conceptual foundations were drawn from the social efficiency movement, with strong ties to Taylorist and behaviourist ideologies (Preston, 2017, p. 13). Tuxworth (2005) similarly identified its roots in U.S. teacher education but noted that the model gained wider traction in the United Kingdom during the 1980s.

Brown (1994, as cited in Ford et al., 2014) outlined six successive generations in the evolution of CBET, with the 1980s and 1990s representing the fifth generation. The first generation emerged with the application of scientific management principles to job roles. In the 1920s and 1930s, the second generation gave rise to mastery learning models in the United States. The third generation reflected the influence of B.F. Skinner’s behaviourist psychology on vocational education and instructional design. During the fourth generation, CBET formally entered education through teacher training, with the introduction of concepts such as measurable behavioural objectives and standards-based performance. It was also during this period that systematic instructional design and curriculum development frameworks were established. In the fifth generation, the focus shifted toward outcome-based curricula and institutional accountability, particularly within post-secondary and adult education. This laid the groundwork for the sixth generation, which encompasses more recent innovations such as online learning platforms, adaptive learning technologies, learning analytics, and direct assessment strategies for full academic programs (Ford et al., 2014).

In Australia, Guthrie (2009) traced the introduction of CBET to the early 1980s as part of a larger shift toward vocational reform. The Caribbean followed a similar timeline, with CBET being introduced as regional governments began to formalize vocational education and training. Esenina et al. (2019) observed that by the late 20th and early 21st centuries, CBET had become a global phenomenon, expanding in response to economic and technological shifts

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characteristic of the information age. These changes included the globalization of labour markets, the evolution of national qualification systems, and the growing need for transferable, occupation-based skills.

Preston (2017) noted that although CBET initially developed within a narrow vocational context in the United States, it eventually expanded across multiple fields in Europe and has since evolved into a global movement influencing education at all levels. Despite differences in adoption timelines and local implementation strategies, CBET has consistently been introduced as part of broader reform agendas aimed at increasing education's relevance, responsiveness, and alignment with national development priorities and global economic trends.

While CBET has been globally embraced as a transformative strategy for aligning education with labour market demands, its implementation often presents distinct and complex challenges, especially in contexts with constrained resources. In the Caribbean, many of the challenges already confronting traditional TVET systems are further exacerbated by the structural, pedagogical, and institutional demands associated with CBET. Although the model offers a more responsive, outcomes-based approach, its integration requires significant adjustments across education systems. As CARICOM member states continue to adopt CBET to meet workforce needs and regional development goals, practical and systemic barriers have emerged that hinder widespread implementation and effectiveness.

Fletcher and Ndahi's (2020) regional review provides critical insights into the uneven implementation of CBET across CARICOM. Their findings suggest that while all member states have formally committed to the CBET model, primarily through the establishment of National Training Agencies (NTAs) or TVET Councils, there remain considerable disparities in the rollout of Caribbean Vocational Qualifications (CVQs) and the quality of TVET

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delivery. Infrastructural development was one of the more promising findings: all countries had established a basic foundation for a functioning TVET system, with Jamaica, Barbados, and Trinidad and Tobago demonstrating more advanced progress. Mechanisms for aligning CBET programs with labour market demands were generally in place, and in countries like Jamaica and Grenada, employers expressed satisfaction with the technical and employability skills of NVQ and CVQ graduates. These findings indicate that while foundational elements exist, significant operational gaps remain.

Despite such progress, Fletcher and Ndahi (2020) identified several persistent challenges limiting the impact of CBET. One of the most critical was the inadequacy of national data systems. Across the region, poor data collection and reporting hindered the ability to track CBET implementation, assess outcomes, or inform evidence-based policy decisions. This shortfall undermined strategic planning and weakened accountability. Another key issue was limited employer awareness. In several countries, there was insufficient understanding and recognition of CVQs and NVQs among industry stakeholders. This lack of familiarity reduced employer engagement, which in turn affected the perceived value and uptake of CBET qualifications. Furthermore, funding constraints were a major concern. Most NTAs and national TVET councils lacked the financial resources necessary to support CBET infrastructure, program development, and ongoing delivery. Instructor capacity was also highlighted as a critical weakness. Many secondary school teachers lacked practical experience with CBET methodologies, especially in countries outside of the more advanced systems. These gaps pointed to an urgent need for targeted capacity-building initiatives, expanded training opportunities, and greater investment in professional development.

The challenges documented in the Caribbean are not unique to the region. Similar constraints have been observed in other developing contexts, reinforcing the notion that CBET

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implementation carries inherent complexities that transcend geography. Anane's (2013) study of CBET implementation in Ghana provides a valuable comparative perspective. Her findings underscore the increased demands of CBET relative to traditional TVET and highlight three broad categories of barriers: funding and infrastructure, facilitation and class size, and workplace experience. As a resource-intensive approach, CBET requires significant investment in equipment, well-equipped laboratories, and high-quality instructional materials that meet industry standards. Anane (2013) emphasized that the delivery of quality competency-based programs depends on these critical inputs. These needs placed considerable financial strain on institutions, especially when student enrolment increased. The infrastructure available in many institutions was outdated and insufficient, which hampered effective training delivery and further highlighted the link between resource availability and training quality.

Facilitation methods posed another set of challenges. Ideally, CBET delivery requires smaller class sizes of between 16 and 20 students to enable personalized, facilitation-driven learning. However, most institutions in Ghana struggled with overcrowding and a shortage of instructors trained in CBET methodologies. Many facilitators were required to deliver both CBET and traditional instruction, which often led to a reversion to conventional, lecture-based teaching. Without adequate initial training and continuous professional development, many instructors defaulted to "teaching as they were taught," thereby weakening the learner-centered philosophy that underpins CBET. The integration of workplace experience, a hallmark of CBET, was also limited. Anane (2013) found that there were insufficient industry partners available to provide meaningful internship or apprenticeship opportunities. This lack of practical experience undermined the relevance and application of students' acquired competencies, resulting in a disconnect between classroom instruction and real-world demands.

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Anane's findings closely mirror the barriers identified in the Caribbean. In both contexts, successful CBET delivery requires more than curriculum redesign. It demands comprehensive systemic readiness, adequate infrastructure, sustained funding, skilled instructors, and active collaboration with industry. These shared challenges point to a broader reality: that in developing regions, CBET reform efforts must be supported by enabling environments that go beyond policy adoption. The transition from traditional education systems to competency-based models requires a reconfiguration of institutional priorities, financial commitments, and stakeholder engagement strategies.

These patterns, while evident in both the Caribbean and Ghana, have also been observed across other developing contexts, confirming that CBET implementation challenges are both persistent and systemic. More recent studies from countries such as Nigeria, Tanzania, and Zimbabwe reinforce this view, further highlighting the disconnect between CBET policy and practice, and the wide-ranging factors that hinder effective delivery. CBET remains widely recognised as a transformative educational reform strategy, particularly in its potential to better align learning outcomes with labour market needs. Yet, its effective implementation continues to face systemic barriers across the Global South, shaped by local conditions and institutional constraints.

Kalu et al. (2023) examined the implementation of CBET within Nigeria's building engineering sector, focusing on the experiences of practising technologists in Enugu State. Their findings revealed that, although CBET has been formally adopted as part of national education policy, delivery remains largely lecture-based and insufficiently aligned with the practical demands of the workplace. Graduates were found to lack key entrepreneurial and occupational competencies, particularly those required for self-employment. These deficiencies were attributed to limited practical exposure, weak alignment between curriculum

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content and industry expectations, and inadequate collaboration between training institutions and industry partners. The authors emphasised that, unless deliberate efforts are made to review curricula and strengthen institutional linkages with the labour market, the disconnect between CBET policy and actual training outcomes is likely to persist.

Similarly, Shukurani et al. (2023), in their qualitative study of vocational education centres in Tanzania, identified a range of systemic constraints affecting the implementation of CBET. Although most trainers met the required academic qualifications, many had limited or no industrial experience, which restricted their ability to contextualise instruction in line with labour market realities. The study further noted that while trainers were generally familiar with CBET principles, they often relied on traditional, lecture-based methods, primarily due to limited institutional support and a lack of pedagogical training specific to competency-based delivery. Professional development was reported to be irregular and not adequately focused on practical skills or industry engagement. These challenges, along with gaps in teaching and learning materials, have contributed to a weak alignment between vocational training provision and national development objectives.

In Zimbabwe, Rusike et al. (2024) examined the extent to which CBET principles were being infused into instructional practice at a polytechnic institution. Their findings revealed that both instructors and students faced difficulties adjusting to the learner-centred, performance-based orientation required by the CBET model. Instructors frequently relied on traditional, teacher-led approaches and showed limited use of task-based, authentic learning activities. The study further noted systemic issues such as weak inter-departmental coordination, minimal stakeholder involvement, and infrastructure limitations. These constraints were found to undermine the effective integration of CBET and limit the model's potential to improve learning outcomes and workplace readiness.

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The constraints documented across the Caribbean, Ghana, Nigeria, Tanzania, and Zimbabwe reveal a strikingly consistent pattern of systemic challenges that continue to hinder CBET implementation. Under-resourced institutions, limited instructor preparedness, weak curriculum–industry linkages, and the persistent gap between policy and practice all point to a broader reality: that successful delivery of competency-based training requires more than curriculum redesign or policy adoption. It calls for comprehensive systemic readiness, including pedagogical capacity, infrastructure, sustained funding, and institutional support. Together, these studies make it clear that CBET cannot function effectively in environments where these foundational conditions are not in place.

Even with widespread recognition of its potential to align education with labour market needs, CBET's transformative impact remains limited in many parts of the Global South. The evidence suggests that realising this potential depends not only on what is written in reform documents but on what happens in classrooms, training centres, and workplaces. For CBET to move beyond a well-intentioned concept to a meaningful force for educational change, it must be supported by sustained investment in human capital, stronger institutional frameworks, and deliberate efforts to build local capacity. For CARICOM states, as with other countries navigating similar constraints, the long-term success of CBET hinges on their ability to create enabling environments where innovation in technical and vocational education is not only possible, but actively nurtured and sustained.

Educational Theoretical Foundation of CBET and TVET

The global and regional challenges to implementing Competency-Based Education and Training (CBET) underscore the importance of grounding reform efforts in sound theoretical frameworks. While CBET has often been discussed in terms of practical relevance, economic development, and institutional reform, its pedagogical and philosophical underpinnings are

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equally important for understanding how it functions and why it can succeed or falter in different contexts. Exploring the educational theories that inform both CBET and broader TVET models offers critical insight into the assumptions that shape curriculum design, instructional strategies, assessment practices, and learning outcomes.

Esenina et al. (2019) asserted that CBET is grounded in principles of active and situational learning, both of which align with constructivist views of learning. Active learning refers to educational experiences in which learners actively engage in constructing their own knowledge, rather than passively receiving information. Situated learning, introduced by Lave and Wenger, emphasizes that learning occurs most effectively within the social and physical context in which it will ultimately be applied. Hodge (2007), in his analysis of the theoretical foundations of CBET, argued that no single theory can fully account for the various components of the model. Instead, he categorized its origins into two broad areas: general theoretical influences and specific theoretical contributions. The former provides a broader philosophical context, while the latter offers practical techniques and tools for the design and implementation of competency-based programmes. Hodge identified both behaviourism and systems theory as central theoretical influences, while highlighting Ralph Tyler's curriculum design model and John Carroll's mastery learning theory as key contributions.

Morcke et al. (2013) similarly linked CBET's origins to behaviourist theory and Tyler's model of curriculum design. They noted that the competency-based approach evolved from efforts to make education more measurable and systematic, building on work by education theorists such as Benjamin Bloom. This perspective echoes that of McCowan (1998), who identified behaviourism, Frederick Taylor's scientific management theory, and Dewey and Addams' progressive education as core influences on the development of CBE. McCowan also highlighted operant conditioning, mastery learning, criterion-referenced testing, minimum

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competency assessments, and instructional design principles as core components shaping the competency-based education model. To better understand how these elements function within CBET, it is useful to elaborate on mastery learning, criterion-referenced testing, and instructional design.

Minimum competency testing emerged as a means of evaluating whether schools were effectively preparing students, using standardized instruments to assess achievement and provide remedial support when learners failed to meet established benchmarks. McCowan (1998) described this model as a precursor to CBET's emphasis on post-test performance assessments and structured remediation. Instructional design theory, particularly the work of Robert Gagné, further extended behaviourist principles by emphasizing sequenced instruction and performance-based assessments. Gagné's models helped shape the modular organization of CBET curricula, reinforcing the alignment between specific performance tasks and defined learning outcomes (McCowan, 1998, pp. 25–26). John Carroll's model of school learning introduced the concept of mastery learning, proposing that student achievement depends on both the time allocated for learning and the quality of instruction. He advocated adjusting these conditions to allow all learners to achieve mastery. Bloom later expanded Carroll's framework by identifying five key variables that influence learning outcomes: learner aptitude, instructional quality, ability to understand instruction, perseverance, and time. CBET integrates these principles through individualized pacing, ongoing formative assessment, and clearly defined competency thresholds. Criterion-referenced testing, first proposed by Glaser and later refined by Popham and Husek, offered another foundational element. Unlike norm-referenced tests, which compare students against each other, criterion-referenced assessments measure performance relative to pre-established standards or competencies. Hodge (2007) observed that Hambleton and Eignor introduced the categories of "competent" and "incompetent," thereby

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operationalizing achievement against defined performance benchmarks (p. 204). This approach remains central to CBET's focus on mastery, measurability, and job-relevant standards. These theoretical foundations demonstrate that CBET is a composite framework, influenced by a range of psychological, managerial, and progressive educational philosophies. Its emphasis on performance, assessment, and learner-centred instruction reflects a deliberate blending of theory and application aimed at producing measurable, transferable skills for workplace success.

Thorndike's work on trial-and-error learning was foundational to early behavioural learning theories. He posited that learning occurs through the formation of associations developed by repeated attempts, which laid the groundwork for performance-based instruction and measurable outcomes. McCowan (1998) emphasised Thorndike's enduring influence on objectives-based instruction, a defining feature of CBET. He also highlighted Frederick Taylor's contributions in adapting principles of scientific management to education. Taylor's use of task analysis, which involved breaking down jobs into discrete, observable units of work, helped establish the foundation for competency frameworks by promoting performance standards that could be assessed objectively. Complementing these behavioural and managerial foundations were contributions from the progressive education movement. John Dewey and Jane Addams championed student-centred learning environments in which students engaged in practical, vocational activities instead of passive, formal instruction. Their focus on learning-by-doing and the role of the teacher as a facilitator aligns closely with CBET's emphasis on experiential, learner-driven training.

Skinner's operant conditioning also contributed to CBET's theoretical structure. His behavioural model, which framed learning as a change in behaviour resulting from environmental stimuli and reinforcement, emphasized repetition and feedback. Hodge (2007)

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noted that this behaviourist foundation supported CBET's view of learners as active participants and reinforced the importance of the facilitator's role in shaping learning experiences.

The development of educational objectives was another critical contribution to CBET. McCowan (1998) traced this practice back to John Franklin Bobbitt, who used activity analysis to derive curriculum content. Hodge (2007) credited Ralph Tyler with formalising this approach through his influential model of curriculum design, which emphasised that instruction should be built around clearly defined educational purposes, specifically outlining what learners should be able to do following instruction. Tyler's work informed Bloom's taxonomy of educational objectives, which categorised learning outcomes into cognitive, affective, and psychomotor domains. Hodge (2007) further argued that CBET's integration of knowledge, skills, and attitudes corresponds closely with Bloom's tripartite model. Robert Mager's work on writing measurable instructional objectives also influenced CBET by offering clear guidance for sequencing learning outcomes and aligning them with assessment criteria. Mager and Bloom's focus on specificity and measurability supported the creation of behavioural objectives that could be translated into observable competencies thereby allowing for precise evaluation and consistent curriculum development.

These theoretical contributions converge in CBET's distinctive structure, which integrates performance-based assessment, individualized learning pathways, and an emphasis on transferable, job-relevant competencies. Importantly, while behaviourist influences provide a foundation for assessment and instructional design, constructivist and progressive elements ensure that learning is meaningful, contextualized, and learner-centred. As this discussion reveals, CBET is not a pedagogical trend without roots, it is deeply embedded in a range of educational traditions, each contributing to its form and function. Recognizing these theoretical

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underpinnings is essential for policymakers, educators, and practitioners who aim to implement CBET in ways that are not only effective but also contextually appropriate. This is particularly true in the Caribbean, where diverse educational legacies, institutional capacities, and socio-economic conditions shape the success or failure of educational reform.

Theoretical Underpinnings of TVET and Alignment with CBET

The overlap in theoretical influences suggests that TVET is inherently aligned with competency-based models. Both draw from behaviourist, constructivist, and cognitivist theories, though they emphasise different aspects of instructional design. Behaviourism frames learning as a response to external stimuli, reinforced through repetition and feedback. These principles underpin CBET's use of observable performance tasks and structured reinforcement. Cognitivism, by contrast, emphasizes the learner's internal processes, such as perception, memory, and reasoning. It views learning as an active, mental process shaped by prior knowledge and mental strategies. Constructivism, often treated as a branch of cognitivism, places learners at the centre of the learning process and asserts that knowledge is constructed through experience and social interaction. Learning is shaped by engagement with real-world contexts and mediated by cultural and social environments.

Guile and Unwin (2019) highlighted the diverse epistemological traditions that inform vocational education research. They emphasized the influence of Lave and Wenger's theory of situated learning, particularly the concept of communities of practice. This theory, rooted in social constructivism, views learning as a process of participation in authentic, real-life contexts. Vygotsky's social constructivism also reinforces this perspective, emphasizing dialogue, scaffolding, and collaborative problem-solving as mechanisms for learning. Stein (1998) synthesized the key principles of situated learning into four interrelated elements: content, context, community, and participation. Content refers to the knowledge and skills

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required for task performance; context involves the physical and cultural environment in which learning occurs; community reflects the social structures through which learners co-construct meaning; and participation emphasizes real-world engagement and problem-solving (p. 3). These principles are highly compatible with the workplace-embedded, outcomes-driven ethos of CBET.

Together, these theoretical insights affirm that CBET and TVET share a strong philosophical and pedagogical foundation. Both prioritize real-world application, learner-centred design, and the integration of knowledge, skills, and attitudes. As such, CBET is not merely compatible with TVET. It represents a logical and potentially transformative evolution of vocational education, especially in settings where education systems are seeking stronger alignment with labour market needs.

Comparison of Competency Based Approaches and Traditional Delivery of TVET

Competency-Based Education and Training (CBET) prioritizes the mastery of specific skills and competencies, ensuring that learners can apply their knowledge effectively in real-world contexts. This distinguishes CBET from traditional TVET systems, which often rely on fixed timeframes, standardized curricula, and theoretical examinations. In the competency-based model, learning is centered on what learners can do (competence), rather than solely on what they know (knowledge), as emphasized in traditional education.

Anane (2013) described CBET as an outcomes-based approach, developed in alignment with occupational standards defined by industry, and focused on equipping learners with the knowledge, skills, and attitudes necessary for success in their fields of employment. In contrast, traditional approaches often emphasize theoretical knowledge over practical competence. Harris and Hodge (2012, as cited in Okoye & Michael, 2015) similarly argued that CBET aims to help learners acquire knowledge and skills that enable them to perform tasks to a defined

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standard. Okoye and Michael (2015, citing Dubois & Rothwell, 2004) added that CBET is focused on both how well a learner must perform a task and under what conditions the task must be executed. Açıkgöz and Babadoğan (2021) also emphasized the priority given to measurable outcomes and learner-centered progression in CBET, whereby students advance upon demonstrating competency, rather than by time spent in class.

A number of key differences exist between the two approaches. As Anane (2013) highlighted, traditional education tends to be exam-driven and follows a rigid, time-bound, content-heavy syllabus, often delivered through deductive teaching methods. Learners are typically passive recipients of knowledge, and the approach is teacher-centered; the teacher is responsible for motivating learners and delivering content. Conversely, CBET employs ongoing, performance-based assessments that are embedded within the learning process. Training is delivered using inductive approaches that encourage critical thinking, reasoning, and reflective practice. Learners are expected to demonstrate industry-relevant knowledge, skills, and values in real-world contexts. The learning experience is flexible and learner-centered, allowing students to progress at their own pace, while instructors act as facilitators rather than traditional lecturers. Furthermore, CBET curricula are designed in consultation with industry stakeholders and based on national or regional occupational standards. This ensures that training is both relevant and responsive to labor market needs. Teachers and facilitators have the autonomy to develop learning programs tailored to these standards, using creative and applied methods of instruction.

Travers and McQuigge (2013, as cited in Okoye & Michael, 2015) identified two defining characteristics of CBET: it is learner-focused, offering flexibility in pacing, and outcomes-based, requiring learners to meet specified competencies before progressing. Açıkgöz and Babadoğan (2021) reinforced this perspective, highlighting that CBET's flexible

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learning pathways, individualized instruction, and performance-based assessments make it particularly valuable for diverse learners, including working professionals and students with varied academic backgrounds.

Compared to traditional TVET models, CBET places greater emphasis on flexibility, practical skill development, task performance, and learner autonomy making it more focused on learning than on teaching. In contrast, traditional TVET delivery remains more structured, theoretical, and examination oriented. This comparison underscores the rationale for adopting CBET in contexts where responsiveness to labor market demands and learner diversity are paramount. Sornson (2016, as cited in Preston, 2017) outlined several benefits of competency-based education for both students and teachers. For students, CBET provides a more personalized learning experience than traditional curriculum-driven models. Learners enjoy greater autonomy in charting their educational paths, with opportunities to engage in conventional classroom settings, informal work placements, or community-based learning activities. This model thus accommodates a variety of learning preferences and environments.

According to Sornson (2016), from a pedagogical perspective, teaching within the CBET framework centres on the attainment of behavioural competencies. This focus supports more varied and flexible teaching, learning, and assessment strategies tailored to individual learner needs. A key departure from the traditional system is that assessments in CBET are not tied to grade level or academic calendar; instead, learners are evaluated when they are ready to demonstrate mastery of a given competency. Another defining feature of CBET is its openness to diverse learning modalities. Competencies may be attained through formal instruction, experiential learning, or self-directed study, with the emphasis placed on demonstrated performance rather than the method of acquisition. In this regard, CBET departs from rigid pedagogical structures and grading norms. Açıkgöz and Babadoğan (2021) further emphasized

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that CBET's primary strength lies in its alignment with real-world application. By anchoring educational objectives to practical skill development, CBET enhances learners' readiness for the workforce and supports greater labour market alignment.

To further clarify the distinctions between competency-based education and training (CBET) and traditional TVET models, the following table provides a comparative overview across key dimensions, including pedagogy, assessment, curriculum development, and learner engagement. This comparison highlights the learner-centred, outcomes-driven orientation of CBET in contrast to the time-bound, content-focused nature of traditional delivery. These differences reinforce the rationale for CBET adoption in contexts seeking improved responsiveness to labour market needs and enhanced student competence.

Table 5

Comparison of Competency-Based and Traditional TVET Approaches

Dimension	Traditional TVET	Competency-Based TVET (CBET)
Curriculum Design	Fixed content-based syllabus, often time-bound and teacher-driven.	Based on occupational standards developed in consultation with industry stakeholders.
Teaching Approach	Deductive, teacher centered.	Inductive, student-centered; teachers serve as facilitators.
Focus of Learning	Emphasis on theoretical knowledge.	Emphasis on practical skills, performance, and application of knowledge.
Assessment Methods	Exam-driven, summative, scheduled at fixed times.	Ongoing, flexible, based on mastery of competencies; not bound by grade levels or time frames.
Learning Pace	Uniform pacing for all students, limited flexibility.	Flexible; learners progress at their own pace based on demonstrated competence.
Instructional Setting	Primarily formal classroom environments.	May include hybrid settings such as workplace or community-based learning.
Learner Autonomy	Limited; students follow fixed pathways and timelines.	High; learners have greater control over how, when, and where they learn.
Certification	Based on completion of coursework or time spent in training.	Based on verified achievement of clearly defined competencies and performance standards.

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Dimension	Traditional TVET	Competency-Based TVET (CBET)
Industry Alignment	Often loosely aligned with labor market needs.	Strong alignment: curriculum is demand-driven and developed in partnership with industry.
Inclusivity and Adaptability	Less responsive to learners' individual needs and backgrounds.	Designed to accommodate diverse learners, including adults and professionals with prior experience.

Note. Adapted from Anane (2013); Okoye & Michael (2015); Preston (2017); Açıkgöz & Babadoğan (2021); Sornson (2016, as cited in Preston, 2017).

While the pedagogical advantages of CBET are clear when contrasted with traditional TVET approaches, the persistent disconnect between training outcomes and labour market needs suggests that structural reforms alone are insufficient. A closer examination of the skills gap across the Caribbean helps to contextualize these educational challenges within broader socio-economic realities.

Skills Gap/Mismatch Within the Caribbean Region

This section begins by defining the concept of the skills gap, followed by an exploration of its causes and consequences within the Caribbean context. It then presents recommendations found in the literature for addressing or closing the gap. To reinforce the wider significance of the issue, perspectives from other global regions are also included, demonstrating that while the skills gap is particularly pressing in the Caribbean, it is also a global phenomenon.

The literature reviewed uses various terms to describe the disconnect between the qualifications or competencies held by the employable population and those required by employers. The International Labour Organization (ILO, 2019) refers to this phenomenon as a 'skills mismatch', defining it as a broad concept encompassing multiple forms of misalignment between the skills and qualifications demanded by employers and those available within the workforce. The ILO further categorizes skills mismatches into several types, including overqualification or underqualification, being over- or underskilled, possessing outdated skills,

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or working in fields unrelated to one's area of study. According to the ILO, the term skills mismatch is most often applied to employed individuals and firms actively seeking talent. When the focus shifts to employers' difficulties in recruiting, however, the literature differentiates between 'skills gaps' and 'skills shortages'. A skills gap arises when current workers are perceived to lack the competencies necessary to perform effectively in their roles, whereas a skills shortage refers to the lack of available qualified candidates to fill open positions.

Echoing similar distinctions, Daka et al. (2023) describe the situation in which there is a discrepancy between the qualifications or skills of the labour force and the expectations of the job market as a 'job mismatch'. According to Mwamba et al. (2021, as cited in Daka et al., 2023), such mismatches occur when the available workforce either lacks the skills required for existing jobs or possesses skills that do not align with job demands, whether insufficient or excessive. Daka et al. (2023) underscore the gravity of this issue, highlighting the far-reaching societal implications of persistent mismatches between education and employment.

Rikala et al. (2024) extended this discussion by examining the impact of skills gaps within the frameworks of Industry 4.0 and Industry 5.0. These paradigms highlight the ongoing digital transformation of the global economy. Drawing on the work of Ghobakhloo (2020), Karacay (2018), and Sung (2018) as discussed in their review, Industry 4.0 was described as the current phase of industrial development, characterized by the integration of advanced digital technologies such as automation and artificial intelligence. In contrast, Industry 5.0 builds on this foundation by emphasizing collaboration between humans and machines (Nahavandi, 2019, as cited in Rikala et al., 2024). To explore these dynamics, Rikala et al. (2024) conducted a systematic review of 40 international articles that investigated the causes and consequences of skills gaps. Based on this review, they proposed a synthesized definition

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of the concept. According to their findings, a skills gap refers to a discrepancy or mismatch between the skills required, demanded, or expected by employers and those possessed by the workforce (pp. 12–13).

This synthesized definition captures the essence of multiple terminologies; skills mismatch, skills shortage, job mismatch, and skills gap and is especially relevant to the Caribbean**,** where educational outcomes frequently fall short of industry demands. It is the definition that will be adopted throughout this study to examine the alignment (or misalignment) between workforce capabilities and labour market needs, both within the Caribbean and in relation to global trends.

Evidence of the skills gap in the Caribbean dates back over a decade. A World Bank (2007) report, which reviewed education and training policies across the Organization of Eastern Caribbean States (OECS), underscored a growing disconnect between education systems and labour market demands. It revealed that employers within the OECS faced persistent challenges in finding skilled workers to fill vacancies, despite periods of economic growth. At the same time, the population of low-skilled youth was increasing. The report also noted that many school-leavers, particularly those without post-secondary qualifications, lacked fundamental competencies in literacy, numeracy, information and communications technology (ICT), and essential life skills such as critical thinking, communication, and teamwork. Furthermore, where firms offered training opportunities, these tended to benefit already higher-skilled employees, thereby reinforcing the marginalization of lower-skilled workers.

Downes (2006), a professor of economics at the University of the West Indies, St. Augustine Campus, had earlier investigated labour market challenges across the English-speaking Caribbean from 1996 to 2006. He identified several pressing issues, including youth

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unemployment, skills mismatches between labour market needs and the outputs of education systems, low labour productivity, emigration of skilled workers (brain drain), and the absence of adequate labour market information. According to Downes, the skills mismatch directly contributed to youth unemployment, as employers across the OECS, Jamaica, Guyana, and Trinidad and Tobago reported difficulties in finding workers with basic literacy and numeracy skills, technical competencies, relevant experience, a strong work ethic, and positive attitudes toward employment.

Although these challenges were documented more than a decade ago, they remain stubbornly persistent today**,** suggesting that efforts to bridge the skills gap have not yielded the intended outcomes. In a World Bank blog post, Angel-Urdinola and Marchioni (2022) reiterated this concern, reporting that firms in Saint Lucia and Saint Vincent and the Grenadines continue to experience difficulty in filling job vacancies due to the unavailability of suitably qualified candidates. The Government of Saint Vincent and the Grenadines, along with the Project Coordinator of the Human Development Service Delivery Project (2021, as cited in Angel-Urdinola & Marchioni, 2022), highlighted the lack of requisite skills and qualifications, absence of soft skills, and limited relevant industry experience as key barriers to employment.

Prada and Rucci (2023) confirmed that these issues are not limited to the Eastern Caribbean but reflect broader trends across Latin America and the Caribbean (LAC). Their data pointed to a persistent and region-wide skills gap, exacerbated by structural issues in education and training systems. Similarly, Robertson and Paul (2023) conducted a survey across 11 Caribbean countries, collecting insights from Rotary Club members who are community leaders. Their findings further validated the existence of significant skills gaps, with respondents identifying shortages in basic literacy and numeracy, the absence of industry-recognized certifications (such as NVQs and CVQs in ICT and construction trades), poor

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communication skills, weak work ethics, limited interpersonal and soft skills, and a general lack of work experience. These studies construct a coherent narrative across time and geography. They reinforce the notion that the skills gap in the Caribbean is systemic, persistent, and multidimensional. The evidence suggests that despite repeated acknowledgment of the problem, substantial progress has been elusive, underscoring the urgent need for coordinated, evidence-based, and contextually grounded interventions in both education and workforce development.

Causes of skills gaps

To provide historical context and deepen understanding of the issue, literature from as early as 2006 has been reviewed alongside more recent analyses. This longitudinal approach validates contemporary findings by highlighting the enduring nature of the skills gap across time. Downes (2006) identified several labour market challenges in the English-speaking Caribbean, including skills mismatches, youth unemployment, low workforce productivity, and the emigration of skilled labour (brain drain). He attributed these issues to external pressures such as trade liberalization, advancements in information and communication technologies (ICT), increased integration of commodity and financial markets, and heightened regional security concerns at the time. According to Downes, these factors significantly impacted labour markets by disrupting traditional employment structures and placing greater demands on human capital, ultimately impeding productivity and economic growth.

Schwalje (2011) similarly highlighted globalization and rapid technological change as major contributors to the widening skills gap across Latin America and the Caribbean. He noted that the region's shift toward a more export-oriented economy between 2000 and 2009 increased the demand for a highly skilled labour force, a demand that far outpaced the capacity of the education system. Additional contributing factors included rising foreign direct

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investment (FDI), which introduced new technologies and heightened competition, the emergence of more flexible and innovation-driven work structures requiring advanced competencies, and insufficient investment by governments in training systems. He also cited population growth and shifting demographics as structural challenges that compounded the gap.

Contemporary analyses reaffirm the persistence of these issues. The International Labour Organization (ILO, 2019) attributed the continued relevance of the skills gap to a rapidly transforming labour market, driven largely by technological disruption and demographic shifts. These changes have created a misalignment between the skills required by employers and those produced by education and training systems, particularly where institutions struggle to keep pace with evolving industry needs. The World Bank, International Labour Organization, and UNESCO (2023) reinforced this point, referring to a "broken link" between technical and vocational education and training (TVET) institutions and employers. This disconnect limits the responsiveness of training providers to labour market signals and contributes to the production of graduates who are underprepared for existing jobs. Furthermore, as the demand for low-skilled labour declines, particularly in sectors undergoing automation or digitization, the problem becomes increasingly acute for individuals without access to upskilling opportunities. Another dimension of the skills gap is tied to the economic structures of Caribbean countries. Angel-Urdinola and Marchioni (2022) pointed to the region's economic dependence on tourism as a contributing factor, arguing that many Eastern Caribbean governments have tailored their workforce development strategies toward this dominant sector. Their findings are supported by the World Bank (n.d.), which noted that tourism contributes, on average, 39% of the OECS region's Gross Domestic Product (GDP) and 11% of its jobs (para. 3). This overreliance on a single sector has constrained the

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development of a diversified skills base, limiting investment in high-growth areas such as ICT, green technologies, and advanced manufacturing.

Angel-Urdinola and Marchioni (2022) also noted that this sectoral focus may have contributed to stagnation in higher education enrollment. For instance, they reported that only 42% of Saint Lucian students applied for higher education, and less than 10% of adults in the Eastern Caribbean pursued tertiary-level courses. In Saint Lucia, tertiary enrollment stood at just 57% in 2019 (para. 5). These statistics indicate a widespread underqualification of the working-age population, further entrenching the region's difficulty in meeting the skill demands of a modern, diversified economy. These findings suggest that the skills gap in the Caribbean is shaped not only by current economic dependencies but also by systemic underinvestment and limited access to post-secondary training. This evolving misalignment between labour supply and demand highlights the need for integrated reforms. Further compounding this challenge are the persistent inequalities in educational access and quality, as Cristia and Pulido (2020) have explored in their analysis of the region.

Cristia and Pulido (2020), in Chapter 7 of *The Inequality Crisis: Latin America and the Caribbean at the Crossroads*, explored the persistent inequalities in education across Latin America and the Caribbean and their contribution to the skills gap in the labour market. They argued that the region's skills gap is not solely the result of misalignment between education systems and labour market needs but is rooted in broader socioeconomic inequalities that shape educational access and outcomes. According to the authors, this gap emerges early in life, as children's socioeconomic backgrounds largely determine the quality of their early education. Children from wealthier or more educated households, or those living in affluent communities, typically have access to better schools, more qualified teachers, and greater learning resources. In contrast, those from marginalized communities face significant disadvantages, including

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weaker school infrastructure and under-resourced teaching, which limits their acquisition of foundational skills. Drawing on Busso and Hincapié (2017), Cristia and Pulido (2020) highlighted disparities in early childhood development across dimensions such as socioeconomic status, cognitive development, and language acquisition. These disparities become increasingly pronounced as children progress through the education system. Literacy and numeracy gaps are evident by the third grade and widen during adolescence, particularly with the addition of science-related competencies. The authors attributed this to the cumulative nature of skills acquisition whereby early disadvantages compound over time. As a result, learners from marginalized backgrounds are more likely to underperform relative to peers from higher-income communities, have a greater likelihood of dropping out of school, and are less likely to access tertiary education. This limits their acquisition of both technical and cognitive skills, resulting in unequal levels of labour market readiness.

UNESCO (2022) corroborated these findings, reporting that only 44.1% of students from marginalized backgrounds complete secondary education, compared to 84.1% of students from higher-income families (p. 7). Similarly, only 46.4% of students in rural areas complete upper secondary school, while the rate in urban areas stands at 66.6%. Even though access to tertiary education has expanded in many countries, UNESCO (2022) found that socioeconomic inequality in access to higher education actually widened between 2015 and 2020, with marginalized populations remaining at a disadvantage. Prada and Rucci (2023) further emphasized the structural nature of the problem, pointing to the high prevalence of informal employment in Latin America and the Caribbean, the widespread lack of basic literacy and numeracy, and low participation in tertiary education, noting that fewer than 20% of the population access higher education. These issues limit upward mobility and contribute to persistent labour market mismatches.

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The Association of Commonwealth Universities (ACU, 2024) also identified rapid technological change, including the proliferation of artificial intelligence, and demographic transitions as major contributors to the skills gap, particularly among young people in Commonwealth countries. The ACU (2024) warned that youth in the Commonwealth are at greater risk of being adversely affected by these developments than their peers in non-Commonwealth countries. They argue that this began in the 1980s (citing ILO, n.d.). Moreover, the report listed several "global megatrends" that heighten volatility and uncertainty in education and employment systems: accelerating climate change, disruptive technological innovations, evolving global value chains, demographic changes, urbanization, global conflicts, and persistent inequality (p. 18). These trends further exacerbate the misalignment between the skills supplied by education systems and those demanded by industry.

Beuermann and Sierra (2024) reinforced the view that the Caribbean region continues to struggle with skills mismatches. They outlined several contributing factors, particularly the region's inability to produce a workforce equipped with the competencies required by modern industries. Their analysis supports the conclusions of several previously discussed authors, including Downes (2006), Schwalje (2011), the ILO (2019), and the ACU (2024), who argue that one of the primary underlying drivers of the skills gap is the unrelenting pace of global technological innovation. These rapid advancements generate ever-evolving skill demands that the education and training sectors struggle to meet.

Using data from the 2020 Innovation, Firm Performance, and Gender (IFPG) Survey, Beuermann and Sierra (2024) noted that, among 17 constraints reported by Caribbean businesses, the mismatch between workforce capabilities and educational outcomes ranked third. A comparison of the same constraints over a ten-year period (2010 to 2020) revealed that perceptions of skills mismatch rose significantly, from 36.2% in 2010 to 59.7% in 2020 (p. 62).

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The authors proposed two primary explanations for this trend. First, educational institutions may not be delivering the quality or type of training aligned with workplace realities. Curricula in many institutions, they argue, fail to reflect evolving industry demands. Second, the growing mismatch may stem from an actual shortage of skilled workers, caused by the emigration of qualified individuals (brain drain) or structural changes within industries that have transformed job requirements.

Both recent and historical literature affirm that the causes of the skills gap in the Caribbean are wide-ranging and interrelated. They include entrenched socioeconomic inequality, globalization, brain drain, inadequate alignment between education and labour markets, insufficient investment in training systems, and the disruptive impact of emerging technologies. These complex and compounding factors highlight the urgent need for multifaceted solutions that address both educational equity and industry responsiveness.

Citing the 2020 IFPG Survey, Beuermann and Sierra (2024, p. 64) indicated that most firms participating in the study attributed the skills shortage primarily to deficiencies within the education and training sector. Specifically, 64.2% of firms identified the mismatch between educational outcomes and industry needs as the main source of the shortage. In addition, 52% reported that an insufficient number of people were being trained, and 51.3% pointed to the failure of educational and training institutions to equip learners with essential personal and soft skills. By contrast, only 25.7% and 18.4% of respondents perceived emigration and internal mobility of professionals within the economy, respectively, as significant contributors to the shortage. Even fewer attributed the skills shortage to institutional factors such as legal regulations (27.3%), high expectations from new hires (6.1%), or other miscellaneous causes (0.8%). Although emigration was not considered the leading cause by most firms, Beuermann and Sierra (2024) provided compelling evidence supporting its significant role in exacerbating

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the skills gap in the Caribbean. Drawing on the work of Docquier and Marfouk (2005) and Mishra (2006), who analyzed data from the 2020 census of OECD countries, the authors reported that Caribbean emigrants tend to be highly educated. On average, only 6% of emigrants from the region had attained education up to the primary level, while 34% and 68% had completed secondary and tertiary education, respectively (as cited in Beuermann & Sierra, 2024, p. 74). Their own analysis of the 2018 U.S. Census Bureau's American Community Survey corroborated these findings. With the exception of migrants from Saint Vincent and the Grenadines, Guyana, and Dominica, over 50% of Caribbean migrants in the United States had attained tertiary-level education. The Bahamas and Saint Lucia had the highest proportions, with 62.8% and 58.6% of their emigrants holding tertiary qualifications, respectively. These were followed by Trinidad and Tobago (56.1%), Barbados (54.4%), Belize and Saint Kitts and Nevis (54.0%), Antigua and Barbuda (52.5%), Grenada (51.9%), and Jamaica (51.8%).

To further demonstrate the magnitude of brain drain, Beuermann and Sierra (2024) compared the data for Jamaica and Trinidad and Tobago with their respective 2011 national censuses. The results revealed that only 8% of persons aged 25 and over in Jamaica, and 19% in Trinidad and Tobago, reported having attained tertiary education while residing in their home countries. When these figures were compared with those for Caribbean migrants in the United States, the authors found a stark disparity. For example, only 21.1% of Mexican migrants in the U.S., despite Mexico being the country with the highest number of migrants to the United States, had completed tertiary education. The average for Caribbean migrants stood significantly higher at 52.3% (Beuermann & Sierra, 2024, p. 72). This comparison provided, in their view, compelling evidence of the disproportionate loss of highly educated individuals from the Caribbean labour market. While Beuermann and Sierra (2024) did not use their analysis of labour supply deficits directly to support the argument concerning emigration, their

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findings further reinforce its contribution to the region's skills gap. As discussed in more detail in the recommendations section of their report, the authors identified a regional labour deficit of 32% for workers with tertiary-level qualifications, in contrast to an oversupply of workers with only primary (17%) or secondary (15%) education. When this labour market imbalance is considered alongside the finding that 52.3% of Caribbean emigrants in the United States possess tertiary education, the implication is clear: emigration of highly educated individuals is a major factor contributing to the skills shortage in the region. These data illustrate that while institutional and educational shortcomings remain the most commonly cited causes of the skills gap, international emigration plays a significant and perhaps underacknowledged role. The loss of highly educated workers to more developed countries not only undermines local efforts to meet the growing demand for specialized skills but also widens the gap between the supply of qualified labour and the dynamic needs of modern Caribbean economies.

While the Caribbean's challenges are acute, the skills gap is not unique to the region. It is a global phenomenon that also affects other developing and even developed economies**.** Daka et al. (2023), drawing on literature from various countries published after 2020, focused on the African context and categorized the causes of the skills gap into three overarching domains: socioeconomic, educational, and employment-related factors. Among the socioeconomic causes of the skills gap, geographic distance between areas of residence and available jobs was highlighted as a significant constraint. In many cases, even when graduates are qualified, they may be unable or unwilling to relocate or undertake long commutes, thereby limiting the practical value of their education. High national unemployment levels also play a role, as the availability and diversity of job opportunities often fail to match the skills and expectations of the workforce. Educational factors primarily relate to the types of disciplines pursued by students. Jonbekova (2015, as cited in Daka et al., 2023) observed that graduates from

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specialized, industry-oriented fields such as science and technology, tend to experience lower rates of skills mismatch compared to those from more generalized academic disciplines like the social sciences. This underscores the need for educational systems to not only respond to aggregate labour market demands but also to promote enrollment in sectors with specific and evolving skill requirements. In terms of employment-related factors, Jonbekova (2015, as cited in Daka et al., 2023) identified four primary issues. First, there is often a disconnect between the competencies acquired through education and those expected by employers, with many businesses requiring graduates to arrive job-ready with minimal need for on-the-job training. Second, there is a growing emphasis on transferable personal and soft skills such as communication, teamwork, and adaptability that are frequently underdeveloped in conventional academic programs. Third, rapid technological advancement is contributing to skill obsolescence in some sectors and increased demand in others, highlighting the urgency of curriculum adaptation. Finally, the level of job specialization was seen to influence the likelihood of a mismatch. For instance, roles in highly technical fields such as medicine tend to be more resilient to mismatches, while jobs requiring broad, generalist skills such as those in hospitality are more vulnerable to rapid change and misalignment.Rikala et al. (2024) reinforced these findings through a global review of 40 academic articles, identifying a set of "megatrends" that are continuously reshaping labour markets and skill requirements. These include digitalization, globalization, demographic shifts, and the green transformation. According to Rikala et al. (2024), these forces create ongoing changes across multiple dimensions, including economic, sociopolitical, environmental, and temporal factors, resulting in persistent misalignment among the three main stakeholders in the labour market: employers, employees, and educational or training institutions. Each group operates with different

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timelines and priorities, which, without coordinated adjustment, contributes to the deepening of the skills gap.

As this analysis suggests, while specific causes may vary by region or context, the fundamental drivers of the global skills gap remain strikingly consistent. Central among these is the inability of education and training systems to adapt quickly enough to evolving industry requirements, particularly in response to the rapid pace of technological innovation. Whether in the Caribbean, Africa, or other regions, the misalignment between educational outputs and labour market needs reflects a systemic lag. Overcoming this gap will require agile curriculum reform, stronger partnerships between education providers and industry, and more equitable access to skill-building opportunities across all sectors of society.

Impacts of the Skills Gap

The literature reviewed highlights several serious and potentially long-lasting consequences of the persistent skills shortage affecting both the Caribbean region and the broader global context. These impacts extend across economic, labour market, and socio-demographic domains, threatening the region's development trajectory if left unaddressed. Skills mismatches also have significant wage-related consequences. Overqualified employees may experience wage penalties, earning less than peers with similar qualifications who are employed in roles better aligned with their skills. According to the ILO (2019), underqualified employees may earn wages that exceed those of individuals with comparable educational backgrounds. These disparities often result in reduced job and life satisfaction, decreased employee engagement and performance, and ultimately, higher turnover rates. According to the ILO (2019), high turnover, in turn, increases recruitment and training costs for firms placing additional strain on already resource-constrained organizations. Moreover, the underutilization of human capital, as reflected in mismatches between worker qualifications and job

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requirements, signals inefficiencies within the labour market that can hinder long-term economic growth. These inefficiencies not only impact individual firms but also slow national economic transformation by limiting innovation, adaptability, and productive capacity.

From a broader societal perspective, skills mismatches deepen socioeconomic disparities. The ILO (2019) warned that skill-related barriers to employment disproportionately affect vulnerable demographic groups, particularly women and youth from low-income communities, reinforcing patterns of exclusion and inequality. Angel-Urdinola and Marchioni (2022) similarly reported that firms in Saint Lucia and Saint Vincent and the Grenadines identified the absence of a suitably trained and skilled workforce as a critical barrier to national competitiveness. These findings underscore the macroeconomic implications of the skills gap, where the limited availability of appropriately trained workers undermines the ability of firms to innovate, expand, and compete effectively in the global marketplace.

Cristia and Pulido (2020) echoed these concerns, emphasizing that the existence of a skills gap exacerbates pre-existing socioeconomic inequalities. Within Latin America and the Caribbean, the employable population from lower socioeconomic strata often lacks the qualifications required for decent employment. As a result, they are disproportionately limited to low-paying jobs, perpetuating a cycle of poverty and educational disadvantage. This cycle begins in early childhood and extends across generations, as children in these households are often restricted in the type and quality of educational exposure they receive. As educational gaps widen throughout the school system, dropout rates tend to increase among these groups, reinforcing long-term patterns of inequality. Busso and Hincapié (2017, as cited in Cristia & Pulido, 2020) found that in the 11 Latin American and Caribbean countries they studied, families in the highest income brackets spent 25 times more on the education of their children (ages 6–23) than families in the lowest income groups. Furthermore, the amount of time

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devoted to developmental activities at home doubled in households where mothers had completed secondary education, compared to households where mothers had not completed primary school. These disparities provide children in higher-income families with early and lasting advantages. UNESCO (2022) supported these findings, concluding that socioeconomic status was the principal factor contributing to learning inequalities across the region. In its report assessing progress toward Sustainable Development Goal 4 (SDG 4), UNESCO warned that such inequalities severely undermine the region's capacity to ensure equal access to quality education for all. The report also noted that the COVID-19 pandemic reversed much of the progress made in recent years, widening educational disparities and eroding gains in equity and access.

The skills gap also carries significant implications for labour productivity and overall quality of life. Prada and Rucci (2023) asserted that sustained economic growth in more developed countries has largely been driven by improvements in labour productivity, which have been made possible by the availability of a well-trained workforce aligned with the evolving needs of employers. Their analysis suggests that in the absence of such a skilled workforce, the Caribbean region risks lagging behind in both productivity and economic transformation. Moreover, skilled workers typically benefit from access to higher-quality jobs, which in turn enhances well-being. This implies that the skills gap not only affects economic indicators but also contributes to disparities in life outcomes, particularly for those excluded from formal, well-compensated employment. The World Bank, ILO, and UNESCO (2023) further emphasized that the skills gap poses a major obstacle to firm productivity and economic development in low- and middle-income countries. As businesses expand, the lack of suitably skilled workers becomes increasingly detrimental to operational efficiency and scalability. Firms are unable to innovate or adapt effectively without the human capital required to support

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growth, thereby limiting economic diversification and regional competitiveness. Collectively, these findings point to a critical conclusion. One of the most significant consequences of the global skills gap, particularly in the Caribbean, is its dampening effect on productivity and economic growth. Addressing this challenge is not merely a matter of workforce development; it is also a prerequisite for advancing broader goals related to poverty reduction, social equity, and sustainable development.

Recommendations for addressing the skills gaps

As a means of addressing both the direct and indirect impacts of the skills gap, and ultimately narrowing it, numerous recommendations have emerged across the literature reviewed in this study. Notably, many of the same suggestions made nearly two decades ago continue to appear in current research, highlighting the complexity and multifaceted nature of this persistent issue. The World Bank (2007) emphasized the urgent need for systematic reform of education systems in the Caribbean to ensure their relevance in preparing learners for the labour market. Among its key recommendations were efforts to improve the quality of and expand access to education, particularly by ensuring that graduates of primary and secondary schools attain foundational competencies in literacy, numeracy, information and communication technology (ICT), and essential life skills. In addition, the report highlighted the importance of closer collaboration between the private sector and educational institutions. Such collaboration, particularly through public–private partnerships (PPPs), was seen as a mechanism to support programme development and ease the school-to-work transition. Proposed strategies included expanding youth training initiatives, potentially led and financed by private firms, that integrate technical and life skills training with internship opportunities in real-world settings.

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More recent studies reinforce these calls. Angel-Urdinola and Marchioni (2022), for instance, recommended diversifying and increasing the number of training programmes that lead to higher-level TVET and academic qualifications, including advanced Caribbean Vocational Qualifications (CVQs), within Eastern Caribbean training institutions. Robertson and Paul (2023) echoed the need for expanded TVET offerings, though without specifying qualification levels. Angel-Urdinola and Marchioni (2022) also called for the provision of financial assistance by governments to support students pursuing tertiary education, continued investment in digital infrastructure to expand access to remote learning, and the integration of digital literacy into national curricula. These measures, they argued, are vital to ensuring that Caribbean citizens are adequately prepared for the demands of a modern, increasingly digital labour market.

Complementing these recommendations, Prada and Rucci (2023) emphasized the importance of expanding collaboration between public and private sectors. They highlighted the role of the Inter-American Development Bank (IDB) in partnering with private sector actors to support reforms in skills development systems across the region. Rikala et al. (2024) similarly underscored the value of sustained, multilevel stakeholder collaboration. They argued that the complexity of the skills gap precludes any single or uniform solution and instead requires a coordinated, inclusive approach. This includes fostering a shared recognition among governments, employers, educational institutions, and learners of the importance of developing job-relevant competencies to meet the demands of a rapidly changing world. The authors also proposed a cultural shift in how education and training are perceived, encouraging individuals to assume greater personal responsibility for their own skills development.

This call for perceptual and cultural change was supported by Robertson and Paul (2023), who argued that cultivating a more positive societal view of vocational education is

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critical to addressing the skills gap. Similarly, Null et al. (2017, as cited in ILO, 2019) recommended challenging negative public perceptions of TVET as a means of improving enrolment and engagement. Rikala et al. (2024) further emphasized the importance of sustained engagement among all stakeholder groups, including employers, educators, policymakers, and learners, in order to better understand their diverse needs and expectations. They argued that clearly defined roles and responsibilities are essential for effective collaboration around skills identification, training delivery, and workforce reskilling and upskilling. Moreover, they cautioned that strategic decisions must be informed by rigorous research and robust evidence to ensure programme relevance, efficiency, and sustainability.

The need for stronger data systems and evidence-based policymaking was echoed across multiple sources. The ILO (2019) strongly advocated for policy interventions particularly in low- and middle-income countries, to be grounded in high-quality research and empirical evidence. Robertson and Paul (2023) supported this recommendation by calling for the development of a regional employment database to facilitate more accurate tracking of labour market trends. McGuinness et al. (2016, as cited in ILO, 2019) likewise recommended the creation of comprehensive labour market information systems. They argued that such systems would reduce job search costs, support more efficient job matching, and ultimately improve employment outcomes. In a similar vein, the World Bank, ILO, and UNESCO (2023) called for the establishment of “robust information and evaluation systems” tailored to the realities of low- and middle-income countries (p. 24). These systems would enable the regular collection, analysis, and use of relevant data to guide programme design, policy formulation, and performance monitoring. The authors emphasized that strong data systems are essential to improving programme targeting, enhancing responsiveness, and ensuring that skills development initiatives are aligned with both current and future labour market needs.

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Another critical area of reform involves enhancing curriculum relevance through sustained public–private collaboration. Beuermann et al. (2024) strongly endorsed the expansion of such partnerships to improve what they defined as “quality education”, that is, education that remains responsive to the evolving needs of industry. They recommended continuous dialogue between employers and the education and training sector to ensure that programmes remain up to date with technological and labour market shifts. This recommendation is particularly salient in the Caribbean context, where slow and bureaucratic curriculum reform processes frequently limit the capacity of education systems to respond to dynamic industry demands. To support their position, Beuermann et al. (2024) analyzed data from several regional sources, including the 2013 Labour Force Surveys of The Bahamas, Barbados, Jamaica, and Trinidad and Tobago; the 2014 Productivity, Technology, and Innovation (PROTEqIN) Survey; and the 2022 Suriname Survey of Living Conditions. Their findings revealed a significant mismatch between educational attainment and labour market demand across the region. Specifically, they observed an oversupply of workers with only primary and secondary education and a corresponding deficit in tertiary-level qualifications. Labour demand for workers with only primary education stood at 15%, while supply was at 32%, indicating an oversupply of 17%. For secondary education, demand was 39% and supply was 54%, yielding a 15% surplus. In contrast, tertiary education showed the greatest imbalance: labour demand was 46%, but the available supply was only 14%, resulting in a 32% deficit.

These findings lend further weight to earlier recommendations by Angel-Urdinola and Marchioni (2022), who advocated for expanding access to higher-level TVET and academic programmes throughout the Caribbean. Similar calls were echoed by the ILO (2019), which recommended improving the quality and relevance of tertiary education in middle-income countries. For lower-income contexts, the ILO (2019) advised prioritizing expanded access to

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both secondary education and TVET, viewing these levels as critical platforms for developing the foundational and occupational skills needed to reduce workforce underqualification. To support this, the ILO (2019), proposed a suite of supportive measures, including conditional cash transfers for low-income families (citing WEF, 2014), expanded online course offerings, improved access to internet and digital devices, and targeted digital skills training particularly for disadvantaged households. These recommendations were reiterated by Angel-Urdinola and Marchioni (2022), who also emphasized financial incentives for tertiary-level studies, improved infrastructure for remote learning, and digital literacy initiatives tailored to marginalized populations.

In addition to expanding access and improving quality, several authors have called for greater institutional autonomy to enable more responsive curriculum development. The Association of Commonwealth Universities (ACU, 2024) argued that higher education institutions should be granted the flexibility to design curricula that integrate essential competencies such as critical thinking, entrepreneurship, and social responsibility. These personal and life skills are seen as increasingly vital in a rapidly changing global labour market. The ACU emphasized that such flexibility would allow institutions to more effectively respond to shifting labour market demands and emerging sectoral priorities. The World Bank, ILO, and UNESCO (2023) expressed similar views, noting the importance of increasing institutional autonomy particularly among TVET providers in low- and middle-income countries. However, they emphasized that this autonomy must be accompanied by stronger accountability mechanisms. Institutions must not only demonstrate sound use of public resources but also be held accountable for the quality and relevance of the educational outcomes they deliver.

Calls for stronger collaboration between higher education and industry were further echoed by Daka et al. (2023), who emphasized the need for ongoing, structured engagement

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between these sectors to ensure curriculum alignment with evolving skill demands. They argued that institutions of higher learning must not operate in isolation but should instead work closely with industry stakeholders to ensure their programmes remain relevant and demand driven. In practical terms, this could include integrating internships, apprenticeships, and other forms of workplace learning into curricula to bridge the gap between theoretical instruction and occupational realities. Changwe, Mwanza, Daka, and Ng'onomo (2023, as cited in Daka et al., 2023) supported this approach, advocating for labour market-informed programme development and sustained industry collaboration. They stressed that training programmes must be built on thorough research and continuous dialogue with employers to ensure that education systems align strategically with regional and national development goals. Beuermann et al. (2024) further recommended increasing private sector participation in skills development through initiatives such as on-the-job training, apprenticeships, and corporate training programmes. These activities form part of a broader strategy to deepen public–private partnerships, which are essential to aligning training provision with industry needs. The authors also called for the implementation of incentive mechanisms to encourage collaboration between tertiary institutions and the private sector, thereby promoting sustained industry engagement in both curriculum development and the delivery of training.

In addition to promoting collaboration, Beuermann et al. (2024) highlighted the importance of upgrading both the physical and human resource infrastructure of the education sector. They advocated for targeted merit-based scholarships to support graduate-level study in national priority areas, particularly fields where labour shortages are emerging. These initiatives, they argued, would not only strengthen the domestic labour supply but also contribute to national development through the cultivation of specialized, high-demand skills.

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The ILO (2019) echoed these recommendations, emphasizing that employers play a pivotal role in maintaining skills relevance by offering structured workplace training, refining recruitment practices, and investing in the ongoing upskilling of their workforce. The ILO (2019) also recommended financial incentives for firms that actively support such initiatives, especially those that recruit and train recent graduates, thereby helping to facilitate their transition into productive employment. Daka et al. (2023) reinforced this perspective, highlighting the need for improved recruitment and onboarding practices among employers. They proposed the adoption of performance-based assessments and psychometric tools to more effectively evaluate the suitability of job candidates. Furthermore, they called for the institutionalization of structured induction training programmes, which could help close the gap between graduates' theoretical qualifications and the specific skills demanded in real workplace environments. Recognizing that many individuals acquire valuable skills outside of formal education systems, the ILO (2019) advocated for the formal recognition of informal and non-formal learning. The development of certification frameworks to validate such skills would allow individuals, particularly those working in informal sectors or without academic credentials, to receive formal recognition of their competencies. This, in turn, would improve labour force statistics, better align policy with actual workforce capabilities, and promote more inclusive labour market participation.

Technical and vocational education and training (TVET) remains a key mechanism for developing employable skills and promoting workforce inclusion. Lange et al. (2020) underscored that TVET’s structure, which focuses on job-relevant knowledge, practical competencies, and professional attitudes, makes it especially well suited for addressing employability challenges. Similarly, the World Bank, ILO, and UNESCO (2023) noted that TVET has the potential to deliver the critical skills needed in a rapidly transforming global

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economy. However, realizing this potential requires significant modernization of TVET systems. Traditional models, which continue to dominate many government-run institutions across the region, often fall short of labour market expectations. The World Bank et al. (2023) argued that such models must give way to competency-based approaches, which prioritize demonstrable skills, job relevance, and flexible, responsive training delivery. A well-functioning TVET system, properly aligned with national qualifications frameworks and designed in collaboration with industry, can serve as a cornerstone for closing the skills gap and fostering inclusive, sustainable economic growth.

Need for Dynamic Competency-Based Approaches to TVET

As highlighted in the preceding sections, the persistence of skills mismatches in the Caribbean and Latin America despite decades of policy reform and investment, reveals deep-seated structural issues in how technical and vocational education and training (TVET) is conceptualized and delivered. Addressing these gaps requires more than isolated initiatives; it calls for a fundamental rethinking of the design, content, and responsiveness of TVET programmes. This section explores the rationale for adopting dynamic competency-based education and training (CBET) approaches as a pathway to improving TVET quality, relevance, and alignment with labour market needs.

The disconnect between TVET institutions and industry has long been recognized in the literature as a central factor contributing to the skills gap, the misalignment between the competencies held by graduates and those required by employers. Research spanning from 2006 to the present confirms that this disjunction is not unique to the Caribbean but is a global phenomenon that continues to undermine the effectiveness of vocational training systems.

If TVET is to fulfil its potential as a vehicle for sustainable development by promoting decent work, lifelong learning and inclusive economic growth in line with Sustainable

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Development Goal 4 (SDG 4), then its delivery must be re-examined. The World Bank, ILO, and UNESCO (2023) referred to this latent potential as the "TVET promise." Yet this promise remains unrealized in many low- and middle-income countries due to a constellation of systemic constraints, including underprepared learners and trainers, outdated infrastructure, weak employer engagement, fragmented governance, and poor-quality data systems.

Among the most pressing concerns is the need for TVET programmes that are flexible, modular, and responsive to the changing needs of employers and learners alike. The nature of TVET disciplines, which often emphasize practical, hands-on skills makes CBET a particularly well-suited pedagogical framework. Unlike traditional education, which frequently prioritizes theoretical knowledge and rigid progression structures, CBET focuses on what learners can *do* with what they know. This alignment between education and real-world application is fundamental to preparing graduates for the workplace. Odewumi and Dekom (2020) observed that CBET supports employability because it accommodates the diverse academic abilities and learning needs of trainees. It reduces emphasis on formal academic credentials, fosters parity with traditional academic qualifications, and enables the use of clearly defined performance standards and flexible, modular certification. Wahba (2019, as cited in Odewumi & Dekom, 2020) also underscored the benefits of modularity in CBET, which allows learners to earn certification in stages, promoting learner-centered progression and adaptability to technological and labour market shifts. Açıkgöz and Babadoğan (2021) further highlighted the strength of CBET in aligning educational outcomes with job market expectations. By focusing on measurable competencies and industry-defined standards, CBET reduces the education–employment divide and better prepares students for real-world roles. Manase and Nyamu (2024) study in Kenya involving 200 TVET trainees, 50 trainers, and 30 industry partner supported this. Their findings revealed a strong correlation between curriculum responsiveness,

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trainer qualifications, and employer engagement, and the employability of graduates. Notably, 75 % of the differences in graduate employability skills could be attributed to a combination of (1) dynamic CBET curricula, (2) trainer expertise and industry experience, and (3) active industry partnerships. The study found that internships and workplace-based learning opportunities were particularly effective in equipping students with communication, problem-solving, and organizational skills.

While the literature does not provide a singular definition of "dynamic CBET," the term is commonly used to describe models that are modular, adaptable, and continuously updated. These models incorporate regular curriculum reviews, employer input, and evolving assessment strategies to ensure alignment with changing economic needs and learner expectations. This emphasis on continuous improvement is supported by broader research. A meta-analysis by Lamb and Huo (2022, as cited in Manase & Nyamu, 2024) reviewed 45 studies and confirmed that institutions using dynamic CBET models produced graduates with stronger work-readiness. Similarly, Nguyen, Do, and Pham (2021, as cited in Manase & Nyamu, 2024) reported improved job-specific and soft skills among Vietnamese TVET graduates. Arslan and Demir (2023, as cited in Manase & Nyamu, 2024) found enhanced critical thinking and innovation capabilities in Turkey, while Raza and Khan (2022, as cited in Manase & Nyamu, 2024) documented improved technical and interpersonal competencies in Pakistan. In Australia, Baker and Brown (2021, as cited in Manase & Nyamu, 2024) linked dynamic CBET implementation to heightened problem-solving and adaptability. Together, these findings underscore the importance of a CBET model that is not only competency-focused but also agile that is, one that can evolve alongside technological innovations, labour market fluctuations, and shifting learner needs. Such an approach holds particular relevance

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for the Caribbean region, where efforts to modernize TVET systems must be guided by a commitment to responsiveness, flexibility, and collaboration with industry.

Trainer qualifications also play a vital role in shaping the employability outcomes of TVET graduates. Manase and Nyamu (2024) cited numerous studies that confirmed a positive correlation between the qualifications and experience of instructors and the success of trainees in securing and thriving in employment. For example, Galli-Debicella and Mori (2020, as cited in Manase & Nyamu, 2024) found that higher trainer qualifications were associated with improved graduate employability, while Johnson and Schmidt (2019, as cited in Manase & Nyamu, 2024) reported a similar link between formal teacher certification and the acquisition of job-relevant skills. Industry experience among instructors was another influential factor. Lee and Kim (2022, as cited in Manase & Nyamu, 2024) showed that trainees whose instructors had relevant professional backgrounds performed better in occupation-specific areas. Mason and McLaren (2023, as cited in Manase & Nyamu, 2024) further demonstrated that trainers with digital literacy were more effective at equipping students with essential workplace technologies, thereby enhancing their workforce readiness. In addition, Chen and Zhang (2021, as cited in Manase & Nyamu, 2024) emphasized the importance of continuous professional development (CPD), noting that trainers who engaged in CPD were more likely to deliver current and relevant skills aligned with industry needs. Pedagogical skill also matters. O'Connor and Wallace (2020, as cited in Manase & Nyamu, 2024) underscored that teaching proficiency including the ability to design engaging learning experiences and deliver content effectively, contributes meaningfully to learner success. These findings affirm that effective CBET delivery requires a balance of technical competence, industry experience, and strong instructional capacity. They also highlight the urgent need for ongoing investment in

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professional development programmes to ensure that TVET educators can keep pace with the dynamic skills landscape.

Beyond educator qualifications, institutional collaboration with industry has emerged as a strategic imperative for enhancing the relevance and effectiveness of TVET. The World Bank, ILO, and UNESCO (2023), drawing on ILO (2020), emphasized that employer engagement must become central within the broader TVET ecosystem, which includes training providers, government bodies, employers, and community stakeholders. Effective partnerships between industry and TVET institutions help ensure that training content, assessment methods, and delivery modalities are directly aligned with the requirements of the workplace. The literature cited by Manase and Nyamu (2024) reinforced this recommendation. Studies by Adams and Osborne (2020, as cited in Manase & Nyamu, 2024) and Garcia and Martinez (2022, as cited in Manase & Nyamu, 2024) found that graduate employability outcomes improved significantly when curricula were co-developed with industry partners. These partnerships helped shape training programs to better reflect current job roles, workplace technologies, and industry expectations. Additionally, Chen and Zhang (2023, as cited in Manase & Nyamu, 2024) highlighted the value of mentorship programmes that paired students with industry professionals. These initiatives were found to enhance career planning, networking, and professional etiquette. Similarly, Nolan and Wilson (2021, as cited in Manase & Nyamu, 2024) reported that industry-led workshops improved students' soft skills, including teamwork, communication, and time management.

These findings support a consistent conclusion: employability outcomes improve most when training institutions work closely with employers, instructors have relevant qualifications and experience, and curricula are continuously revised to reflect labour market demands. Nevertheless, engagement with industry remains a persistent challenge in many low- and

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middle-income countries. According to the World Bank et al. (2023, citing World Bank 2017; ILO 2020), collaboration between TVET institutions and the employment sector is often hindered by structural and cultural barriers. These include limited awareness of potential partnerships, uncertainty about how to implement such collaborations, financial constraints, and skepticism regarding the return on investment. Yet the necessity of employer engagement in driving curriculum relevance and reform remains clear. UNESCO-UNEVOC (2020) emphasized the importance of industry participation in shaping new qualifications and competencies (NQCs) which refer the constantly evolving mix of knowledge, skills, and attitudes demanded by the modern workforce. As technological innovation, globalization, and sustainability priorities reshape job roles and workplace requirements, the development of responsive and adaptable training systems must be undertaken in concert with employers.

Together, the findings from Manase and Nyamu (2024) and the broader literature affirm that realizing the full potential of CBET requires a dynamic, interdependent model: one in which educators are supported through continuous training, employers co-create and validate curricula, and institutions are empowered to evolve with labour market demands. Without this collaborative approach, TVET systems risk continuing to fall short of their transformative promise. One model that captures this collaborative imperative is UNESCO-UNEVOC's New Qualifications and Competencies (NQC) ecosystem framework, which provides a structured approach to aligning workforce needs with TVET delivery.

Aligning Skills Demand and Supply

UNESCO-UNEVOC (2020) proposed a two-sided framework referred to as the NQC ecosystem to explain how new qualifications and competencies (NQCs) are shaped and operationalized. On the demand side are labour market, economic, technological, and

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sociopolitical trends that shape skill expectations. The supply side involves the incorporation of these competencies into formal TVET systems through structured training and assessment.

The link between these two sides is sustained through the interaction of stakeholders operating at three levels: macro-level governance actors such as ministries and regulatory bodies; meso-level advocacy groups such as trade unions, employer federations, and NGOs; and micro-level training institutions and delivery agents. According to UNESCO-UNEVOC (2021), the successful identification, integration, and implementation of NQCs depend on consistent coordination across these levels. When such coordination exists, the system can support a dynamic model of TVET, one in which the training supply remains responsive to shifts in market demand. This requires that curricula be flexible, regularly updated, and capable of incorporating emerging learning outcomes and diverse delivery methods. As global labour markets continue to undergo rapid transformation, and as TVET systems are called upon to address increasingly complex social and economic challenges, the establishment of institutional mechanisms for the continuous identification and integration of NQCs has become imperative. Achieving this requires not only procedural and structural reform, but also a fundamental shift in mindset toward viewing TVET as a dynamic, collaborative, and innovation-driven system.

One critical prerequisite for the effective identification of new qualifications and competencies is sustained collaboration between industry stakeholders and TVET regulatory bodies. UNESCO-UNEVOC (2021, Vol. 1) observed that the entity responsible for identifying NQCs varies by national and sectoral context. In the Caribbean, national TVET agencies such as the Saint Lucia Council for TVET (SLCTVET), the National Training Agency in Trinidad and Tobago, the Grenada National Training Agency, the HEART Trust in Jamaica, and the TVET Council of Barbados, typically lead this process, consulting with industry

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representatives to determine sector-specific priorities. Yet despite their central role, many of these bodies face persistent challenges in establishing robust systems for identifying NQCs. The first challenge, as highlighted by UNESCO (2020, as cited in UNESCO-UNEVOC, 2021, Vol. 1), is the lack of accurate and comprehensive labour market data especially in emerging or niche sectors influenced by rapid technological shifts. These sectors often remain poorly understood, complicating the process of forecasting skill demands and designing appropriate competencies. The second challenge is more cultural and institutional. In many low- and middle-income countries, including those in the Caribbean, workforce planning has historically been a top-down process, with governments rather than employers, dictating priority areas for skill development. Moving toward a genuinely consultative and collaborative model requires not only institutional reform but also a significant cultural shift. This shift must involve inclusive engagement, especially of underrepresented sectors, and encourage employers to look beyond immediate hiring needs to consider long-term industry trends.

Once identified, NQCs must be systematically integrated into national curricula and training regulations. Although curriculum development processes vary among countries, most adhere to regional or international standards and aim to align with qualifications frameworks. In the Caribbean, the CBET curriculum development model follows a structured, multi-step process aligned with International Labour Organization (ILO) guidance. As outlined by the ILO (2020), curriculum development begins with the identification of a specific training need, usually based on labour market demand or government policy priorities. While industry stakeholders are central to this process, donor influence and policy mandates may also shape which sectors are prioritized. The next step involves an occupational analysis, typically conducted using the DACUM (Developing a Curriculum) methodology. In this phase, panels of industry experts are convened to define detailed occupational profiles, outlining the duties,

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tasks, skills, and competencies associated with particular job roles. These profiles are subsequently validated by additional stakeholders to ensure their relevance and applicability across the sector.

Once validated, the information is used to develop occupational standards using the Caribbean Association of National Training Agencies (CANTA) template, which is derived from ILO (2016) guidelines. This framework promotes regional consistency and allows for national standards to be adapted for cross-border recognition. In addition to identifying performance criteria, the CANTA template includes underpinning knowledge and skills, assessment guidance, and acceptable evidence of competency. Following technical validation of the standards, formal curricula are designed. This involves translating standards into learning objectives, organizing content into modular units, developing instructional materials, and designing performance-based assessments. The curriculum is then piloted in selected institutions, with data collected on its effectiveness and relevance. Based on feedback from the pilot phase, refinements are made before the curriculum is implemented at scale. Steps 9 through 16 in the ILO (2020) model include detailed guidance on trainer preparation, delivery methods, quality assurance, and mechanisms for monitoring and evaluation. Through this highly structured approach, the Caribbean's CBET curriculum development process seeks to ensure that training programmes are not only pedagogically sound but also industry relevant. It reflects a model of dynamic responsiveness, one that supports ongoing alignment with the competencies needed for success in the modern labour market.

Despite efforts to develop dynamic and responsive CBET curricula across national and regional TVET systems, many institutions at the micro-level continue to face significant implementation challenges. UNESCO-UNEVOC (2020, Vol. 3) explored this issue from the perspective of training institutions, often described as the "foot soldiers" of curriculum

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delivery. These institutions are tasked with implementing formal curricula using the resources at their disposal, yet they often operate under constraints that hinder the realization of CBET's full potential. Even when curricula are aligned with industry needs, institutional limitations frequently compromise the quality and effectiveness of training. A primary concern is the shortage of qualified human resources. Popov and Fedorenko (2019, as cited in UNESCO-UNEVOC, 2020) argued that many TVET systems lack the flexibility needed to support lifelong learning pathways and adapt to emerging sectoral demands. Compounding this is a persistent skills gap among teachers and trainers themselves. Many lack exposure to current industry practices and technologies, and motivation to engage in professional development is often low, particularly in environments where infrastructure is outdated and teaching equipment is scarce. These findings were echoed by Omar et al. (2020) and Sasseta (2019, as cited in UNESCO-UNEVOC, 2020), who noted that such deficiencies undermine the delivery of practical, market-relevant instruction. Maina et al. (2017, as cited in UNESCO-UNEVOC, 2020) further highlighted the disconnect between the practical competencies taught in training institutions and the expectations of modern workplaces. This gap is often the result of insufficient funding for up-to-date tools and facilities. In many cases, institutions rely on obsolete equipment or improvised materials, leading to training that is misaligned with real-world industry standards. As a result, graduates are frequently perceived as underprepared, which negatively affects the reputation of TVET institutions and diminishes public confidence in their programmes.

To address these challenges, UNESCO-UNEVOC (2020, Vol. 3) proposed several strategies aimed at strengthening institutional capacity and enabling more effective implementation of CBET and the integration of new qualifications and competencies (NQCs). A key recommendation is the formalization of Prior Learning Assessment and Recognition

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(PLAR) systems. This approach enables individuals who have gained skills through informal or non-formal means to receive credit toward certification, based on demonstrated competencies rather than time spent in formal education. By allowing learners to complete only the training modules required to address their skill gaps, PLAR enhances the flexibility and inclusiveness of TVET systems. Incorporating PLAR mechanisms aligns with the principles of lifelong learning and supports greater equity in access to certification. It also broadens participation in TVET by recognizing diverse learning pathways and promoting upskilling opportunities for workers outside the formal education system. According to UNESCO-UNEVOC (2020), this is a core feature of dynamic CBET models and a critical strategy for making TVET more responsive to learner needs and labour market realities.

To improve trainer quality, UNESCO-UNEVOC (2020) recommended increasing access to both in-house and external professional development opportunities. Partnerships with industry can play a pivotal role in this effort. In Kenya, for example, TVET instructors participate in short-term industry attachments during academic breaks, enabling them to stay abreast of current tools, technologies, and practices (citing Kikwai, 2021). Similarly, Italy's Cometa institution was highlighted for its institutional commitment to the ongoing professional development of its teaching staff. Beyond formal training, UNESCO-UNEVOC also emphasized the value of professional learning communities and peer support networks within institutions. These collaborative environments foster knowledge exchange, encourage reflective practice, and support innovation in instructional strategies. They also help bridge the technical and pedagogical knowledge gaps among trainers, reinforcing both the quality and relevance of training programmes.

By embedding flexible certification pathways such as PLAR and reinforcing system-level coordination, Caribbean TVET systems can evolve into truly dynamic engines of

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inclusive growth and skills development. To realize this potential, implementation must be anchored in institutional environments that are adequately resourced, agile, and committed to continuous improvement. This involves more than upgrading equipment and training materials; it requires sustained investment in educator development and the integration of inclusive, competency-based certification models. When these elements are in place, TVET institutions are better positioned to empower learners, respond to industry needs, and contribute meaningfully to inclusive economic growth.

Gaps in the Literature Reviewed

Despite the breadth and diversity of the literature examined, several critical gaps persist reinforcing the need for this study. These gaps highlight areas that have been underexplored, inconsistently addressed, or insufficiently grounded in empirical investigation within the context of Technical and Vocational Education and Training (TVET) and the adoption of Competency-Based Education and Training (CBET) in the Caribbean. Identifying these gaps helps to justify the present research and underscores its intended contribution to both regional and international discourses on TVET reform. First, although CBET is extensively discussed in international literature, particularly in relation to its theoretical foundations and perceived benefits, few studies have rigorously examined its practical adoption at the institutional or classroom level within Caribbean TVET systems. Much of the existing regional research remains policy-oriented or focuses on the development of qualifications frameworks such as NVQs and CVQs. While these documents provide valuable contextual insight, they often lack data-driven analysis of how CBET is implemented by trainers, received by learners, or supported institutionally. Consequently, the micro-level dynamics of implementation including the behavioral, motivational, and contextual factors influencing CBET uptake remain poorly understood.

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Second, although stakeholder engagement is frequently acknowledged as essential to TVET reform, there is a notable absence of empirical work linking stakeholder goal orientation and perceived social support to the adoption of CBET methodologies. While both constructs are well-established in organizational psychology and change management literature, they are rarely applied within the context of educational reform in small developing states. Moreover, when these variables do appear in educational studies, they are seldom operationalized using validated instruments, nor are they examined in relation to adoption outcomes. This leaves a significant gap in understanding how key actors such as TVET instructors, administrators, and institutional leaders, choose to adopt or resist CBET-based curricula and assessment strategies. Third, the literature reveals a disconnect between policy frameworks and empirical evaluation. Numerous regional strategies have articulated goals related to TVET quality and CBET integration, but there is limited publicly available evidence to assess progress toward these goals. Evaluations of regional initiatives such as the Caribbean Vocational Qualification (CVQ) often omit stakeholder perspectives and instead prioritize system-level outputs over experiential or attitudinal indicators. This limits the ability to understand how policies are perceived, interpreted, and enacted at the ground level.

Fourth, there is a lack of comparative studies examining CBET adoption across countries or within regions, particularly in the Caribbean. While models from countries such as Australia, Germany, and Singapore provide valuable insights, the contextual relevance of these approaches is not always critically assessed in relation to the Caribbean's institutional, economic, and socio-cultural landscape. There remains a pressing need for region-specific research that takes into account localized constraints, including resource scarcity, stigma surrounding TVET, and inconsistent policy implementation. Finally, the interplay between historical legacies, educational reform, and workforce demands is often acknowledged in broad

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terms but remains under-integrated with empirical data. Although the literature recognizes these as important contextual influences, few studies systematically examine how they converge to shape CBET implementation outcomes.

This study seeks to address several of these pressing gaps, particularly those related to the behavioral and contextual factors influencing CBET adoption. By focusing on the goal orientation and perceived social support of TVET stakeholders, the study responds to the absence of localized empirical research on the motivations and barriers experienced by frontline implementers. Through a mixed-methods phenomenological design, it provides multi-dimensional insights into how these variables influence the adoption process within the Caribbean context. In doing so, it contributes meaningfully to ongoing scholarly and policy dialogues concerning CBET implementation, stakeholder engagement, and educational transformation in developing regions.

Summary of the Literature Review

The preceding section identified critical gaps in the literature that justify the need for this study, particularly the lack of research on micro-level implementation dynamics and stakeholder perceptions. Building on that foundation, the literature reviewed in this chapter has provided a critical and comprehensive basis for understanding the multifaceted nature of Technical and Vocational Education and Training (TVET) and its transformation through Competency-Based Education and Training (CBET) within the Caribbean context. It established the theoretical, historical, and policy-related underpinnings necessary for examining the adoption of CBET across the region, particularly in relation to stakeholder readiness, systemic capacity, and socio-cultural influences. Drawing upon regional and international sources, this review has examined the evolution of education systems, the emergence and rationale for CBET, the principles and processes that underpin competency-

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based training, and the challenges that persist at various levels of implementation. The literature illuminated not only the promise of CBET for workforce development and economic resilience but also the practical constraints and systemic contradictions that hinder its full realization.

This chapter began by tracing the historical development of education in the Caribbean, outlining its colonial roots and the post-independence drive for localization and democratization of education. The evolution from elite-focused systems to more inclusive frameworks, while laudable, was often marked by political interruptions, external dependency, and resource limitations. The establishment of the Caribbean Examinations Council (CXC) was a major milestone in regional educational development, representing a shift toward culturally relevant assessment systems. However, as noted by Jules (2012) and Miller (1999), the education system remained largely academic in orientation, with insufficient attention to technical and vocational streams—a trend that exacerbated educational stratification and reinforced negative perceptions of TVET.

In response to the limitations of traditional education systems and driven by the need for labour market responsiveness, the literature traced the emergence of competency-based approaches to education and training. CBET was introduced as a strategic educational innovation aimed at enhancing learner employability, promoting skill portability, and bridging the persistent mismatch between education outcomes and labour market demands (Sullivan & Bruce, 2017; Tovmasyan, 2017). Grounded in constructivist theories such as situated learning and active learning (Lave & Wenger, 1991; Esenina et al., 2019), CBET emphasizes demonstrated competence in real-world contexts over theoretical knowledge alone. The literature reviewed affirmed that CBET aligns with contemporary demands for adaptable, learner-centered, outcomes-based education, particularly in skills-intensive sectors.

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The review further demonstrated that the implementation of CBET is often framed within change management paradigms, including the Concerns-Based Adoption Model (CBAM) and Transfer of Training theory. These frameworks provided critical lenses for understanding how stakeholders adopt new educational practices and how environmental and individual factors influence the likelihood of sustained change. CBAM, for example, emphasizes the affective and cognitive stages through which individuals pass when encountering innovation (Hall & Hord, 2015), while Baldwin and Ford's (1988) Transfer of Training theory draws attention to trainee characteristics, work environment, and training design as core influences. Together, these frameworks provided a basis for examining how stakeholder perceptions and institutional support mechanisms influence the integration of CBET within Caribbean TVET institutions. As outlined in Chapter 1, these theoretical perspectives frame the study's inquiry into the behavioral and contextual factors affecting CBET adoption across the region.

However, while the literature underscores the potential benefits of CBET for improving workforce readiness and social mobility, it also highlights numerous challenges and contradictions that hinder effective implementation. Chief among these is the issue of systemic fragmentation. Despite regional agreements through CARICOM and mechanisms such as the Caribbean Vocational Qualification (CVQ), the rollout of CBET remains uneven, with significant variation across countries, sectors, and institutions. As UNESCO-UNEVOC (2020) and Miller (2012) observe, this fragmentation is partly due to limited institutional capacity, inconsistent policy enactment, and insufficient investment in teacher training and curriculum reform.

Moreover, there is a notable disparity in understanding what constitutes TVET, even among regional bodies. For instance, CXC categorizes subjects such as Technical Drawing and

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Food and Nutrition as technical, while others traditionally considered vocational such as Agriculture or Business are treated as general education. This inconsistency, as revealed in both regional documents and national education policies (e.g., Saint Lucia's classification of 13 CSEC subjects as TVET), complicates efforts to streamline TVET within a cohesive CBET framework. The literature suggests that such definitional ambiguity undermines clarity in curriculum design, qualifications recognition, and stakeholder communication (OECD, 2021; CXC, n.d.-b). In addition to definitional issues, the stigma attached to TVET persists as a significant cultural and psychological barrier. Several studies (e.g., Fletcher & Ndahi, 2020; Anane, 2013; Popov & Fedorenko, 2019) documented that TVET is often perceived as a last resort for academically weak students, which undermines its legitimacy and appeal. This societal undervaluing of technical and vocational pathways leads to lower enrolments, reduced funding, and limited policy prioritization. The literature indicates that reversing this stigma requires sustained advocacy, industry involvement, and demonstrable pathways for upward mobility through TVET systems. Furthermore, trainer and institutional readiness were repeatedly cited as limiting factors in CBET implementation. Many institutions lack qualified trainers with industry experience, up-to-date facilities, or adequate instructional resources. In some cases, trainers themselves are resistant to adopting new pedagogical approaches due to lack of training, overburdened workloads, or discomfort with outcomes-based teaching and assessment (UNESCO-UNEVOC, 2020; Oketch et al., 2010). These factors are compounded by poor monitoring and evaluation systems, which make it difficult to assess implementation fidelity or measure the impact of CBET programs on learner outcomes and employability.

The literature also exposed gaps in empirical evidence, particularly with respect to stakeholder attitudes, perceived social support, and institutional goal orientation. While theoretical models such as CBAM and Transfer of Training have been widely applied in other

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contexts, few studies within the Caribbean have operationalized these models to understand the behavior and attitudes of teachers, administrators, policymakers, and employers in adopting CBET. The absence of such data constrains the development of targeted interventions and policies to enhance adoption. This observation directly supports the study's rationale in Chapter 1, which identifies the lack of localized research on stakeholder perceptions as a key justification for the research. In contrast, international literature, including case studies from countries such as Australia, Singapore, and Germany, presents CBET as a linchpin of effective workforce development. These systems are characterized by strong government-industry collaboration, dual education models, and national frameworks for lifelong learning (Guthrie, 2020). The literature demonstrates that where CBET is fully institutionalized, it results in higher employment rates, better alignment of training with economic priorities, and improved perceptions of TVET. These success stories suggest that the Caribbean's limited uptake of CBET is not due to the model itself, but rather the contextual readiness of the region's systems and stakeholders.

Another significant insight from the literature is the disconnect between policy and practice. While regional strategies, including the Human Resource Development 2030 Strategy and CARICOM's TVET policy framework, express a strong commitment to CBET, implementation remains inconsistent. Several scholars (e.g., Wint & Frankson, 2022; Jules, 2012) argue that without coherent national strategies, resource allocation, and performance monitoring, policy declarations have limited practical effect. Moreover, the over-reliance on donor funding and external technical assistance creates vulnerabilities and can result in unsustainable initiatives that falter when funding ends. Given these complexities, the literature consistently calls for a more holistic and context-sensitive approach to CBET adoption. This includes building institutional capacity, fostering stakeholder buy-in, aligning qualification

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frameworks across the region, improving labor market information systems, and creating clearer progression pathways for learners. Importantly, the literature also points to the need for more robust research on implementation processes, stakeholder experiences, and long-term outcomes, areas that remain underexplored in the Caribbean context. The literature reveals a field that is rich in policy intent but lacking in robust empirical grounding at the micro and meso levels. While there is broad consensus on the transformative potential of CBET in aligning TVET with labour market needs, there is less clarity on how to operationalize and scale these reforms within the Caribbean's diverse institutional and socio-cultural contexts.

This contradiction between the promise of CBET and the practical realities of implementation forms the central tension that this dissertation seeks to address. By exploring the predisposing factors that influence the adoption of competency-based approaches to TVET, particularly through the dual lenses of goal orientation and perceived social support, this study contributes to filling a significant gap in the literature. It brings into focus the affective and contextual dimensions of educational reform, moving beyond structural critiques to examine the behaviors, motivations, and perceptions of those directly involved in implementation. The study's methodological design, presented in Chapter 3, reflects this emphasis by employing a mixed-methods phenomenological approach that captures both the breadth and depth of stakeholder experiences.

This literature review has laid a comprehensive foundation for understanding the conceptual, historical, and practical dimensions of CBET adoption in the Caribbean. It has revealed that while CBET holds transformative potential, its integration into TVET systems is contingent upon multiple, interrelated factors including clear policy direction, institutional capacity, stakeholder support, and societal perceptions. The contradictions, inconsistencies, and gaps identified across the literature underscore the need for this study, which aims to

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provide empirical insight into how goal orientation and perceived social support influence the adoption of CBET within Caribbean TVET institutions. In so doing, it not only aligns with the study's aims outlined in Chapter 1 but also sets the stage for the empirical exploration detailed in Chapter 3. The findings of this research are expected to inform regional strategies for more effective, inclusive, and sustainable implementation of competency-based education and training.

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CHAPTER 3: RESEARCH METHOD

Introduction

The purpose of this study was to investigate the factors influencing the adoption of competency-based approaches to Technical and Vocational Education and Training (TVET) in the Caribbean. In addition to identifying these factors, the study also aimed to determine the most significant one. Furthermore, it sought to explore whether there is a correlation between goal orientation, perceived social support of stakeholders, and the adoption of competency-based approaches to TVET.

At the time that this study was conducted, and data was collected, there was limited published research on the specific focus of this study. It was therefore necessary to develop an understanding of, and explanation for, the differences in the rate of adoption of competency-based approaches to TVET across the region. This understanding is crucial for informing TVET policies that enable the sector to fulfill its mandate of driving economic growth, development, and sustainability.

This necessity led to the adoption of a cross-sectional, exploratory approach, employing a qualitatively driven mixed-methods research design to answer the central question: "What influences the rate of adoption of competency-based approaches to TVET within the Caribbean region?" Within the Caribbean, the Caribbean Vocational Qualification (CVQ) represents the only region-wide competency-based approach to TVET. Despite its launch in 2007 and the commitment by all CARICOM member states to implement it, the rate of adoption varies significantly among the member states. Regional research is therefore essential to uncover why some countries have successfully implemented this competency-based approach while others have not, and to identify the challenges faced by member states. This understanding is vital to

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strategizing a way forward for the broader adoption of this TVET delivery method across the region.

To gain an in-depth understanding of the issues surrounding TVET and the adoption of competency-based approaches within the field, it was necessary to draw from the lived experiences of those involved in TVET. A phenomenological study design was selected as the most suitable approach, as phenomenology allows for a deep exploration of participants' experiences without the need to develop a theory. This chapter outlines the research approach and design, the population and sample used, the data collection instruments, the study procedures (including ethical assurances), and the methods employed for data analysis.

Research Approach and Design

This study is inductive and exploratory rather than deductive and conclusive, since it does not test a theory or hypothesis. Instead, the study seeks to discover the reasons behind the phenomenon under investigation. The research is also cross-sectional, meaning it examines the phenomenon at a specific point in time, rather than through repeated data collection over an extended period. For a study of this nature, it is possible to use either a grounded theory or phenomenological approach. In grounded theory, the goal is to develop a theory that explains the phenomenon based on data. In contrast, phenomenology provides a thematic description of the phenomenon based on participants' experiences and their interactions with it. While both approaches are exploratory and inductive, phenomenology, specifically transcendental phenomenology, was selected as the most appropriate methodology for this research. The rationale for this choice lies in the study's focus: rather than developing a theory about the adoption of competency-based approaches to TVET, this study aims to describe, understand, and explain the lived experiences of participants regarding TVET, particularly competency-

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based approaches, and to identify the predisposing factors influencing the adoption of CBET within the countries included in the study.

The following section will discuss both research approaches and provide the rationale for selecting phenomenology, specifically transcendental phenomenology. Additionally, four studies with similar focus which employed this approach, will be discussed to help justify its use in this current study.

Research Approach

As mentioned in the previous section, in a study where little is known about the focus area, and the researcher seeks to understand the phenomena that gave rise to the research topic, it is possible to approach the research using either a grounded theory or a phenomenological approach. In grounded theory, the expectation is that a theory that explains the phenomenon being studied will be developed from the data collected. In contrast, phenomenology provides a thematic description of the phenomenon, which is derived from participants' perspectives and their interactions with the phenomenon under investigation. Both approaches, while distinct in their outcomes, employ an exploratory, inductive approach to research, focusing on understanding the experiences and perspectives of the participants.

Grounded theory

Grounded theory was introduced in the 1960s by Barney Glaser and Anselm Strauss, who described it as discovering theory from systematically obtained and analyzed data. Strauss and Corbin (1990, as cited in Chun et al., 2019) described it as a theory that emerges from the research data; in other words, the theory is derived from the systematic gathering and analysis of research data. Charmaz (2011) explained that grounded theory refers to a qualitative method of inquiry in which theory emerges through a repetitive process of data collection and analysis that mutually influence and shape one another. Charmaz (2012) described it as a primarily

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analytical, inductive inquiry method of systematically collecting and analyzing data to develop theories. Additionally, this method is repetitive, comparative, and engaging, focusing on data analysis while being mindful that early data analysis can inform subsequent data collection. According to Charmaz (2012, citing Wertz et al., 2011), several distinguishing features of this approach include the provision of clear methods for analyzing processes, promoting the consideration of various theoretical perspectives, fostering provisional interpretations of the data through coding and categorization, and refining the researcher's key theoretical categories. Charmaz (2012) also suggested that, although most grounded theorists follow an iterative approach, many fall short of actually constructing theories. Chun et al. (2019) explained that grounded theory is inherently flexible, aimed at discovering or developing theory based on the comparative analysis of systematically collected data. Ary et al. (2010) explained that in grounded theory, the researcher constructs concepts and identifies plausible relationships to propose a theory based on the data obtained.

Rieger (2019, citing Charmaz 2006; Glaser and Strauss 1967; McClement and Harlos, 2018; Strauss and Corbin 1998), described it as a qualitative research method incorporating simultaneous data collection and analysis of real-life social phenomena to generate theory. Descombe (2010) described it as a research approach aimed at generating theories rather than testing them or simply describing the subject matter of research, emphasizing empirical fieldwork and the link between explanations obtained and the real world. He explained that grounded theory is appropriate for qualitative, exploratory, small-scale research into human interactions, particularly when the researcher aims to explore practical activities, everyday situations, and the perspectives of participants. Strauss & Corbin (2015, as cited in Urcia, 2021) explained that this approach uses a structured and comparative analytical process to identify patterns in social dynamics (such as actions, behaviors, and interactions) over time to develop

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theory. The approach focuses on generating theory from data through a constant process of comparative analysis and memo-writing, enabling researchers to identify patterns, concepts, categories, and theoretical constructs that explain social processes and interactions.

Types of Grounded Theory

Three genres or adaptations of grounded theory have been identified in the literature. While researchers have slightly varied the names, all agree that classical grounded theory, based on the work of Glaser and Strauss, is the first genre, laying the foundation for the other two genres. The second genre is evolved or attributive grounded theory, attributed to Strauss, Corbin, and Clarke, while the third genre is constructivist grounded theory, associated with Charmaz.

Sebastien (2019) explained that in classical grounded theory, the researcher is seen as detached and distant, whereas in interpretive grounded theory, the researcher is engaged and actively interprets the data. In constructivist grounded theory, rather than discovering the theory, the researcher develops it from the data. In classical grounded theory, research questions arise only after data collection. In interpretive grounded theory, somewhat vague research questions are used to allow flexibility and clarification as data emerges. In constructivist grounded theory, while research questions are present to guide data collection, they may evolve as data becomes available.

Urcia (2021) distinguished the three genres based on their ontological and epistemological stances. The premise of classical grounded theory is positivism, which asserts that a reality already exists and can be objectively observed to discover a theory about that reality. According to Glaser (1992, as cited in Urcia, 2021), the assumption in this type of grounded theory is that the researcher's knowledge and experiences might affect the authenticity of the data. Thus, researchers must be objective observers capable of ascertaining

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truth from the data they have gathered, ensuring that preconceived notions do not influence data analysis. Urcia (2021) explained that Strauss and Corbin's evolved grounded theory is more interpretive, as they argued that complete researcher objectivity is unattainable. Researchers' experiences, perspectives, and subjectivity inevitably influence the research process, so it is important for researchers to acknowledge and reflect on these aspects during the study. In constructivist grounded theory, Charmaz (2014) posited that the researcher's prior knowledge is important in co-constructing knowledge with the participants, leading to highly detailed contextual understandings of the research subject. Chun et al. (2019) provided a simple distinction among the three genres: traditional grounded theory generates theory to explain behavior patterns relevant to the persons involved; evolved grounded theory relies on the meanings placed on objects, behaviors, or events based on people's perception of truth; and constructivist grounded theory is developed based on participants' experiences, which researchers help co-create through their interactions with participants. Based on this discussion, it is possible that this study could be conducted using a constructivist grounded theory approach.

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Phenomenology

Phenomenology, a philosophical tradition, traces its roots to the German philosopher Franz Brentano. Edward Husserl and Martin Heidegger are generally recognized as the most influential figures in its development into a formal discipline. While Husserl is often credited as the founder of phenomenology, other notable advocates of this method include Jean-Paul Sartre, Maurice Merleau-Ponty, and Emmanuel Levinas. Zahavi (2018) described phenomenology as the "science or study of the phenomena" (p. 9) and explained that its purpose is to explore the fundamental structures that define our experiences, their related aspects, and the relationships between them. Essentially, phenomenology is concerned with describing the subjective experience of the perceiver.

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In a phenomenological study, the primary aim is to identify commonalities among participants who experience a phenomenon, seeking to provide meaning to those experiences. Creswell, (2013) referred to this as uncovering a “universal essence” (p. 76). Denscombe, (2014) explained that phenomenology does not attempt to categorize, quantify, or theorize about phenomena; instead, it focuses on “getting a clear picture of the ‘things in themselves’ the things as directly experienced by people” (p. 95). This approach seeks to capture experiences authentically, without overlooking the inconsistencies and nuances inherent in real-life experiences.

Creswell and Poth (2017) emphasized that phenomenology is concerned with identifying commonalities among participants' experiences with the phenomenon under investigation. English and English (1958), as cited in Cohen et al. (2018), described phenomenology as a theoretical approach that examines the direct experience of participants, with behaviors shaped by their interactions with the phenomenon, rather than any “external objective and physically described reality” (p. 20). Cohen et al. (2018) further argued, citing Hammersley (2013) and Denscombe (2014), that phenomenological research is grounded in the belief that our understanding of the world is rooted in our experiences. Thus, the researcher’s responsibility is to describe, understand, interpret, and explain those experiences. Additionally, Marshall and Rossman (2016) defined phenomenological research as aiming to describe, explain, and interpret a phenomenon, situation, or experience by identifying the meanings ascribed to them by participants at both individual and group levels.

Mayoh and Onwuegbuzie (2015) noted that phenomenological research emphasizes the description or interpretation of the experiences of individuals who have lived through them, providing valuable qualitative insights. Randles (2012) distinguished phenomenology from other qualitative methods by its focus on questioning meaning, positioning it as both a

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discipline within qualitative research and a form of “philosophical inquiry” (p. 11, citing Bowman, 1998). Husserl (1964) and Van Manen (1990), as cited in Randles (2012), explained that phenomenology centers on providing detailed descriptions of phenomena to uncover their “essence,” thereby enhancing understanding.

Urcia (2021, citing Charmaz 2014) described phenomenology as both a philosophical and methodological approach designed to understand the essence of human experiences. Urcia (2021) referred to its use in research as the Phenomenological Approach (PA). Munhall (2012, as cited in Urcia 2021), explained that the phenomenological approach provides a detailed and explanatory framework for exploratory research, uncovering individuals' lived experiences. Corben (1999, also cited in Urcia 2021), added that phenomenology offers significant insights into the lived experiences of individuals who have encountered the phenomenon, thanks to the rich data collection methods employed. This approach contrasts with grounded theory, as phenomenology focuses on understanding participants' lived experiences with the phenomenon, rather than using those experiences to generate theories. Phenomenology allows the researcher to delve deeply into the meaning behind participants’ experiences, making it invaluable for studies that require exploring the nuances and intricacies of lived experiences, especially those with complex social or cultural contexts.

Phenomenology emphasizes the subjective nature of human experiences, recognizing that individuals interpret and assign meaning to the world based on their own perceptions and personal history. This approach allows researchers to explore how participants understand and make sense of their experiences, providing a rich, in-depth perspective that may not be captured through other research methods. By focusing on these lived experiences, phenomenology contributes to a deeper, more authentic understanding of the phenomenon under investigation. Moreover, it supports the exploration of diverse perspectives, revealing both shared and unique

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aspects of participants' experiences, and offering an opportunity to uncover new insights that may have been overlooked by other research methodologies.

Types of phenomenology

Literature identifies three main types of phenomenology: descriptive (eidetic), interpretative (hermeneutic), and dialogical. These types, based on the works of key phenomenological scholars, provide different approaches to understanding the lived experiences of participants. Each type of phenomenology offers a distinct focus on how these experiences are described, interpreted, and co-constructed by the researcher.

Descriptive phenomenology is rooted in the work of Edmund Husserl, who emphasized the importance of describing human experiences without inferring or interpreting them. Creswell (2013) and Mayoh and Onwuegbuzie (2015) emphasize that this approach focuses on understanding the "things themselves" as directly experienced by individuals, aiming to capture the phenomenon as it is, unaltered by the researcher's personal biases. In this form, the researcher is tasked with setting aside their own experiences, a process referred to as "bracketing", to ensure an unbiased description of the phenomenon from the participants' perspectives (Creswell & Poth, 2017). This type of phenomenology does not aim to explain the underlying meanings of experiences but instead seeks to describe what is happening from the perspective of those experiencing it. Giorgi (2009, cited in Bartholomew et al. (2021), articulated that descriptive phenomenology systematically describes the phenomenon as it emerges through participants' lived experiences. The focus is on giving a clear account of what the participants report, using language that accurately translates their natural expressions into terms that help understand the essence of their experiences. Neubauer et al. (2019) further clarified that descriptive phenomenology attempts to exclude the researcher's interpretations

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and preconceived beliefs, thus providing an objective lens through which participants' experiences can be studied.

Interpretative phenomenology, associated with the work of Martin Heidegger and Max Van Manen, on the other hand, takes a different approach. While descriptive phenomenology focuses purely on description, interpretative phenomenology seeks to explain the meanings of participants' experiences. As Urcia (2021) explains, interpretative phenomenology acknowledges that the researcher's perspective inevitably influences the analysis of the data. This form of phenomenology is grounded in the belief that understanding is co-constructed between the researcher and the participants, with the researcher's interpretive engagement helping to uncover deeper layers of meaning. Creswell and Poth (2017) highlight the key distinction of interpretative phenomenology in that it goes beyond simply describing the phenomenon—it interprets and explains what it means. This approach recognizes the researcher's active role in interpreting the data and understanding how the phenomenon is experienced. Bartholomew et al. (2021) similarly define interpretative phenomenology as an approach that engages deeply with the unique, lived experiences of individuals, using a hermeneutic process of reflection to make sense of these experiences. Neubauer et al. (2019) discussed how interpretative phenomenology builds on this foundation, acknowledging that the researcher's perspective is inevitably intertwined with the interpretation process, making the co-construction of meaning an essential part of the research. This type of phenomenology emphasizes the dynamic relationship between the researcher and the participants, where understanding emerges through mutual engagement.

While not as commonly referenced as the first two categories, dialogical phenomenology, based on the work of Amadeo Giorgi and cited by Mayoh and Onwuegbuzie (2015), introduces the notion of researchers and participants co-constructing meaning. In this

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approach, the research process becomes a dialogue between the researcher and the participants, with both parties contributing to the understanding of the phenomenon. Rather than treating the researcher as a distant observer, dialogical phenomenology emphasizes collaboration and interaction, where the participants are seen as co-researchers. This method fosters a deeper connection and mutual influence in the process of meaning-making, providing a richer and more interactive data collection process. According to Mayoh and Onwuegbuzie (2015, citing Stawarska, 2009), dialogical phenomenology focuses on establishing a rapport between the researcher and participants to allow for the free exchange of perspectives. The dialogue between the two parties helps shape a shared understanding of the phenomenon under investigation, ensuring that the research reflects a nuanced, co-created interpretation of the lived experiences.

While there are several approaches to phenomenology, the fundamental distinction lies in the researcher's role and the level of interpretation involved. Descriptive phenomenology, grounded in Husserl's work, strives for objectivity and aims to provide an unmediated account of participants' experiences, often requiring researchers to "bracket" their preconceptions. Interpretative phenomenology, which draws from Heidegger, accepts that the researcher's perspective inevitably shapes the inquiry, focusing on how meaning is derived from participants' experiences. Lastly, dialogical phenomenology fosters an even greater sense of collaboration between the researcher and participants, emphasizing a joint creation of meaning through ongoing dialogue. In all cases, phenomenology seeks to uncover the essence of experiences by describing or interpreting the lived reality of participants. The variations described above (descriptive, interpretative, and dialogical) represent nuanced approaches to this goal, each offering valuable insights into human experience and its subjective reality.

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Given the aim to explore and describe the lived experiences of participants, this study is best aligned with descriptive phenomenology. By focusing on the essence of participants' experiences with the adoption of competency-based approaches to TVET, this study seeks to provide a clear and unbiased description of the phenomenon. The descriptive approach allows for an in-depth understanding of these experiences while minimizing the influence of the researcher's preconceptions.

Comparison of Grounded Theory and Phenomenology

As previously discussed, both phenomenology and grounded theory are qualitative research methodologies that employ an exploratory, inductive approach to research. According to Masoodi (2017), these methodologies share several similarities, including their qualitative nature, reliance on inductive reasoning, and the use of interviews and observations to collect rich, detailed data. Both methodologies aim to understand complex social phenomena and seek to capture participants' lived experiences and perspectives. Despite these similarities, significant differences exist between phenomenology and grounded theory, particularly in their purpose, philosophical foundations, and research approaches. The following table (Table 6) provides a comparison of the two methodologies, highlighting key distinctions:

Table 6

Comparison of Phenomenology and Grounded Theory

Feature	Phenomenology	Grounded Theory
Philosophy	There exists an essential perceived reality with common features.	Theory is discovered by examining concepts grounded in the data.
Goals	Describe the meaning of the lived experience of a phenomenon	Develop an explanatory theory of basic social processes.
Methodology (formulating a research question)	What is the lived experience of the phenomenon of interest?	How does the basic social process of X happen in the context of Y environment?
Sampling	Those who have experienced the phenomenon of interest	Those who have experienced the

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Feature	Phenomenology	Grounded Theory
		phenomenon under different conditions
Data Collection: Observation	Observe participants in the context where the phenomenon is experienced	Observe participants where the basic social process takes place
Interviewing Strategy	Participant describes experience, interviewer probes for detail, clarity	Participant describes experience, interviewer probes for detail, clarity
Analytic Methods (Decontextualization & re contextualization: Process of coding, sorting, identifying themes and relationships, and drawing conclusions	Identify descriptions of the phenomenon; cluster into discrete categories; taken together, these describe the "essence" or core commonality and structure of the experience	Open, axial and selective coding: examine concepts across their properties and dimension; develop an explanatory framework that integrates into a core category.
Role of Analyst's Views	Researcher brackets views to minimize bias.	Bracket views to minimize bias.
Product	A thematic description of the pre-given "essence" and structures of lived experiences	Generate theory from the range of the participants' experience

Rationale for Phenomenology

Although both phenomenology and grounded theory share similarities, significant differences between the two approaches are evident, as shown in Table 2.6 above. In addition to their shared inductive nature, Masoodi (2017) identified other commonalities, such as the use of interviews as the primary data collection method, the design of semi-structured interview questions, and efforts to minimize interviewer bias. Starks and Brown Trinidad (2007) further noted that both approaches involve iterative, inductive processes of coding original data, identifying patterns and themes, and reorganizing the data into themes and relationships to draw final conclusions. However, the key differences between the two lie in their purpose (goal) and outcome (end result). Grounded theory aims to discover or construct a theory to explain the phenomenon, while phenomenology seeks to describe or explain the phenomenon based on participants' lived experiences. Therefore, the outcome of grounded theory is the

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development of a theory, whereas phenomenology results in a deeper understanding of the participants' experiences with the phenomenon under investigation.

While either approach or a combination of the two could have been employed in this study, the phenomenological approach was considered more suitable. This decision was based on the study's aim to explore and understand the lived experiences of educators, administrators, and policymakers involved in TVET, capturing the essence of their experiences and the meanings they ascribe to them. Since the research focuses on describing and interpreting participants' lived experiences, it aims to provide rich and detailed insights into the factors influencing the adoption of competency-based approaches to TVET. The phenomenological approach enables the researcher to create meaning and offer a nuanced perspective that may not be adequately captured by grounded theory, which primarily seeks to develop theories to explain phenomena rather than to understand the lived experiences behind them. In this study, the focus is not on proposing a theory, but on understanding the reasons for the varying rates of adoption of competency-based approaches to TVET. This rationale was further reinforced when a review of relevant research revealed that phenomenology has been widely used by scholars investigating various aspects of TVET across different regions and settings. While no research directly aligned with the focus of this study was found, related studies on student and teacher perspectives of TVET, as well as challenges faced by TVET systems, were reviewed. This led to the identification of four studies spanning from 2015 to 2021, which provided valuable context for this research.

Use of Phenomenology in Similar Studies

Mack and White (2019) employed the phenomenological approach in their study of the challenges facing TVET at four tertiary institutions in Trinidad and Tobago, examining these challenges from the perspectives of various stakeholders. The use of phenomenology was

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justified by the authors' goal of gaining a deeper understanding of the opinions, experiences, and insights of those involved in TVET, which allowed them to gather purposeful and accurate information about the specific challenges within the Trinidadian context.

Similarly, Damit et al. (2021) applied phenomenology to investigate the challenges faced by teachers at the Malaysian Vocational College in the implementation of outcome-based education (OBE). The authors justified their use of phenomenology by emphasizing its ability to gather truthful and in-depth information, enabling them to describe the phenomenon in detail while focusing on the findings themselves rather than on validating those findings. Mayordo and Durias (2021) used the phenomenological approach to explore the experiences of teachers involved in the implementation of outcome-based education at two higher education institutions in the Philippines. They justified the use of phenomenology, noting that it facilitated a deeper understanding of the teachers' daily interactions and helped them interpret how the teachers made sense of the phenomenon. The approach also allowed the study to capture the teachers' perspectives on their instructional practices and student engagement. Goins (2015) utilized a hermeneutical phenomenological approach to examine the experiences of high school career and technical education (TVET) graduates in North Carolina, USA. The justification for using this approach was that it provided an opportunity for the researcher to interpret the experiences of the participants and gain a more accurate understanding of the core nature of the phenomenon. By closely examining participants' experiences, Goins was able to uncover the meaning of the phenomenon and its impact on the graduates' lives. These justifications for the use of phenomenology in the studies mentioned above strongly support its application in the current research. Each study utilized phenomenology to capture and interpret the lived experiences of participants, emphasizing its utility in gaining a deep, contextually rich understanding of complex educational phenomena.

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Research Design

Research design refers to the structured and systematic process used in gathering, analyzing, interpreting, and presenting data in research studies. It provides a coherent plan that directs every phase of inquiry and ensures the research effort is logically connected to the research questions posed. According to Creswell and Plano Clark (2017), research design outlines the specific processes involved, serving as a framework or guideline for conducting research that is both methodologically rigorous and theoretically sound. Similarly, Cohen et al. (2018) described research design as the blueprint for approaching, implementing, and examining a research problem, further characterizing it as a strategic plan that structures the research process, ensures its feasibility, and provides a foundation for addressing the research questions with appropriate evidence and justification. Labaree (2013, as cited in Cohen et al., 2018) added that research design is a comprehensive strategy that unifies the various elements of a study logically and consistently, ensuring that the research problem is effectively explored.

The role of a research design goes beyond mere organization; it reflects the philosophical assumptions underpinning the study, the researcher's theoretical orientation, and the overall methodological coherence of the work. In mixed methods studies, in particular, the design must provide a coherent strategy for integrating two distinct approaches- qualitative and quantitative - in a manner that enhances, rather than fragments, the investigation.

When selecting a research design, Leavy (2017) emphasized that the main criteria should be the research purpose and research questions, with particular attention to the rationale for collecting both types of data, the relationship between them, and the planned method of integration during the data collection and analysis phases. She underscored that alignment between research questions, data collection strategies, and analytical techniques is vital for ensuring the credibility and coherence of findings. Similarly, Maxwell (2012), Maxwell et al.

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(2015), and Maxwell and Loomis (2003), all as cited in Creswell and Plano Clark (2017), advocated for consideration of five interrelated elements when designing a study: the study's goals, conceptual framework, research questions, methods, and validity considerations. These interconnected elements act as anchors, ensuring that methodological decisions are both theoretically informed and practically feasible.

Research design is therefore an essential element of any research project, as it determines the approach, methodology, and processes that guide the entire study. It lays out how data will be collected, measured, and analyzed and ensures that the investigation maintains internal consistency from beginning to end. Given the nature of this study, which seeks to explore the phenomenon of varying rates of adoption of competency-based approaches to TVET in Saint Lucia and three other countries within the Caribbean region, a mixed methods design was deemed the most suitable choice to address the complexity of the research questions and to capture the richness of the data required.

Definition and Benefits of Mixed Methods Research

Mixed methods research is widely recognized in the research community as an approach that integrates both qualitative and quantitative methodologies across various stages of a study, offering a more comprehensive understanding of research problems than either method could provide independently. According to Teddlie and Tashakkori (2008), a mixed methods research design refers to a research structure where qualitative and quantitative approaches are incorporated systematically throughout the research process. They emphasized that true integration of methods occurs when the strengths of both approaches are used deliberately to compensate for their individual limitations, resulting in a more robust and nuanced inquiry. Creswell and Creswell (2018) similarly defined mixed methods research as an approach to inquiry where both types of data are gathered, analyzed, and merged in response

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to research questions, employing specific designs informed by philosophical assumptions and theoretical frameworks. Their perspective highlighted that mixed methods research studies are not merely the mechanical combination of two types of data. Instead, they are shaped by broader philosophical worldviews, particularly pragmatism (the belief that research methods should be chosen based on what best helps answer the research questions) and methodological pluralism, which supports using different methods together to provide a fuller understanding of complex problems.

Mixed methods research has been referred to by various terms, reflecting its evolution over time. Johnson et al. (2007, citing Thomas, 2003; Johnson & Onwuegbuzie, 2004; Hunter & Brewer, 2003; Morse, 2003; Smith, 2006; Sandelowski, 2003; Fry et al., 1981; Johnson, 2006; Johnson & Christensen, 2004) documented alternative labels such as "blended research," "integrative research," "multimethod research," "multiple methods," "triangulated studies," "ethnographic residual analysis," and "mixed research." These terminologies underline the widespread recognition that combining diverse methodological approaches can enrich the research process and offer more credible, triangulated conclusions.

According to Creswell & Creswell, (2018), the origins of mixed methods research can be traced to the late 1950s, primarily within the social sciences, where early researchers began exploring how qualitative insights and quantitative measurements could complement one another. Its formalization as a recognized framework evolved during the middle to late 1980s (Creswell & Creswell, 2018). This formalization paralleled broader movements within social science research toward recognizing the value of multiple perspectives in studying complex social phenomena. Johnson et al. (2007) noted that mixed methods is now regarded as the third major research paradigm, standing alongside quantitative and qualitative paradigms, and combining elements from both traditions, including data collection, analysis, and inference

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techniques to produce a more comprehensive and corroborated understanding of research problems. Leavy (2017) described mixed methods research as a problem centered methodology particularly suited to studies that aim to describe, explain, or evaluate complex issues, especially when the research problem demands both numerical precision and contextual depth.

Although definitions of mixed methods research vary slightly across scholars, the central idea remains consistent: it systematically integrates qualitative and quantitative data, enhancing the depth, breadth, and validity of findings. As Dawadi et al. (2021) explained, mixed methods research is not simply a methodological convenience but a distinct research tradition, complete with its own philosophical assumptions. These assumptions often draw on pragmatism, which values practical solutions to complex problems and supports the view that research approaches should be chosen based on their effectiveness in addressing the specific research questions, rather than strict adherence to rigid methodological boundaries. In this way, mixed methods research offers a unified framework for drawing insights from diverse data sources within a single study, allowing researchers to better address multifaceted research problems.

Benefits of Mixed Methods Research

Mixed methods research offers a range of benefits that have made it an increasingly attractive approach for addressing complex research problems, particularly in educational and social science contexts. These benefits were instrumental in the selection of mixed methods research for this study. Greene et al. (1989) outlined five key reasons for using a mixed methods approach, which have continued to serve as foundational justifications in contemporary methodological literature. The first is triangulation, which strengthens the trustworthiness of findings by allowing for the convergence and corroboration of data collected through different methods. By validating results across both qualitative and quantitative sources, the risk of bias

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or over reliance on a single perspective is significantly reduced. Complementarity, the second purpose, allows one method to enrich or clarify the findings of the other. For example, while quantitative data may identify patterns or trends, qualitative data can provide rich, contextualized explanations for why such patterns exist, adding depth to the understanding of the research problem. The third purpose, development, refers to the way findings from one method can shape or refine the application of the other. For example, initial qualitative insights can be used to design more targeted quantitative surveys, or preliminary quantitative results can direct researchers toward specific qualitative questions that warrant deeper exploration. The fourth reason, initiation acknowledges that mixed methods can help uncover contradictions or unexpected tensions between different data sources, prompting researchers to reframe their research questions or develop new theoretical perspective. Finally, expansion broadens the scope of the research by allowing the use of different methods to examine different aspects of the phenomenon, thereby offering a more comprehensive understanding. Each of these purposes helped to guide the integration of qualitative and quantitative strands in this study, enabling a more layered and contextually grounded exploration of the factors influencing CBET adoption.

Dawadi et al. (2021) further justified the use of mixed methods research by explaining that combining qualitative and quantitative methods significantly enhances the breadth and depth of the research. It allows researchers to examine a phenomenon from multiple perspectives, ensuring a fuller and more balanced exploration of the topic. This combination is particularly useful when dealing with multifaceted issues that cannot be fully captured through a single methodological lens. Moreover, mixed methods research helps to offset the individual weaknesses of qualitative and quantitative approaches by leveraging the strengths of each, thereby producing more robust, credible, and actionable findings. In addition to improving

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validity through triangulation, mixed methods research increases the comprehensiveness and richness of research outcomes by allowing multiple types of evidence to be synthesized. The integration of different forms of data also makes it easier to address practical, policy-oriented questions, thereby enhancing the real-world relevance of the research findings.

Given these advantages, mixed methods research is particularly well-suited to this study, which seeks to develop a comprehensive understanding of the varying rates of adoption of competency based approaches to TVET across the Caribbean region. Qualitative data will provide deeper insights into the underlying factors, motivations, and barriers influencing adoption, while quantitative data will offer a broader perspective on how these factors are distributed across different institutions and countries. The integration of both data types will not only strengthen the validity of the findings through triangulation but also allow for richer interpretation and more actionable recommendations. This integrated approach is critical for generating valuable insights that can guide future policy development and practice, ultimately contributing to the enhancement of TVET systems in the Caribbean region.

Types of Mixed Methods Research Design

According to (Leavy, 2017) a key feature of mixed methods research is the deliberate and strategic integration of qualitative and quantitative data, which significantly influences the selection and development of the research design. The extent to which the two types of data are blended and the point at which integration occurs have important implications for the overall structure, execution, and interpretation of the study. As such, decisions about design must be made thoughtfully, considering the study's purpose, research questions, and practical constraints.

Creswell and Plano Clark (2017) observed that designing mixed methods research is inherently challenging given the number of methodological, philosophical, and practical

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considerations involved. They emphasized that no two mixed methods studies are entirely identical, as each study features a distinct design shaped by the specific research problem, context, and goals. Despite these variations, they proposed that mixed methods designs can broadly be classified as either fixed or emergent. Fixed designs are those in which the decision to use both qualitative and quantitative methods is made at the outset of the study, and the procedures for integration are explicitly planned and implemented according to a predetermined structure. In contrast, emergent designs arise organically during the course of the research process, often in response to unexpected findings or methodological challenges that necessitate the inclusion of an additional method to strengthen or complete the inquiry.

Mixed methods designs can be organized using a typology-based or an interactive approach. Creswell and Plano Clark (2017) explained that typology-based designs emphasize selecting a structure from an established set of options, based on specific decision points such as purpose (e.g., triangulation, complementarity), sequencing (e.g., concurrent or sequential collection of data), prioritization (e.g., qualitative or quantitative dominance or equal emphasis), and the level of integration (e.g., fully integrated or component-based studies). By contrast, an interactive approach focuses on the dynamic interplay among the various components of the study, allowing for more flexibility and responsiveness but requiring a high level of methodological reflexivity from the researcher.

For new researchers, Creswell and Plano Clark (2017) recommended adopting a typology-based approach to guide design decisions because it provides a clear framework and reduces the complexity inherent in methodological decision-making. They identified three fundamental designs commonly used in mixed methods research. The first is the convergent design, which involves the collection and analysis of both qualitative and quantitative data simultaneously. The results are then integrated to provide a more comprehensive and nuanced

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understanding of the research problem. The second is the explanatory sequential design, where researchers begin by collecting and analyzing quantitative data, followed by a qualitative phase that is specifically designed to explain or expand upon the initial findings. Lastly, the exploratory sequential design starts with a qualitative phase that explores the research topic in depth. Insights from this phase are then used to develop instruments, hypotheses, or interventions that are later tested or examined through quantitative methods. Each design serves a distinct purpose and is chosen based on the nature of the research questions and the depth of understanding required.

Creswell and Creswell (2018) reiterated these three designs, noting that they serve as foundational models upon which more complex, multi-phase mixed methods studies can be built. Their refinement of earlier typologies reflects the evolving understanding of mixed methods as a flexible, context-sensitive research tradition. Dawadi et al. (2021) echoed this classification but referred to the convergent design as "convergent parallel" (citing Creswell & Plano Clark, 2018), emphasizing the simultaneous but independent analysis of both data strands. Tashakkori and Teddlie (2009) offered a complementary categorization of mixed methods research based on three key criteria: the number of strands in the research process (including conceptualization, methodological/analytical, and inferential stages), the type of implementation process, and the timing of integration. From this framework, they identified five “families” of mixed methods designs. The sequential design involves at least two distinct phases occurring in chronological order, with each phase building upon the previous one to elaborate or clarify findings. In contrast, parallel designs feature two interconnected strands, one qualitative and one quantitative. These are conducted simultaneously but independently, with integration occurring during the interpretation stage. The conversion design transforms data from one form to another, such as converting qualitative responses into quantitative codes

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for analysis and integration. Multilevel designs allow integration at different layers of analysis, often involving nested structures like individuals within institutions. Finally, fully integrated designs involve mixing methods at every stage, from conceptualization through to data collection, analysis, and interpretation.

Leavy (2017) also outlined five major design types, underscoring that the most appropriate design depends on the research questions and practical considerations of the study. Sequential designs, including both explanatory and exploratory types, involve time-ordered phases where one method precedes and informs the next. Convergent or concurrent designs collect and analyze qualitative and quantitative data simultaneously, integrating the findings during interpretation. Nested designs embed one method within the other, such as incorporating a qualitative sub-study within a larger quantitative framework, to enrich and contextualize the results. Additionally, Johnson et al. (2007) proposed a typology that distinguishes mixed methods research by the relative emphasis placed on each component. An equal status design gives qualitative and quantitative components equal priority, with full integration across all stages. In contrast, a qualitative dominant design prioritizes qualitative inquiry, using quantitative data to support or extend interpretations. A quantitative dominant design does the reverse, foregrounding quantitative analysis while incorporating qualitative insights to add depth or explanation. Each framework offers valuable guidance for selecting a design that aligns with both the research objectives and the practical realities of implementation.

The key takeaway from the discussion on mixed methods research design is that although different terminology has been used, researchers generally converge on a common understanding of the basic types of design. Furthermore, as emphasized by Creswell and Creswell (2018), while there are core typologies, research design remains fluid, evolving

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according to researchers' goals, contextual considerations, and decisions made throughout different phases of the study.

Given the objectives of this study, its design can be described as a convergent mixed methods design (Creswell & Plano Clark, 2017; Creswell & Creswell, 2018; Dawadi et al., 2021), or a convergent or concurrent design (Leavy, 2017) or a parallel design (Tashakkori & Teddlie, 2009). The study can also be classified as qualitative dominant (Johnson et al., 2007), as greater emphasis is placed on qualitative findings while still recognizing the valuable contributions of quantitative data.

Mixed Methods in Phenomenology

Because this study adopts a phenomenological framework, it is important to explore the integration of mixed methods in phenomenological research. Mayoh and Onwuegbuzie (2015) investigated the use of mixed methods phenomenological research (MMPR) in empirical studies, revealing that the first instance of MMPR appeared in 2003. Among the 24 studies between 2002 and the first half of 2012 that were investigated, most were in the field of health research, with only two studies coming from the education sector. To Mayoh and Onwuegbuzie (2015) this was not a surprising trend, as both phenomenology and mixed methods have strong historical roots in health research. Moreover, the majority of those studies employed interpretative phenomenology, often combining this approach with quantitative instruments like surveys or questionnaires.

While many of the studies did not explicitly clarify why mixed methods were employed, Mayoh and Onwuegbuzie (2015) identified five main purposes for mixing methodologies within a single study. These purposes were as follows: (1) to "ground quantitative data" in rich experiential narratives, (2) to place phenomenological data within an existing context or framework, (3) to provide direction towards a pertinent phenomenon, (4) to

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validate findings, and (5) to add an extra dimension to the analysis (p. 10). Mayoh and Onwuegbuzie (2015) noted that grounding aligns with the core phenomenological aim of providing a meaningful understanding of lived experiences, resonating with Greene et al.'s (1989) concept of complementarity. Furthermore, framing, which employs the strengths of one method to reduce the limitations of another, also paralleled the complementarity purpose proposed by Greene et al. (1989). In the case of the orientation purpose, Mayoh and Onwuegbuzie (2015) described it as guiding phenomenology toward a specific sample, a relevant phenomenon, or the perspectives of participants, aligning this idea with Greene et al.'s (1989) development concept, which posits that one method's outcomes can guide or enhance the other. Although they identified validation of findings as one purpose for employing MMR in phenomenology, Mayoh and Onwuegbuzie (2015) expressed reservations regarding the challenges associated with triangulation, noting that phenomenology's focus on the essence of human experience complicates efforts to cross-validate findings. This difficulty is further compounded, as Sale et al. (2002, as cited in Mayoh & Onwuegbuzie, 2015) argued, when the paradigms underpinning different approaches are based on fundamentally distinct assumptions about reality. With regard to the final purpose, Mayoh and Onwuegbuzie (2015) described this as layering, which provides a more precise understanding of the phenomenon. Although similarities with Greene et al.'s (1989) expansion and initiation concepts were acknowledged, Mayoh and Onwuegbuzie (2015) also highlighted important contrasts, suggesting that MMPR warrants an independent justification of its purposes, separate from the triangulation goals outlined by Greene et al. (1989).

Mayoh and Onwuegbuzie (2015) asserted that the acceptance of MMR stems from its increased use in research, arguing that the scholarly focus should therefore shift toward providing a "philosophical justification" (p. 92) for incorporating specific qualitative methods

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within an MMR framework. To address this need, they introduced the concept of "mixed methods phenomenological research (MMPR)" (p. 92) as a means of establishing a philosophical foundation for integrating qualitative and quantitative methods within phenomenology. Citing Johnson and Onwuegbuzie (2004), they argued that, based on the premise that research paradigms do not always dictate specific methods, phenomenological research can incorporate quantitative techniques when appropriate. Mayoh and Onwuegbuzie (2015) further explained that although differences exist between the ontology (nature of reality) and epistemology (means of acquiring knowledge) of phenomenology and quantitative research, the two traditions share common values and methodologies that allow them to be meaningfully combined within a single study, provided that the study is guided by a unifying paradigmatic framework capable of supporting multiple methods. Citing Giorgi (1970), they emphasized that phenomenology, despite its qualitative origins, has a scientific basis (as it is often referred to as a human science approach) that supports its integration with deductive, structured, and hypothesis-driven approaches. This, they argued, justifies the adoption of mixed methods within a phenomenological study. Additionally, Mayoh and Onwuegbuzie (2015) noted that phenomenology's flexibility and adaptability allow it to evolve alongside emerging research trends. Consequently, all forms of phenomenology can be combined with other methods to strengthen research findings. Supporting this view, Garza (2007, as cited in Mayoh & Onwuegbuzie, 2015) also postulated that the inherent strengths of phenomenology (its flexibility and adaptability) enable it to be incorporated within developing research trends (p. 98).

This capacity for change makes phenomenology a versatile approach that can be adapted to a variety of research designs. For example, Mayoh and Onwuegbuzie (2015) justified the use of mixed methods within different types of phenomenology, including

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descriptive and interpretive phenomenology. They explained that descriptive phenomenology, as outlined by Giorgi (2009), incorporates four core characteristics: (1) intentionality, referring to how objects are perceived within an individual's consciousness; (2) the descriptive nature of research, focusing on what is directly experienced; (3) phenomenological reduction, which entails setting aside prior knowledge to remain open to how the data inform the phenomenon being studied; and (4) the "essence" or structure of the phenomenon, capturing its core themes or essential elements (p. 95) that define it and transcend individual differences. In the context of MMPR, these characteristics support the integration of deductive methods into an inductive phenomenological framework. Mayoh and Onwuegbuzie (2015) suggested that the acceptance of objectivity within descriptive phenomenology, which aims to identify commonalities, divergences, and unique interpretations in lived experiences, provides a rationale for incorporating quantitative methods that focus on measuring and testing these elements. They also discussed how the concept of phenomenological reduction-ensuring researcher objectivity-aligns with post-positivism, which requires objectivity in research, even while acknowledging that such objectivity can only be approximated. According to Mayoh and Onwuegbuzie (2015), this overlap allows for the triangulation of data and the integration of quantitative methods into phenomenological research.

Regarding interpretive phenomenology, Mayoh and Onwuegbuzie (2015) proposed that its focus on "phenomenological orientation" (p. 97), or the explanation of participant behavior, provides a strong rationale for using preliminary quantitative methods to help focus the research before engaging in deeper qualitative analysis. They argued that both descriptive and interpretive phenomenology share a discovery-oriented approach, which justifies the use of sequential explanatory methods. In this design, the quantitative phase is conducted first to

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provide an initial framework, followed by a qualitative phase that delves deeper into participants' experiences.

Population and Sample of the Research Study

The general population in a study, according to Asiamah et al. (2017), consists of the largest group of potential participants who share attributes of interest to the researcher. This broad population encompasses both the target and accessible populations. The target population is a refined subset that includes only participants possessing the specific attributes relevant to the research, excluding those who do not meet the established criteria. The accessible population refers to the final group of participants who are both eligible and available to participate in the study. Depending on the size of this accessible group, it may either comprise all participants in the study or serve as the population from which a sample is drawn.

Sampling, the process of selecting participants for a study, has been defined in various ways. Polit and Beck (2017, as cited in Moser & Korstjens, 2018) described sampling as the identification or selection of situations, contexts, or participants that can provide valuable and in-depth data about the phenomenon of interest (p. 10). Similarly, Tashakkori and Teddlie (2003, as cited in Tashakkori & Teddlie, 2009) defined sampling as the selection of "units of analysis (for example: people, groups, artifacts, settings) in a manner that maximizes the researcher's ability to answer research questions that are set forth in a study" (p. 291).

Teddlie and Tashakkori (2008) identified four primary types of sampling techniques commonly employed in the social and behavioral sciences: purposive, probability, convenience, and mixed methods sampling. Each technique has distinct characteristics and applications, depending on the nature and goals of the study. Purposive sampling was described as a qualitatively oriented method wherein units of analysis are deliberately selected based on

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their capacity to provide rich information relevant to the research questions. Within this approach, they identified three forms: sampling to achieve representativeness or comparability, sampling special or unique cases, and sequential sampling. Probability sampling on the other hand was described as a quantitatively oriented method involving the random selection of units of analysis from a population or subpopulation, ensuring that every member has a known probability of inclusion. This approach includes random, stratified, and cluster sampling. Convenience sampling was described as a technique wherein participants are selected based on their availability and willingness to participate. Teddlie and Tashakkori (2008) further subdivided this into volunteer samples (individuals who willingly agree to participate) and captive samples (individuals who find it difficult to refuse participation). Mixed methods sampling described the sampling technique that combines qualitative (QUAL) and quantitative (QUAN) sampling strategies in innovative ways to comprehensively answer the study's research questions. Teddlie and Tashakkori (2008) outlined five types of mixed methods sampling: basic mixed methods strategies, sequential mixed methods sampling, parallel mixed methods sampling, multilevel mixed methods sampling, and sampling using multiple mixed methods strategies. Tashakkori and Teddlie (2009) later refined this classification, excluding the mixed methods sampling category thereby narrowing the focus to more systematically defined categories.

In the context of phenomenological research, the range of available sampling strategies is narrower compared to other research approaches. Creswell and Poth (2017) emphasized that sampling must involve participants who have directly experienced the phenomenon under study. Thus, criterion sampling, which involves selecting participants based on the fulfillment of specific predefined criteria, was identified as the most appropriate strategy. This view was supported by Moser and Korstjens (2018), who described criterion sampling as the inclusion

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of participants who meet set eligibility standards designed to ensure that the sample is directly relevant to the phenomenon being investigated.

Sample Size Considerations

The question of appropriate sample size in phenomenological and mixed methods research has been widely debated in the literature. Bartholomew et al. (2021) noted that the lack of standardized guidelines for sample sizes in phenomenological research continues to create confusion and practical difficulties for researchers. Despite the development of various guidelines for different forms of phenomenology, methodologists have yet to reach consensus on what constitutes an adequate sample size.

Smith et al. (2009, as cited in Bartholomew et al., 2021) indicated that among the variants of phenomenological research, only the interpretative approach suggested possible sample size guidelines, proposing between four to ten interviews. Even then, these were presented as flexible guidelines rather than strict rules, as no definitive answer exists regarding sample size in phenomenology (Smith et al., 2009, as cited in Bartholomew et al., 2021). Polkinghorne (1989, as cited in Creswell & Poth, 2017) is frequently credited with providing one of the few concrete recommendations, suggesting a range of five to 25 participants for phenomenological studies. However, Creswell and Poth (2017) also acknowledged a wide variation in sample sizes, citing examples ranging from one participant (citing Padilla, 2003) to 325 participants (citing Polkinghorne, 1989). Dukes (1984, as cited in Creswell & Poth, 2017) recommended between three and ten participants, while Edwards (2006, also cited in Creswell & Poth, 2017) used a considerably larger sample of 33 participants. In their analysis of 200 phenomenological studies, Bartholomew et al. (2021) found that the average sample size was slightly above 16 participants. They observed that studies identifying a specific type of phenomenology tended to have smaller, more focused samples, whereas studies that did not

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specify a type tended to have larger samples. Furthermore, they noted that larger sample sizes were often associated with lower study quality, while smaller, type-specific studies exhibited higher quality.

In mixed methods research, Leavy (2017) emphasized that while it is possible for both qualitative and quantitative samples to be of similar size, this is not the norm. Typically, quantitative phases require larger samples to support statistical generalization, while qualitative phases prioritize depth over breadth. Leavy (2017) stressed that the chosen research design plays a more critical role in determining sample size than any strict numerical guideline. Teddlie and Tashakkori (2008) introduced the concept of the representativeness/saturation tradeoff" in mixed methods sampling: "As more emphasis is placed on the representativeness of the QUAN sample, less emphasis can be placed on the saturation of the QUAL sample, and vice versa" (p. 163). Cohen et al. (2018) advised that each sample, whether qualitative or quantitative, should generate enough data to effectively answer the research questions and permit meaningful conclusions, while still respecting ethical standards and logistical feasibility.

Despite this seemingly inconclusive information regarding sample size, the general consensus across the literature (Bartholomew et al., 2021; Creswell & Poth, 2017; Leavy, 2017) is that phenomenological studies typically require small, focused samples. Bartholomew et al. (2021) identified three key reasons for this. First is the need to achieve saturation, where data collection continues until no new insights emerge, addressing concerns of redundancy (citing Wertz, 2005). Second is the importance of fully voicing participants' lived experiences, which requires deep engagement with individual narratives (citing Giorgi, 2009). Third is the challenge of adequately presenting participant quotations within reporting constraints, particularly in academic or institutional settings where space is limited (citing Smith, 2011).

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These considerations are equally relevant to mixed methods research, particularly in the qualitative phase, where richness and depth take precedence. The following section elaborates on how these principles informed the sampling strategy used in this study.

Rationale for Sample Size

The selection of 61 teachers and 20 administrators for the qualitative phase was grounded in the need for rich, diverse, and contextually relevant insights. Given the centrality of stakeholder experience in understanding the challenges and preconditions for CBET adoption, a criterion-based purposive sampling strategy was applied. Participants were selected based on their direct involvement in TVET delivery, supervision, or institutional leadership, ensuring that those most knowledgeable about CBET implementation were represented.

In qualitative research, data saturation (the point at which no new themes or insights emerge) rather than statistical representativeness, is the guiding principle for determining sample adequacy. The relatively large number of participants (n = 81) in the qualitative strand reflects the regional scope of the study and the deliberate inclusion of voices from different islands, institutional types, and hierarchical levels. Saturation was reached as recurring patterns and thematic convergence emerged during data collection and preliminary coding, particularly across teacher and administrator responses. The diversity of perspectives ensured that core themes were explored in sufficient depth and from multiple vantage points. In contrast, the quantitative strand relied on a broader stratified sample of TVET stakeholders who completed a structured questionnaire. Sampling for the quantitative phase was designed to maximize statistical validity, allowing for inferential testing and generalization within the study's defined parameters.

Accordingly, sampling strategies and data treatment were differentiated across strands: the qualitative component employed purposive and stratified purposive sampling with thematic

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analysis, while the quantitative component utilized probability sampling where feasible, and statistical analysis via SPSS, including descriptive statistics, correlation, and multiple regression. This distinct treatment reinforces the study's convergent parallel design, in which qualitative and quantitative data were collected independently but integrated during interpretation to ensure a comprehensive understanding of CBET adoption in the Caribbean TVET context.

Participant groups and Recruitment Procedures

Building on the sampling rationale previously outlined, this section presents the composition of the study's participant groups and the procedures used to recruit them. The target population for this study consisted of stakeholders from secondary schools, training institutions, Ministries of Education, and national TVET Councils or National Training Agencies (NTAs) across four Caribbean countries. From this broader group, a total of 81 individuals formed the accessible population and participated in the study. Table 7 provides a breakdown of both the target and accessible populations.

Table 7

Composition of the Target and Accessible Populations

Stakeholder Group	Target Population (n)	Accessible Population (n)
Secondary School Principals	23	9
TVET Teachers	171	61
Administrators from Other Training Institutions	2	1
TVET Unit – Ministry of Education (Saint Lucia)	4	2
Saint Lucia Council for TVET (SLCTVET)	10	5
Foreign Participants (MOEs and NTAs in Barbados, Trinidad & Tobago, Jamaica)	6	3

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Stakeholder Group	Target Population (n)	Accessible Population (n)
Total	216	81

These participants represented approximately 37.5% of the total target population. The sampling strategies used to select them varied by group and have been previously justified in relation to qualitative saturation and quantitative validity. What follows is a breakdown of the actual procedures used to access each group and the reasoning behind those recruitment choices.

Purposive sampling, specifically criterion-based, was employed to ensure that all participants had direct experience with technical and vocational education programs, particularly those offering competency-based qualifications. Distinct purposive techniques were applied to different stakeholder groups. Stratified purposive sampling was used to select principals and teachers from secondary schools, as well as administrators from other training institutions. This ensured representation from both instructional leaders and frontline educators across institutional types.

Random purposive sampling was used to select participants from the TVET Unit and the Saint Lucia Council for Technical and Vocational Education and Training (SLCTVET), capturing a range of internal perspectives while maintaining relevance to the study's focus. For foreign participants representing Barbados, Jamaica, and Trinidad and Tobago, snowball and convenience sampling strategies were applied. Initial contacts facilitated referrals for additional suitable interviewees which was particularly effective given the logistical challenges of securing cross-border participants. Table 8 summarizes the sampling strategy and data collection method employed for each participant group.

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Table 8

Sampling Strategies by Participant Group

Participant Group	Sampling Strategy	Data Collection Method
Secondary school principals and teachers	Stratified purposive sampling	Interviews (principals); Questionnaires (teachers)
Administrators from training institutions	Stratified purposive sampling	Interviews
SLCTVET and Ministry of Education (Saint Lucia)	Random purposive sampling	Interviews
Foreign participants (Barbados, Jamaica, T&T)	Snowball and convenience sampling	Interviews

Recruitment of local participants was facilitated through collaboration with the Ministry of Education. The researcher used Ministry records to identify eligible secondary schools offering Caribbean Vocational Qualification (CVQ) programs. Principals were first contacted by telephone, during which the researcher explained the study's purpose and scheduled in-person meetings to conduct interviews and brief teachers about the questionnaire process. Prior to these meetings, principals were sent formal permission letters (including Ministry authorization), UNICAF University consent forms, sample interview questions, and a link to the online questionnaire. Following the meetings, principals distributed the questionnaire link to their TVET teachers. A similar procedure was followed for administrators of training institutions and members of the TVET Unit and SLCTVET. Initial telephone contact was made to schedule meetings, and interview guides were shared in advance. For foreign participants, interviews were conducted remotely via telephone or Zoom, following similar initial contacts.

Materials/Instrumentation of Research Tools

Given the descriptive phenomenological framework within a mixed methods research design adopted for this study (Mayoh & Onwuegbuzie, 2015), two primary data collection instruments were developed: a semi-structured interview guide for the qualitative component and a structured questionnaire for the quantitative component. These instruments were

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carefully designed to capture the depth and breadth of participant experiences while ensuring alignment with the research questions and the mixed methods phenomenological research (MMPR) model employed in the study.

Regarding mixed methods research, Creswell and Plano Clark (2017) observed that qualitative data can be gathered from traditional methods such as observations and interviews, as well as from newer sources like text messages, blogs, wikis, artifacts, pictures, and videos. Quantitative data collection, on the other hand, often relies on instruments such as performance and attitudinal tests, structured interviews, observational data categorized beforehand, census data, attendance records, biomedical tests, GIS spatial data, and digital tracking data. They further noted that while the line between qualitative and quantitative data collection can sometimes blur, open-ended questions generally yield qualitative data, while closed-ended questions with structured responses yield quantitative data. These distinctions guided the structuring of the instruments for this study, ensuring that data collected were suitable for both qualitative and quantitative analysis.

The semi-structured interview guide was selected because it allowed for the exploration of participants' experiences in their own words while ensuring that key thematic areas were addressed. As Lincoln and Guba (1985, as cited in Cohen et al., 2018) noted, researchers must depend on participants to provide insights into areas that may not have been anticipated. Bevan (2014) also emphasized the centrality of interviews in phenomenological research for uncovering detailed descriptions of experiences. Semi-structured interviews offered the flexibility needed to probe deeper based on participants' responses while maintaining consistency across interviews. In contrast, the structured questionnaire provided a standardized means of gathering data from a broader participant base, particularly teachers, facilitating pattern recognition and comparative analysis across institutions.

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The choice to use both instruments also reflects a pragmatic rationale rooted in mixed methods research principles. The qualitative interviews allowed for a deep understanding of lived experiences with competency-based TVET implementation, while the questionnaire captured quantifiable attitudes and perceptions, supporting triangulation and providing a more comprehensive view of the phenomenon. As Creswell and Plano Clark (2017) and Tashakkori and Teddlie (2010) advised, such integration of qualitative and quantitative strands is essential for addressing complex research problems where one type of data alone may be insufficient.

Development of the instruments drew heavily from established research sources, including Cohen et al. (2018), Creswell and Creswell (2018), Seidman (2006), Johnson and Christensen (2014), and Creswell and Plano Clark (2017). The first step involved grouping research questions into four thematic subtopics: adoption of competency-based approaches to TVET, goal orientation of stakeholders, perceived social support for TVET, and the relationship between goal orientation and adoption behaviors. An implementation matrix (Creswell & Plano Clark, 2017) was developed to map questions to participant groups, ensuring that each research question was addressed appropriately across the two instruments.

Following initial drafting, the instruments were subjected to piloting and pretesting to enhance their reliability, clarity, and alignment with research aims. Piloting the questionnaire involved distributing it to a small group comprising four family members (two with TVET experience and two non-educators), three retired TVET teachers, and two retired administrators/department heads. Their feedback focused on item clarity, logical flow, language appropriateness, and instrument length. Based on their suggestions, minor revisions were made to wording, scale labeling, and demographic question sequencing. A second pilot confirmed that the revised instrument functioned effectively within Google Forms, capturing responses accurately and consistently.

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For the semi-structured interview guide, mock interviews were conducted with individuals familiar with the education sector but not involved in the study. This process allowed for fine-tuning the phrasing of prompts, the logical sequencing of topics, and the operation of the recording equipment (smartphone application and backup devices). Special attention was given to ensuring that the prompts encouraged reflective responses and that the interviews could flow naturally while still covering the required thematic areas.

Each instrument began with a demographic section designed to gather key background data essential for contextualizing responses. Demographic information was partly optional to protect participants' privacy but included items such as age, gender, educational background, and professional experience. For principals and administrators, additional demographic questions explored their leadership responsibilities, exposure to TVET training, and familiarity with competency-based education frameworks. Teachers were asked about their years of teaching experience, subjects taught, and the education district they belonged to. Collecting this information was crucial for identifying potential patterns and differences in perceptions across demographic groups.

The body of each instrument targeted the four key thematic areas linked to the study's conceptual framework. In the interviews, open-ended questions and flexible probing techniques were employed to elicit participants' narratives in a manner consistent with phenomenological research principles. For instance, principals were asked about their perceptions of CVQ implementation challenges and the support structures available at their institutions. TVET administrators and council members were questioned on institutional-level planning, support mechanisms, and systemic factors influencing CBET adoption.

The structured questionnaire administered to teachers consisted of 47 items following the demographic section. These included 42 closed-ended questions measured on a five-point

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Likert scale (strongly agree to strongly disagree) and five open-ended questions to capture additional explanatory data. Questions were grouped by thematic area: for example, adoption of competency-based approaches included 13 closed-ended items and one open-ended item; goal orientation had 12 closed-ended items, a multiple-response question ("select all that apply"), and an open-ended question; and perceived social support included 10 closed-ended items and two open-ended items. The open-ended questions provided opportunities for teachers to elaborate on factors not fully captured through the scaled responses.

Overall, the use of both semi-structured interviews and structured questionnaires allowed for methodological triangulation, strengthening the validity and credibility of the study's findings. This comprehensive approach was particularly important in the Caribbean TVET context, where program adoption processes are influenced by multifaceted individual, institutional, and systemic factors that benefit from both narrative and numerical representation.

Study Procedures and Ethical Assurances

Before embarking on the data collection process, the necessary approvals were obtained from the University Research Ethics Committee (UREC) and the local Ministry of Education. In Saint Lucia, before any research can be undertaken at a public school, the researcher must seek permission from the Ministry of Education. Gaining this permission requires completing and submitting the prescribed Ministry of Education form (Research in Education Permission Form), which captures details about the researcher, the affiliated university, the topic of the study, the schools involved, the duration of the research, samples of instruments, and an undertaking to share the research findings with the Ministry.

As Englander (2012) stated, there is no specific method for conducting a successful phenomenological interview except for ensuring that a complete description of the participant's

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experience with the phenomenon is obtained. Accordingly, the researcher briefed participants about the study during the initial telephone conversation, introducing herself, informing them that permission had been granted, soliciting their cooperation, explaining what would be required of them, and clarifying that they and their teachers (in the case of school principals) could choose not to participate or withdraw at any point without consequence. The necessary informed consent forms, which provided information about the study and its conduct and solicited participants' signatures, were emailed following the initial conversation. Informed consent forms for participants completing the questionnaire (teachers), along with the questionnaire link, were emailed to principals for onward transmission after the briefing sessions held during the school visits.

Although the number of educational institutions involved was small and, given the nature of the research topic (competency-based approaches to TVET), it would have been possible to easily identify them, anonymity was preserved through the use of coded identifiers instead of institutional names. The same approach was used for the TVET Unit and TVET Council, given their small sizes (four and ten persons, respectively). Teachers were asked to complete the questionnaires online using their school email addresses, shared through the principals, rather than their private email addresses. This method enabled the researcher to follow up through the schools if responses were not received, while also helping preserve anonymity, as there was no direct individual contact apart from the general introductory briefing. Although identification through school email addresses could theoretically have been possible if staff lists were obtained, responses were accessible only to the researcher, stored securely in password-protected folders. Furthermore, identification of individual teachers was neither necessary nor undertaken during data analysis. For overseas participants, although it would be more difficult to identify them from a Saint Lucian perspective, the possibility of

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identification within their respective countries remained; therefore, coding procedures were also applied. Confidentiality was ensured through minimizing individual-level data reporting and utilizing only aggregated or generalized findings.

Apart from the risk of identification, another potential risk during this time of COVID-19 was infection transmission. To mitigate this risk, the researcher adhered to all nationally mandated protocols during in-person interviews, including wearing medical masks, sanitizing or washing hands, and maintaining at least one metre of distance from participants. To further safeguard confidentiality, interviews were conducted individually in private settings arranged by the institutions, with no third parties present, and all recordings and transcripts were stored securely in password-protected files accessible only to the researcher. Participants were also assigned pseudonyms during transcription, and any identifying information was removed or generalized to protect confidentiality during both analysis and reporting.

Ethical Assurances

Several strategies were implemented to address ethical considerations, which included preventing harm to participants, ensuring informed consent, protecting the right to privacy, and maintaining honesty with professional colleagues. Researchers must ensure that no harm, whether physical or psychological, results from study participation. Although there was no significant risk of physical harm in this study, due to the COVID-19 pandemic, additional safety protocols were necessary beyond normal circumstances. As Seidman (2006) explained, “Interviewing requires that researchers establish access to, and make contact with, potential participants whom they have never met” (p. 12). Since the researcher did not previously know the participants, she sought to establish rapport (except with the teachers) through at least two preliminary telephone conversations prior to the meeting. The first call introduced the researcher, outlined the purpose and topic of the research, assured participants that Ministry

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permission had been obtained, explained what participation would involve for both principals and teachers, and set a meeting date. This was followed by an email that included the informed consent form, the Ministry permission letter, and the interview guide. Subsequent phone calls confirmed receipt of the documents, clarified questions, thanked participants for agreeing to the meetings, and provided reminders about the interview topic. These efforts helped foster trust and transparency between the researcher and the participants.

To further protect participants from potential professional harm and ensure privacy, pseudonyms or codes known only to the researcher were used consistently for recording, storing, analyzing, and presenting data. From the first point of contact, the researcher disclosed that the study was personally significant, as it supported her advocacy for the development of competency-based programs at her institution. She expressed hope that the study's findings would positively influence the development of competency-based TVET initiatives nationally. For the distribution of the questionnaires, some principals forwarded the survey links to their staff and copied the researcher into the communication. This allowed the researcher to follow up with staff directly, avoiding overburdening principals. Participants' privacy and confidentiality were safeguarded by not requesting personally identifying information and by conducting the survey through Google Forms, with codes or pseudonyms used to identify responses. Email addresses obtained through copied communications were used strictly for reminder or follow-up messages where necessary. No unsolicited contact was made, nor was any additional personal information requested. For overseas participants, interviews were conducted via telephone or Zoom, employing the same confidentiality measures as for local participants. All participants provided informed consent through forms based on the UNICAF University template. They were fully informed of the study's purpose and reminded that participation was voluntary, with the option to withdraw at any time.

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The researcher's role in this study was that of interviewer, with no prior experience teaching TVET subjects structured according to a competency-based framework at the time of data collection. However, her interest in competency-based education enabled her to engage more meaningfully with participants and better understand their experiences with the NVQ/CVQ and competency-based TVET practices. These interactions helped to surface potential challenges her institution might face if it decided to implement competency-based programming. Following the data collection phase, the researcher pursued further professional development in CBET, participating in the design and delivery of competency-based courses, and becoming a certified CBET trainer and assessor. These experiences helped clarify issues raised by participants, strengthened the study's recommendations, and informed future research directions.

Data Collection and Analysis

The data collection process for this study was guided by the principles of mixed methods phenomenological research, employing both qualitative and quantitative data collection techniques to capture a comprehensive understanding of the phenomenon under investigation. Prior to beginning data collection, ethical clearance was secured from the University Research Ethics Committee (UREC) and permission was obtained from the Ministry of Education in Saint Lucia, following the required procedures for research involving public educational institutions.

Data were collected over a seven-week period, commencing immediately after the Easter school vacation. This timing was intentional, as it minimized disruptions caused by vacation schedules and ensured that participants, particularly school-based participants, were available for interviews and questionnaire distribution. In keeping with phenomenological research tradition, qualitative data collection relied heavily on semi-structured interviews,

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while quantitative data collection utilized structured questionnaires. The sequential collection of qualitative followed by quantitative data reflected the study's PHEN + QUAN mixed methods model, allowing initial qualitative insights to inform and contextualize the interpretation of the quantitative findings.

Semi-structured interviews were conducted with five participant groups: secondary school principals, administrators of TVET institutions, members of the TVET Unit, members of the TVET Council, and regional TVET stakeholders from three other Caribbean islands. Interviews were scheduled at the participants' convenience and conducted either in person, via telephone, or using the Zoom platform, depending on the participants' preferences and logistical constraints. During each in-person school visit, the researcher also used the opportunity to meet briefly with teachers to sensitize them about the research and encourage their participation in the online questionnaire.

Each interview followed the interview guide developed during the instrument construction phase, with minor modifications made depending on the participants' organizational roles. Interviews were recorded with participants' permission using a smartphone application, with a secondary recording device (another smartphone) used as backup. Notes were also taken during interviews to document non-verbal cues, immediate impressions, and contextual information. Interview recordings were subsequently transcribed for analysis. Where possible, manual transcription was employed; however, due to time constraints, especially with longer interviews, the Ligre transcription platform was utilized. Transcripts were manually reviewed and edited to ensure accuracy, particularly in instances where the software misinterpreted accents or specific terminology common to the Caribbean education and TVET landscape.

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Quantitative data were collected via a structured online questionnaire distributed to secondary school TVET teachers. Teachers received the questionnaire link through their principals, who had been briefed during their own interviews about the purpose of the survey and the importance of securing maximum teacher participation. Google Forms was used as the platform for questionnaire administration, as it allowed for easy distribution, automatic recording of responses, and minimal technological barriers for participants. The questionnaire was designed so that teachers had to review and consent to the informed consent section before proceeding to the questions.

To maximize response rates, reminder emails were sent approximately two weeks after the initial distribution, particularly to schools where few or no responses had been recorded. Some principals copied the researcher into their email communications to staff, allowing for direct but respectful follow-up with teachers. All questionnaire responses were automatically recorded in Google Sheets, and data were downloaded in Microsoft Excel format for preliminary cleaning before statistical analysis.

Data analysis procedures mirrored the mixed methods approach adopted for data collection. Qualitative data analysis followed phenomenological procedures aimed at uncovering the essence of participants' experiences with competency-based approaches to TVET. Interview transcripts were first reviewed manually to familiarize the researcher with the data. Initial codes were developed inductively, based on significant statements and meaning units extracted from the transcripts. The coding process involved horizontalization, where all statements were initially treated as having equal value, as recommended by Moustakas (1994). Codes were subsequently grouped into larger themes that reflected the underlying structures of experience shared by participants. This thematic development process drew upon principles

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outlined by Creswell and Poth (2017) and van Manen (1990), emphasizing both individual and composite descriptions of participants' experiences.

Ligre software was employed during the qualitative data analysis phase to support the thematic organization of interview transcripts. After manually transcribing the audio recordings, the researcher uploaded the transcripts into Ligre to begin inductive coding. Ligre's visual framework structured around the metaphor of branches, stems, and leaves was particularly useful for categorizing emerging codes and grouping them into higher-order themes. 'Leaves' represented discrete coded segments or meaning units, 'stems' grouped similar codes into conceptual categories, and 'branches' represented overarching themes that reflected the shared lived experiences of participants. This structure aligned well with the study's phenomenological orientation by allowing a visual yet rigorous approach to capturing participant perspectives. The coded outputs were later exported into Excel to support further thematic refinement and comparison across stakeholder groups. After exporting coded data from Ligre, the researcher used Microsoft Excel to further refine the thematic categories and compare them across participant groups. A matrix format in Excel allowed for clear visualization of themes, supporting both transparency and auditability. This process aligned with qualitative rigor standards recommended by Lincoln and Guba (1985).

Quantitative data analysis was conducted using SPSS (Statistical Package for the Social Sciences) software. Data cleaning procedures included checking for incomplete responses, ensuring that all required questions had been answered, and verifying that Likert scale responses were correctly coded. Descriptive statistics (frequencies, percentages, means, and standard deviations) were generated for all closed-ended questionnaire items. These statistics provided a snapshot of the general trends and perceptions among teacher participants regarding the adoption of competency-based approaches to TVET, their goal orientations, and perceived

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social support. In addition to basic descriptive statistics, cross-tabulations were employed to explore relationships between selected demographic variables (such as years of teaching experience or educational district) and perceptions of competency-based TVET adoption. While the small sample size limited the extent to which inferential statistical tests could be meaningfully conducted, these cross-tabulations helped to identify emerging patterns that complemented and extended the qualitative findings.

The integration of qualitative and quantitative data occurred during the interpretation phase. Following Creswell and Plano Clark's (2017) recommendations for mixed methods data integration, qualitative themes were compared with quantitative patterns to identify areas of convergence, divergence, and expansion. This comparative analysis enriched the findings by allowing deeper exploration of how quantitative trends reflected or differed from participants' narrative experiences. For example, where quantitative data suggested moderate teacher agreement about institutional support for CBET implementation, interview data provided nuanced descriptions of specific barriers faced at the school leadership and policy levels.

Throughout the data collection and analysis process, efforts were made to ensure trustworthiness and validity, following the frameworks of Lincoln and Guba (1985) for qualitative inquiry and standard principles of quantitative validity and reliability. Triangulation across data sources (principals, administrators, teachers, TVET Council members, and regional stakeholders) further strengthened the credibility of findings. Maintaining detailed records of coding decisions, data cleaning steps, and analytic memos ensured that the study's results were grounded firmly in the data collected and were reflective of participants' genuine experiences. Overall, the combined use of qualitative and quantitative data collection and analysis methods allowed the study to provide a richer, more comprehensive understanding of the factors

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influencing the adoption of competency-based approaches to TVET in Saint Lucia and the broader Caribbean context.

Summary

This study sought to investigate the factors influencing the adoption of competency-based approaches to TVET among four Caribbean countries and to identify the most significant factor contributing to adoption differences. It was grounded in a phenomenological framework, more specifically characterized as transcendental or descriptive phenomenology. A mixed methods research design was employed, best described as a convergent approach (Creswell & Plano Clark, 2017; Creswell & Creswell, 2018; Dawadi et al., 2021), also referred to by some authors as concurrent (Leavy, 2017) or parallel (Tashakkori & Teddlie, 2009). Data collection occurred simultaneously using semi-structured interviews and structured questionnaires, with each method developed independently and the results of one not influencing the other.

As is common in phenomenological studies, the sample size was relatively small: 20 participants for the qualitative component and 61 participants for the quantitative component, representing approximately 37.5 percent of the general population. Ethical clearance was obtained from the University Research Ethics Committee (UREC) and the Ministry of Education in Saint Lucia prior to data collection. All participants provided informed consent, either physically or electronically. Participant confidentiality was maintained through the use of coded identifiers known only to the researcher. Data security measures included storing interview recordings, transcripts, questionnaire reports, and associated files in password-protected locations on Google Drive, USB devices, and the researcher’s personal computer.

Qualitative data analysis initially utilized the Ligre research software to categorize responses into emergent themes, which were named by the researcher based on the content of participants’ narratives. However, due to the researcher's limited familiarity with the software

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and the time-intensive nature of its use, thematic analysis was also conducted manually. This dual approach helped ensure the robustness of the qualitative analysis process. Quantitative data analysis was performed using SPSS software, with results cross-verified using relevant functions in LibreOffice Calc and Microsoft Excel to confirm accuracy.

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CHAPTER 4: DATA ANALYSIS

Introduction

This study sought to identify the predisposing factors influencing the adoption of competency-based approaches to technical and vocational education and training (TVET) within the Caribbean region. Beyond identifying influencing factors and determining the most significant one, the study also explored the potential correlation between stakeholders' goal orientation, perceived social support, and the adoption of competency-based approaches to TVET. Eight research questions were formulated to guide the investigation. Data analysis employed descriptive statistics, Pearson's Product Moment Correlation (PPMC), and multiple regression analysis. The results are presented following an explanation of the procedures undertaken to ensure trustworthiness, reliability, and validity.

Trustworthiness of Data

Ensuring the trustworthiness of the research data was critical to establishing the credibility and validity of the findings in this mixed-methods descriptive phenomenological study. Strategies were employed in accordance with the principles of credibility, transferability, dependability, and confirmability (Creswell & Poth, 2018).

Credibility: Credibility was established through the use of a mixed-methods approach, involving the collection of both qualitative and quantitative data using semi-structured interviews and standardized questionnaires. Both instruments were pilot tested to enhance validity and reliability. The interview guide allowed for an in-depth exploration of participants' experiences and perspectives. Member checking was employed, giving participants the opportunity to review and confirm the accuracy of the findings, thereby enhancing credibility.

Transferability: Transferability was addressed by providing comprehensive descriptions of the research context, participants, and data collection procedures. Information

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about the TVET setting, participant demographics, and the research process enables readers to assess the applicability of the findings to similar contexts. The use of direct quotations from participants in the analysis provided a rich and detailed understanding of the phenomenon, thus enhancing transferability.

Dependability: Dependability was established through systematic data collection and analysis procedures. The administration of questionnaires and the conduct of interviews were carefully documented to ensure transparency and auditability. Established qualitative and quantitative analysis techniques were employed throughout the study.

Confirmability: Confirmability was strengthened by comparing the findings with existing research globally. Due to the limited availability of studies specifically on the Caribbean region, findings were contextualized by referencing similar studies conducted internationally. This strategy helped ensure that interpretations were grounded in the data rather than researcher bias.

The trustworthiness of the data in this study was strengthened through methodological rigour, the use of mixed methods, member checking, rich description, and careful documentation of procedures. Together, these strategies enhanced the credibility, transferability, dependability, and confirmability of the findings.

Reliability and Validity of Data

In this descriptive phenomenological study, multiple steps were taken to ensure the reliability and validity of the data collected. Purposive, snowball, and convenience sampling methods were employed to ensure that participants with relevant experience in the adoption of competency-based approaches to TVET were included in the sample. Standardized questionnaires gathered quantitative data regarding participants' perceptions of adoption levels, goal orientation, and perceived social support. Semi-structured interviews ensured consistency

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in qualitative data collection while allowing flexibility to accommodate participants' unique perspectives. Although participants were drawn from different groups and had different responsibilities, all responded to questions addressing the main research questions. Where necessary, participant-specific questions were posed to better capture group-specific experiences. The use of two complementary data collection instruments strengthened the reliability of the findings by reducing potential biases associated with single method approaches and allowing data triangulation across multiple perspectives. Interviews were designed to be open-ended, encouraging participants to share their experiences in their own words, thereby supporting the validity of the qualitative data.

Internal consistency within the questionnaire was also addressed. Multiple questions phrased differently assessed similar constructs, enhancing reliability. For example, Questions 10 and 11 were internally consistent with Questions 31 and 32, while Questions 36a aligned with 44c, and 36 with 43c. Additionally, contradictory questions were incorporated - for instance, comparing responses to encouragement toward CVQ versus CSEC (Questions 10 and 11) and training background (Questions 22 and 23) - to further validate response patterns. Validity was ensured through pilot testing involving three retired TVET teachers and two retired administrators not included in the final study sample. Instruments were tested and then retested with the same group within one week to assess stability. The test-retest reliability of the questionnaire, measured using Cronbach's alpha, yielded a value of 0.977, indicating excellent consistency. Furthermore, the internal reliability of the questionnaire responses was confirmed through a Cronbach's alpha of 0.758, suggesting acceptable reliability.

To ensure that this research was grounded in reliable and valid data, careful sampling procedures, the use of standardized instruments, pilot testing, internal consistency checks, and appropriate statistical validation measures were all employed to uphold the integrity of the data.

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Results

This study consisted of 81 participants, all of whom were involved in TVET and CVQ. Sixty-one were teachers and twenty were involved in the administration of TVET. Teachers completed the questionnaire, while interviews were conducted with the TVET administrators. Thus, 61 participants completed questionnaires, and 20 participants were interviewed, resulting in a sample size of 81 total participants. Although there is no set recommendation for the sample size of phenomenological research, Creswell and Poth (2018) identified an approximate range of five to 25 participants for interviews, citing examples ranging from one (citing Padilla, 2003) to 325 (citing Polkinghorne, 1989). Bartholomew et al. (2021), in their investigation of 200 phenomenological studies, found that the average sample size was about 16 participants. Teddlie and Tashakkori (2008) introduced the concept of the "representativeness/saturation tradeoff" in sample size determination, indicating that if greater emphasis is placed on representativeness in the quantitative sample, less emphasis can be placed on saturation in the qualitative sample and vice versa. Cohen et al. (2018) advised that the focus should be on whether the sample sufficiently generates both types of data necessary to answer the research questions while remaining practical, ethical, and efficient.

The questionnaire was administered via Google Forms, with the survey link distributed either by principals or by the researcher directly to TVET/CVQ teachers through school colleagues. Responses were downloaded from Google Forms and converted into LibreOffice Calc for preliminary review. Questionnaire responses were categorized into three main sections for analysis: adoption of competency-based approaches to TVET, stakeholders' goal orientation, and perceived social support. Most questions (31) employed a five-point Likert scale ranging from strongly agree to strongly disagree. One item required multiple selections, and five items were open-ended. Open-ended responses were categorized into themes using the

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Ligre software, while Likert scale items were analyzed using PSPP and SPSS software. Table 9 shows the distribution of questionnaire items according to the research questions.

Table 9

Distribution of Research Questions by Type in the Questionnaire.

Category	Questionnaire numbers	Likert scale question numbers	Open ended question numbers	Checklist question
Adoption	7-20	7-19	20	
Goal Orientation	21-35	21-32	33-34	35
Perceived Social Support	36-47	36-45	46-47	

Questionnaire respondents were not required to answer Research Questions One, Five, Six, Seven, or Eight directly. Rather, their responses to items relating to adoption, goal orientation, and perceived social support were used to derive responses for these questions. 14 items on the questionnaire were used to answer Research Question Two, “What is the level of adoption of competency-based approaches to TVET among countries within the Caribbean region?” 15 items were used to answer Research Question Three, “What is the level of goal orientation of stakeholders involved in TVET among countries within the Caribbean region?” and 11 items were used to answer Research Question Four, “What is the level of perceived social support of stakeholders involved in TVET among countries within the Caribbean region?”

Correlation analysis was employed to answer Research Questions Five and Six: “What is the relationship between goal orientation and adoption of competency-based approaches to TVET?” and “What is the relationship between perceived social support and adoption of competency-based approaches to TVET?” respectively. Regression analysis was utilized to answer Research Questions Seven and Eight: “What are the joint contributions of goal

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orientation and perceived social support of stakeholders to the adoption of competency-based approaches to TVET?" and "What are the relative contributions of goal orientation and perceived social support of stakeholders to the adoption of competency-based approaches to TVET?" respectively.

For purposes of coding and analysis, numerical values were assigned to the Likert scale options: 5 for strongly agree, 4 for agree, 3 for neither agree nor disagree, 2 for disagree, and 1 for strongly disagree. For items requiring reverse coding, the values were adjusted accordingly: 1 was converted to 5, 2 to 4, 3 remained unchanged, 4 was converted to 2, and 5 to 1. In some analyses, responses were further collapsed: agree and strongly agree were combined and assigned a value of 3, neither agree nor disagree was assigned a value of 2, and disagree and strongly disagree were combined and assigned a value of 1.

The interviews were recorded using the voice recorder application on the researcher's mobile phone. Audio files were downloaded and saved on the researcher's laptop for transcription using software that allowed audio speed control and playback during manual typing. Interviews were first transcribed using intelligent transcription methods, followed by edited transcription for clarity and accuracy. The qualitative data sets, including open-ended questionnaire responses and interview transcripts, were analyzed through thematic analysis using Ligre software. An inductive coding process was employed, beginning with open coding to identify key concepts, followed by axial coding to organize these into broader thematic categories. This process yielded three dominant themes: resourcing, implementation, and image, which captured the most frequently emphasized challenges and priorities across participant responses. To protect confidentiality while enabling analytical clarity, all respondents were assigned anonymized identifiers ranging from A to T.

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The research questions and sub-questions posed to each group are detailed in Appendix A. It must be noted that the questions varied depending on participants' responsibilities; not all groups were asked the same questions. In cases where questions were identical or had only minor wording adjustments to suit each group, the table indicates this by presenting them without separation.

Findings from all participant groups were combined and are presented according to the corresponding research questions. For purposes of analysis, demographic results are presented first, followed by the categorized results presented separately as quantitative and qualitative findings. Quantitative results include the analysis of Likert scale items from the questionnaire, while qualitative results derive from interviews and the open-ended questionnaire responses.

Based on this approach, quantitative results begin with Research Question Two, as Research Question One was addressed through qualitative methods. Additionally, the qualitative results section does not present findings for Research Questions Six through Eight, as these were determined through statistical analysis (quantitative techniques). However, this distinction is not maintained in the discussion and evaluation sections: in those sections, findings from both participant groups are combined and discussed sequentially from Research Questions One through Eight.

Participant Demographics

Demographic information collected included gender, age, years of experience, training background, years of experience, and district assignment (for teachers). Table 10 presents the demographic characteristics of participants.

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Table 10

Demographic Information of Study Participants. (n=81)

Variable	Administrators (n=20)	Teachers (n=61)	Total Frequency (n=81)	Percentage (%)
Gender				
Variable	**Administrators (n=20)**	**Teachers (n=61)**	**Total Frequency (n=81)**	**Percentage (%)**
Male	9	28	37	46
Female	11	33	44	54
Age Ranges				
21-30	0	15	15	19
31-40	0	24	24	30
41-50	11	18	29	36
51-60	3	4	7	9
61-70	6	0	6	7
Level of Education				
Associate degree	0	13	13	16
Bachelors	1	30	31	38
Masters	15	17	32	40
Doctorate	4	0	4	4
Trade Certificate	1	0	1	1
Number of Years in Position				
1-10	16	24	40	49
11-20	4	17	21	26
21-30	0	14	14	17
>30	0	6	6	7

The majority of participants were female (54%). Participants' ages ranged from 22 to 70 years, with the largest group falling within the 41–50 age range (36%). Teachers had been employed within the education system for periods ranging from 2 to 38 years, with an average tenure of 16 years. Administrators had served in their positions for between 2 and 20 years, with an average tenure of 8 years. Overall, most participants had held their current positions for 1 to 10 years (49%), while six participants (7%) had been in their roles for more than 30 years. In terms of educational qualifications, the majority of participants held master's degrees (40%), followed by bachelor's degrees (38%). One participant held a trade certificate.

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Quantitative Results

Research Question Two: What is the Level of Adoption of Competency-based Approaches to TVET Within the Caribbean Region?

14 questionnaire items (Questions 7–19) were used to assess the level of adoption of competency-based approaches to TVET among countries in the Caribbean. Descriptive statistics were used to summarize the frequency and percentage of participant responses for each of the five Likert scale categories related to the adoption of competency-based approaches. These results are presented in Table 11.

Table 11

Frequency, Percentage, and Mean Scores for Questions 7–19 on Adoption of Competency-Based Approaches to TVET. (n = 61)

Question		Frequency of responses					Percentage of responses				
		SA	A	NAD	D	SD	SA	A	NAD	D	SD
7	I was part of the decision to offer the Caribbean Vocational Qualification (CVQ) in my subject area	14	14	6	18	9	23	23	10	30	15
8	The CVQ should be more widely adopted at my school.	42	14	3	2	0	69	23	5	3	0
9	Students should be given a choice between CVQ and Caribbean Secondary Education Certificate (CSEC)	37	13	7	2	2	61	21	11	3	3
10	I would encourage students to do CVQ rather than CSEC.	18	14	15	12	2	30	23	25	20	3
11	I would encourage students to do CSEC rather than CVQ. (This item was reverse coded)	15	14	15	14	3	25	23	25	23	5
12	Students view CVQs as a desirable qualification.	4	10	28	13	6	7	16	46	21	10
13	CVQs provide students with more employable skills	47	10	2	0	2	77	16	3	0	3
14	CVQs are for ‘less intelligent’ students	0	0	2	11	48	0	0	3	18	79

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15	People do not see the CVQs as valuable as CSEC	36	19	4	2	0	59	31	7	3	0
16	If parents and students understood what CVQs are, more students would be interested in this qualification	49	9	3	0	0	80	15	5	0	0
17	CVQ programme is expensive	37	17	5	2	0	61	28	8	3	0
18	The school values TVET teaching	12	29	12	3	5	20	48	20	5	8
19	Competent teachers are being used to deliver TVET at the school	29	21	11	0	0	48	34	18	0	0
Averages		26	14	9	6	6	43	23	14	10	10
Combined averages		40		9	12		66		14	20	

The findings of this research indicate that participants were generally supportive of the adoption of competency-based approaches, particularly the Caribbean Vocational Qualification (CVQ), within their institutions. On average, 66% of teachers either agreed or strongly agreed with statements related to CVQ adoption. However, while there was broad support, several concerns emerged regarding public perception and the cost of implementation.

Perceptions of CVQ Value. Participants overwhelmingly rejected the idea that CVQs are intended for "less intelligent students," with 97% disagreeing, including 79% who strongly disagreed. Additionally, 92% of participants believed that the CVQ should be more widely adopted at their schools, with 69% strongly agreeing. These responses reflect a clear sense among educators that the CVQ is a valid and worthwhile qualification.

Choice and Student Encouragement. Most participants (82%) believed that students should be given the option to choose between the CVQ and the Caribbean Secondary Education Certificate (CSEC). However, only 53% indicated that they would actively encourage students to pursue the CVQ, suggesting a level of hesitation or uncertainty despite their general support

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for the qualification. This may reflect concerns about how the CVQ is perceived or resourced in practice.

Public Perception Challenges. Despite their own positive views, participants acknowledged that the CVQ continues to face challenges in terms of wider public perception. Approximately 90% agreed that the CVQ is not widely seen as valuable. When asked whether students see the certification as desirable, 46% neither agreed nor disagreed, and 31% disagreed. These findings suggest a degree of ambivalence or uncertainty among students, possibly influenced by societal attitudes or a lack of awareness about the benefits of CVQ certification.

Potential for Greater Adoption. There was broad agreement that increased awareness could positively impact uptake. A large majority (95%) believed that greater understanding among parents and students would lead to more students pursuing the CVQ. This points to the need for continued public education and communication around the value, structure, and opportunities associated with the CVQ programme.

Institutional Support. The majority of participants (68%) believed that their schools value technical and vocational education and training (TVET), and 82% agreed that competent teachers are being used in its delivery. These responses indicate that within schools, there is institutional support for TVET, and that the educators involved are perceived to be qualified and capable.

Concerns About Cost. Cost was highlighted as a significant issue. 89% of participants agreed that the CVQ programme is expensive, while only 3% disagreed and 8% neither agreed nor disagreed. This perception of high cost could be a barrier to wider implementation, particularly in schools or systems already facing resource limitations.

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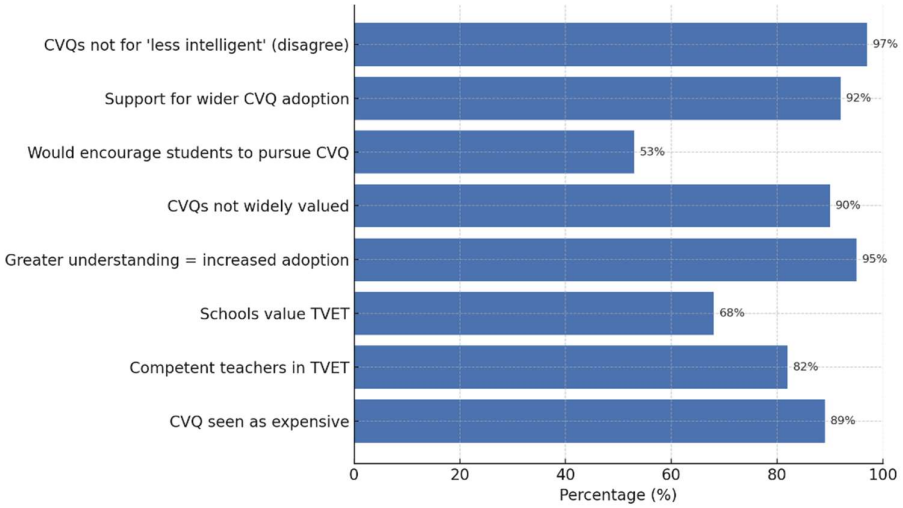
To enhance clarity, Figure 2 below provides a bar chart summarizing levels of agreement across selected items related to adoption, value perception, student encouragement, and programme cost.

Figure 2

Teacher Support for CVQ Adoption and Perceived Challenges (RQ2)



Implications. The findings suggest that while teachers are generally supportive of the CVQ and the broader competency-based framework, several systemic and perceptual barriers continue to inhibit widespread adoption. The rejection of the stereotype that CVQs are for academically weaker students reflects a shift in professional attitudes among teachers. However, the hesitation to actively encourage students to pursue the CVQ, despite believing in its value, indicates that institutional or societal uncertainties may be influencing individual decision-making.

Teachers' belief that greater understanding among parents and students would improve CVQ adoption highlights a clear call for national-level public education campaigns. These efforts could help address the persistent perception that CVQs are less prestigious or valuable than academic pathways. Additionally, the concern about cost-voiced by nearly 90% of participants-underscores the need for policy interventions that provide financial and material

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support to schools offering CVQ programmes. Ministries of Education and National Training Agencies must consider resource-based constraints when designing and expanding competency-based qualifications. Investment in materials, assessments, and sustained teacher training will be essential for ensuring equity and consistent delivery across institutions. Finally, the data reinforces the importance of institutional commitment to CBET. Where schools value TVET and deploy competent teachers, support for the CVQ is notably stronger. This indicates that institutional leadership and strategic prioritization of CBET goals can have a direct impact on teacher confidence and programme legitimacy.

Research Question Three: What is the Level of Goal Orientation of Stakeholders Involved in TVET?

Twelve questionnaire items (Questions 21–32) were used to examine participants' backgrounds and their perceptions of TVET and the CVQ relative to traditional academic qualifications to explore their level of goal orientation as it pertains to TVET. These results are summarized in Table 12 below while figure 3 provides a visual representation of the data.

Table 12

Frequency, Percentage, and Mean Scores for Questions 21–32 on Stakeholder Goal Orientation. (n = 61)

	Question	Frequency of responses					Percentages of responses				
		SA	A	NAD	D	SD	SA	A	NAD	D	SD
21	I teach in the TVET field	45	16	0	0	0	74	26	0	0	0
22	My training in this field was competency based	1	3	0	40	17	2	5	0	66	28
23	My training in this field was academic based	23	35	0	2	1	38	57	0	3	2
24	I am a certified teacher (possess a certificate in teaching)	42	4	0	7	8	69	7	0	11	13
25	As a certified teacher (possess a certificate in teaching), my training was specific to TVET.	7	1	0	25	13	15	2	0	54	28
26	As a non-certified teacher, I received some basic training before I began actual teaching (I do not possess a certificate in teaching)	4	6	0	3	2	27	40	0	20	13

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	Question	Frequency of responses					Percentages of responses				
		SA	A	NAD	D	SD	SA	A	NAD	D	SD
27	TVET is best suited for students who cannot follow the regular academic stream	4	3	2	19	33	7	5	3	31	54
28	Students graduate with requisite skills to perform effectively in the workplace	30	16	3	4	8	49	26	5	7	13
29	TVET makes students self-reliant	41	20	0	0	0	67	33	0	0	0
30	TVET helps students become creative and innovative	49	12	0	0	0	80	20	0	0	0
31	CSEC is more beneficial to students than CVQ (responses reverse coded)	8	19	20	11	3	13	31	33	18	6
32	CVQ is more beneficial to students than CSEC	20	14	21	5	1	33	23	34	8	2
Averages		23	12	4	10	7	39	23	6	18	13
Combined averages		35		4	17		62		5	31	

Participants responded to a series of items related to their training background, perceptions of the TVET stream, and its comparative value against academic qualifications like CSEC. The responses reflect a combination of factual background and attitudes that shape how TVET and CVQ are viewed and delivered in schools.

Professional Training and Certification. A significant majority (74%) of respondents indicated that they teach in the TVET field (Item 21). However, only a small percentage (7%) reported that their training as teachers was specifically TVET-focused (Item 25). Instead, most described their training as academic-based (95% agreed or strongly agreed with Item 23), while 94% disagreed that their training was competency-based (Item 22).

Although 69% indicated that they held teaching certification (Item 24), just 17% agreed that their certified training was aligned to TVET content (Item 25). For non-certified teachers, 67% reported receiving at least some basic training prior to beginning their teaching careers (Item 26). These responses suggest a disconnect between current teaching assignments in TVET and the specific preparation teachers received, particularly regarding competency-based instruction.

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Perceptions of TVET's Purpose and Value. Participants rejected the notion that TVET is primarily for students who cannot manage the academic stream. Only 12% agreed with this idea (Item 27), while a strong majority (85%) disagreed or strongly disagreed, signaling a growing understanding of TVET as a legitimate and valuable educational path rather than a fallback option. There was also widespread agreement that TVET contributes positively to student development, equipping them with workplace-relevant competencies. Seventy-five percent agreed that students graduate with the requisite skills to perform effectively in the workplace (Item 28), 100% agreed that TVET fosters self-reliance (Item 29), and 80% agreed that it enhances student creativity and innovation (Item 30).

Comparative Views: CVQ vs. CSEC. When asked to compare the benefits of the CVQ and the traditional CSEC qualification, responses were more mixed. Item 31, which was reverse-coded, found that only 18% agreed that CSEC is more beneficial than CVQ, while 33% were neutral and 24% disagreed. Conversely, in Item 32, 56% agreed or strongly agreed that the CVQ is more beneficial than CSEC, while 34% remained neutral. These results indicate moderate support for the CVQ as a valuable alternative but also suggest some lingering uncertainty or need for further clarity among educators about the comparative merits of the two qualifications.

To enhance clarity, Figure 3 summarizes teacher perceptions of training background, TVET value, and CVQ vs. CSEC comparisons.

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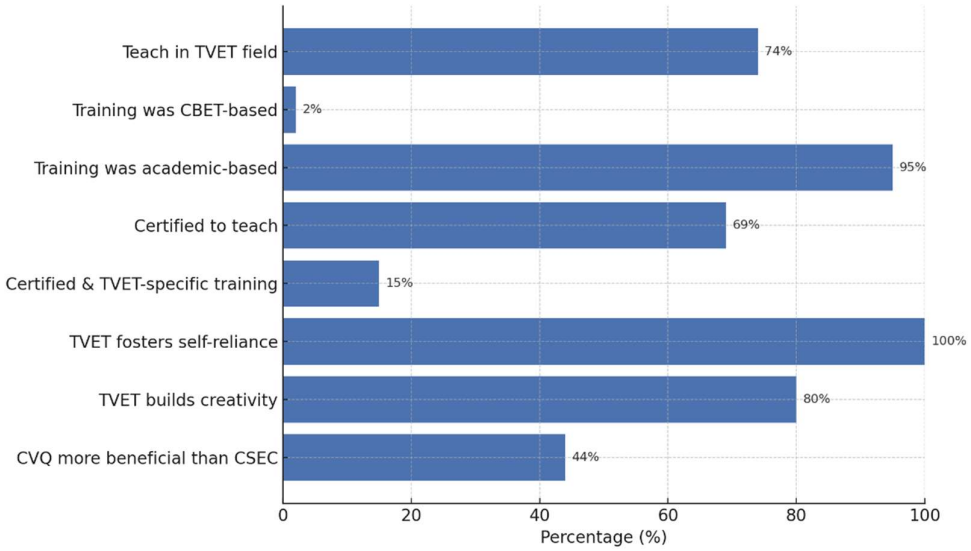
Figure 3

Teacher Goal Orientation Toward TVET RQ3



Implications. The data reflect moderate to high levels of goal orientation among stakeholders involved in TVET, particularly in terms of their belief in the purpose and value of vocational education. However, the misalignment between training and teaching assignments, along with mixed views about the CVQ's relative benefits, may indicate hesitation or cognitive dissonance between belief and practice. While stakeholders appear invested in the goals of TVET, a lack of consistent CBET-aligned training may undermine their ability to fully translate those goals into classroom practice. National education authorities and training agencies may wish to address this gap by investing in targeted professional development focused on competency-based principles. Additionally, clearer public communication about the structure and advantages of CVQs could help reduce ambiguity and boost confidence in the programme.

Research Question Four: Are Stakeholders Perceived as Being Supportive of TVET?

To assess stakeholder support for TVET, responses from questionnaire items 36 to 45 were analyzed. These items explored teachers' perceptions of support from parents, school

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administrators, government, and industry actors. The results are presented in Table 13 which follows.

Table 13

Frequency, Percentage, and Mean Scores for Questions on Stakeholder Support for TVET. (n = 61)

		Question	Frequency of responses					Percentages of responses				
			SA	A	NAD	D	SD	SA	A	NAD	D	SD
36	a	Lack of training materials is a challenge for me in the delivery of TVET	45	11	0	5	0	74	18	0	8	0
	b	Inadequate workspace- workshops, labs etc. is a challenge for me in the delivery of TVET	31	9	1	16	4	50	15	2	26	7
	c	Large class sizes (more than 10) is a challenge I face	25	9	2	15	10	41	15	3	25	16
	d	Quality of students (low performers, disruptive) is a challenge I face	19	12	12	15	3	31	20	20	24	5
	e	Students being forced into TVET stream is a challenge I face	19	15	8	10	9	31	25	13	16	15
	f	Lack of tools and equipment is a challenge for me in the delivery of TVET	42	15	2	1	0	69	26	3	2	0
	g	Non-functioning tools/equipment is a challenge for me in the delivery of TVET	49	7	11	3	0	66	11	18	5	0
	h	Poor maintenance of tools/equipment is a challenge for me in the delivery of TVET	41	9	4	5	2	67	15	7	8	3
	i	Inadequate training in use of equipment is a challenge for me in the delivery of TVET	10	8	14	11	18	16	13	23	18	30
	j	The inability to establish collaboration with industry for attachments and internship is a problem I face	11	25	6	16	3	18	41	10	26	5
37		Government provides adequate resources to support TVET delivery	8	8	4	15	26	13	13	7	25	43
38		School administrators allocate adequate time for TVET classes	11	14	17	14	15	18	23	11	23	26
39		Students have difficulty getting jobs in this area	0	6	20	22	13	0	10	33	36	21
40		TVET development is a national priority	24	2	21	9	5	39	3	34	15	8
41		Parents/guardians are supportive of their students doing CVQ	2	21	22	9	7	3	34	36	15	11
42	a	My programme receives support from parents in the delivery of training	4	17	9	24	7	7	28	15	39	11
	b	My programme receives support from the school administrator in the delivery of training	12	20	10	10	9	20	33	16	16	15
	c	My programme receives support from potential employers in the delivery of training	7	22	16	13	3	11	36	26	21	5
	d	My programme receives support from the ministry of education in the delivery of training	6	11	22	12	10	11	36	26	21	5

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		Question	Frequency of responses					Percentages of responses				
			SA	A	NAD	D	SD	SA	A	NAD	D	SD
	e	My programme receives support from other government departments in the delivery of training	0	11	25	17	8	0	18	41	28	13
	f	My programme receives support from non-governmental organizations in the delivery of training	0	14	14	20	13	0	23	23	31	21
43	a	My programme receives support by the timely provision of materials	0	11	9	21	20	0	18	15	34	33
	b	My programme receives support by the provision of technical support	4	11	8	23	15	7	18	13	38	25
	c	My programme receives support by the timely maintenance of equipment etc.	2	5	10	21	23	3	8	16	34	38
	d	My programme receives support by the potential employers taking interns	7	18	10	20	6	11	30	16	33	10
	e	My programme receives support by the practitioners allowing visits to their businesses	7	28	7	14	5	11	46	11	23	8
	f	My programme receives support by the practitioners serving as resource persons	11	32	5	10	3	18	52	8	16	5
44	a	Inadequate learning resources (to create authentic experience) is a challenge that I face	25	22	8	6	0	41	36	13	10	0
	b	Inadequate infrastructure (labs, workshops etc.) is a challenge that I face	27	12	2	17	3	44	20	3	28	5
	c	Timely provision of materials is a challenge that I face	36	17	0	5	3	59	28	0	8	5
	d	Cost of assessment is a challenge that I face	17	21	14	9	0	28	34	23	15	0
	e	Lack of parental support (e.g., in providing materials etc.) is a challenge that I face	22	9	18	11	1	36	15	29	18	2
	f	Inadequate training of teachers is a challenge that I face	20	15	8	6	12	33	25	13	19	10
45		Government is serious about TVET development locally	0	5	18	22	16	0	8	30	26	36
Average			16	14	10	8	13	26	23	16	13	22
Combined averages			30		10	21		49		16	35	

The data suggest that teachers generally view stakeholder support for TVET as limited and inconsistent. For example, while 41% felt that parents were supportive of students pursuing the CVQ, nearly a third disagreed (32%), and another 27% were unsure. This uncertainty is echoed in responses to Item 44e, where 51% of teachers identified lack of parental support as a challenge. Only 35% felt they received any meaningful support from parents when it came to delivering training.

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Support from school administrators seemed a bit stronger, but still uneven. While some teachers noted that administrators were helpful-particularly in allowing resource persons to contribute to training-56% said that large class sizes were a problem (Item 36c), and 60% felt there wasn't enough time allocated for TVET subjects (Item 38). Teachers also voiced concern that some students were being pushed into TVET streams rather than choosing them willingly, with 56% agreeing to this in Item 36e.

Industry support was seen as fairly narrow. Seventy percent of teachers agreed that industry practitioners occasionally served as resource persons (Item 43f), but fewer felt that employers were involved in practical training (35%) or willing to take on interns (41%). Teachers also pointed to common logistical challenges such as lack of maintenance of tools, delays in receiving materials, and limited access to internships.

Government support was perceived as particularly weak. A striking 96% of respondents said they did not believe the government was serious about TVET development (Item 45). Teachers linked this perception to broader systemic issues—underfunding, shortages of training materials, poor infrastructure, and high costs for student assessments.

To further illustrate stakeholder support trends, Figure 3 provides a bar chart summarizing agreement levels with selected items relating to parental, school, government, and industry support.

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Figure 4

Teacher Perceptions of Stakeholder Support for TVET (RQ4)

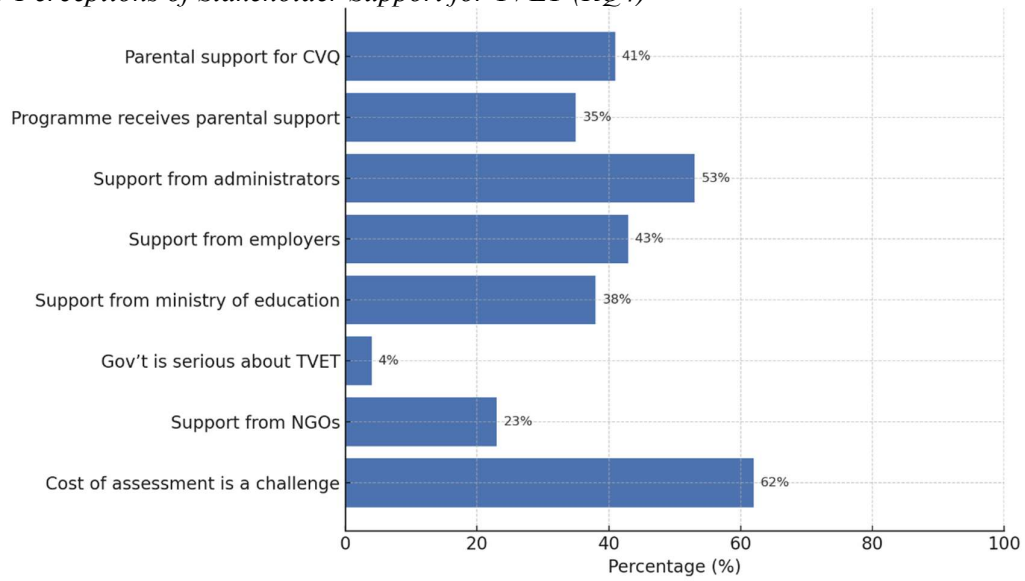

Figure 4

Implications. These findings highlight a clear disconnect between the intended goals of TVET and the level of support perceived by those delivering it. Teachers pointed to barriers that go beyond the classroom-challenges related to infrastructure, industry partnerships, and public engagement. The high number of neutral responses across some items may also point to poor communication or inconsistent involvement from stakeholders, leaving many unsure of where others stand.

Improving this situation will require more than just structural reforms. Ministries of education and national training agencies may need to strengthen school-community-industry partnerships, allocate more resources to support TVET delivery, and launch sustained public awareness efforts to help clarify the value of the CVQ. Engaging employers more directly in

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curriculum development and offering incentives for internship partnerships could also help address gaps in industry collaboration.

Research Question Five: How does the Goal Orientation of Stakeholders Influence the Adoption of Competency-based Approaches to TVET?

To address this question, a Pearson correlation analysis was conducted to determine the relationship between stakeholders' goal orientation and their level of adoption of competency-based education and training (CBET) approaches. Results are summarized in Table 14.

Table 14

Correlation between goal orientation and adoption of competency-based approaches to TVET

Variable	Mean	SD	df	N	r	p	Remarks
Adoption of competency-based approaches to TVET	2.46	.257	2	61			Significant
Goal Orientation	2.33	.183			.457**	.000	

**. Correlation is significant at the 0.01 level (2-tailed).

The results indicate that there is a significant moderate positive relationship between the two variables at the 0.01 significance level ($r = .457$; $p < .01$). This implies that goal orientation has a significant impact on the adoption of competency-based approaches to TVET. This means that as stakeholders' goal orientation increases-that is, their motivation, value alignment, and commitment to TVET-the likelihood of adopting CBET practices also rises. Additionally, the low standard deviation (SD = 0.183) for goal orientation suggests relative consistency in responses, implying that most stakeholders shared similar levels of internal motivation and goal-driven attitudes toward teaching. This uniformity strengthens the position that the results are significant and reliable.

Practical Implications. This finding has meaningful implications for policy and institutional practice. Although the correlation is not strong enough to imply causation, it does

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suggest that goal alignment and clarity of purpose among educators and administrators may be essential to scaling up CBET adoption. Stakeholders with strong personal investment in the goals of vocational education are more likely to embrace new, outcomes-based approaches.

Ministries of education and training agencies might consider embedding motivational strategies and goal alignment activities into professional development frameworks. These may include; recognizing exemplary CBET implementers, aligning institutional performance goals with CBET values, and strengthening teacher induction with a focus on the philosophy behind competency-based training. A conceptual diagram summarizing this relationship is presented in Figure 4, which also visually connects to research question six to show an integrated overview of both influences on CBET adoption.

Research Question Six: How does Perceived Social Support from Stakeholders Influence the Adoption of Competency-based Approaches to TVET?

To answer this question, a Pearson correlation analysis was conducted to assess the relationship between perceived social support and the adoption of competency-based education and training (CBET). Results are presented in Table 15.

Table 15

Correlation between perceived social support and adoption of competency-based approaches to TVET

Variable	Mean	SD	df	N	r	p	Remarks
Adoption of competency-based approaches to TVET	2.46	.257	2	61	.266*	.038	Significant
Perceived social support	2.14	.167					

*. Correlation is significant at the 0.05 level (2-tailed).

The results indicate that there is a significant moderate positive relationship between the two variables ($r = .266$; $p < 0.05$). This therefore implies that perceived social support does have an impact on the level of adoption of competency-based approaches to TVET, that

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increases in the level of perceived social support result in increases in the level of adoption of competency-based approaches to TVET. The low standard deviation also suggests that there is little variation in the responses, that the participants generally shared similar views regarding the level of social support they received. responses were fairly consistent.

Practical Implications. Although the correlation between perceived social support and CBET adoption is statistically significant, it does not imply a direct causal relationship. Rather, the results suggest a consistent trend in which more supportive environments are associated with higher levels of CBET adoption. This finding reinforces the importance of stakeholder engagement and a collaborative institutional culture as key enablers of reform, even if causality cannot be confirmed from the current data.

While perceived social support may not emerge as the strongest statistical predictor of CBET adoption, its influence should not be underestimated. Supportive environments foster confidence, openness to change, and persistence during the reform process. In particular, the presence of collegial encouragement, clear communication, and accessible leadership appears to enhance stakeholder commitment. These findings suggest that cultivating a culture of encouragement and trust can play a meaningful role in advancing CBET objectives.

The implications for national agencies and policymakers are therefore clear. Strategic efforts should focus on promoting mentorship and peer-support networks among TVET educators, facilitating transparent and consistent communication about CBET implementation, and involving key stakeholders in planning and feedback mechanisms. These strategies are likely to improve morale, reduce resistance, and enhance the conditions under which CBET is introduced and sustained.

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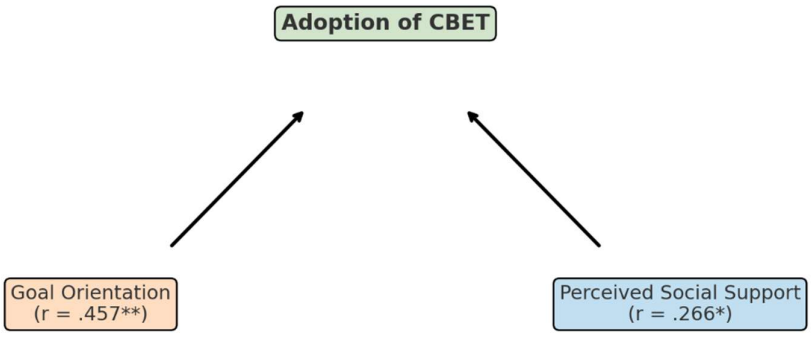
Figure 5

Conceptual Diagram showing Influences on Adoption of CBET (RQs 5&6)



Research Question Seven: How do goal orientation and perceived social support from stakeholders jointly influence the adoption of competency-based approaches to TVET?

In order to answer this question, the dependent variable, adoption of competency-based approaches to TVET was regressed on goal orientation and perceived social support and the relevant results are presented in tables 16 and 17 below.

Table 16

Regression Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.523[a]	0.27	0.25	0.22

a. Predictors: (Constant), goal orientation, perceived social support.

b. Dependent Variable: adoption

The regression model (Table 16) demonstrates that goal orientation and perceived social support together significantly influence the adoption of CBET. The multiple correlation coefficient (R = 0.523) and the adjusted R^2 value of 0.248 indicate that approximately 25% of the variance in adoption is explained by these two predictors combined. While the model explains a meaningful portion of the variance, it also suggests that additional factors-possibly institutional, systemic, or resource-related-contribute to CBET adoption but were not captured in this model.

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Table 17

Joint Contribution of Goal Orientation and Perceived Social Support to the Prediction of CBET Adoption

ANOVA[a]	Sum of Squares	df	Mean Square	F	Sig.
Regression	1.08	2	0.54	10.92	.000[b]
Residual	2.88	58	0.05		
Total	3.96	60			

a. Dependent Variable: Adoption. b. Predictors: (Constant), Goal orientation, perceived social support.

From table 17 it can be seen that the analysis of the variance (ANOVA) produced an F-value of 10.917 which was found to be significant at the 0.05 significance level. Moreover, the adjusted r^2 value of .248 indicates that the independent variables account for 24.8 percent of the prediction of adoption of competency-based approaches to TVET. This confirms the statistical significance of the model, with $F(2, 58) = 10.92$ and $p < 0.01$.

Practical Implications. These results emphasize the combined importance of internal motivation (goal orientation) and external reinforcement (social support) in facilitating the adoption of CBET. Policies and strategies aimed at CBET implementation should consider both intrinsic and extrinsic motivators. For example: enhancing goal clarity through training aligned with CBET objectives, providing structured mentorship and peer learning communities, strengthening systemic support at the school and national levels, and recognizing and celebrating CBET adoption milestones to maintain momentum. These interventions can help create the kind of supportive environment needed for long-term adoption.

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Research Question Eight: What are the Relative Contributions of Goal Orientation and Perceived Social Support of Stakeholders to the Adoption of Competency-based Approaches to TVET?

Regression analysis was also used to determine the relative contributions of the independent variables to the prediction of adoption of competency-based approaches to TVET and the relevant results of the regression analysis are presented in table 18 below.

Table 18

Relative Contribution of Goal Orientation and Perceived Social Support to the Prediction of CBET Adoption

	Unstandardised Coefficients		Standardized Coefficients		
	B	**Std. Error**	**Beta**	**t**	**Sig.**
(Constant)	0.15	0.51		0.3	0.77
Average Goal orientation	0.63	0.16	0.45	4.02	0
Average Perceived social support	0.39	0.17	0.26	2.28	0.03

a. Dependent Variable: Adoption

The results revealed that both goal orientation and perceived social support were found to be statistically significant predictors of CBET adoption. In terms of the magnitude of the impact, goal orientation had a more significant impact as revealed by the higher standardized beta coefficient ($\beta = 0.45$) and a higher t-value ($t = 4.02$, $p < .01$). Perceived social support on the other hand had a lower beta coefficient ($\beta = 0.26$) and was significant at the 0.05 level ($t = 2.28$, $p = .026$). This suggest that attitudes- stakeholders' internal motivation, clarity of purpose, and commitment to TVET goals are stronger drivers of CBET adoption than external social or institutional encouragement alone. Nonetheless, both constructs contribute meaningfully to explaining differences in adoption levels.

Practical Implications. The findings highlight the need for interventions that prioritize the personal belief systems and motivational structures of TVET stakeholders. Professional development programmes and policy frameworks that emphasize intrinsic motivation, values

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alignment, and goal clarity may yield stronger adoption outcomes. At the same time, while perceived social support is a comparatively weaker predictor, it still plays an important role in enhancing the adoption climate. Therefore, institutions should also continue investing in building collaborative, well-supported environments for TVET implementation. This includes the design of CBET training that cultivates professional identity and belief in vocational education, integration of motivational interviewing or reflective practice in teacher development, encouraging leadership to recognize and support early adopters, and the promotion of stakeholder partnerships that reinforce a shared vision for CBET.

Qualitative Results

Research Question One: What are the Competency-based Approaches to TVET Among Countries Within the Caribbean Region?

Within the Caribbean region the competency-based TVET qualifications are the NVQs and CVQs which are delivered at secondary schools and training institutions, both formal and non-formal. Oversight of these qualifications varies based on the type of institution. At the secondary school level, the Caribbean Examinations Council (CXC) has legal authority, as mandated by CARICOM, to administer and regulate the delivery of CVQs. In contrast, National Training Agencies or TVET Councils oversee the administration of NVQs and CVQs within other training institutions. These structures ensure that competency-based education maintains regional standards, enabling greater comparability and recognition of skills across member states.

Research Question Two: What is the Level of Adoption of Competency-based Approaches to TVET?

During the period that this research was undertaken only nine of the 23 secondary schools and two institutions in the non-formal education system in Saint Lucia offered the

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CVQ. One of the non-formal education institutions also offered the NVQ in addition to the CVQ. Thematic analysis of the interview data revealed three themes relating to the adoption of competency-based approaches to TVET: resourcing, implementation and image. Resourcing referred to availability of physical resources such as infrastructure, industry-standard equipment, financial resources, teacher training, teacher workloads, availability of assessors, and industry attachment. Implementation referred to issues related to operationalising the CVQ programme, cost of certification and support from the Ministry of Education's TVET Unit. Image referred to the perception of TVET and the CVQ. The results reveal that from the perspective of TVET administrators, resourcing was the greatest challenge to the adoption of competency-based approaches to TVET, followed by implementation and perception.

Resourcing. Thematic analysis revealed persistent shortages in trained personnel, infrastructure, materials, and financial investment. Within the school system, the majority of TVET teachers had not been trained in competency-based instructional approaches. As D explained, "There is no training support for teachers to deliver using this competency-based modality. They are expected to deliver CVQ but have no training in how to deliver this way." S emphasized the need for continuous teacher training to keep up with developments in the field, including industry attachments as part of professional development.

Another major resourcing challenge relates to increased teacher workloads, driven by the extensive documentation required for CVQ portfolios. Participants agreed that TVET delivery is expensive. One administrator (O) opined that the cost of successfully providing TVET training has been underestimated explaining that "TVET is costly setting up labs, buying materials etc. the Ministry of Education will spend hundreds of thousands mainly for SBAs alone, that is not even setting up labs, workshops etc.". T pointed out that the nature of competency-based training makes some degree of material wastage inevitable, as learners must

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continue practising until they achieve mastery of the required skills. Additionally, the necessary infrastructure and equipment must be up to industry standard as learners cannot be expected to train on archaic equipment or equipment that does not function properly and be expected to function in an industry with modern state of the art equipment. S added that industry-standard infrastructure and equipment are critical, "if you want to create a workforce that's at an international standard, you have to be able to work with industry so that you are getting all equipment and tools used by industry". Participant O noted that while TVET occasionally receives funding through project-based initiatives, funding is not continuous or prioritized in a sustained way. This according to O, "trickles into how people subscribe to TVET".

Implementation. Participants were generally critical of how the competency-based programmes were implemented. D voiced reluctance to fully embrace CVQ programming

> I am not willing to do full-fledged CVQ because of the level of disorganization in implementation of the programme on the part of the Ministry of Education. Students pursue CVQ for one to three years and cannot get certification at the end. While the Ministry of Education thrust is for CVQ they need to put their house in order before coming to schools" (D).

Institutions reported feeling abandoned in their efforts to operationalize CVQ delivery. As G described "there are no guiding documents regarding management and implementation, schools are encouraged to do it, but they don't get much support". H further added that the "Ministry of Education touts CVQ but gives no support, no technical nor financial support" (H). While identifying the lack of support from the TVET Unit as a challenge for TVET and CVQ delivery, one administrator attributed this perceived lack of support to "bureaucratic frustration" within the unit explaining that "the TVET Unit is understaffed and over worked" (I). At the time that data was collected for this study, there were only three officers at the TVET Unit who were responsible for supporting the 17 TVET subjects offered at the 23

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secondary schools island wide in addition to the 14 CVQs highlighting the overwhelming workload.

Another major implementation challenge involved scheduling CVQ activities within the regular school timetable. G explained that:

> how to fit CVQ within the timetable with 27 subject offerings? How to offer CVQ alongside CSEC? Some aspects of CSEC cater to CVQ, e,g CSEC Food and Nutrition has aspects of CVQ Commercial Food Preparation, but not all. There's a heavier workload for teachers as portfolios must be kept for individual students. How to operationalise this in the school, TVET Unit has not answered. (G)

Similarly, I emphasized,

> CVQ requires hours long blocks of time and in the context of the ordinary school day, it won't work, ideally the CVQ teacher should only be doing CVQ, however Ministry of Education stipulation of 80-85% teacher engagement makes this difficult. (I)

The cost of CVQ certification emerged as a recurring concern. Participants described the certification process as prohibitively expensive and plagued by communication gaps. One principal reported

> the current batch of form fives have to be assessed, to date no response from the TVET Unit on cost attached to assessing, we were advised to check with CXC Barbados. According to the CXC website there is a 250 Barbados dollar registration fee, Miss X from the TVET Unit said that she would contact other schools to see if we could register as a batch, and also look for funding to examine the entire batch. It hasn't happened. (G)

Another principal added "CVQ is costly for certification, one CVQ is equivalent or more expensive than six CSEC, there's no clear answer about cost of certification" (H). F corroborated this, noting that certification costs accumulate based on the number of units within the occupational standard being assessed, sometimes making it even "more costly than eight CSEC subjects" (F). Administrators also complained that information about assessment requirements, protective gear, materials as well as the costs associated with the certification and the identity of assessors was inconsistently provided by the TVET Unit.

Another administrator (J) explained that in addition to the challenge of increased cost of training associated with the CVQ programme, the very nature of programme means that

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students are allowed to develop competence "sooner or later" (J) and this impacts planning or scheduling. The administrator further explained that sometimes the project ends, and some learners have still not yet demonstrated competence, and this is problematic for reporting and closing off projects.

Image and perception. Participants also emphasized that societal attitudes towards TVET remain a significant barrier to wider adoption. As Q explained "TVET has been sold for a very long time as something that entails very menial tasks where you get dirty, not understanding that its taking knowledge and actualizing it", essentially, "there is just too much of that mentality and that is what is crippling our system where TVET education is concerned" (O). Similarly, T observed that

> in many circles TVET is still seen as something that only persons who are unable to do well in academia go into therefore the stigma impacts even in terms of how programs are developed, whether you get the support within the community as you would want. (T)

Thus, although administrators provided resourcing, implementation, and image-related advice to policymakers, most agreed that changing the societal perception of TVET is the most critical step toward encouraging wider adoption of competency-based approaches.

Research Question Three: What is the Level of Goal Orientation of Stakeholders Involved in TVET?

TVET administrators identified resourcing and implementation as the two primary areas requiring improvement to enhance the delivery of TVET. When asked about their broader vision for TVET, however, participants placed even greater emphasis on image and perception, followed by resourcing and implementation. There was consensus that TVET is not being delivered effectively in schools, largely due to resourcing and implementation challenges. Participants pointed out that although TVET is intended to be competency-based, it is often delivered in an academic manner. They attributed this to the lack of teacher training in

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competency-based methodologies and the persistent shortage of resources, which makes it difficult to provide students with the necessary practical exposure. As one administrator observed teachers “make do with what they have” (B). Principals echoed these concerns, indicating that the “schools are trying to make TVET/CVQ work but the policy makers are not making the necessary change or investment in the sector to show its value. They talk but show no action”. (I)

Image and perception. Most participants recognized that both CVQ and traditional academic qualifications serve important roles. However, they emphasized that the CVQ offers a more practical path to workforce readiness and mobility. Several referenced the ratification of the regional and individual country Vocational Qualifications Frameworks which equates NVQ/CVQ certification with traditional academic qualifications also lends as a step in the right direction. When asked whether they believed that our society sees TVET as critical to the nation’s economic development and survival, the consensus was mixed. Some acknowledged that employers increasingly value CVQ holders, but broader public perception remains low. Participants noted that many parents and even within the schools, some educators actively dissuade high achieving students from entering TVET streams, relegating it as an option for the ‘less bright’ students or as a disciplinary measure for the unruly, delinquent students. This attitude is especially pronounced in Saint Lucia where students aged between 13 and 19 years with behavioural problems are often referred to the Centre for Adolescent Renewal and Education, (CARE). Though CARE offers valuable skills training, its role as a repository for "problem students" has cemented negative associations with vocational pathways.

TVET careers are still being seen as menial, dirty work not recognising its international reach, particularly that of the competency-based qualifications NVQ and CVQ. One administrator added that TVET professionals themselves must do more to shift this narrative

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as they seem to perpetuate this perception by the image they put out to society, by not marketing their professions. Several administrators questioned the depth of government commitment to TVET. While they acknowledged that the growing number of TVET-related projects points to some level of recognition, a few felt that these initiatives were more closely aligned with meeting external funding requirements than with advancing genuine national priorities.

Responsiveness to labour market needs. On the question of whether the Caribbean's current education system meets current and future labour market needs, the TVET administrators unanimously agreed that throughout the Caribbean, our current education systems are falling short in preparing students for current and future labour market needs. Two themes emerged from the responses: flexibility and responsiveness, and data for decision making. One response which suggests both themes was "we have to constantly look at the job market and make necessary adjustments. Our system is not flexible enough and as a consequence we are always catching up" (O). The administrators felt that our education systems needed to be more flexible in order to be able to address changes in the world of work, the way things are done, to ensure that our citizens can function in an ever-changing world. Although change is so rapid and as another TVET administrator explained, "we can't predict everything" (M), it is necessary to have people who are critical thinkers, who are flexible, and it appears that our system is not catering to this as employers complain that employees "cannot think for themselves, as if they want to fit in a mold, they want to have a definite role. In this global environment there is no definite role, you need to be a critical thinker, be mobile, be flexible" (N).

Participants expressed concern over the limited use of labour market information in curriculum development and policy formation. Many indicated that labour market surveys are infrequent, outdated, or poorly circulated. This results therefore in the regions education system

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"most times operating in the present and far too often in the past. CSEC, for example is the principal certification and CXC has the legal clout to provide secondary education in the Caribbean, they review the curriculum every five to ten years" (O). Another believed that the gap between labour market needs and the education sector is too wide because not enough labour market and tracer studies are being done, not enough consultation is being done with employers to determine their needs so as a result our education system is not flexible enough to respond to changing labour market needs.

Research Question Four: Are Stakeholders Perceived as Being Supportive of TVET?

Learning institutions indicated that, generally, within the school environment and the industries they collaborate with, the CVQ is accepted and receives some level of support, particularly through job placements and employment of graduates. However, they noted that support outside of these spaces-especially from the broader public-remains limited. While parents, the Ministry of Education to some extent, and certain industry partners are supportive, broader public buy-in is lacking. Participants emphasized that greater support from all parties-government, parents, and industry-is critical to the success of the CVQ programme. When discussing how social support could be improved, how government policies translate into tangible action, and whether governments were serious about TVET development, three main themes emerged: image/perception, resourcing, and implementation. Administrators believe that improving the image of TVET and ensuring better resourcing are key to increasing social support. They view the government's tangible support primarily through its provision of resources, efforts to enhance the image of TVET, and the development of policies and programs. In their view, the level of investment in TVET reflects the government's seriousness.

Image and perception. Participants were nearly unanimous in pointing to poor societal perception as a barrier to support. When asked whether they believed that with better

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understanding of what the NVQ and CVQs are there would be greater societal support for the programmes, one administrator reflected, “I don’t know that they don’t understand, some of the biggest critics of CBET system know it better than you and I. Habit is a difficult thing to break” (O). He elaborated that “it’s a struggle to break a cycle, it’s not that they don’t know but we have to broadcast this thing, use someone who the establishment sees as being somebody successful to bring the message across and turn the tide”, “it’s more than just enlightenment, it must be branded differently in some ways and sell it appropriately, so branding and merchandising are more important than just the know-how”. (O) Other participants reinforced this view; “it’s all about us not educating our people, the mindset of our people has to be changed” (P), “if society was better educated they would have better understanding and appreciation for vocational qualification and therefore kindle greater demand for CVQs, if you value something you would want to have it, since you see the benefits of it” (N). This line of reasoning suggested that what was needed was not simply public education but a strategic rebranding of TVET to align it with aspirational goals, upward mobility, and economic relevance.

Implementation. Participants acknowledged that while governments demonstrate support for TVET through policy development, CARICOM frameworks, and national qualifications frameworks, the real issue lies with implementation. As N explained, “if you're looking at level of implementation or fidelity of implementation, it’s very low. Because you have all these nice policies that look great on paper but you're not seeing it in reality, it’s not happening in real life”. L similarly noted that “Government tries, for example the establishment of the TVET Council and committees, project funds to fund training, although sometimes the funds have to be allocated better to avoid wastage”. O pointed out that:

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Government negotiated loans with World Bank etc. they saw it as important enough to accept or approach for funding, part of money supposed to go into development of TVET schools, my issue is they are using low performing school as schools to change into TVET schools. This is eroding progress made by TVET in recent years.

P expressed concerns about sustainability "the way the policies are crafted, there's no actual potential for sustainability, that's the part I have the problem with, its what's missing from a lot of these things", and goes on to explain that:

> it's a lot of lip service, when we dig a little further into these policies particularly access to project funds etc. you realize that with TVET it's a lot of lip service, it's how TVET is promoted. There's a lot of funding available for TVET but when you try to access some of those funds you realise the conditions to access those funds make it impossible, the stipulations for who the target for the training is, it's like there's no plan for sustainability built in there it's like people are meant to stay poor. (P)

Q believes that the ratification of the qualifications framework which enables "people to see where their occupational certification sits in comparison to traditional forms of education" as well as Government "working on an initiative to transform four secondary schools into TVET focused institutions" as well as the amount of "money being spent in schools on TVET subjects in terms of procuring of materials to assist students in completing practicals and SBAs" provide evidence of the tangible translation of government policy on TVET.

Despite some of this evidence of the tangible translation of governments' policy on TVET, there is still contrary evidence that government values TVET. As T explained,

> year after year there are scholarships being given and you have never heard them being offered in a TVET area, so while we are saying with our lips that TVET is important its valued and promoted, we don't see any awards when we are giving those accolades to those persons who have been working in TVET. (T)

Resourcing and accountability. Limited funding, inadequate training materials, and insufficient industry collaboration were frequently cited. Several respondents criticized the lack of accountability for TVET programme outcomes. M lamented that "lots of money is being

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spent and nobody is being held accountable to answer for what they have been asked to do" referring to the slow progress of implementation of TVET policy despite the amount of funding which TVET receives.

Research Question Five: How Does the Goal Orientation of Stakeholders Influence the Adoption of Competency-based Approaches to TVET?

Three key themes emerged from participant responses: stigma as a barrier to adoption, the importance of narrative and branding, and the link between attitudes and adoption outcomes. Stigma was associated with negative perceptions of TVET as an inferior or second-tier form of education. Narrative and branding highlighted the need for strategic messaging and rebranding efforts to reposition TVET in a more positive light. Finally, the connection between attitudes and adoption outcomes emphasized that stakeholder perceptions play a direct role in shaping the success of TVET implementation.

Stigma as a barrier to adoption. Participants consistently pointed to deeply rooted stigma as one of the most significant barriers to stakeholder support. This stigma is often expressed through perceptions that TVET is suitable only for students who are "less academic," despite the real-world relevance and professional success that TVET careers can offer. A recurring theme across interviews was the entrenched belief that TVET is for the "not-so-bright." As L explained, "a 'bright' child choosing to do TVET subjects has to put up with a lot of opposition," while students perceived as less academically inclined are often pushed into TVET by default. P described this mindset as a key barrier to support and proposed that integrating CBET methods into non-traditional subject areas could help elevate TVET's standing. Similarly, H emphasized, "if society's attitude towards TVET was positive-if the stigma towards TVET was removed-there would be greater support and adoption of the CVQ. If people really saw/understood the value of TVET, we would have no issues." C and E echoed

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this sentiment, stating that "in our society there is still stigma attached to TVET" (C) and "stigma is part of our culture" (E). D added, "we have a very hypocritical society. On the surface, value is placed on white-collar jobs, although we know blue-collar jobs are financially viable and necessary." These comments suggest that the stigma is not simply a matter of misinformation, but rather a deep-seated cultural bias that prioritizes academic education over technical or vocational training.

Narrative and branding. Participants emphasized that goal orientation must be supported by deliberate and strategic messaging. Several administrators warned that portraying TVET as a fallback option for students who are not academically strong only serves to perpetuate stigma. There was strong agreement that the narrative around TVET needs to be revised. Stakeholders called for a strategic rebranding effort to recast TVET not merely as an alternative to academic education, but as a complementary pathway-one that emphasizes relevance, rigor, and real-world success. They agreed that messaging should reflect TVET's potential to foster innovation, entrepreneurship, and international mobility, rather than reinforcing outdated stereotypes.

Attitudes and adoption outcomes. Participants emphasized that attitudes toward TVET and the adoption of competency-based approaches are closely interconnected. Q described the relationship as "inextricably linked," while T explained that "attitude is a major element of the adoption process." She elaborated:

> I have seen projects that have come off the ground successfully even when there was little to no resourcing because persons came together and said this is important, this needs to be done, we are getting behind it and through the social capital, they have been able to get it successfully. I think that how we view TVET, its value in society, plays a phenomenal role in terms of the adoption of those qualifications. (T)

These views were echoed by O, who cautioned that "if attitudes are not aligned with desired outcomes, adoption will be problematic." M agreed, observing that public support often

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depends on visible financial investment: “when they see there’s money, they tend to move. If finance can be sourced and they know the finance is there... then you will see things happening.” O also noted that TVET continues to be viewed as “an alternative form of education… for people who are not ‘academically inclined.’” These insights suggest that adoption is not simply a matter of resources but also of public perception and entrenched cultural narratives.

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Evaluation of the Results

The following evaluation integrates data from both quantitative and qualitative strands, highlighting areas of convergence and divergence across participant types. While more detailed interpretation is reserved for Chapter 5, this section offers preliminary triangulation to strengthen the credibility and depth of the findings.

The data reveal that both teachers and TVET administrators generally support the adoption of competency-based approaches to TVET, particularly the CVQ. These categories were derived inductively during coding and used consistently across both the qualitative and quantitative strands of the study to interpret stakeholder experiences and priorities. Each theme is discussed in turn below.

The first of these thematic categories, image and perception included stakeholders' views on how TVET is marketed and socially perceived. Responses highlighted issues such as stigma toward vocational education, lack of public understanding, and limited recognition of the CVQ's portability and value. These issues were particularly highlighted by school principals and other TVET administrators and directly relate to research questions two and four, which examine levels of adoption and stakeholder support. Participants consistently reported that negative perceptions undermined wider adoption.

The second key theme, resourcing highlighted the challenges including teacher workloads, limited infrastructure, insufficient industry-standard equipment, and a lack of certified assessors. These barriers were reported by all participant groups- teacher, principals and other TVET administrators. Such issues map directly to research questions two, four, and six, which explored adoption levels and the role of social and institutional support. Participants also linked resourcing gaps to inconsistent Ministry of Education support, further affecting program fidelity.

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The final theme, implementation referred to operational issues such as scheduling CVQ sessions within rigid academic timetables, financial costs associated with certification, and unclear Ministry of Education guidance. These implementation problems were especially prevalent in feedback from principals. While national policies may exist, fidelity of implementation remains low, mirroring the early stages of concern described in Hall and Hord's Concerns-Based Adoption Model (CBAM). This theme intersects with research questions two and five, where implementation outcomes were seen to be shaped by stakeholder commitment and goal alignment. Each of the three themes was mapped to specific research questions based on the nature of the issues raised. For example, 'resourcing' was most closely aligned with RQ2 (adoption) and RQ4 (stakeholder support); 'implementation' informed RQ2 and RQ5 (goal orientation and adoption link); while 'image' related directly to RQ2, RQ4, and RQ6 (impact of social support). Responses from administrators emphasized implementation and image more frequently, while teacher responses centered on resourcing and stakeholder support. Qualitative accounts that highlight issues of stigma, underfunding, and limited practical exposure correspond with statistical patterns showing that adoption is lower where support systems are weak. This cross-validation across data types improves the trustworthiness of the findings, consistent with best practices in mixed methods research. The thematic categorization is further summarized in the table below, which shows how each major theme aligns with the study's research questions and highlights the relative emphasis placed by different stakeholder groups.

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Table 19

Thematic Categorization by Research Question and Stakeholder Group

Theme	Related Research Questions	Stronger Emphasis by Stakeholders
Image and Perception	RQ2 (Adoption), RQ4 (Support), RQ6 (Social Support)	Principals, Administrators
Resourcing	RQ2 (Adoption), RQ4 (Support), RQ6 (Social Support)	Teachers, Principals, Administrators
Implementation	RQ2 (Adoption), RQ5 (Goal Orientation & Adoption)	Principals, Administrators

Note: These mappings reflect the dominant themes as derived from qualitative coding and reinforced by quantitative patterns. They help contextualize stakeholder priorities and highlight the varying emphasis placed on reform challenges across groups.

Among the study's variables, goal orientation emerged as the strongest statistical predictor of adoption, with a moderate positive correlation ($r = .457$, $p < .01$). This suggests that the more future-oriented and intrinsically motivated stakeholders are, the more likely they are to adopt competency-based practices. While this correlation does not establish causality, it underscores the significant role of personal beliefs and intrinsic motivation in driving educational reform. This finding is consistent with existing literature (e.g., Ngeno et al., 2021), which highlights the central importance of teacher attitudes in curriculum implementation success.

Perceived social support, though a weaker predictor, was also significantly related to adoption ($r = .266$, $p < .05$). This variable included support from parents, school administrators, and external stakeholders such as employers. The combined regression model, which included both predictors, explained approximately 25% of the variance in adoption (adjusted $R^2 = 0.248$). Although this represents modest explanatory power, it suggests that additional factors

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such as policy alignment, leadership commitment, and institutional incentives may also influence adoption outcomes but were not captured in this study.

These findings affirm that the successful adoption of competency-based TVET approaches depends not only on national policy directives but also on a synergy of internal motivation, institutional support, and shifting public perception. The evaluation reinforces the need for integrated reform strategies that address both individual and systemic enablers. The findings for each research question are presented in turn, with interpretation grounded in the data and compared where relevant to existing literature. Unexpected or inconsistent results are also noted, with plausible explanations offered based on contextual realities, while avoiding unsupported generalizations.

Research Question One: What are the Competency-based Approaches to TVET Among Countries Within the Caribbean Region?

The study revealed that the main competency-based qualifications recognized and implemented across Caribbean countries are the National Vocational Qualifications (NVQs) and the Caribbean Vocational Qualifications (CVQs). These qualifications are grounded in occupational standards and delivered in both secondary schools and post-secondary training institutions. This finding is supported by Fletcher and Ndahi (2020), who explained that the CVQs were introduced to support the objectives of the Caribbean Single Market and Economy (CSME)-a CARICOM initiative designed to promote the free movement of goods, services, financial capital and skilled labour among member states. Individual CARICOM member states developed their own National Vocational Qualifications (NVQs) in collaboration with industry to improve the quality of TVET and enhance labour productivity by establishing nationally recognized competency standards and certification. However, the implementation of the CSME required a common certification system. The CVQs were therefore established

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to fulfil this role, with the dual purpose of supporting the free movement of skilled labour and strengthening linkages between employers and the education sector, while also raising the overall quality of TVET through its competency-based methodology.

Thus, the CVQ and NVQ frameworks remain the principal mechanisms through which competency-based education is delivered and recognized across the Caribbean. Their adoption reflects a regional commitment to labour mobility, lifelong learning, and workplace relevance in education.

Implications

The findings of RQ1 confirm that regional frameworks such as the CVQ and NVQ, supported by institutions like the Caribbean Examinations Council and National Training Agencies (NTAs), provide a robust structural foundation for CBET implementation. For policymakers at the national level, particularly Ministries of Education and NTAs, this reinforces the value of continued alignment with regional TVET policies and quality assurance mechanisms. While no significant structural gaps were identified in this phase of the research, it remains important for national actors to routinely audit their policies and delivery mechanisms to ensure they remain aligned with evolving regional standards and sectoral demands.

Research Question Two: What is the Level of Adoption of Competency-based Approaches to TVET?

The findings of this research indicate that although teachers and TVET administrators expressed positive attitudes toward competency-based approaches, the rate of adoption within the region remains low. The adoption of vocational qualifications such as the CVQ is not a straightforward issue; rather, it is constrained by multiple, interrelated challenges deeply ingrained within the TVET system. These challenges can be categorized into three broad

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themes: resourcing, implementation, and image. Resourcing challenges encompassed physical infrastructure, equipment, financial resources, teacher training, workloads, availability of assessors, and opportunities for industry attachment. Resourcing challenges also reflect deficits in social support structures-instrumental or tangible (e.g., facilities, equipment) and informational supports (e.g., instructor training) being limited. Implementation challenges referred to operational challenges in delivering CVQ programmes, including issues related to timetabling, curriculum design, cost of certification, and the support provided by the Ministry of Education's TVET Unit. Image referred to the broader perception of TVET and the CVQ, including concerns around marketing, acceptance, transferability, and the overall societal valuation of vocational education.

These findings align with those of Mack and White (2019), who categorized the challenges in Trinidad and Tobago's TVET sector as stigma, attrition, lack of industrial training, inadequate regulation, management deficiencies, low quality of trainees, insufficient teacher training, and limited resources-including funding, infrastructure and tools and equipment. Similarly, Manase and Nyamu (2024) although they did not directly investigate the challenges with implementation of CBET, their investigation into the impact of a dynamic CBET curriculum, teacher qualification and industry engagement on the employability skills of TVET graduates emphasized that teacher qualifications and industry experience significantly influence the employability of TVET graduates. This further underscores the critical role of qualified, trained personnel and adequate resourcing in the successful implementation of competency-based approaches to TVET.

Some of these findings, particularly those related to teacher training (whether pedagogical, industrial and their qualifications in the skill area) are corroborated by Manase and Nyamu (2024) who found that the quality of teachers in terms of their industry experience

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and qualifications as well as the training resources available significantly impacted their ability to provide trainees with employable skills. These findings are directly applicable to CBET implementation in TVET, underscoring the need for adequately trained and qualified teachers, trainers, or instructors. Manase and Nyamu (2024) also referenced several other researchers such as Johnson and Schmidt (2019), Galli-Debicella and Mori (2020), O'Connor and Wallace (2020), Chen and Zhang (2021) and Lee and Kim (2022) who reported similar findings. Johnson and Schmidt (2019) and Galli-Debicella and Mori (2020), as cited in Manase and Nyamu (2024), found a positive correlation between teacher qualification and trainees' employability skills. Lee and Kim (2022), also cited in Manase and Nyamu (2024), reported a similar relationship between teacher experience in their skill area and trainee employability outcomes. Likewise, Chen and Zhang (2021) and O'Connor and Wallace (2020), also cited in Manase and Nyamu (2024), noted that trainees whose instructors engaged in continuous professional development-such as upskilling in both pedagogical techniques and technical skills-demonstrated higher levels of employability. Collectively, these findings reinforce the view that instructor training and ongoing professional development are critical to the successful implementation of CBET in TVET programmes, further supporting the conclusions of this study as well as those of Mack and White (2019).

Fletcher and Ndahi (2020) also highlighted limitations in financial resources available to National Training Agencies (NTAs) and TVET councils across the region-except for HEART Trust in Jamaica and, to a lesser extent, the Barbados TVET Council-which they noted could undermine both the effectiveness and long-term sustainability of these institutions. This concern is not unique to the Caribbean. Similar findings have been documented by several authors in other regions. In Ghana, Anane (2013) identified multiple challenges to CBET implementation, including insufficient funding for physical resources, a lack of initial and

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continuous CBET training for facilitators, dual teaching roles for instructors across traditional and CBET modalities, and limited opportunities for student job attachments in industry. Amedorme and Fiagbe (2013) also pointed to inadequate training facilities and materials for both teachers and students, a shortage of technically trained teachers, and insufficient teacher training. In Zimbabwe, Woyo (2013) reported challenges such as outdated and insufficient tools and equipment, lack of training materials and facilities, and weak collaboration between training institutions and industry for practical on-the-job experience. Kennedy et al. (2017), focusing on Nigeria, cited inadequate financing for TVET programme planning and implementation, a shortage of trained TVET teachers, inappropriate training delivery methods, and inadequate infrastructure and equipment. Similarly, Amiruddin et al. (2021) found that vocational college teachers in Malaysia faced challenges including increased workloads, insufficient CBET training, and lack of equipment. Wahba (2016) also identified a range of barriers to TVET development in developing countries, including funding constraints, limited teacher professional development, inadequate infrastructure and training tools, and poor collaboration between industry and training providers.

Generally, learning institutions in Saint Lucia-particularly those that enroll students who perform at the lower end of the Common Entrance Exam or the Caribbean Primary Exit Assessment (CPEA)-are enthusiastic about the Caribbean Vocational Qualification (CVQ). They recognize its value and the potential benefits it offers to both students and schools. However, this enthusiasm has not translated into widespread adoption among schools not currently offering the CVQ, nor into effective implementation among those that do. A major contributing factor appears to be poor implementation, which encompasses challenges related to operationalizing the programme, the cost of certification, and limited support from the Ministry of Education's TVET Unit. The CVQ differs significantly from the traditional model

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of teaching and learning within the formal education system. As such, its introduction should be carefully orchestrated-from planning and implementation through to monitoring and evaluation. Yet, schools receive minimal support in the execution and delivery of the programme. In Saint Lucia, students are required to cover the full cost of assessment and certification, unlike in Barbados, Trinidad and Tobago, Grenada, and Jamaica, where such costs are absorbed either directly or indirectly by government or industry through their respective National Training Agencies. The high cost of certification becomes a prohibitive factor, deterring students from pursuing formal certification. As a result, even when students complete the programme and acquire the relevant knowledge, skills, and attitudes, they are left without formal recognition of their competence.

These findings support those of Amiruddin et al. (2021), whose study in Malaysia identified an unstable implementation system-particularly with regard to time constraints and limited administrative support-as a major challenge to the delivery of objectives-based education. Time constraints referred to the insufficient time allocated to the programme; citing Mustafa et al. (2019), they explained that skills-based training requires more time for planning, instruction, and assessment than traditional systems. The lack of administrative support referred to inadequate monitoring of programme delivery. Amiruddin et al. (2019, citing Zain 2016), emphasized that continuous monitoring is essential for identifying weaknesses in implementation and taking timely corrective action. The relationship between implementation challenges and adoption has also been highlighted by Kennedy et al. (2017), Anane (2013), and Woyo (2013). Curry and Docherty (2017) argued that effective CBET implementation requires not only restructuring educational support systems but also rethinking fundamental elements of the traditional education model. They contended that successful implementation demands ongoing innovation, experimentation, adaptation, and refinement. Similarly, Rogers

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(2021), in her study of secondary school teachers in New Hampshire, found that competency-based approaches were more widely adopted in districts that had strong administrative and structural supports in place to promote implementation.

The study findings also corroborate those of Fletcher and Ndahi (2020), who identified several challenges across the 11 CARICOM member states included in their study. These challenges included employers' preference for hiring CSEC certificate holders, limited knowledge of CBET methodologies, and insufficient practical training among instructors at the secondary school level. They also noted issues related to the funding of TVET Councils and National Training Agencies (NTAs), most of which rely on government subventions-with the exception of Jamaica and Barbados, where funding is sourced through an employer levy. Saint Lucia was identified as being unique in this regard, as it receives no direct funding from government or employers and instead relies on grant funding and tuition fees.

This study also revealed that TVET does not have a positive image within the region-an issue that, once again, appears not to be unique to the Caribbean but rather part of a broader global challenge. Warner-Arnold (2022) reported somewhat contradictory findings regarding the perception of TVET in Saint Lucia, based on research conducted to understand awareness, attitudes, and perceptions of various stakeholders toward TVET. Her study formed part of a Social Marketing Strategy consultancy commissioned by the Saint Lucia Human Capital Resilience Project. While Warner-Arnold indicated that the overall perception of TVET in Saint Lucia was generally positive-viewed as valuable for securing future employment and enabling entrepreneurial pursuits-she also pointed to persistent misconceptions. These included the widespread belief among all stakeholder groups that TVET is primarily for individuals who are not academically inclined or are "better with their hands" (p. 33), and that participation was limited by the perception among parents and students that TVET is suited only for "uneducated

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or unacademic persons" (p. 34). The stakeholders consulted included the general public, employers, representatives of SLCTVET, eight principals, 14 teachers from different educational districts, and three additional learning institutions. Similar negative perceptions have been documented globally. Mohamed and Wahba (2012) noted that in developing countries, TVET is often viewed as a second-choice option, typically associated with those considered societal "failures." Woyo (2013) explained that in Zimbabwe and other African countries, TVET is perceived as a pathway for poorer or less intelligent students. This view is also reflected in Ghana, where Atchoarena and Delluc (2001, as cited in Amedorme & Fiagbe, 2013) identified negative public attitudes as a significant barrier to TVET development. Essel et al. (2014) echoed this perspective, reporting that in Ghana, TVET is widely seen as best suited for less intellectual individuals, illiterates, and school dropouts. Marope et al. (2015) further identified the stigmatization of TVET as a continuing challenge to its advancement. In addition, Jørgensen et al. (2018) found that in countries such as Sweden, Denmark, Norway, and Finland, creating a positive image of TVET remained a significant challenge.

Ackehurst et al. (2022) explained that perceptions of TVET are shaped by the interrelated factors of image, level of awareness, quality, and relevance. Unfortunately, many of these perceptions are negative or inaccurate, contributing to the stigma associated with pursuing a TVET pathway. They further noted that the perception of TVET is a complex global issue, influenced by both external and internal factors-such as students' and society's subjective views, alignment with labour market needs, and the perceived overall quality of programmes (Cedefop, 2014, as cited in Ackehurst et al., 2022)-all of which impact its attractiveness. Drawing on the work of several other authors, Ackehurst et al. (2022) also highlighted that perceptions vary across regions: in some areas, TVET is valued as a viable route to address

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unemployment, promote social inclusion, and drive economic development, while in others it continues to be viewed as a second-choice alternative to general or higher education.

Theoretical Alignment

The study's findings strongly align with the two key theoretical frameworks underpinning the research. This alignment is first evident in Baldwin and Ford's (1998) transfer of training theory, which highlights the conditions necessary for the successful transfer of skills and knowledge from training to the workplace. The theory emphasizes three key factors: training design, trainee characteristics, and the work environment. The identification of resource-related challenges in this study aligns with the importance of training design and the work environment as crucial for effective transfer. When teachers are inadequately trained or lack access to ongoing professional development in competency-based teaching and learning, they may struggle to design and implement effective learning experiences, thereby limiting their ability to adopt and deliver the CVQ effectively. Additionally, heavy workloads reduce teachers' capacity for deep engagement with CBET methodology-such as maintaining accurate records for each learner. When overburdened, teachers may resist adopting the CVQ due to the additional time and effort it demands, further impeding the transfer process. These challenges also have broader implications for working and training conditions. In terms of physical resources, the absence of adequate infrastructure, training materials, and industry-standard equipment means that teachers cannot provide sufficient hands-on practice. As a result, students are unable to fully apply what they have learned, leading to weak transfer and limited adoption. Insufficient financial support compounds this issue by preventing institutions from maintaining or upgrading facilities and resources, thereby reducing the ability to simulate real-world contexts in the classroom. This, in turn, limits learners' ability to transfer their training to actual work environments. Furthermore, the absence of qualified assessors and

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opportunities for industry attachment or internships further weakens the transfer of training, reducing both the effectiveness and appeal of the CVQ.

These findings also corroborate Hall and Hord's (1987) Concerns-Based Adoption Model (CBAM), which focuses on understanding the concerns and levels of use among individuals as they adopt new educational practices or innovations, as well as the fidelity with which those innovations are implemented. The model provides a framework for identifying and addressing the specific concerns of educators and other stakeholders during the adoption of CBET (Hall & Hord, 2015). Based on Hall and Hord's (2015) description of the stages of concern, the challenges identified in this study can be categorized as self, task, and impact concerns. Workload and training-related issues-such as how CVQ adoption affects existing responsibilities and whether educators possess the skills to deliver training-reflect self-concerns. Issues around the availability of resources, cost of certification, and the logistics of assessment suggest task concerns, as teachers may worry about how to deliver effective training and facilitate transfer without adequate support. Impact concerns are seen in the reported lack of support from government, parents, and industry, as well as the negative image of TVET and the CVQ. When educators question whether their efforts will lead to improved learner outcomes-especially if the certification is not valued by employers or society-this may lead to resistance. These observations also highlight the nonlinear nature of the model: educators can experience concerns at multiple levels simultaneously. Moreover, this discussion reveals how CBAM aligns with Baldwin and Ford's (1988) transfer of training theory, pointing to the complex interplay of factors influencing the adoption of educational innovations. Both models emphasize the importance of sufficient physical, financial, and human resources in facilitating effective training and implementation. Inadequate teacher preparation and excessive workloads hinder training design and delivery, undermining the capacity to apply

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CBET principles. The level of support for the programme and prevailing perceptions of TVET also influence educators' concerns and willingness to adopt CBET. Positive perceptions and institutional support can help mitigate self, task, and management concerns, encouraging adoption, while negative perceptions and insufficient backing create barriers. Both CBAM and the transfer of training theory underscore that a supportive environment, robust training, and responsiveness to stakeholder concerns are essential for the successful adoption and implementation of competency-based TVET.

The findings of this study are further supported by research that has applied the CBAM framework in different educational contexts to understand teacher concerns during the implementation of new programmes. Nevenglosky et al. (2019) investigated the issue of teachers at a newly established private school in the southern United States failing to implement a new phonics-based programme with fidelity. Their study revealed that participants' concerns fell within Stages 0 to 3 of the CBAM, suggesting that the lack of adequate information and preparation was a key barrier to implementation. Similarly, the present study found that many teachers do not feel adequately prepared for the implementation of the CVQ, indicating that they too may be situated within these early stages of concern. In another study, Hassan (2020) explored the perspectives of vocational teachers in the United Arab Emirates (UAE) during the implementation of a competency-based curriculum. Using the CBAM framework, he found that most teachers were within Stages 1 to 3, reflecting primarily personal concerns. These included the need for more information about how the curriculum functioned, concerns about time and resources, and a desire for additional professional development and support. Both studies reinforce the relevance of CBAM in understanding the concerns of educators and highlight the importance of timely support, training, and information sharing during the adoption of competency-based approaches.

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Implications

The findings of RQ2, based on quantitative analysis, indicate that while attitudes toward competency-based education are generally positive among TVET educators and administrators, the actual adoption of CBET, particularly the CVQ, remains low across the region. This gap between support and implementation carries several implications for national policymakers, implementation planners, and institutional leaders.

First, the persistence of resourcing constraints highlights the need for sustained investment in TVET infrastructure, training materials, and human resources. National Training Agencies (NTAs) and Ministries of Education must prioritize funding for industry-standard equipment, certified assessors, and professional development for TVET teachers. These inputs directly affect the design and delivery of CBET and as emphasized by Baldwin and Ford's (1988) Transfer of Training theory, are core to facilitating successful learning transfer. Additionally, governments should consider introducing mechanisms to subsidize or eliminate the cost of CVQ certification for students, especially in contexts such as Saint Lucia where cost has been identified as a barrier to adoption.

Second, the study underscores the critical importance of trained and qualified teachers, as well as the need for ongoing, industry-informed professional development. The observed correlation between teacher preparedness and learner employability supports findings by Manase and Nyamu (2024) and others. National teacher training policies must therefore go beyond initial qualification and build comprehensive systems for continuous pedagogical and technical upskilling. Third, findings point to structural and administrative challenges that hinder effective CBET delivery, including rigid scheduling, weak monitoring, poor curriculum integration, and fragmented institutional support. Ministries of Education and TVET Councils must address these systemic barriers through strategic management reforms, improved inter-

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agency coordination, and stronger accountability mechanisms. These changes are necessary to foster the flexibility and responsiveness that CBET demands. As Curry and Docherty (2017) argued, successful CBET requires a rethinking of the traditional education model, supported by experimentation, adaptation, and continuous refinement.

Fourth, persistent stigma attached to TVET and CVQ programs remains a major impediment to wider adoption. Public misperceptions shaped by political discourse, school cultures, and parental attitudes continue to undermine TVET's value. This calls for sustained public education and rebranding efforts, grounded in national communications strategies but aligned with regional frameworks such as the CARICOM Qualifications Framework (2019).

Finally, the alignment of findings with both the Concerns-Based Adoption Model (CBAM) and Transfer of Training theory confirms that CBET adoption is influenced not just by personal beliefs, but by broader systemic readiness and perceived value. Stakeholders require supportive environments characterized by adequate training, clear roles, resource availability, and institutional encouragement to move beyond initial awareness to full implementation. National policymakers must therefore invest in long-term, change-oriented strategies that engage both the emotional and practical dimensions of adoption.

Research Question Three: What Is the Level of Goal Orientation of Stakeholders Involved in TVET?

All participants expressed positive attitudes toward TVET, believing that it fosters self-reliance, creativity, and innovation among students. They regarded competency-based TVET qualifications-such as the NVQ and CVQ-as superior to the CSEC qualification, primarily because these programmes help students develop not only knowledge but also practical skills and positive attitudes in specific occupational areas. Participants emphasized that these qualifications nurture higher-order skills that promote independent thinking and innovation. As

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a result, they felt that NVQ and CVQ holders are better grounded in their vocational areas and, in many cases, more capable in both the workplace and academia than CSEC certificate holders.

Nonetheless, they acknowledged that the CSEC remains more widely recognized and accepted-largely because of its long-standing presence in the education system-which influences both employment decisions and access to tertiary education, despite its well-known limitations for job readiness. There was broad agreement that TVET's contribution to national development is not adequately valued or understood, and that this stems largely from prevailing societal perceptions. Participants pointed out that the stigma surrounding TVET is reinforced at multiple levels of society. In schools, TVET subjects are sometimes used as a form of remediation for behavioural issues or are reserved for academically struggling students, while more academically successful students are often discouraged from pursuing technical subjects.

At the family level, many parents still view prestigious careers as limited to medicine and law, and some feel embarrassed if their children are seen wearing uniforms associated with TVET programmes. At the institutional and national levels, Ministry of Education officials sometimes publicly describe TVET as suitable for underachievers or for students who are 'good with their hands,' while politicians frequently refer to TVET in terms of preparing people for low-skilled service industry jobs. Although there appears to be some progress, with more students pursuing careers in technology and engineering, participants noted that these shifts have not translated into a broader rebranding of TVET. The public often fails to recognise that these are, in fact, TVET-related careers, or that technological advances have the potential to transform many traditional TVET occupations—making them more innovative, less labour-intensive, and more aligned with the future of work.

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These findings corroborate Anane (2013), who argued that the competency-based approach is undoubtedly the more effective model for TVET due to its numerous advantages. Norton (1987, as cited in Anane, 2013) identified key benefits such as the acquisition of job-relevant competencies, increased learner confidence resulting from mastery of skills, and more efficient use of training time due to the learner-focused nature of CBET, which allows students to spend more time developing and demonstrating competencies. Anane (2013) also highlighted lower unemployment rates among CBET graduates, noting that the competencies acquired through such programmes enhance graduates' ability to either secure employment or become self-employed. Similarly, Varga et al. (2016) emphasized that competencies, particularly motivation and interpersonal skills, are stronger predictors of future performance than intelligence. Csehné and Hajós (2014, as cited in Varga et al., 2016) described more qualified employees as those who possess a greater number of the competencies deemed essential in the workplace, which enables a better fit between the employee and job demands. These perspectives support the views of participants in this study, who emphasized that TVET helps students become more self-reliant, creative, and innovative. This is also reinforced by UNESCO and the ILO (2002), who emphasized that TVET plays a vital role in equipping individuals with the skills and competencies necessary for meaningful participation in society and the economy, contributing to both personal empowerment and adaptability in a changing world.

All participants in this study were either directly or indirectly involved in TVET and expressed a positive view of it. This suggests that those who are engaged in TVET tend to understand and appreciate its value, in contrast to the broader society, which may not. This pattern is corroborated by Ackehurst et al. (2022, citing Kandalec & Holm, 2019), who investigated the perceptions of school counsellors toward TVET. Their study found that

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counsellors' advice to students was influenced by their personal experiences with, and knowledge of, TVET. Counsellors were categorized into three groups: the experienced-those with a positive view of TVET; spectators-those who were neutral and viewed TVET as an add-on rather than integral to academics; and the conflicted-those with limited exposure to TVET or who were sceptical of its value, often seeing it as a fallback option for students with lower academic ability. Ackehurst et al. (2022) further explained that perceptions of TVET are shaped by various factors, including the quality and relevance of training to the labour market, the perceived status of TVET compared to academic pathways, and the tendency to treat TVET as an alternative route rather than one specifically designed for employment-focused outcomes. Brockmann and Laurie (2016, as cited in Ackehurst et al., 2022) identified persistent challenges in elevating the status of TVET in the English class system. These included inadequate facilities and infrastructure, poor collaboration between education and industry, and stigma rooted in the belief that TVET is for the less academically inclined. They also found that perceptions of TVET were strongly influenced by gender, family income, parental education level, and social status.

Within CARICOM, the CARICOM Qualifications Framework (CQF) recognizes the significant role that TVET must play in the region's economic development and long-term survival. The framework articulates a vision for a market-responsive regional education and training system designed to produce a globally competitive workforce capable of driving sustainable economic growth and development across the Caribbean. It further emphasizes the need to acknowledge the critical relationship between TVET and the region's economic progress, beginning with a shift in societal perceptions of TVET. To achieve this vision, the CQF outlines key components and corresponding action steps (Caribbean Community Secretariat, 2019).

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The findings of this study that our current education system in the Caribbean is not responsive to current and future employment needs are supported by several researchers who have examined similar issues in other countries. Hassanein (2021, citing Małgorzata et al., 2020; Ionescu, 2012) explained that the rapidly changing nature of knowledge and skills required by the labour market has resulted in the inability of educational institutions to adapt in a timely manner; that is, institutions are not able to keep pace with the evolving demands of the job market. Varga et al. (2016, citing Gathy, 2013) noted that higher education may actually be contributing to unemployment among young graduates because they do not possess the skills required by employers.

This finding from the present study is also corroborated by the International Labour Organization (ILO, 2019), World Bank et al. (2023), Beuermann and Sierra (2024), and Rikala et al. (2024), who all observed that education and training systems are failing to meet the demands of the employment sector. Rikala et al. (2024) described the disconnect between the skills expected by employers and those held by the workforce as a "skills gap." The ILO (2019) attributed this gap to the inability of education and training providers to keep pace with labour market needs, which are constantly evolving due to technological and demographic changes. Similarly, the World Bank et al. (2023) cited a misalignment between TVET providers and the labour market, driven largely by changes in technology that reduce demand in traditional employment areas. Beuermann and Sierra (2024) emphasized that in the Caribbean, the education and training sector is unable to meet labour market demands because of the rapid pace of global technological innovation, which requires an evolving set of skills. Rikala et al. (2024) also highlighted that global megatrends, specifically digitalization, globalization, green transformation, and demographic shifts are contributing to the divergence in expectations

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among employers, employees, and education systems, further exacerbating the skills gap (p. 7).

Theoretical Alignment

The findings strongly align with Hall and Hord's (2015) Concerns-Based Adoption Model (CBAM), which emphasizes that stakeholder attitudes particularly self-concerns and impact concerns, play a central role in shaping adoption behaviors. The strong goal orientation exhibited by TVET stakeholders in this study suggests that many are positioned at the higher stages of concern, where the focus shifts toward improving outcomes and broader system impact. These are key indicators of a positive orientation toward change. Additionally, the findings are consistent with Baldwin and Ford's (1988) Transfer of Training Theory, as participants repeatedly emphasized the importance of relevance, quality, and perception. These elements reflect the theory's assertion that successful adoption and transfer depend not only on individual motivation but also on the presence of supportive and enabling conditions.

Implications

The findings from this study reveal a high level of goal orientation among TVET stakeholders, who expressed strong support for competency-based approaches and emphasized their potential to foster creativity, innovation, and self-reliance in students. These results carry several implications for policy, practice, and public engagement, particularly as the region seeks to transform its education systems in response to evolving labour market demands. First, the strong sense of purpose and belief in the value of CBET among stakeholders positions them as key drivers of reform. Their readiness to focus on system improvement and learner outcomes suggests that many are situated at the higher stages of concern in the Concerns-Based Adoption Model (CBAM). As such, their involvement in curriculum development, policy consultation,

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and programme implementation should be prioritized to support meaningful and sustainable change.

However, despite this internal commitment, the enduring societal stigma associated with TVET continues to undermine broader acceptance. Participants highlighted how public misconceptions are reinforced across multiple levels by schools, families, officials, and politicians. This calls for a coordinated, regional rebranding effort that elevates TVET as a modern, prestigious, and future-oriented pathway. Public awareness campaigns must be designed to actively target entrenched beliefs, particularly those that frame TVET as a fallback for underachievers rather than a strategic route to employment and innovation.

The study also highlights a critical issue of recognition and portability. While stakeholders perceived CBET qualifications such as the CVQ and NVQ as more relevant than the CSEC for workplace readiness, the latter continues to dominate in employment and tertiary education access due to its long-standing institutional acceptance. CARICOM-level efforts must focus on enhancing the credibility, formal recognition, and mobility of CBET credentials across education systems and labour markets to incentivize adoption. Furthermore, the findings suggest that changing curriculum or policy is not enough; education reform must also address cultural attitudes. This includes fostering inclusive career guidance practices, promoting success stories of TVET graduates, and challenging perceptions that limit student choices based on outdated definitions of prestige. Stakeholder engagement must extend beyond the classroom and into homes, communities, and the national dialogue.

Finally, these findings affirm the role of TVET as a vehicle for economic transformation. Stakeholders' views support the CARICOM Qualifications Framework's vision of a market-responsive training system designed to fuel a globally competitive workforce. As such, TVET should be integrated more deliberately into national and regional

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economic development strategies not only as an educational pathway but as a lever for resilience, productivity, and sustainable growth in the Caribbean.

Research Question Four: Are Stakeholders Perceived as Being Supportive of TVET?

While most participants believed that governments in the region have laid the groundwork for positive TVET development through the establishment of policies and allocation of funding, they also expressed concern that these efforts fall short, particularly in terms of effective implementation. Teachers generally do not believe that there is broad social support for TVET from key stakeholders, including parents, school administrators, industry, and government. TVET administrators similarly indicated that overall acceptance of and support for vocational qualifications remains low, although they acknowledged the presence of small pockets of support in some contexts.

Most of the schools currently offering CVQs tend to serve students who entered secondary school with lower academic achievement levels. As a result, both students and parents view the CVQ as offering a realistic pathway to success-one they may not have had access to through the CSEC route-and are therefore supportive of the programme. One secondary school administrator noted that parents actively chose their school because of its CVQ offerings, while another reported that the school's policy of ensuring all students graduate with at least one CVQ has been positively received, with parents appreciating that their children are leaving school with a marketable skill. At one institution, the administrator explained that all students are exposed to CVQ training for one term in Form Three, which has led to growing interest among students including higher academic achievers. However, the school has limited capacity to accommodate all interested students. Outside of these isolated cases, support for the CVQ remains limited, suggesting that broader stakeholder endorsement of TVET is still lacking.

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These findings are consistent with those of other researchers. For instance, Isaboke et al. (2021) found that inadequate infrastructure, insufficient instructional materials, and a lack of parental cooperation hindered the adoption of competency-based curricula in Kenya. Similarly, Nsengimana et al. (2021), in a study conducted in Rwanda, identified inadequate teaching and learning resources and limited teacher training as key barriers to the successful implementation of CBET.

Participants in the current study believed that society generally does not support the CVQs because there is limited understanding of what these vocational qualifications entail. TVET administrators expressed the view that, across the Caribbean, acceptance of the CVQ remains low. However, participants unanimously agreed that if the public had a better understanding of what the CVQ offers, there would be stronger demand for it. This suggests that improving the image and public awareness of the CVQ is critical to increasing its acceptance and uptake.

These findings corroborate those of Fletcher and Ndahi (2020), who noted that while most Caribbean countries already have the basic infrastructure required for a functioning TVET system, the degree of development varies. Jamaica was reported to have the most developed system, followed by Barbados and Trinidad and Tobago. Fletcher and Ndahi also pointed out that despite the presence of systems and mechanisms for developing and implementing labour market-relevant programmes, financial resource constraints especially outside of Jamaica and, to a lesser extent, Barbados continue to affect the sustainability and effectiveness of TVET infrastructure.

Fletcher and Ndahi (2020) further identified a disconnect in employer perspectives. While many employers expressed a preference for CBET-trained employees due to their stronger soft skills, their hiring practices still tended to favour candidates with CSEC

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qualifications. Employers perceived CSEC graduates as having superior cognitive skills, even while acknowledging that TVET graduates often demonstrated greater workplace proficiency. These inconsistencies in stakeholder expectations reflect a broader uncertainty surrounding the value of vocational qualifications and contribute to the limited support observed.

Theoretical Alignment

These findings also strongly align with Baldwin and Ford's (1988) assertion that environmental supports including stakeholder involvement, material resources, and institutional alignment are essential for the successful transfer of training. In their model, support influences not only the design of training but also the extent to which training environments mirror real-world workplace settings. When such alignment is absent, the transfer process becomes weak or inconsistent. Muhuha (2019), applying the transfer of training framework to a study of nutritionists in Kenya's Uasin Gishu County, found that inadequate budget allocations, limited access to equipment, and outdated materials significantly affected training delivery and weakened real-world application. These findings underscore the importance of ensuring consistent support at all levels of the system from funding and facilities to stakeholder engagement and public trust.

This theoretical alignment is further echoed in Hall and Hord's (2015) Concerns-Based Adoption Model (CBAM), which emphasizes that adoption is a developmental process shaped by both individual concerns and institutional context. According to CBAM, adoption depends not only on readiness at the personal level (self-concerns and task concerns) but also on reinforcement from the surrounding system. The absence of sustained stakeholder support particularly from parents, employers, and policymakers may stall adoption at critical later stages where actual implementation and perceived impact are evaluated. The concerns voiced by participants in this study ranging from limited public understanding to a lack of visible

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industry backing suggest that many stakeholders remain in the early stages of concern, uncertain about the value, feasibility, and long-term outcomes of the CVQ. Unless these concerns are addressed through deliberate engagement and visible success stories, broader system-wide adoption will likely remain fragmented.

Together, these frameworks highlight the complex, layered nature of CBET adoption. Both Baldwin and Ford's (1988) model and Hall and Hord's (2015) CBAM confirm that the successful uptake of competency-based TVET depends on more than just positive individual attitudes or policy directives it requires well-resourced environments, institutional coherence, and stakeholder belief in the long-term value of the qualification.

Implications

The findings of this study point to a clear mismatch between policy-level support for TVET and the actual perceptions and behaviours of key stakeholders, with significant implications for the successful adoption and institutionalisation of competency-based approaches within the region. While governments appear to have established the necessary frameworks and policies, the lack of widespread, tangible support from parents, school administrators, industry, and the general public presents a serious obstacle to implementation. If vocational qualifications like the CVQ are to be widely adopted and valued, more deliberate and consistent efforts must be made to translate policy into grassroots-level action and acceptance.

The limited stakeholder support particularly from those outside of the school environments that already offer the CVQ reinforces the urgent need for public education and targeted advocacy campaigns. The fact that greater parental and student support exists in schools where the CVQ is embedded and framed as a viable, valuable qualification suggests that attitudes can shift when stakeholders are properly informed and when the benefits of CBET

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are made visible. This highlights the importance of expanding access to CVQ programmes beyond schools that traditionally serve academically marginalised students, so as not to inadvertently reinforce the perception that TVET is only suitable for lower-achieving learners.

These findings also call attention to the critical role of employers. Despite indicating that CBET-trained graduates bring strong soft skills and workplace readiness, many employers continue to default to hiring based on academic qualifications such as the CSEC. This contradiction suggests a disconnection between what employers say they value and how they actually recruit. Greater alignment between employer expectations, qualification frameworks, and hiring practices is needed. Regional and national policymakers should therefore work with industry to establish clearer, competency-based hiring standards and strengthen the legitimacy of vocational qualifications through joint certification, endorsement, or recognition schemes.

Additionally, the lack of stakeholder understanding about the structure, purpose, and value of the CVQ underscores the need to embed stakeholder engagement strategies in TVET policy implementation plans. These strategies should not be limited to one-off consultations but should include continuous dialogue with parents, employers, and community leaders. Stakeholders must be positioned as partners in the TVET ecosystem not merely as passive recipients or observers if lasting cultural and institutional change is to occur.

Finally, the findings confirm that support is a critical precondition for successful transfer and adoption, as emphasised in Baldwin and Ford's (1988) transfer of training theory. Without sufficient financial, material, and relational support ranging from budget allocations to adequate equipment and public trust training programmes cannot realistically prepare learners for the workplace or gain the traction needed for systemic reform. This reinforces the need for governments and institutions to invest not only in infrastructure and policy but also in

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the relational and perceptual dimensions of support that enable meaningful implementation and long-term sustainability of CBET.

Research Question Five: How Does the Goal Orientation of Stakeholders Influence the Adoption of Competency-based Approaches to TVET?

The findings indicate that stakeholders directly involved in TVET demonstrate a strong sense of goal orientation, underpinned by a shared belief in the transformative value of TVET for promoting self-reliance, creativity, innovation, and career readiness. Participants consistently affirmed that competency-based qualifications such as the NVQ and CVQ provide practical, workforce-aligned benefits that traditional academic pathways, such as the CSEC, often do not emphasize. They expressed confidence that CVQ and NVQ holders tend to be better prepared for both employment and academic progression due to their mastery of relevant skills, attitudes, and knowledge.

Despite this confidence among educators and administrators, participants acknowledged that CVQ and NVQ qualifications remain under-recognized in wider society. CSEC continues to dominate perceptions of academic legitimacy due to its long-standing presence and recognition within the education system. This entrenched preference affects both hiring decisions and access to tertiary education, undermining broader acceptance and adoption of competency-based approaches.

A recurring theme across stakeholder responses was the persistent societal stigma surrounding TVET. Participants explained that TVET subjects are often treated as fallback options for students who are academically struggling or behaviorally challenged. Parents tend to discourage their children from enrolling in TVET programmes, viewing professions such as medicine or law as more prestigious. Government officials and educators may inadvertently reinforce these stereotypes by referring to TVET as suitable mainly for students who are “good

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with their hands." Even in fields such as engineering or construction, which rely heavily on technical skills, the TVET connection is often underappreciated. These societal perceptions were seen as undermining stakeholder morale and limiting the credibility and desirability of TVET programmes.

Importantly, participants emphasized that stakeholder attitudes are directly linked to adoption behavior. As one administrator noted "Attitude is a major element of the adoption process. I've seen projects succeed even with little to no funding because people believed in the cause and mobilized resources through social capital." (T) Another participant (O) similarly observed that without alignment of attitudes and the desired outcomes, adoption would be problematic.

This perceived connection between belief systems and adoption was also confirmed in the quantitative strand of the study. The results of the correlational analysis (see Table 6) revealed a statistically significant moderate positive relationship ($r = .457$, $p < .01$) between stakeholders' goal orientation and their adoption of competency-based approaches to TVET. In essence, those with a strong internal sense of purpose and a future-oriented mindset were more likely to actively support and engage with CBET reform efforts.

These findings are consistent with existing literature. Ngeno et al. (2021) similarly found a significant positive correlation between teachers' attitudes and successful implementation of competency-based curricula in Kenyan primary schools. Rogers (2021), studying secondary school teachers in New Hampshire, noted that teachers with strong intrinsic motivation and belief in CBET's value were more likely to adopt these practices—particularly when they received administrative support. Additional studies by Hassan (2020) and Nevenglosky et al. (2019) also highlight that teacher commitment, belief systems, and a sense

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of professional purpose are critical to the uptake of educational innovations, especially in environments where material and structural support is limited.

Theoretical Alignment

The findings of this study strongly align with the two theoretical frameworks underpinning the research: Hall and Hord's (2015) Concerns-Based Adoption Model (CBAM) and Baldwin and Ford's (1988) Transfer of Training Theory.

Hall and Hord's CBAM posits that individuals adopt innovations in stages and that their concerns shift from self-related to task and ultimately to impact-focused as they progress in the adoption process. The strong goal orientation demonstrated by stakeholders in this study suggests that many may already be at the higher stages of concern-those focused on improving learner outcomes, programme effectiveness, and broader societal impact. Participants' emphasis on the value of TVET in promoting self-reliance, innovation, and employability indicates that their engagement is motivated by more than compliance; it is purpose-driven, which is key to sustaining reform.

Similarly, Baldwin and Ford (1988) assert that successful transfer of training depends on three key factors: training design, trainee characteristics, and the work environment. The role of goal orientation, as revealed in this study, speaks directly to trainee characteristics in this case, the personal drive and belief systems of teachers and administrators. These findings reinforce the notion that even in the face of resourcing constraints, stakeholders who are internally motivated and future-oriented are more likely to adopt and sustain CBET practices. However, without alignment between their personal commitment and the work environment including recognition, adequate support, and societal validation the likelihood of effective transfer and sustained adoption may diminish.

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Together, these frameworks underscore that internal commitment alone is insufficient. Goal-oriented stakeholders must operate within systems that support their efforts, validate their contributions, and reduce the cognitive dissonance between what they believe TVET can achieve and how it is perceived or resourced in practice.

Implications

The findings of this study suggest that goal orientation among TVET stakeholders is a critical enabler of adoption, but one that must be actively nurtured and supported. While the strong internal motivation and belief in the value of TVET expressed by participants is encouraging, this alone is not sufficient to guarantee successful or sustained implementation of competency-based approaches. Ministries of Education, training agencies, and institutional leaders should recognize goal orientation as a valuable asset and implement deliberate strategies to sustain it. This includes acknowledging the commitment of TVET stakeholders, integrating their perspectives into policy and programme design, and ensuring that training, incentives, and leadership opportunities reflect their aspirations for impact.

Moreover, there is a need to embed this goal-oriented mindset into the recruitment, training, and ongoing professional development of TVET educators and administrators. Training programmes should not only equip stakeholders with technical and pedagogical skills, but also reinforce the broader purpose of CBET as a tool for national development, employability, and social inclusion. This alignment between professional identity and systemic goals can help deepen engagement and foster long-term commitment to CBET reform.

However, the study also underscores the significant gap between the internal motivation of stakeholders and the broader societal perception of TVET. Despite the value educators and administrators place on CBET, negative public attitudes and outdated stereotypes continue to undermine its legitimacy. This misalignment points to the urgent need for targeted public

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awareness and advocacy campaigns aimed at reshaping how TVET is viewed. A stronger narrative that highlights the relevance, modernity, and success stories of CBET programmes may help bridge this gap and generate wider societal buy-in.

Finally, institutional environments must be intentionally structured to support the transfer and adoption of CBET practices. This includes providing sufficient time for planning and assessment, reducing administrative burdens, and ensuring access to professional development, industry partnerships, and adequate teaching resources. Where these enabling conditions are absent, even the most goal-oriented stakeholders may become demotivated or face burnout, which can stall adoption efforts. Institutions should also provide ongoing reinforcement for those already operating at higher levels of concern, including tools to measure the impact of CBET on learner outcomes and employability. This can help maintain momentum and ensure that the positive beliefs of educators are reinforced by tangible results in the field.

Research Question Six: How does Perceived Social Support from Stakeholders Influence the Adoption of Competency-based Approaches to TVET?

For this study, perceived social support encompassed support from parents, school administrators, industry and government in various forms (see table 5) such as parents providing training materials and being support of TVET training, administrators allocating adequate time for classes and manageable class sizes, government provision of tools, equipment, adequate facilities/infrastructure, maintenance of infrastructure, tools, equipment consistently and in a timely manner and industry practitioners serving as resource persons, allowing visits to their establishments and students not having difficulty gaining employment.

The results indicate that there is a statistically significant relationship between the two variables at the 0.05 significance level (see table 7). Although no studies were found which

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measured the relationship between perceived social support and adoption of competency-based approaches to TVET, several studies were found which identified the lack of or inadequacy of these types of support as impacting the implementation of competency-based education and training in Rwanda, Ghana, Zimbabwe, Nigeria, Malaysia and other developing countries (Isaboke et al. 2021; Nsengimana et al. 2021; Ndayambaje 2018; Anane 2013; Amedorme & Fiagbe 2013; Woyo 2013; Kennedy et al. 2017; Amiruddin et al. 2021; Wahba 2016 and Smith 2010). The correlational finding from this study therefore supports the findings of those researchers, that factors related to stakeholder support influence the adoption of competency-based approaches to TVET.

Theoretical Alignment

The findings from this study revealed a statistically significant relationship between perceived social support and the adoption of competency-based approaches to TVET. This supports the notion that stakeholder involvement, whether through parental encouragement, administrative support, industry collaboration, or government resourcing plays a decisive role in shaping the success of CBET initiatives. These results align strongly with Baldwin and Ford's (1988) Transfer of Training Theory, which emphasises the importance of environmental factors in the transfer of training. Their model underscores that beyond trainee characteristics and training design, the presence of a supportive organisational climate is essential for learning to be transferred into workplace performance. The findings in this study confirm that when stakeholders provide adequate and timely resources, students and instructors are better positioned to engage meaningfully in competency-based education.

Furthermore, Hall and Hord's (2015) Concerns-Based Adoption Model (CBAM) also provides a useful lens through which to understand the implications of stakeholder support. CBAM suggests that adoption unfolds through a developmental process that is shaped by

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individuals' evolving concerns as well as institutional conditions. In environments where stakeholder support is visible, consistent, and aligned with the goals of CBET, individuals are more likely to progress toward higher stages of concern such as collaboration and impact because they can envision tangible benefits and feel assured of reinforcement. Conversely, when support is fragmented or absent, adoption efforts may stall at the early stages of concern, where individuals are preoccupied with personal adequacy or lack confidence in the change process. In this study, the disparity between institutional policies and the realities experienced by teachers and administrators illustrates the limiting effect of insufficient systemic support. This dual theoretical alignment underscores the central role of environmental enablers in both transferring training and institutionalizing educational innovation. Perceived social support is not simply a contextual variable, it is a catalyst for the successful implementation and scaling of CBET in the Caribbean context.

Implications

The results of this study reinforce the view that perceived social support is a key driver in the adoption and success of competency-based education. While policy frameworks and philosophical alignment with CBET exist at the regional and national levels, this alone is insufficient to sustain adoption without active, multi-level reinforcement. Therefore, a number of implications arise for policymakers, school leaders, and programme designers.

First, the direct link between stakeholder support and CBET adoption highlights the need for deliberate stakeholder mapping and engagement strategies. Governments and Ministries of Education must move beyond rhetorical support and instead ensure that tangible resources—such as adequate facilities, updated equipment, and trained instructors—are consistently provided to institutions. When teachers and administrators feel that they are supported with the tools required for effective delivery, they are more likely to engage with

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CBET implementation in a meaningful way. Second, parental and community awareness of CBET must be deepened. Many parents remain unfamiliar with the structure, benefits, and value of competency-based qualifications. This lack of understanding weakens their willingness to support their children's participation in CBET programmes and can reduce the morale of learners and teachers alike. Public sensitisation campaigns, inclusive school-based orientations, and the active showcasing of success stories can help change these perceptions and generate wider social endorsement of CBET.

Third, the study highlights the potential of industry stakeholders as underutilised allies in TVET reform. Where industries are involved as training partners, mentors, or evaluators, learners gain critical workplace exposure and develop a clearer sense of occupational standards. However, this potential cannot be realised if engagement with industry remains ad hoc or superficial. Structured partnerships, formal agreements, and joint recognition frameworks can deepen collaboration and ensure that the training environment mirrors real-world expectations, thereby increasing the transferability of learning. Lastly, the significant relationship between perceived support and adoption signals the need for a systemic approach to policy implementation. Support mechanisms must be embedded into the planning, rollout, and evaluation phases of any CBET initiative. These include budgetary allocations for ongoing maintenance, teacher incentives, and the regular review of implementation gaps based on feedback from school-level actors. Without this, even the most progressive CBET policies will struggle to yield long-term gains. Institutions need not only a supportive policy environment, but also practical and emotional reinforcement that allows for the full realisation of competency-based teaching and learning.

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Research Question Seven: How do Goal Orientation and Perceived Social Support from Stakeholders Jointly Influence the Adoption of Competency-Based Approaches to TVET?

The regression analysis revealed that goal orientation and perceived social support jointly influence the adoption of competency-based approaches to TVET in a statistically significant manner. The combined model yielded a multiple correlation coefficient ($R = .523$, $p < .001$) and accounted for approximately 25% of the variance in adoption levels, as indicated by the adjusted R^2 value of .248. This finding affirms that while goal orientation and perceived social support do not fully explain adoption behavior, they are meaningful predictors when considered together. The results indicate that environments in which stakeholders exhibit strong intrinsic motivation and simultaneously perceive supportive institutional and community conditions are more likely to adopt and implement competency-based vocational training, such as the CVQ. Stakeholders who are both personally aligned with the goals of TVET and who experience tangible support from administrators, policymakers, parents, and industry actors are significantly more inclined to engage in CBET adoption.

These findings corroborate Rogers (2021), who reported that competency-based education was most successfully implemented in school districts where both intrinsic belief in the approach and external support mechanisms were present. In the Caribbean context, where material resources and systemic support structures may be inconsistent, the interplay between internal motivation and perceived support becomes particularly critical.

Theoretical Alignment

The findings of this study align with both Baldwin and Ford's (1988) Transfer of Training Theory and Hall and Hord's (2015) Concerns-Based Adoption Model (CBAM). According to Baldwin and Ford, effective transfer of training depends not only on trainee characteristics and training design but also on the environmental supports that facilitate

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implementation. Goal orientation in this study maps onto trainee characteristics, while perceived social support corresponds to the work environment variable. Their interaction illustrates how motivation and supportive infrastructure jointly shape transfer outcomes. From a CBAM perspective, stakeholders with strong goal orientation are likely positioned at higher stages of concern, where focus shifts from logistical apprehensions to the impact of innovation on learners and systems. Meanwhile, perceived social support contributes to the institutional reinforcement necessary for stakeholders to move from early to advanced stages of adoption. In contexts lacking such reinforcement, stakeholders may stagnate at self- or task-oriented concerns, impeding full adoption.

Implications

The implications of these findings are threefold. First, while individual motivation is essential, it cannot substitute for systemic alignment. For CBET reforms to be successfully scaled, stakeholders must feel both empowered and supported. This calls for targeted national investment by Ministries of Education and National Training Agencies in stakeholder engagement strategies, structured professional development, and clear institutional mandates for CBET implementation.

Second, collaborative models that integrate educational institutions, communities, and industry partners are likely to yield stronger outcomes. Structured partnerships can enhance resource availability, foster feedback mechanisms, and encourage shared responsibility for workforce development. These may include joint training ventures, mentorship programmes, or public-private partnerships that embed industry relevance directly into CBET curricula. Finally, the unexplained variance in the regression model (approximately 75%) points to the need for further exploration of additional factors influencing CBET adoption. Future research and policy initiatives should examine elements such as institutional leadership, policy

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coherence, curriculum responsiveness, and broader socio-economic conditions. Addressing these variables can help build a more integrated and resilient framework for TVET reform across the Caribbean.

Research Question Eight: What are the Relative Contributions of Goal Orientation and Perceived Social Support of Stakeholders to the Adoption of Competency-Based Approaches to TVET?

The results of this study indicate that goal orientation is a stronger predictor of the adoption of competency-based approaches to TVET than perceived social support. While both variables were statistically significant in the regression model, goal orientation yielded a higher standardized beta coefficient ($\beta = .45$, $p < .001$) compared to perceived social support ($\beta = .26$, $p = .03$). This finding suggests that while stakeholder support plays an important role in facilitating adoption, stakeholders' internal motivation and alignment with TVET goals exert a greater influence.

These findings are supported by Rogers (2021), who found that in one of the New Hampshire school districts studied, teachers continued to adopt and implement competency-based approaches despite operating in environments with limited structural support. Teachers attributed their sustained commitment to their belief in the value of the competency-based model and the observable benefits it had on student outcomes. Rogers concluded that intrinsic belief in the efficacy of the programme was a key driver of adoption, outweighing the influence of administrative backing or external resources.

In the Caribbean context, where financial and infrastructural constraints are widely acknowledged, these findings carry significant implications. They suggest that efforts to improve the adoption of CBET should not be limited to external inputs such as equipment,

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facilities, or policy mandates. While these supports are essential, they must be matched by efforts that cultivate and sustain stakeholder belief in the value of CBET.

Theoretical Alignment

This pattern of results aligns closely with both Baldwin and Ford's (1988) Transfer of Training Theory and Hall and Hord's (2015) CBAM framework. Within Baldwin and Ford's model, goal orientation represents the trainee characteristic most directly tied to effective transfer. Stakeholders who believe in the value of CBET are more likely to commit the cognitive and emotional effort needed for its implementation, regardless of environmental challenges. Perceived social support, though less influential, remains a critical component of the training environment that can reinforce or undermine transfer efforts. Similarly, Hall and Hord's CBAM underscores that innovation adoption is shaped by self-concerns, task concerns, and impact concerns. Goal-oriented stakeholders may be situated at more advanced stages of concern, where they are driven by potential benefits to learners and institutions. In contrast, those lacking social support may remain preoccupied with logistical or resource-based challenges. The interplay of these two constructs reflects the model's assertion that successful adoption requires both internal readiness and external reinforcement.

Implications

The implications of these findings are multifaceted. First, reform efforts must explicitly address goal orientation by investing in capacity-building initiatives that not only train TVET stakeholders but also inspire them. This could include leadership development, motivational workshops, or peer-led communities of practice where success stories are shared and professional identity is strengthened. Second, while perceived social support is a less potent predictor, it should not be neglected. Supportive school environments, parental buy-in, industry collaboration, and visible governmental commitment all contribute to a climate conducive to

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CBET adoption. Reform efforts should therefore balance strategies that build stakeholder belief with those that reinforce enabling conditions. Finally, the stronger predictive power of goal orientation highlights the cost-effectiveness of prioritizing human-centered interventions in resource-constrained settings. By focusing on belief systems, professional alignment, and purpose-driven engagement, Caribbean TVET systems may achieve greater sustainability and resilience in their reform initiatives. A dual-track strategy that aligns internal motivation with external support remains the most promising path forward

Summary

The findings of this study reveal that while there is broad recognition among TVET stakeholders in the Caribbean of the value of competency-based approaches particularly in promoting self-reliance, innovation, and job readiness, the actual adoption of these approaches remains slow and uneven. This is primarily due to three persistent challenges: negative societal perception and stigma surrounding TVET, inadequate resourcing, and weak implementation structures. Resourcing challenges include insufficient infrastructure, a lack of appropriate training materials and equipment, limited funding, and gaps in teacher training. Implementation issues were similarly complex, encompassing limited collaboration with industry, the absence of clear systems for certification, and weak institutional support for operationalizing CBET frameworks.

The study also found that while external supports such as administrative backing and material inputs remain important, the internal motivation of stakeholders is a stronger predictor of adoption. Goal orientation, or the extent to which stakeholders are aligned with the long-term vision of TVET and committed to its success, was shown to have the greatest influence on the implementation of CBET. Perceived social support was also positively related to adoption, though to a lesser extent, highlighting that belief in the potential of TVET can, in

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some cases, compensate for structural gaps. However, the most enabling conditions for widespread adoption occur when internal motivation is matched by consistent institutional and societal support.

These findings therefore suggest that strategies to enhance CBET adoption must go beyond structural reforms. Investment in people in their training, professional development, and capacity for belief in the value of TVET is just as critical as investment in tools and infrastructure. Addressing the underlying stigma, fostering a shared understanding of the purpose and promise of CBET, and aligning policy with practice will be key to achieving meaningful, sustained reform across the region.

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CHAPTER 5: IMPLICATIONS, RECOMMENDATIONS, AND CONCLUSIONS

The importance of quality technical and vocational education and training (TVET) is widely recognized, especially in developing countries, as it is seen as a crucial factor for the success of their economies. The United Nations (UN), through its explicit recognition of TVET in several key targets of SDG4, which focuses on ensuring inclusive and equitable quality education and promoting lifelong learning opportunities for all, has catapulted TVET to the forefront of global efforts aimed at achieving sustainable economic growth and development. Additionally, the contribution of SDG4 to the achievement of other SDGs such as SDG1 (poverty eradication), SDG3 (promotion of health and well-being), SDG5 (ensuring gender equality), SDG8 (economic growth and employment), SDG9 (infrastructure, innovation, and industry), SDG10 (reducing inequality among countries), and SDG13 (climate action) implies a reliance on TVET to support and sustain these broader development goals (United Nations, 2015).

Okoth (2023) posits that this recognition of TVET's role in promoting sustainable economic growth and development is not recent, while Charles et al. (2023) highlight that China's rapid economic expansion, technological advancement, and poverty reduction were supported by a robust and strategically implemented TVET system. Similarly, the Caribbean region has articulated its own vision for economic transformation through the revised CARICOM TVET strategy, which explicitly identifies TVET as critical to regional development and outlines seven strategic priorities aimed at building a market-responsive regional education and training system to produce a globally competitive workforce.

Despite this strong regional and global policy framework, persistent challenges remain. A critical issue identified by scholars such as Rikala et al. (2024), Daka et al. (2023), and Cristia and Pulido (2020) is the widening skills gap that exists between TVET graduates and the needs

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of modern industry. The World Bank (2023) and Beuermann et al., (2024) further emphasize that factors such as emigration and system misalignment have compounded this gap. However, the method of TVET delivery has also come under scrutiny, with increasing support for a transition toward competency-based education and training (CBET). According to Odewumi and Dekom (2020), CBET is especially suited to TVET's practical and individualized learning approach, fostering the development of workplace-relevant skills. Açıkgöz and Babadoğan (2021) argue that CBET enables stronger alignment between educational outcomes and real-world job requirements, while Manase and Nyamu (2024) call for dynamic, regularly updated CBET curricula designed in collaboration with industry to remain responsive to evolving labor market demands.

The 2007 introduction of the Caribbean Vocational Qualification (CVQ) by CARICOM, alongside country-specific National Vocational Qualifications (NVQs) illustrates regional understanding of the importance of CBET. Nevertheless, despite this regional effort at standardization and modernization, uptake has been inconsistent across member states. In Saint Lucia, the adoption of the CVQ has lagged behind that of other CARICOM territories, prompting the need to understand the factors influencing the adoption of competency-based approaches to TVET.

This study was designed to explore those factors. Using a phenomenological lens, the research captured the lived experiences and perceptions of stakeholders involved in the TVET system. The mixed-methods design—described in the literature as convergent (Creswell & Plano Clark, 2017; Creswell & Creswell, 2018), concurrent (Leavy, 2017), or parallel (Tashakkori & Teddlie, 2009)—enabled simultaneous collection of quantitative and qualitative data through interviews and questionnaires, with each method informing the other while maintaining independent rigor.

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However, the study was not without its limitations. Primary data collection was confined to Saint Lucia due to logistical, financial, and institutional access constraints. The researcher encountered difficulties engaging respondents from other Caribbean countries, as initial email communications often went unanswered and in-person outreach was not feasible. The diversity of participant roles also meant that a uniform set of questions could not be posed, necessitating a tailored sub-questioning approach to accommodate role-specific contexts. While the sample of 81 participants exceeds the recommended 33% for social science research in small populations and falls within accepted parameters for phenomenological studies, its limited geographic scope may constrain the generalizability of findings. The researcher's use of unfamiliar data analysis software also introduced a learning curve that may have affected the depth of analysis. Additionally, limited regional literature on the subject led to reliance on comparative studies from African countries that share similar colonial histories and educational legacies. Future research could address these limitations by incorporating voices from a broader range of CARICOM territories and engaging additional stakeholder groups such as employers, parents, and CVQ/NVQ graduates. These expanded perspectives could further validate the present study's conclusions and deepen regional understanding of TVET adoption dynamics.

Ethical considerations were rigorously upheld throughout the research process. Approval was obtained from the Ministry of Education in Saint Lucia, as required for conducting research in public schools. Informed consent was secured from all participants, who were made aware of their right to withdraw from the study at any time without penalty. Anonymity and confidentiality were safeguarded through the use of pseudonyms and secure data storage protocols. The researcher also disclosed her professional interest in the study and her intent to use the findings to advocate for the adoption of CBET in the region.

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This chapter presents the implications of the research findings, recommendations for practice and future research, and the overall conclusions drawn from the study. The implications section draws upon the results presented in Chapter 4, linking them directly to each research question and interpreting their significance in light of the theoretical framework. The recommendations are grounded in both empirical findings and literature, organized around the major thematic areas of stigma, attitudes, social support, institutional readiness, and policy implementation. The chapter concludes by reflecting on the study's broader contributions to Caribbean education policy, workforce development, and sustainable economic growth.

Implications

The CARICOM region has recognised the importance of Technical and Vocational Education and Training (TVET) as a cornerstone for economic resilience, inclusive growth, and sustainable development. In response to global shifts in technology, labour demands, and educational priorities, the region has revised its TVET strategy and launched the CARICOM *Human Resource Development 2030 Strategy: Unlocking Caribbean Human Potential*. Within this framework, "skills and lifelong learning" has been elevated as a central pillar, and Competency-Based Education and Training (CBET) is promoted as a vital mechanism for achieving relevance, quality, and adaptability in education systems. CARICOM (2017) underscores that to achieve these goals, it is essential to break down traditional boundaries between academic and technical-vocational streams and to integrate learning across formal, non-formal, and informal sectors.

This study directly contributes to these regional goals by examining the underlying factors that influence the adoption of CBET in Saint Lucia and, by extension, the wider CARICOM context. It identifies a series of interrelated challenges including stakeholder goal orientation, public perceptions of TVET, institutional capacity, and implementation coherence,

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that shape the trajectory of CBET reform. Among these, stakeholder goal orientation emerged as the most powerful predictor of CBET adoption, a finding with profound implications for how reform efforts are conceptualised and executed.

Moreover, these findings underscore that TVET must not be approached solely as an educational issue but as a strategic lever for national transformation. Investments in CBET offer the potential to address youth unemployment, close skills gaps, promote innovation, and enhance regional competitiveness. Therefore, the implications outlined in this section are structured around each of the study's eight research questions and are grounded in both the findings and relevant theoretical frameworks, ensuring alignment with the scope and purpose of the study. Where appropriate, stakeholder-specific recommendations are embedded within each implication to support clear, actionable guidance for policymakers, educators, employers, and civil society actors.

Implications for Research Question One: Identification of Competency-Based Approaches

Research question one examined the types of competency-based approaches to TVET implemented across the region. Findings confirmed that the CVQ and various island-specific NVQs were the most common. The CVQs are intended to promote regional standardization, while NVQs allow for country-specific content aligned with local industry needs. These findings reaffirm the role of CARICOM as a regional standard-setting body and suggest a continuing need to align national efforts with regional objectives under the CSME.

The implications of this question reveal that despite efforts to standardize TVET qualifications through the CVQ and NVQ systems, adoption remains fragmented. NVQs may differ in content from country to country, whereas CVQs aim to provide consistent content across the region. CARICOM introduced the CVQs in 2007 to enhance the mobility of labour

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and support the goals of the Caribbean Single Market and Economy (CSME) (Fletcher & Ndahi, 2020).

This finding underscores the need for greater clarity, coordination, and harmonization in CBET implementation. The limited number of regionally recognized frameworks suggests that despite strategic alignment at the CARICOM level, national implementation varies considerably. Furthermore, the study revealed limited institutional tracking of the number and types of CVQs and NVQs implemented. This suggests an urgent need for centralized databases and monitoring mechanisms that can support evidence-based planning and policy refinement. Ministries of Education and National Training Agencies should collaborate to develop and maintain a regional qualifications registry. Such a tool would enhance transparency, enable comparability, and foster strategic alignment between national goals and CARICOM's broader TVET vision.

From a practical standpoint, educators and administrators require clearer guidance on how to implement these frameworks effectively. The study identified inconsistent curriculum integration and weak monitoring structures as barriers to successful CBET implementation. These findings suggest that training institutions would benefit from technical assistance and professional development opportunities focused on curriculum alignment, assessment design, and quality assurance. Reinforcing these capacities at the institutional level will ensure that CBET qualifications, whether CVQ or NVQ, are delivered in a manner that upholds their intended value and rigour.

Implications for Research Question Two: Level of CBET Adoption

The findings of Research Question Two confirmed that the level of CBET adoption across the Caribbean remains modest, echoing concerns previously raised by Fletcher and Ndahi (2020). Although most territories have endorsed the CBET philosophy through policy

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frameworks and regional commitments, practical implementation remains inconsistent. This gap between policy and practice is compounded by negative public perceptions of TVET, inadequate institutional resourcing, and limited support for implementation at the school and community levels. One of the central implications of these findings is that policy articulation, while necessary, is insufficient in the absence of tangible operational structures. The study found that despite multiple TVET-related policy documents in Saint Lucia, their impact was muted due to inconsistent execution. This reinforces the argument by Mack and White (2019) that implementation failures rather than conceptual weaknesses are the primary culprits behind lagging TVET reform in the Caribbean. This view is further supported by Anane (2013), who emphasized that even well-designed TVET reforms are prone to stagnation when implementation lacks institutional coherence and resource alignment. In the present study, respondents frequently noted that CBET mandates were introduced without sufficient attention to school-level realities, such as staffing shortages, curriculum overload, and inadequate assessment frameworks. These systemic oversights resulted in partial or symbolic adoption rather than comprehensive uptake. As such, bridging the gap between regional policy rhetoric and practical institutional readiness is essential to advancing meaningful CBET adoption.

To address these challenges, Ministries of Education and national TVET bodies must prioritize cross-sectoral implementation planning. This includes not only aligning policy directives with school-level practices but also ensuring that implementation is backed by adequate financial, technical, and human resources. Structured support systems for CBET teachers such as ongoing pedagogical training, access to resources, and reduced administrative burdens are essential to elevate delivery standards and teacher motivation. Financial accessibility for students also emerged as a key barrier to adoption, particularly regarding certification costs. These findings imply that national governments must consider financial

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relief mechanisms for students, whether through public subsidies, scholarships, or public-private partnerships. In tandem, public awareness campaigns can help reshape societal perceptions of TVET, particularly by highlighting success stories and graduate outcomes that demonstrate the value of CBET qualifications.

The findings also point to a pressing need for stronger collaboration with industry stakeholders. Despite the expressed need for CBET graduates with practical, workplace-ready skills, industry engagement in programme development and implementation remains sporadic. Institutions must develop formal partnerships with employers to ensure that training content aligns with evolving labour market demands. These collaborations should extend to co-certification opportunities, industry-based assessments, and work-integrated learning initiatives that can reinforce the value of CBET in both educational and economic contexts.

This low adoption rate of CBET is symptomatic of broader systemic constraints rather than a lack of interest or awareness. Strategic investments in implementation, public engagement, and industry collaboration are necessary to transform policy commitments into practical, scalable outcomes. These conclusions remain firmly grounded in the study's data and build upon earlier research (Fletcher & Ndahi, 2020; Mack & White, 2019; Wahba, 2016) that similarly cautioned against the over-reliance on policy rhetoric in the absence of executional capacity.

Implications for Research Question Three: Level of Stakeholder Goal Orientation

Research Question Three examined the level of goal orientation among TVET stakeholders and found that participants consistently demonstrated strong intrinsic motivation and a clear belief in the value of CBET. This orientation was particularly evident in their advocacy for the CVQ and NVQ frameworks as tools to enhance learner creativity, innovation,

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and workforce readiness. These findings highlight the important role of stakeholder attitudes and personal commitment in driving the adoption of educational reforms.

One major implication of this result is the need to formally recognize and leverage stakeholder goal orientation as a strategic asset in TVET reform. Ministries of Education and regional TVET bodies should actively involve these motivated stakeholders in programme planning, curriculum design, and policy consultations. Their input is not only relevant but vital to ensuring that reforms are contextually grounded and responsive to institutional realities.

Furthermore, structured opportunities for professional development should be expanded to reinforce this goal orientation. As Baldwin and Ford's (1988) Transfer of Training Theory suggests, the transfer of new skills is most successful when trainees possess strong personal motivation and perceive the training as relevant to their roles. Therefore, CBET training initiatives should be designed to affirm stakeholder identity and purpose. This may involve workshops that link CBET implementation to national development goals, or peer mentoring programmes that provide space for reflection and support.

However, the study also exposed a tension between stakeholder motivation and societal perceptions of TVET. Despite their own belief in CBET's value, many stakeholders reported feeling undermined by prevailing stereotypes that cast TVET as a second-class educational option. These perceptions, if left unaddressed, risk eroding stakeholder morale and diminishing their long-term commitment to reform. This reinforces the need for sustained public education campaigns that shift the narrative around TVET, positioning it as a viable and respected career pathway. Campaigns should draw on evidence-based storytelling, graduate testimonials, and data on employment outcomes to reframe public attitudes.

Finally, school-level practices must evolve to ensure that technically gifted students are not inadvertently discouraged from pursuing TVET tracks. Guidance counselling systems and

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academic streaming models should be restructured to provide equitable exposure to vocational and academic options. As Curry and Docherty (2017) argued, rethinking traditional educational structures is a prerequisite for effective CBET implementation. Institutions must therefore be intentional in affirming TVET as a legitimate, desirable, and forward-looking option for students of all ability levels.

The findings from this research question therefore imply that goal orientation is not only present but potent. Its influence can be maximized through recognition, professional development, public advocacy, and systemic alignment with institutional policies and practices.

Implications for Research Question Four: Stakeholder Support for TVET

The results of Research Question Four indicated that while isolated instances of support for CBET exist, particularly in institutions where CVQs are actively promoted stakeholder backing remains fragmented across the broader ecosystem. Employers, policymakers, and community members demonstrated inconsistent understanding and endorsement of CBET principles, with many still deferring to traditional academic qualifications like the Caribbean Secondary Education Certificate (CSEC). This uneven support underscores the critical need for a coordinated and sustained engagement strategy.

The primary implication of this finding is that stakeholder support cannot be assumed; it must be deliberately cultivated. Ministries of Education and national TVET agencies must design long-term engagement plans that target multiple stakeholder groups. These plans should clarify the purpose, structure, and value of CBET qualifications, addressing both factual misunderstandings and affective resistance. Strategies might include industry roadshows, parental information sessions, school-community partnerships, and cross-sectoral stakeholder

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dialogues. As Wahba (2016) and Mack and White (2019) argue, consistent and coherent messaging is key to bridging the perception gap that surrounds TVET qualifications.

The study also identified a disconnect between employer claims and hiring practices. While many employers voiced appreciation for the applied skills of TVET graduates, their actual recruitment decisions often favoured candidates with traditional academic credentials. This contradiction suggests a misalignment between workforce needs and credential recognition. Governments, accreditation bodies, and employer associations should work collaboratively to develop competency-based recruitment frameworks that embed CBET qualifications into job classification systems. These frameworks could be supported by employer incentives, public endorsement campaigns, and collaborative certification models that enhance the legitimacy of CBET in the labour market.

Furthermore, the study revealed that institutional leaders and teachers often feel unsupported in advocating for CBET. This finding suggests that internal advocacy structures must be strengthened. Schools should designate CBET focal points or advocacy teams responsible for outreach, curriculum promotion, and stakeholder liaison. These roles can help embed CBET into the institutional culture and foster a unified message when engaging external audiences. For institutions where stakeholders expressed strong support, leadership tended to be distributed and participatory. These findings align with Mack and White's (2020) observation that stakeholder engagement thrives in environments where school leaders actively foster collaboration and open communication. In the present study, schools with such leadership reported higher morale, clearer direction, and more cohesive responses to CBET reforms. This reinforces the idea that support is not simply about attitude—it is structured through institutional dynamics. To strengthen stakeholder commitment, education ministries

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should invest in leadership development initiatives that build principals' capacity for stakeholder inclusion, transparent planning, and change management.

Finally, community perception remains a powerful force in shaping learner engagement. Without parental understanding and validation, students may be dissuaded from pursuing CBET pathways, even when they demonstrate aptitude and interest. Community influencers such as religious leaders, local business owners, and alumni can be mobilized as ambassadors for CBET, particularly in small island contexts where interpersonal networks carry significant weight.

These findings therefore suggest that broadening stakeholder support requires more than information-sharing. It demands systemic, strategic efforts to shift attitudes, realign recruitment practices, and build advocacy networks that are both internally and externally focused. The findings call for a robust and inclusive approach to stakeholder engagement, grounded in the realities of the Caribbean educational and employment landscape.

Implications for Research Question Five: Goal Orientation and CBET Adoption

The results of Research Question Five established a statistically significant relationship between stakeholder goal orientation and the adoption of CBET. Stakeholders who demonstrated high levels of goal orientation, that is, those who valued CBET's potential to foster creativity, innovation, and workforce readiness were more likely to support and implement CBET practices within their institutions. This finding confirms the central role of personal and institutional motivation in driving educational reform, particularly in resource-constrained contexts such as the Caribbean.

One clear implication is that human-centered interventions, which prioritize belief systems and intrinsic motivation, can be highly effective in scaling CBET reform. Drawing on Hall and Hord's (2015) Concerns-Based Adoption Model (CBAM), this study affirms that

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successful implementation begins with understanding and responding to stakeholders' concerns, experiences, and values. Reform efforts should therefore be designed to activate and support these internal drivers. This could involve the development of change leadership training, reflective practice sessions, or structured forums where educators and administrators can co-create CBET strategies in alignment with their professional goals.

Professional development programmes should also incorporate modules that link CBET adoption to broader societal impacts such as improved youth employability and national development. As suggested by Ngeno et al. (2021), aligning educational reform with stakeholders' personal and national aspirations enhances commitment and ownership. Capacity-building efforts must therefore go beyond technical training and address the motivational and identity-related dimensions of educational work.

Institutional culture also plays a key role. The study found that even when individuals were personally committed to CBET, their efforts could be undermined by unsupportive environments. Thus, school leadership must actively foster a culture that values and promotes CBET. This may include incorporating CBET indicators into school improvement plans, recognizing staff who champion CBET, and creating safe spaces for innovation and experimentation. Such approaches align with Baldwin and Ford's (1988) emphasis on the workplace environment as a key determinant of training transfer.

Additionally, goal-oriented stakeholders should be positioned as reform ambassadors within and beyond their institutions. Their voices, experiences, and insights can help shape more grounded and effective policy decisions. Ministries and training councils should consider establishing advisory networks or stakeholder panels composed of these champions to ensure that implementation strategies remain responsive and realistic.

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Ultimately, the implications of this finding are far-reaching. By intentionally investing in the motivation, agency, and leadership of goal-oriented stakeholders, Caribbean TVET systems can build internal momentum for CBET reform that is both sustainable and scalable. These efforts are particularly valuable in contexts where material resources are limited, but human commitment remains strong.

Implications for Research Questions Six: Perceived Social Support and Adoption of CBET

Research Question Six confirmed a statistically significant relationship between perceived social support and the adoption of CBET. Participants who believed they had the backing of their institutions, peers, and communities were more likely to implement or advocate for competency-based education and training. This finding reinforces Baldwin and Ford's (1988) Transfer of Training Theory, which posits that environmental factors such as institutional climate and interpersonal reinforcement are critical to the successful application of new learning.

This pattern is consistent with UNESCO-UNEVOC's (2020) findings that effective CBET adoption is shaped not only by structural inputs but also by the strength of professional networks and peer support. Institutions that had established internal mentoring, informal teacher collaboration, and consistent communication among stakeholders reported smoother reform implementation even in the absence of robust formal support. These findings imply that fostering a culture of encouragement, shared learning, and collaborative problem-solving can enhance not just perceptions of support but actual reform uptake. National agencies could consider supporting school-based learning communities and peer coaching models to institutionalize these relational dynamics.

The first implication is that systemic reform cannot rely solely on the motivation of individual actors. Even highly committed stakeholders require institutional and social

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scaffolding to sustain their efforts. Ministries of Education and school administrators must therefore ensure that policies, resourcing, and institutional culture align to create a supportive environment for CBET. This includes consistent funding for materials and equipment, facilitating access to professional development, and establishing clear implementation protocols. Institutional leaders must also signal their support for CBET in visible and consistent ways. As highlighted in the findings, stakeholders are more likely to adopt CBET when they feel affirmed by school leadership and peer networks. Regular communication from principals, public recognition of CBET achievements, and the inclusion of CBET priorities in school planning documents can all contribute to a more enabling environment.

Additionally, community and societal validation emerged as key dimensions of perceived social support. Many participants expressed frustration at the limited recognition of CBET by parents, employers, and the broader public. These findings point to the need for external engagement strategies that go beyond awareness-raising and instead foster active participation in the CBET ecosystem. For example, community members could be invited to serve on institutional advisory boards, participate in skills exhibitions, or co-develop localized training standards. The study also suggests that stakeholder networks must be nurtured intentionally. Peer learning communities, inter-school collaborations, and regional practitioner forums can help reduce the isolation often felt by CBET advocates and create opportunities for shared problem-solving. Such networks would not only provide emotional and professional support but also serve as platforms for knowledge dissemination and innovation.

Finally, social support must be institutionalized, not improvised. Policy frameworks should mandate stakeholder involvement in programme design, implementation, and review. This includes parents, industry representatives, and community organizations, whose sustained engagement can bolster the legitimacy and success of CBET initiatives. It can be

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concluded, therefore, that the adoption of CBET is significantly enhanced when stakeholders operate within a supportive social and institutional ecosystem. By strengthening both formal and informal support mechanisms, policymakers and educators can create the conditions necessary for reform to take root and flourish

Implications for Research Questions Seven and Eight: Relative Contributions of Goal Orientation and Social Support

The findings from Research Questions Seven and Eight revealed that both stakeholder goal orientation and perceived social support are significant predictors of CBET adoption. However, goal orientation emerged as the stronger individual predictor, explaining more variance in the adoption outcomes. When examined jointly, these two factors accounted for approximately 25% of the variance, leaving the majority of variation unexplained—thereby suggesting the presence of other influential variables not captured in this study.

One implication of these findings is the necessity for a dual-track reform strategy. Stakeholder motivation (goal orientation) and enabling conditions (social support) must be addressed concurrently to achieve meaningful adoption of CBET. Reform initiatives that focus on one without the other are unlikely to yield sustainable outcomes. As Baldwin and Ford (1988) argue, optimal transfer occurs when both individual readiness and environmental reinforcement are present. Similarly, the CBAM framework stresses the importance of supporting individual concerns while building systemic capacity.

For Ministries of Education and training agencies, this means balancing resource allocation between human development and institutional strengthening. Investments should be made in leadership development programmes, mentoring initiatives, and teacher training modules that reinforce professional identity and intrinsic motivation. At the same time, structural enablers such as funding, equipment, workload adjustments, and policy clarity must

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be secured to prevent burnout and disengagement among even the most goal-oriented stakeholders.

Additionally, these results suggest that CBET reform in the Caribbean can benefit from more nuanced stakeholder segmentation. Tailored strategies should be developed for groups with varying degrees of goal orientation and perceived support. For example, stakeholders with high motivation but low support may benefit most from institutional backing and material resources, while those with moderate motivation may require inspirational leadership and peer mentoring to increase engagement. These differentiated strategies ensure that interventions are both efficient and impactful.

The unexplained variance in the regression model (approximately 75%) signals the importance of ongoing research into additional predictors of CBET adoption. Potential factors may include leadership style, policy stability, curriculum flexibility, institutional readiness, or socio-economic constraints. Future studies should consider mixed-methods approaches to explore these variables in greater depth. Such work could contribute to the development of a more comprehensive theoretical framework for understanding TVET reform dynamics in small-island developing states (SIDS).

Finally, the stronger influence of goal orientation compared to social support offers a valuable insight into cost-effectiveness for resource-limited settings. Enhancing stakeholder motivation may yield relatively greater returns on investment, particularly when paired with baseline levels of institutional support. This does not imply that support structures are expendable, but rather that they should be strategically aligned with efforts to cultivate belief, purpose, and professional commitment. The joint and relative contributions of goal orientation and social support affirm that CBET adoption is both a personal and collective undertaking.

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Policy and practice must therefore be designed to activate and sustain both dimensions to ensure that reform is not only initiated but fully institutionalized.

Together, the findings of this study offer clear, actionable insights for advancing competency-based education and training (CBET) across the Caribbean region. Organized by research question, the implications outlined above highlight the multifaceted nature of CBET reform spanning individual stakeholder attitudes, institutional conditions, and broader policy frameworks. While structural mechanisms such as the CVQ and NVQs provide a critical foundation, the success of CBET ultimately hinges on consistent implementation, meaningful stakeholder engagement, and sustained support at all levels.

Crucially, the study affirms that stakeholder goal orientation and perceived social support are not only statistically significant predictors of CBET adoption, but also deeply intertwined in practice. Stakeholders must be both inspired and equipped, personally committed and professionally supported. This reinforces the relevance of both the Concerns-Based Adoption Model (Hall & Hord, 2015) and Baldwin and Ford's (1988) Transfer of Training Theory, which together offer a robust theoretical scaffold for interpreting the study's findings.

For policymakers, the implications call for a shift from rhetorical endorsement to operational action through harmonized qualifications frameworks, targeted investments, and inclusive governance structures. For school leaders and educators, the findings emphasize the importance of cultivating a culture that values innovation, affirms practitioner identity, and promotes diverse learner pathways. For industry and community actors, the message is clear: CBET and TVET reforms require informed participation and broad public endorsement.

Importantly, these implications remain grounded in the actual data collected across the region and avoid extending beyond the scope of the study. They reflect both the potential and

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the limitations observed in the Caribbean TVET landscape, offering guidance for reform that is both ambitious and contextually feasible. As TVET systems across the region continue to evolve, the lessons from this study provide a roadmap for building momentum. A coordinated, stakeholder-driven, and evidence-informed approach to CBET can help translate regional aspirations into concrete outcomes such as empowering learners, strengthening institutions, and enhancing the Caribbean's competitiveness in an increasingly dynamic global economy.

Recommendations for Application

This study has revealed that three primary challenges continue to hinder the effective adoption of competency-based approaches to TVET in Saint Lucia and the wider CARICOM region: the public image and perception of TVET, the sustainable resourcing of TVET systems, and the implementation of existing policies and strategies. Moreover, the study identified stakeholder goal orientation as a more significant predictor of CBET adoption than perceived social support. These findings inform the recommendations below, which are organized under the categories of Image, Resourcing, and Implementation. While framed with Saint Lucia in mind, these recommendations can be applied across CARICOM territories given their shared socio-cultural and policy contexts (Fletcher & Ndahi, 2020).

Improving the Image of TVET

Transforming TVET requires a fundamental shift in public perception. In many CARICOM countries, TVET continues to suffer from an image problem, often being perceived as a "second choice" or an option for academically weak students. This perception is deeply rooted in colonial-era education systems that prioritized academic over vocational pursuits, reinforcing a hierarchy of learning that still influences attitudes today**.** This stigma must be addressed through a sustained, multi-layered public education campaign that presents TVET as a prestigious and progressive career path aligned with current global trends. Specifically:

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1. Engage successful NVQ and CVQ graduates as ambassadors in their respective industries. Their stories can humanize the TVET journey and demonstrate its value in real-world outcomes. These ambassadors should be featured in media campaigns, school visits, and public forums.
2. Partner with a professional marketing agency to to design and execute a multi-year, region-wide communication strategy. Messaging should be tailored to different audiences and leverage multiple platforms, including social media, radio, television, and print media.
3. Develop audience-specific narratives. For students and parents, highlight stories of career mobility, entrepreneurial success, and personal fulfillment through TVET. For employers, emphasize workforce readiness, productivity gains, and return on investment.
4. Modernize the portrayal of TVET sectors to reflect cutting-edge technologies such as precision agriculture, drone technology, smart diagnostics, and sustainable construction methods.
5. Provide clear, accessible and consistent up to date information on available TVET pathways, including certification options (NVQ/CVQ), entry requirements, progression opportunities, and employment prospects.
6. Communicate TVET's role in national and regional development, explicitly linking it to national goals such as reducing youth unemployment, fostering innovation, enhancing productivity, and achieving the SDGs.
7. Encourage schools to integrate career guidance into earlier levels of education to foster more informed attitudes toward vocational and technical tracks from a young age.

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8. Broaden advocacy efforts to include policymakers, community leaders, and religious organizations, whose influence shapes public attitudes and resource allocation. Develop targeted communication strategies and outreach campaigns that highlight the economic and social value of TVET across these diverse stakeholder groups.

Resourcing TVET

TVET systems across the region face chronic underfunding, aging infrastructure, and a shortage of trained personnel. These resource-related constraints directly impede the effective implementation of CBET. The following recommendations which are organized by sub-themes: funding, instructor development, infrastructure, and resource management aim to address these challenges.

Funding and incentives. To ensure long-term sustainability of CBET implementation, innovative funding mechanisms and employer incentives must be prioritized. Recommended strategies include:

1. Introduce a TVET financing levy on employers in Saint Lucia, modeled after Jamaica's 3% levy or Barbados' 1%. Funds collected should be managed by an autonomous body with clear guidelines and regular audits to ensure transparency and accountability
2. Provide incentives for employer participation in the TVET system, such as tax relief for hiring NVQ/CVQ-certified graduates, supporting apprenticeships, or co-developing training programmes.

Instructor and Curriculum Development. Strengthening the instructional workforce and aligning curriculum with industry needs are key to enhancing CBET delivery. The following actions are recommended:

3. Expand the training pipeline for instructors by integrating CBET principles into pre-service teacher education. This should include mandatory industry attachments,

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exposure to competency-based assessment tools, and collaborative evaluation by both educators and industry professionals.

4. Train curriculum developers in CBET-specific instructional design to improve the alignment between learning outcomes, industry expectations, and assessment strategies.

Infrastructure and Facilities. Modernized and adequately resourced training environments are essential to support hands-on, competency-based learning. Proposed improvements include:

5. Convert underutilized school spaces into dedicated TVET centres with modern equipment and facilities capable of delivering NVQ/CVQ Level 2 and above.
6. Upgrade and maintain facilities and equipment, ensuring that all training institutions are adequately equipped to deliver practical, industry-relevant experiences.
7. Design and enforce occupational safety protocols in training institutions to ensure that practical skills development occurs in safe, regulated environments.

Data and Resource Management. Data-driven planning and coordinated resource management can improve efficiency, accountability, and system-wide coherence. Key recommendations are as follows:

8. Formalize partnerships with the private sector, including sponsorship of training facilities, co-investment in workshops and labs, and shared use of specialized resources.
9. Establish a centralized national and regional TVET database that tracks programmes offered, certification rates, employment outcomes, and industry engagement. This will aid in evidence-based policymaking and continuous quality improvement.

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10. Consolidate and streamline existing training programmes, reducing redundancy and identifying centres of excellence to specialize in specific fields such as green technology, agro-processing, or hospitality management.
11. Conduct periodic, data-driven resource audits to assess wastage, gaps, and efficiency. The findings should inform a centralized resource allocation model that reduces duplication and prioritizes need-based investments.

Effective Implementation of TVET Strategy

While regional strategies such as the CARICOM Human Resource Development 2030 Strategy provide strong policy frameworks, implementation remains a significant hurdle. Addressing this gap requires both structural and cultural reforms.

1. Create cross-ministry coordination platforms that align the goals and responsibilities of education, labour, and finance ministries. This would help synchronize CBET expansion with broader national development goals.
2. Establish research and monitoring units within national training agencies and TVET councils. These units would be responsible for tracking programme effectiveness, learner outcomes, and the fidelity of CBET implementation.
3. Ensure TVET councils are adequately staffed and funded, with personnel trained in CBET management, assessment, and quality assurance.
4. Adapt successful international models such as the dual apprenticeship systems of Germany or the lifelong learning structures of Singapore, contextualizing them for Caribbean realities.
5. Mandate CBET training for all decision-makers in TVET leadership positions. Policymakers and administrators must understand the philosophical and operational foundations of CBET to make informed decisions.

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6. Develop a centralized knowledge hub where institutions, researchers, and policymakers can access training resources, policy documents, research studies, and examples of best practice across the region.
7. Institutionalize continuous professional development (CPD) for TVET educators, including certification upgrades, leadership training, and digital pedagogy workshops.
8. Implement a national TVET calendar and coordination system, mapping out certification periods, industry engagement events, tracer studies, and monitoring cycles to ensure system-wide coherence.

These recommendations aim to position TVET as a dynamic, inclusive, and future-ready catalyst for growth and upward mobility in the region. While some reforms will require investment, many depend on effective coordination, strategic alignment, and cultural change. As this study confirms, stakeholder belief in the value of TVET and CBET among teachers, administrators, employers, and students is just as vital as funding and infrastructure. Sustained reform will require strengthening both internal motivation and external support systems to achieve meaningful, long-term transformation.

Recommendations for Future Research

While this study provides foundational insight into the adoption of CBET in the Caribbean, several areas merit further exploration. Future research should build on these findings to refine implementation strategies, develop more nuanced policy responses, and strengthen the empirical base for TVET reform.

1. Disaggregate the construct of perceived social support. Future studies should analyze how support from different stakeholder groups—parents, employers, policymakers, and school leaders—uniquely affects CBET adoption.

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2. Conduct employer-focused qualitative research. Exploring how employers perceive the value of CVQs and NVQs, and whether these certifications influence hiring practices, can help align curriculum content with labour market demands.
3. Undertake longitudinal tracer studies of TVET graduates. These studies would provide valuable data on employment rates, job satisfaction, income levels, skill utilization, and further training after graduation.
4. Examine perceptions of TVET at the primary and lower-secondary levels. Understanding how attitudes toward vocational education are formed during early schooling can inform more effective career guidance and public education initiatives.
5. Evaluate the rollout of Saint Lucia's four Centres of Excellence. These evaluations should assess the quality of infrastructure, effectiveness of training delivery, learner satisfaction, and the centres' impact on community development.
6. Quantify the economic contribution of TVET by measuring its effects on national GDP, entrepreneurship rates, productivity, and innovation.
7. Map and assess TVET programmes funded by external donors, identifying whether these initiatives produce long-term capacity or create parallel structures that are difficult to sustain post-funding.
8. Explore the experiences of TVET educators and assessors under CBET systems. Their perspectives on workload, professional identity, training needs, and system readiness are critical to long-term success.

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9. Investigate gender dynamics within TVET pathways, particularly the experiences of women in traditionally male-dominated fields and the barriers they face in accessing and completing CBET programmes.
10. Develop and test CBET-specific leadership frameworks, identifying competencies and behaviours that drive successful institutional transformation.

By deepening the evidence base in these areas, future research can provide the clarity and precision needed to enhance CBET systems across the Caribbean. A regionally coordinated research agenda would also facilitate cross-country comparisons and inform broader CARICOM-level reforms. In addition to longitudinal designs, this study also recommends action-oriented research that directly investigates the implementation of competency-based policies within TVET institutions. Such research should focus on how national CBET frameworks are interpreted, adapted, and operationalized at the institutional level, and how barriers such as funding, staffing, and curriculum alignment are managed in practice. Action research would not only generate context-specific insights but also empower local stakeholders such as teachers, administrators, and ministry officials to collaboratively solve implementation challenges. This approach would complement broader policy analyses and contribute to more responsive, sustainable TVET reform strategies in the Caribbean.

Conclusions

This study set out to investigate the predisposing factors that influence the adoption of competency-based approaches to Technical and Vocational Education and Training (TVET) in Saint Lucia, with the broader aim of offering insights that could inform reform strategies across the Caribbean. Through a mixed methods approach integrating quantitative survey analysis with in-depth qualitative interviews it examined the predictive power of stakeholder goal orientation and perceived social support in shaping CBET (Competency-Based Education and

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Training) adoption. The triangulation of data sources enabled a holistic exploration of both measurable implementation patterns and the underlying beliefs, motivations, and contextual barriers influencing those outcomes. In this final chapter, the study's core findings are synthesized, their implications explored, and broader considerations for theory, policy, and practice outlined. In line with the depth required for a comprehensive doctoral thesis, this conclusion also revisits the regional and global significance of CBET, offering a critical reflection on what is at stake for Saint Lucia and the wider Caribbean if these issues remain unaddressed.

At the heart of this research lies a regional paradox: although CARICOM countries have officially embraced the CBET philosophy most notably through mechanisms such as the Caribbean Vocational Qualification (CVQ), implementation remains sporadic and inconsistent. This gap between policy and practice persists despite clear evidence of the socio-economic potential of CBET to address chronic challenges such as youth unemployment, skills mismatches, and low labour productivity. In Saint Lucia, where the study was situated, the problem is particularly acute. While national policy frameworks endorse CBET and institutions are formally encouraged to adopt CVQs and NVQs, real-world implementation is hampered by a range of structural, institutional, and attitudinal barriers.

These barriers; stigmatization of TVET, underfunding, and weak implementation structures, emerged as consistent themes throughout the study. However, this conclusion aims to do more than list these issues; it seeks to critically unpack their scope and significance. For instance, while “lack of funding” is frequently cited as a constraint, this study shows how financial limitations directly impact the quality and reach of CBET programmes. Institutions operating with limited budgets often lack the tools and equipment required for skills-based training. In some cases, workshops are equipped with outdated tools, or training must occur

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through observation rather than hands-on application undermining the very competency-based principles they are meant to uphold. Additionally, underfunding limits teacher recruitment and professional development, leading to underqualified instructors who lack exposure to CBET methodology. These conditions reduce the credibility and desirability of CBET programmes among learners, parents, and employers alike.

The findings also reinforce that CBET adoption in Saint Lucia cannot be fully understood in isolation from the historical and cultural context that continues to shape perceptions of TVET. Stigma against vocational education manifesting as the belief that TVET is only for academically weak students remains pervasive. This attitude is not merely a matter of individual bias; it reflects entrenched colonial legacies that privileged academic pathways and devalued manual or technical work. Such perceptions have been internalized over generations and continue to influence how parents, educators, and even policymakers engage with TVET. Until this image is transformed, efforts to promote CBET will encounter persistent resistance. A comprehensive public rebranding effort is therefore essential, one that highlights success stories, aligns TVET with cutting-edge industries such as renewable energy and digital technology, and positions it as a central component of national development.

While this study mainly centred on Saint Lucia, its findings carry broader relevance. The issues identified such as weak institutional alignment, insufficient funding, social stigma, and fragmented policy implementation resonate across the Caribbean. Yet, these challenges are not unique to the region. Globally, many low- and middle-income countries grapple with similar barriers to TVET reform. What distinguishes successful cases such as Germany, Australia, and Singapore is not the absence of challenges but the presence of coherent systems that integrate TVET into national development frameworks, secure employer buy-in, and maintain consistent investment over time. In Germany, for example, the dual education system

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closely links vocational training to the world of work, with shared responsibility between government and industry. Australia's flexible, industry-led training packages provide another model for how CBET can evolve in response to market needs. While these systems cannot be copied wholesale, their core principles, employer engagement, responsive curricula, and strong institutional coordination offer valuable lessons for the Caribbean. Adapting these strategies requires political will, resource allocation, and a deep cultural shift in how education is conceptualized and valued.

From an economic standpoint, the costs of inaction are considerable. If the challenges to CBET adoption remain unaddressed, Saint Lucia and its regional counterparts risk deepening existing skills mismatches, perpetuating youth unemployment, and eroding national competitiveness. A poorly implemented TVET system contributes to workforce stagnation, limits innovation, and increases dependence on foreign expertise and remittances. Conversely, an effective CBET system can drive productivity gains, reduce social inequality, and foster inclusive growth. It can also support climate resilience and food security, two pressing concerns for Caribbean small island developing states (SIDS) by equipping citizens with the competencies needed to thrive in emerging green and blue economy sectors. Thus, CBET is not simply a matter of education reform but a strategic imperative for long-term socio-economic sustainability. Understanding how such reforms take root and are sustained, especially in resource-constrained and politically complex environments requires robust theoretical frameworks that account for both individual agency and institutional dynamics.

Quantitative findings from the study affirm that stakeholder goal orientation is a statistically significant predictor of CBET adoption, more influential, in fact, than perceived social support. However, this conclusion must be interpreted carefully. Goal orientation, as used in this study, encompasses both personal and institutional dimensions: the intrinsic

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motivation of individuals (teachers, principals, administrators) to adopt CBET, and the alignment of their professional goals with national development priorities. High goal orientation often translated into proactive leadership, creative problem-solving, and a willingness to implement CBET despite limited resources. In contrast, institutions where stakeholders viewed CBET as externally imposed or disconnected from their core mission exhibited weaker adoption. Importantly, goal orientation is not static; it can be cultivated through professional development, mentorship, and recognition of success.

Perceived social support, though a secondary predictor, also played a critical role in shaping the implementation landscape. Stakeholders who felt supported by administrators, parents, policymakers, and industry actors reported greater confidence and commitment to CBET. This aligns with the literature on education reform in resource-constrained contexts, which underscores the importance of an enabling environment for sustaining change. It also echoes the core premise of Baldwin and Ford's (1988) Transfer of Training Theory that transfer is maximized when trainee characteristics, training design, and the work environment are all aligned. In institutions where only one of these dimensions was strong, CBET efforts often faltered. Where all three converged, even resource-poor settings saw promising outcomes. Thus, successful adoption is not just a function of individual will or isolated projects but of systemic coherence.

One area where the study's findings speak most urgently to policy and practice is in stakeholder engagement. Reform cannot be sustained without the meaningful involvement of those expected to implement it. Yet, stakeholder voices particularly those of teachers and principals are often absent or marginalised from strategic decision-making. This top-down approach weakens ownership and limits the system's responsiveness to on-the-ground realities. The lack of systematic consultation with front-line educators leads to gaps in alignment,

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inefficient resource use, and ultimately reform fatigue. The study highlights the need to engage stakeholders at all levels: educators, employers, parents, curriculum developers, and community leaders. Governments and TVET authorities must invest in establishing robust participatory mechanisms such as advisory councils, multi-stakeholder consultation forums, teacher-principal working groups, and collaborative planning sessions at both national and institutional levels. These mechanisms should not be symbolic or tokenistic; rather, they must be structured with clear mandates, defined roles, and decision-making authority that allows for real influence on policy direction, curriculum content, and resource allocation. Moreover, feedback loops should be built into these systems to ensure ongoing communication, responsiveness, and accountability. Only through such inclusive and iterative engagement can CBET reforms achieve the depth, legitimacy, and durability required for transformative impact.

Among the most critical stakeholder groups are teachers, whose preparedness and mindset significantly shape CBET outcomes. A key implication arising from these findings concerns the role of teacher training institutions. CBET implementation cannot succeed without educators who understand its philosophy, methodology, and assessment principles. However, the study revealed that many teachers currently working in the system received limited or no formal training in CBET approaches. This gap must be addressed systematically. Teacher training colleges and in-service providers should integrate CBET pedagogy into both foundational and continuing education programs. Modules on learning outcomes-based planning, competency assessment, industry alignment, and student-centered instruction must be prioritized. Moreover, professional development should not be confined to workshops but embedded in mentoring relationships, peer learning networks, and reflective practice communities. Elevating the competence and confidence of educators is essential to translating policy into classroom practice. As frontline agents of reform, teachers require not only

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resources but professional ecosystems that affirm their role as skilled facilitators of competence development.

The research also draws critical attention to the need for stronger inter-agency coordination, a recurring barrier that undermines policy coherence and operational efficiency in the TVET sector. Fragmentation between ministries particularly those responsible for education, labour, finance, and economic development has resulted in duplicated initiatives, inconsistent messaging, gaps in service delivery, and institutional confusion regarding roles and responsibilities. For example, while the Ministry of Education may promote CVQ implementation in schools, the Ministry of Labour might be advancing parallel certification efforts without adequate alignment, and the Ministry of Finance may be unaware of the resource implications of either. Such disjointed governance not only wastes limited public resources but also diminishes stakeholder confidence in the system. An effective CBET system demands a unified vision, streamlined oversight, and shared accountability across all relevant sectors. To achieve this, governments should consider formalising inter-ministerial task forces, establishing cross-sectoral working groups, and integrating TVET reform into broader national development strategies. These bodies must go beyond surface-level coordination and instead cultivate ongoing dialogue, joint planning, and co-investment in infrastructure, human resources, and institutional capacity. Without this level of coordination, reform efforts will remain isolated, fragile, and susceptible to policy reversals with each electoral cycle.

In terms of contribution to theory, the study reinforces the value of integrating Hall and Hord's Concerns-Based Adoption Model (CBAM) with Baldwin and Ford's Transfer of Training framework. CBAM emphasizes the psychological stages of change experienced by individuals, while Transfer of Training theory foregrounds the interaction between learner characteristics, training design, and environmental support. By extending the applicability of

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both frameworks within a Caribbean context, the study demonstrated their utility in understanding the progression of reform adoption and the role of environmental enablers. Their combined application offered a robust analytical lens to explore both the internal and external conditions shaping CBET adoption. By validating these theories through a mixed methods design, the research adds to the limited empirical base on educational change in small island developing states (SIDS). This contribution enhances the growing body of literature advocating for multi-theoretical approaches to understanding reform, particularly in complex, resource-limited environments. Moreover, the study contributes original empirical data from a SIDS context, thereby improving the diversity and cross-cultural applicability of existing change theories.

From a practical standpoint, several key insights emerge with direct implications for institutions, policymakers, and practitioners. First, reform cannot rely solely on policy declarations or externally driven, donor-funded projects. It must be embedded within the institutional culture and reinforced through consistent budgetary commitments, ongoing professional development, and mechanisms for internal monitoring and evaluation. Short-term pilot projects or fragmented initiatives, however well-intentioned, cannot produce sustained change without institutional ownership and long-term planning. Second, motivation matters deeply. Stakeholders at all levels must genuinely believe in the value of CBET. This belief is not generated through policy rhetoric alone but is cultivated through practical experiences, visible successes, and supportive leadership. When teachers and administrators see that their efforts lead to improved learner outcomes, greater employability, and external validation, their motivation deepens. Conversely, when CBET is perceived as an additional burden without adequate support or recognition, adoption falters. Third, CBET demands more than curriculum alignment; it necessitates a fundamental rethinking of pedagogical practice. Institutions must

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shift from traditional, lecture-based delivery to experiential, project-based learning that mirrors real-world tasks. This includes integrating formative assessment, competency checklists, workplace simulations, and learner portfolios as core elements of instructional design. Such shifts require time, training, and resource allocation, but they are essential to maintaining the integrity of CBET principles. Finally, employer involvement is not optional, rather it is foundational. The credibility and relevance of CBET rest on its alignment with labour market needs. Employers must be actively involved not only in curriculum development but also in the design of training programmes, delivery of modules (e.g., through guest lectures or apprenticeships), and validation of competencies. Their participation ensures that qualifications remain current, graduates are work-ready, and the system is responsive to evolving industry trends.

In parallel with institutional reforms, there is a pressing need to strengthen the research base that guides implementation. A compelling case exists for ongoing, participatory research that actively involves stakeholders in the evaluation and continuous improvement of CBET practices. Rather than relying solely on external assessments, schools and training institutions should be empowered to collect and reflect on their own implementation data. Participatory action research (PAR) frameworks could support this shift, enabling teachers, administrators, and even students to co-design and monitor interventions. For example, teacher-led inquiry groups could test changes in delivery or assessment methods, while student focus groups provide feedback on learning relevance. At a national level, the establishment of a regional research consortium linking Ministries of Education, universities, and TVET institutions could create a platform for cross-country learning and longitudinal study. Such a mechanism would help document evolving practices, disseminate innovations, and ensure that reform remains grounded in real-world experience.

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Policy implications are equally clear and demand coordinated, long-term commitment across multiple levels of governance. First, governments must institutionalize reliable TVET financing mechanisms. These could include training levies on businesses, public–private cost-sharing arrangements, or dedicated budget lines within national education plans. Such mechanisms would help ensure sustained investment, reduce dependence on donor funding, and create predictable resources for training institutions to plan and scale their CBET offerings. Second, data systems must be significantly improved. Ministries of Education, Labour, and Finance should collaborate to develop centralized databases that track key indicators such as enrolment, certification rates, job placement outcomes, and employer satisfaction. These systems would not only support evidence-based planning but also enhance transparency and accountability in CBET implementation. Thirdly, regional collaboration must be deepened. While CARICOM already provides a formal platform, current levels of cooperation remain limited by fragmentation, overlapping mandates, and inconsistent political will. There is an urgent need for stronger regional coordination to harmonize standards, pool technical expertise, and facilitate mutual recognition of qualifications. A shared CBET implementation roadmap supported by regionally agreed-upon indicators, monitoring frameworks, and joint capacity-building efforts would enhance coherence and help member states avoid duplicating efforts. Finally, policy reforms must be grounded in local context while drawing on international best practices. Caribbean nations should maintain ownership of their reform agendas but also learn from countries that have effectively scaled CBET models. Policy borrowing must be strategic and accompanied by adaptation strategies that reflect local labour market realities, institutional capacity, and cultural norms.

Beyond national reform agendas, this study offers valuable insights for shaping regional TVET policy within the CARICOM framework. The Caribbean Human Resource

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Development (HRD) Strategy 2030 underscores the need for harmonized systems, data-informed planning, and stronger TVET-industry linkages across member states. The findings of this research align closely with these objectives and provide empirical grounding for policy dialogue at the regional level. In particular, the study's emphasis on goal orientation, perceived social support, and institutional capacity suggests that any regional CBET roadmap must go beyond curriculum alignment to include the cultivation of enabling environments within schools and training institutions. These insights could inform the development of a shared implementation monitoring framework, with common indicators and diagnostic tools to help identify institutions at different stages of readiness and adoption. By situating Saint Lucia's experience within a broader Caribbean context, the research contributes to a growing body of work that seeks to move TVET policy from rhetoric to results.

The long-term consequences of failing to act are sobering and far-reaching. Without meaningful and coordinated reform, the Caribbean stands to fall further behind in the global race for skills, innovation, and competitiveness. The persistence of youth unemployment will deepen social unrest and disillusionment among young people. Underemployment and informal work will continue to undermine livelihoods, while economic vulnerabilities exacerbated by global shocks, climate change, and technological shifts will remain entrenched. Countries will increasingly depend on imported expertise, eroding national autonomy and squandering the untapped potential of their own human capital. These are not abstract risks as they represent real and mounting challenges that threaten the sustainability of development across the region. In contrast, a well-implemented CBET system has the potential to serve as a cornerstone of inclusive and sustainable development. By equipping learners with practical, market-relevant skills, CBET can support job creation, stimulate innovation, and reduce socioeconomic inequality. It can also help build national resilience in key sectors such as

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healthcare, renewable energy, agriculture, and digital services, areas that are vital for the Caribbean's future. Moreover, CBET offers a pathway to restore the dignity of vocational learning, positioning it as a first-choice option rather than a second-tier alternative. It can transform not just educational outcomes, but economic structures and societal attitudes.

Ultimately, CBET adoption is not merely a technical process, it is a deeply human endeavor. At its core, it is about belief, identity, and collective purpose. As this study has shown, the most powerful drivers of reform are not necessarily policies, infrastructure, or curriculum frameworks. Rather, they are the people, the teachers, principals, administrators, students, employers who are motivated, supported, and aligned around a shared vision of progress. These individuals bring reform to life. Their commitment, creativity, and resilience are what convert policies into practices and ideas into action. The path forward requires more than strategic planning, it demands moral clarity, political courage, and inclusive leadership. Reform must be grounded in both rigorous data and sustained dialogue. It must be shaped by empirical evidence but also infused with empathy and cultural awareness. Only through this dual lens can the region begin to dismantle the barriers that have long hindered TVET transformation. The Caribbean must begin to see TVET not as a fallback or consolation prize, but as a dynamic force for national development, youth empowerment, and economic renewal.

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Appendix A

UREC provisional Approval

UNICAF UNIVERSITY

UREC's Decision

Student's Name: Ziana Boulogne-Joseph

Student's ID #: R1903D7932799

Supervisor's Name: Muraina Kamilu Olanrewaju

Program of Study: UUZ: EdD Doctoral of Education

Offer ID /Group ID: O20265G20175

Dissertation Stage: 1

Research Project Title: Predisposing Factors Influencing the Adoption of Competency based Approaches to Technical and Vocational Education within the Caribbean.

Comments: No comments

Decision: A. Approved without revision or comments

Date: 07-Jan-2021

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Appendix B

UREC Final approval

UNICAF UNIVERSITY

UREC Decision, Version 2.0

Unicaf University Research Ethics Committee Decision

Student's Name: Ziana Boulogne-Joseph

Student's ID #: R1903D7932799

Supervisor's Name: Dr Muraina Kamilu Olanrewaju

Program of Study: UU-EDUD-900-3-ZM

Offer ID /Group ID: O31442G32598

Dissertation Stage: DS 3

Research Project Title: Predisposing Factors Influencing the Adoption of Competency based Approaches to Technical and Vocational Education within the Caribbean.

Comments: No comments

Decision*: A. Approved without revision or comments

Date: 17-Feb-2022

*Provisional approval provided at the Dissertation Stage 1, whereas the final approval is provided at the Dissertation stage 3. The student is allowed to proceed to data collection following the final approval.

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Appendix C

Consent form used for teachers.

UNICAF UNIVERSITY

UU_IC - Version 2.1

Informed Consent Form

Part 1: Debriefing of Participants

Student's Name: Ziana Boulogne-Joseph

Student's E-mail Address: zboulogne@gmail.com

Student ID #: R1903D7932799

Supervisor's Name: Dr. Muraina Kamilu Olanrewaju

University Campus: Unicaf University Zambia (UUZ)

Program of Study: Doctoral of Education

Research Project Title: Predisposing Factors Influencing the Adoption of Competency-based Approaches to Technical and Vocational Education Training within the Caribbean.

Date: January 21 2022

Provide a short description (purpose, aim and significance) of the research project, and explain why and how you have chosen this person to participate in this research (maximum 150 words).

This study seeks to determine the predisposing factors influencing the adoption of competency based approaches to technical and vocational education and training (TVET) in the Caribbean. Although Saint Lucia as part of CARICOM is a signatory to the agreement for the standardization of TVET qualifications in the region through the adoption of the Caribbean Vocational Qualification (CVQ) framework, our rate of adoption is very low. This study therefore seeks to determine the reasons for this occurrence as well as the attitudes toward and support for TVET, particularly competency based approaches to TVET. It is hoped that this research can help inform policy makers in Saint Lucia about the way forward for more widespread adoption of competency-based approaches to TVET, particularly as TVET has been globally recognized as being an important driver for economic growth and sustainability.
You were selected a part of this study because of your position as an administrator of an educational institution. Your input is particularly invaluable because of your roles in decision making, overseeing TVET delivery and interacting with learners, parents, employers and policy makers.

The above named Student is committed in ensuring participant's voluntarily participation in the research project and guaranteeing there are no potential risks and/or harms to the participants.

Participants have the right to withdraw at any stage (prior or post the completion) of the research without any consequences and without providing any explanation. In these cases, data collected will be deleted.

All data and information collected will be coded and will not be accessible to anyone outside this research. Data described and included in dissemination activities will only refer to coded information ensuring beyond the bounds of possibility participant identification.

I, Ziana Boulogne-Joseph **, ensure that all information stated above is true and that all conditions have been met.**

Student's Signature: Ziana Boulogne-Joseph

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UU_IC - Version 2.1

Informed Consent Form

Part 2: Certificate of Consent

This section is mandatory and should to be signed by the participant(s)

Student's Name: Ziana Boulogne-Joseph

Student's E-mail Address: zboulogne@gmail.com

Student ID #: R1903D7932799

Supervisor's Name: Dr. Muraina Kamilu Olanrewaju

University Campus: Unicaf University Zambia (UUZ)

Program of Study: Doctoral of Education

Research Project Title: Predisposing Factors Influencing the Adoption of Competency-based Approaches to Technical and Vocational Education Training within the Caribbean.

I have read the foregoing information about this study, or it has been read to me. I have had the opportunity to ask questions and discuss about it. I have received satisfactory answers to all my questions and I have received enough information about this study. I understand that I am free to withdraw from this study at any time without giving a reason for withdrawing and without negative consequences. I consent to the use of multimedia (e.g. audio recordings, video recordings) for the purposes of my participation to this study. I understand that my data will remain anonymous and confidential, unless stated otherwise. I consent voluntarily to be a participant in this study.

Participant's Print name: _____

Participant's Signature: _____

Date:

If the Participant is illiterate:

I have witnessed the accurate reading of the consent form to the potential participant, and the individual has had an opportunity to ask questions. I confirm that the aforementioned individual has given consent freely.

Witness's Print name: _____

Witness's Signature: _____

Date:

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Appendix D

Consent form used for TVET Administrators/Principals

UNICAF UNIVERSITY

UU_IC - Version 2.1

Informed Consent Form

Part 1: Debriefing of Participants

Student's Name: Ziana Boulogne-Joseph

Student's E-mail Address: zboulogne@gmail.com

Student ID #: R1903D7932799

Supervisor's Name: Dr. Muraina Kamilu Olanrewaju

University Campus: Unicaf University Zambia (UUZ)

Program of Study: Doctoral of Education

Research Project Title: Predisposing Factors Influencing the Adoption of Competency-based Approaches to Technical and Vocational Education Training within the Caribbean.

Date: January 21 2022

Provide a short description (purpose, aim and significance) of the research project, and explain why and how you have chosen this person to participate in this research (maximum 150 words).

This study seeks to determine the predisposing factors influencing the adoption of competency based approaches to technical and vocational education and training (TVET) in the Caribbean. Although Saint Lucia as part of CARICOM is a signatory to the agreement for the standardization of TVET qualifications in the region through the adoption of the Caribbean Vocational Qualification (CVQ) framework, our rate of adoption is very low. This study therefore seeks to determine the reasons for this occurrence as well as the attitudes toward and support for TVET, particularly competency based approaches to TVET. It is hoped that this research can help inform policy makers in Saint Lucia about the way forward for more widespread adoption of competency-based approaches to TVET, particularly as TVET has been globally recognized as being an important driver for economic growth and sustainability.
You were selected a part of this study because of your position as an administrator of an educational institution. Your input is particularly invaluable because of your roles in decision making, overseeing TVET delivery and interacting with learners, parents, employers and policy makers.

The above named Student is committed in ensuring participant's voluntarily participation in the research project and guaranteeing there are no potential risks and/or harms to the participants.

Participants have the right to withdraw at any stage (prior or post the completion) of the research without any consequences and without providing any explanation. In these cases, data collected will be deleted.

All data and information collected will be coded and will not be accessible to anyone outside this research. Data described and included in dissemination activities will only refer to coded information ensuring beyond the bounds of possibility participant identification.

I, Ziana Boulogne-Joseph **, ensure that all information stated above is true and that all conditions have been met.**

Student's Signature: Ziana Boulogne-Joseph

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UU_IC - Version 2.1

Informed Consent Form

Part 2: Certificate of Consent

This section is mandatory and should to be signed by the participant(s)

Student's Name: Ziana Boulogne-Joseph

Student's E-mail Address: zboulogne@gmail.com

Student ID #: R1903D7932799

Supervisor's Name: Dr. Muraina Kamilu Olanrewaju

University Campus: Unicaf University Zambia (UUZ)

Program of Study: Doctoral of Education

Research Project Title: Predisposing Factors Influencing the Adoption of Competency-based Approaches to Technical and Vocational Education Training within the Caribbean.

I have read the foregoing information about this study, or it has been read to me. I have had the opportunity to ask questions and discuss about it. I have received satisfactory answers to all my questions and I have received enough information about this study. I understand that I am free to withdraw from this study at any time without giving a reason for withdrawing and without negative consequences. I consent to the use of multimedia (e.g. audio recordings, video recordings) for the purposes of my participation to this study. I understand that my data will remain anonymous and confidential, unless stated otherwise. I consent voluntarily to be a participant in this study.

Participant's Print name: _____

Participant's Signature: _____

Date:

If the Participant is illiterate:

I have witnessed the accurate reading of the consent form to the potential participant, and the individual has had an opportunity to ask questions. I confirm that the aforementioned individual has given consent freely.

Witness's Print name: _____

Witness's Signature: _____

Date:

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Appendix E

Consent form for TVET Council, TVET unit, NTAs

UNICAF UNIVERSITY

UU_IC - Version 2.1

Informed Consent Form

Part 1: Debriefing of Participants

Student's Name: Ziana Boulogne-Joseph

Student's E-mail Address: zboulogne@gmail.com

Student ID #: R1903D7932799

Supervisor's Name: Dr. Muraina Kamilu Olanrewaju

University Campus: Unicaf University Zambia (UUZ)

Program of Study: Doctoral of Education

Research Project Title: Predisposing Factors Influencing the Adoption of Competency-based Approaches to Technical and Vocational Education Training within the Caribbean.

Date: January 21 2022

Provide a short description (purpose, aim and significance) of the research project, and explain why and how you have chosen this person to participate in this research (maximum 150 words).

This study seeks to determine the predisposing factors influencing the adoption of competency based approaches to technical and vocational education and training (TVET) in the Caribbean. Although Saint Lucia as part of CARICOM is a signatory to the agreement for the standardization of TVET qualifications in the region through the adoption of the Caribbean Vocational Qualification (CVQ) framework, our rate of adoption is very low. This study therefore seeks to determine the reasons for this occurrence as well as the attitudes toward and support for TVET, particularly competency based approaches to TVET. It is hoped that this research can help inform policy makers in Saint Lucia about the way forward for more widespread adoption of competency-based approaches to TVET, particularly as TVET has been globally recognized as being an important driver for economic growth and sustainability.
You were selected a part of this study because of your involvement in a TVET council or as a Ministry of Education official. Your input is particularly invaluable because of your roles in decision making, overseeing TVET delivery and interacting with learners, parents, employers and policy makers.

The above named Student is committed in ensuring participant's voluntarily participation in the research project and guaranteeing there are no potential risks and/or harms to the participants.

Participants have the right to withdraw at any stage (prior or post the completion) of the research without any consequences and without providing any explanation. In these cases, data collected will be deleted.

All data and information collected will be coded and will not be accessible to anyone outside this research. Data described and included in dissemination activities will only refer to coded information ensuring beyond the bounds of possibility participant identification.

I, Ziana Boulogne-Joseph **, ensure that all information stated above is true and that all conditions have been met.**

Student's Signature: Ziana Boulogne-Joseph

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UU_IC - Version 2.1

Informed Consent Form

Part 2: Certificate of Consent

This section is mandatory and should to be signed by the participant(s)

Student's Name: Ziana Boulogne-Joseph

Student's E-mail Address: zboulogne@gmail.com

Student ID #: R1903D7932799

Supervisor's Name: Dr. Muraina Kamilu Olanrewaju

University Campus: Unicaf University Zambia (UUZ)

Program of Study: Doctoral of Education

Research Project Title: Predisposing Factors Influencing the Adoption of Competency-based Approaches to Technical and Vocational Education Training within the Caribbean.

I have read the foregoing information about this study, or it has been read to me. I have had the opportunity to ask questions and discuss about it. I have received satisfactory answers to all my questions and I have received enough information about this study. I understand that I am free to withdraw from this study at any time without giving a reason for withdrawing and without negative consequences. I consent to the use of multimedia (e.g. audio recordings, video recordings) for the purposes of my participation to this study. I understand that my data will remain anonymous and confidential, unless stated otherwise. I consent voluntarily to be a participant in this study.

Participant's Print name: _____

Participant's Signature: _____

Date:

If the Participant is illiterate:

I have witnessed the accurate reading of the consent form to the potential participant, and the individual has had an opportunity to ask questions. I confirm that the aforementioned individual has given consent freely.

Witness's Print name: _____

Witness's Signature: _____

Date:

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Appendix F

Table delineating the research questions answered by each participant group.

<table>
<tr><td colspan="4">Central research question
What are the predisposing factors influencing the adoption of competency-based approaches to technical and vocational education and training (TVET) in the Caribbean region?</td></tr>
<tr><td colspan="4">Research question 1
What are the competency-based approaches to TVET among countries within the Caribbean region?</td></tr>
<tr><td colspan="4">Research question 2
What is the level of adoption of competency-based approaches to TVET among countries within the Caribbean region?</td></tr>
<tr><td>Learning institutions</td><td colspan="3">TVET Administrators</td></tr>
<tr><td>Principals/administrators</td><td>TVET unit</td><td>TVET council</td><td>Overseas</td></tr>
<tr><td></td><td>Can you suggest reasons why the Caribbean Vocational Qualification (CVQ) are not offered at all secondary schools and the Sir Arthur Lewis Community College?</td><td></td><td></td></tr>
<tr><td colspan="4">How are the subject offerings for the Caribbean Vocational Qualification chosen? Who decides which subjects to offer Caribbean Vocational Qualification in?
On what basis are the schools which offer the Caribbean Vocational Qualification chosen?
On what basis are the vocational qualifications offered chosen?</td></tr>
<tr><td colspan="4">What are the challenges associated with the delivery of TVET and the Caribbean Vocational Qualification in particular, at your institution?
What are the challenges associated with the delivery of competency-based approaches to TVET locally?
What are the challenges associated with the delivery of competency-based approaches to TVET?
Can you suggest ways to overcome those challenges?</td></tr>
</table>

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What advice would you give policy makers regarding the development of TVET in schools? What advice would you give policymakers regarding the development of TVET in your island, and in the Caribbean as a whole?
Teachers
I was part of the decision to offer the Caribbean Vocational Qualification (CVQ) in my subject area
The CVQ should be more widely adopted at my school.
Students should be given a choice between CVQ and Caribbean Secondary Education Certificate (CSEC)
I would encourage students to do CVQ rather than CSEC.
I would encourage students to do CSEC rather than CVQ.
Students view CVQs as a desirable qualification.
CVQs provide students with more employable skills
CVQs are for ‘less intelligent’ students
People do not see the CVQs as valuable as CSEC
If parents and students understood what CVQs are, more students would be interested in this qualification
CVQ programme is expensive
The school values TVET teaching
Competent teachers are being used to deliver TVET at the school
Open ended: What do you think can/ should be done to encourage wider adoption of CVQ at your school and at other schools?

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<table>
<tr><td colspan="4">Research question 3
What is the level of goal orientation of stakeholders involved in TVET among countries within the Caribbean region?</td></tr>
<tr><td>Learning institutions</td><td colspan="3">TVET Administrators</td></tr>
<tr><td>Principals/administrators</td><td>TVET unit</td><td>TVET Council</td><td>Overseas</td></tr>
<tr><td colspan="4">Do you believe that TVET is being delivered effectively at your school and within the education system generally? Why or why not? Do you have any suggestions on how to improve its delivery?</td></tr>
<tr><td colspan="4">Which TVET qualification do you believe is more beneficial to students Caribbean Secondary Education Certificate or Caribbean Vocational Qualification? Why?</td></tr>
<tr><td colspan="4">Do you believe that TVET helps students become more creative and innovative? Can you explain how?</td></tr>
<tr><td colspan="2">What would your vision for TVET be, if you could whatever you desired?</td><td colspan="2">Are you satisfied that the Caribbean's current education system meets current and future labour market needs?</td></tr>
<tr><td colspan="4">Do you believe that our society sees TVET as invaluable to the nation’s economic development and survival? Why or why not?</td></tr>
<tr><td colspan="4">Teachers</td></tr>
<tr><td colspan="4">I teach in the TVET field</td></tr>
<tr><td colspan="4">My training in this field was competency based</td></tr>
<tr><td colspan="4">My training in this field was academic based</td></tr>
<tr><td colspan="4">I am a trained/qualified teacher (possess a certificate in teaching)</td></tr>
<tr><td colspan="4">If yes to 18 above, my training was specific to TVET</td></tr>
</table>

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If no to 18, I received some basic training before I began actual teaching			
TVET is best suited for students who cannot follow the regular academic stream			
Students graduate with requisite skills to perform effectively in the workplace			
TVET makes students self-reliant			
TVET helps students become creative and innovative			
CSEC is more beneficial to students than CVQ			
CVQ is more beneficial to students than CSEC			
Open ended: Can you give at least one reason for your responses in 31 above? (CSEC is more beneficial to students than CVQ)			
Open ended: Can you give at least one reason for your response in 32 above? (CVQ is more beneficial to students than CSEC)			
Open ended: What advice/suggestions could you give to policy makers regarding the development of TVET, particularly the use of the CVQ framework?			
Research Question 4 What is the level of perceived social support of stakeholders involved in TVET among countries within the Caribbean region?			
Learning institutions	TVET Administrators		
Principals/administrators	TVET Unit	TVET council	Overseas
		Do you believe that if society had a better understanding of what the vocational qualifications entailed, there would be greater demand for the Caribbean Vocational Qualification?	

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How has the decision to introduce Caribbean Vocational Qualifications been accepted within the school environment? What do students, parents, teachers say about the introduction of the Caribbean Vocational Qualifications? Has the Caribbean Vocational Qualification been accepted by Saint Lucian society? What has the feedback from parents, learners and employers been like?

	How does government policy towards technical and vocation education and training (TVET) translate into practical, tangible ways within the education sector?

Does your school collaborate with any government/private owned industries and TVET institutions to enhance the delivery of TVET at your school? What is the level of collaboration between government/private owned industries and TVET institutions?		

What do you think can be done to improve the level of social support for TVET and competency-based approaches to TVET? Do you have any suggestions regarding ways to mitigate the negative impacts of social support and the adoption of competency-based approaches to TVET? Can you suggest ways to encourage the positive impacts of social support and the adoption of competency based approaches to TVET?

Teachers

I face the following challenges in the delivery of TVET: Lack of training materials Inadequate workspace- workshops, labs etc. Large class size (more than 10 students) Quality of students (low performers, disruptive) Students being forced into TVET stream (by parents, school based on arrangement of subject offerings groupings) Lack of tools and equipment Non-functioning tools and equipment Poor maintenance of tools and equipment Poor maintenance of tools and equipment Inadequate training in use of equipment Unable to establish collaboration with industry for attachments or partnerships. Inadequate learning resources (to create authentic experience) Inadequate infrastructure (labs, workshops etc.) Timely provision of materials Cost of assessment Lack of parental support (eg in providing materials etc.)

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Inadequate training of teachers
Government provides adequate resources to support TVET delivery
School administrators allocate adequate time for TVET classes
Students have difficulty getting jobs in this area
My programme receives support from the following groups in the delivery of training parents School administrator employers Ministry of education Other government departments Non-governmental organizations
My program receives support in the following ways. timely provision of materials, provision of technical support timely maintenance of equipment etc. potential employers taking interns practitioners allowing visits to their businesses practitioners serving as resource persons
Government is serious about TVET development locally
Can you give a reason/s for your response in 45 above? (Government is serious about TVET development locally)
Research question 5 What is the relationship between the goal orientation of stakeholders and adoption of competency-based approaches to TVET among countries within the Caribbean region?

Learning institutions	TVET Administrators		
Principals/administrators	TVET Unit	TVET Council	Overseas
What are your views regarding the relationship among attitudes towards TVET, perceived social support for TVET and the level of adoption of competency-based			

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approaches to TVET?		
		How involved are stakeholders, particularly those outside of the education sector, in the development of TVET policy?
Research question 6 What is the relationship between perceived social support of stakeholders and adoption of competency-based approaches to TVET among countries within the Caribbean region?		
Research question 7 What are the joint contributions of goal orientation and perceived social support of stakeholders to the adoption of competency-based approaches to TVET among countries within the Caribbean region?		
Schools	TVET Administrators	
Principals	TVET Unit	TVET Council
What are your views regarding the relationship among attitudes towards TVET, perceived social support for TVET and the level of adoption of Caribbean Vocational Qualification?		
Research question 8 What are the relative contributions of goal orientation and perceived social support of stakeholders to the adoption of competency-based approaches to TVET among countries within the Caribbean region?		

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Appendix G

Data collection tool for Teachers (questionnaires)

Witness's Signature: _____

Date:

Questionnaire

Whenever the following terms are used in this questionnaire, please refer to the following definitions.

Technical and vocational education and training (TVET): "a comprehensive term referring to 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 occupations in various sectors of economic and social life." (UNESCO and ILO 2001)

Competency-based education: "approach [that] allows students to advance based on their ability to master a skill or competency at their own pace regardless of environment" (EDUCAUSE)

CVQ: Caribbean Vocational Qualification

CSEC: Caribbean Secondary Education Certificate

Section A: Personal Data

Instructions: Please answer all questions by selecting the appropriate option and filling in the gap where necessary.

1. Age:_____
2. Gender: Male ( ) Female ( ) Do not want to say ( )
3. Level of education (indicate highest)
   a) Caribbean Secondary Education Certificate ( )
   b) Associate degree ( )
   c) Bachelor's degree ( )
   d) Master's degree ( )

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e) Doctoral degree ( )

f) Trade certificate ( )

g) Prefer not to say ( )

4. How many years have you been in the teaching profession: _____

5. Educational district: _____

6. Subject/s you teach:_____

Section B: Adoption of Competency based Approaches to TVET

Instructions: *Please answer questions 7-19 by selecting one of the categories- Strongly agree (SA); Agree (A); Neither agree nor disagree (NA/D): Disagree (D): Strongly disagree (SD).*

Question 20 requires you to type in your response.

#	Question	SA	A	NA/ D	D	SD
7.	I was part of the decision to offer the Caribbean Vocational Qualification (CVQ) in my subject area					
8.	The CVQ should be more widely adopted at my school.					
9.	Students should be given a choice between CVQ and Caribbean Secondary Education Certificate (CSEC)					
10.	I would encourage students to do CVQ rather than CSEC.					
11.	I would encourage students to do CSEC rather than CVQ.					
12.	Students view CVQs as a desirable qualification.					
13.	CVQs provide students with more employable skills					
14.	CVQs are for 'less intelligent' students					
15.	People do not see the CVQs as valuable as CSEC					
16.	If parents and students understood what CVQs are, more students would be interested in this qualification					

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#	Question	SA	A	NA/ D	D	SD
17.	CVQ programme is expensive					
18.	The school values TVET teaching					
19.	Competent teachers are being used to deliver TVET at the school					

20. What do you think can/ should be done to encourage wider adoption of CVQ at your school and at other schools?_____

_____

_____

Section C: Goal Orientation of Stakeholders involved in TVET

Instructions for this section: *Please answer questions 21-32 by selecting one of the categories Strongly agree (SA); Agree (A); Neither agree nor disagree (NA/D): Disagree (D): Strongly disagree (SD).*

Questions 33 and 34 require you to type in your response while question 35 requires that you select all options which apply, additionally you may add any other reason not already stated.

#	Question	SA	A	NA/ D	D	SD
21.	I teach in the TVET field					
22.	My training in this field was competency based					
23.	My training in this field was academic based					
24.	I am a trained/qualified teacher (possess a certificate in teaching)					
25.	If yes to 18 above, my training was specific to TVET					
26.	If no to 18, I received some basic training before I began actual teaching					

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#	Question	SA	A	NA/ D	D	SD
27.	TVET is best suited for students who can not follow the regular academic stream					
28.	Students graduate with requisite skills to perform effectively in the workplace					
29.	TVET makes students self reliant					
30.	TVET helps students become creative and innovative					
31.	CSEC is more beneficial to students than CVQ					
32.	CVQ is more beneficial to students than CSEC					

33. Can you give at least one reason for your responses in 31 above? (CSEC is more beneficial to students than CVQ)_____

_____

34. Can you give at least one reason for your response in 32 above ?(CVQ is more beneficial to students than CSEC)_____

_____

35.	*Select all options that apply.*	
	Students in my class/es indicate that they chose TVET for the following reason/s:	
	They need it for their future career	
	Parents/guardians/family members made them choose it	
	Teachers/principals told them to do it	
	Their friends are doing it	
	They were not good at the other subjects	
	They like working with their hands	
	They can get a better paying job	

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	Less competition for jobs in that field	
	They acquire skills that enable them to be self employed/start their own business	
Other:		

Section D: Perceived social support of stakeholders involved in TVET

Instructions: *Please answer questions 36-45 by selecting one of the categories Strongly agree (SA); Agree (A); Neither agree nor disagree (NA/D): Disagree (D): Strongly disagree (SD).*

Questions 46 and 47 require you to type in your response.

36.	I face the following challenges in the delivery of TVET	SA	A	N A/ D	D	SD
	Lack of training materials					
	Inadequate workspace- workshops, labs etc.					
	Large class size (more than 10 students)					
	Quality of students (low performers, disruptive)					
	Students being forced into TVET stream (by parents, school based on arrangement of subject offerings groupings)					
	Lack of tools and equipment					
	Non-functioning tools/equipment					
	Poor maintenance of tools/equipment					
	Inadequate training in use of equipment					
	Unable to establish collaboration with industry for attachments/internships					
Other:						

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#	Question	SA	A	NA/ D	D	SD
37	Government provides adequate resources to support TVET delivery					
38	School administrators allocate adequate time for TVET classes					
39	Students have difficulty getting jobs in this area					
40	TVET development is a national priority					
41	Parents/guardians are supportive of their students doing CVQ					
42	My programme receives support from the following groups in the delivery of training.					
	parents					
	School administrator					
	employers					
	Ministry of education					
	Other government departments					
	Non governmental organizations					
43	My program receives support in the following ways.					
	timely provision of materials,					
	provision of technical support					
	timely maintenance of equipment etc.					
	potential employers taking interns					
	practitioners allowing visits to their businesses					
	practitioners serving as resource persons					

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#	Question	SA	A	NA/ D	D	SD
44	I face the following challenges in the delivery of the CVQs.					
	Inadequate learning resources (to create authentic experience)					
	Inadequate infrastructure (labs, workshops etc.)					
	Timely provision of materials					
	Cost of assessment					
	Lack of parental support (eg in providing materials etc.)					
	Inadequate training of teachers					
45	Government is serious about TVET development locally					

46. Can you give a reason/s for your response in 45 above? (Government is serious about TVET development locally)_____

_____

_____

47. What advice/suggestions could you give to policy makers regarding the development of TVET, particularly the use of the CVQ framework?_____

_____

_____

Thank you for your time and honesty.

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Appendix H

Consent form and data collection tool for TVET Unit of Ministry of Education, TVET Council members locally and regionally.

Interview Questions

Interviewees will be Ministry of Education officials (TVET units), principals/administrators and TVET council personnel (locally and in the selected countries). All participants will be required to provide the same demographic information while their interview questions may be slightly different based on their roles as indicated below.

Demographic information

Age: _____ Rather not say _____

Gender: Male ( ) Female ( ) Do not want to say ( )

Level of education: (choose highest level) Bachelor's Degree ( ) Master's Degree ( )

Doctoral degree ( ) other_____

Are/were you trained in a TVET area?_____

What is your current position/job title?_____

What do your responsibilities entail with regard to TVET?_____

How long have you been in this position?_____

Ministry of Education Officials (TVET Unit)

Adoption of Competency based Approaches to TVET

1. Can you suggest reasons why the Caribbean Vocational Qualification (CVQ) are not offered at all secondary schools and the Sir Arthur Lewis Community College?
2. On what basis are the schools which offer the Caribbean Vocational Qualification chosen?
3. How are the subject offerings for the Caribbean Vocational Qualification chosen? Who decides which subjects to offer Caribbean Vocational Qualification in?

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4. What are the challenges associated with the delivery of competency based approaches to TVET?

Goal Orientation of Stakeholders involved in TVET

1. Do you believe that TVET helps students become more creative and innovative? Can you explain how?
2. Can you suggest ways that TVET makes students more self reliant?
3. Which TVET qualification do you believe is more beneficial to students Caribbean Secondary Education Certificate or Caribbean Vocational Qualifications? Why?
4. Do you believe that TVET is being delivered effectively within the education system? Why or why not? Do you have any suggestions on how to improve its delivery?
5. What would your vision for TVET be, if you could whatever you desired?

Perceived social support of stakeholders involved in TVET

1. How does government policy towards technical and vocation education and training (TVET) translate into practical, tangible ways within the education sector?
2. Do you believe that society sees TVET as invaluable to the nation's economic development and survival?
3. What is the level of collaboration between government/private owned industries and TVET institutions?
4. What do you think can be done to improve the level of social support for TVET and competency-based approaches to TVET?

Relationship between Goal orientation of stakeholders involved in TVET and Adoption of competency-based approaches to TVET

1. What is your view regarding the influence of perceived social support and adoption of competency-based approaches to TVET?

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2. What are your views regarding the relationship among attitudes towards TVET, perceived social support for TVET and the level of adoption of competency based approaches to TVET?
3. How involved are stakeholders, particularly those outside of the education sector, in the development of TVET policy?

Principals/administrators

Adoption of Competency based Approaches to TVET

1. What are the challenges associated with the delivery of TVET and the Caribbean Vocational Qualification in particular, at your institution?
2. How are the subject offerings for the Caribbean Vocational Qualification chosen? Who decides which subjects to offer Caribbean Vocational Qualification in?
3. What advice would you give policy makers regarding the development of TVET in schools?

Goal Orientation of Stakeholders involved in TVET

1. Which TVET qualification do you believe is more beneficial to students Caribbean Secondary Education Certificate or Caribbean Vocational Qualification? Why?
2. Do you believe that TVET helps students become more creative and innovative? Can you explain how?
3. Can you suggest ways that TVET makes students more self reliant?
4. Do you believe that TVET is being delivered effectively at your school and within the education system generally? Why or why not? Do you have any suggestions on how to improve its delivery?
5. What would your vision for TVET be, if you could whatever you desired?

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Perceived social support of stakeholders involved in TVET

1. How has the decision to introduce Caribbean Vocational Qualifications been accepted within the school environment? What do students, parents, teachers say about the introduction of the Caribbean Vocational Qualifications?
2. Does your school collaborate with any government/private owned industries and TVET institutions to enhance the delivery of TVET at your school?
3. What are your views regarding the relationship among attitudes towards TVET, perceived social support for TVET and the level of adoption of Caribbean Vocational Qualification?
4. What do you think can be done to improve the level of social support for TVET and competency-based approaches to TVET?

Relationship between Goal orientation of stakeholders involved in TVET and Adoption of competency-based approaches to TVET

1. What are your views regarding the relationship among attitudes towards TVET, perceived social support for TVET and the level of adoption of competency based approaches to TVET?
2. Do you believe that society sees TVET as invaluable to the nation's economic development and survival?

TVET council personnel (locally)

Adoption of Competency based Approaches to TVET

1. Do you believe that if society had a better understanding of what the vocational qualifications entailed, there would be greater demand for the Caribbean Vocational Qualification ?
2. What advice would you give policy makers regarding the development of TVET on the island?
3. What are the challenges associated with the delivery of competency based approaches to TVET locally?

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4. Do you believe that TVET is being delivered effectively within the education system? If no, what can you suggest to change this?

Goal Orientation of Stakeholders involved in TVET

1. Which TVET qualification do you believe is more beneficial to students Caribbean Secondary Education Certificate or Caribbean Vocational Qualifications? Why?
2. Has the Caribbean Vocational Qualification been accepted by Saint Lucian society? What has the feedback from parents, learners and employers been like?
3. Are you satisfied that the Caribbean's current education system meets current and future labour market needs?

Perceived social support of stakeholders involved in TVET

1. How does government policy towards TVET translate into practical, tangible ways within the education sector?
2. What is the level of collaboration between government/private owned industries and TVET institutions?
3. What role can TVET play in the future of education and work in the Caribbean?
4. What are your views regarding the relationship among attitudes towards TVET, perceived social support for TVET and the level of adoption of competency based approaches to TVET?
5. What do you think can be done to improve the level of social support for TVET and competency-based approaches to TVET?

Relationship between Goal orientation of stakeholders involved in TVET and Adoption of competency-based approaches to TVET

1. Do you believe that our society sees TVET as invaluable to the nation's economic development and survival? Why or why not?
2. Do you have any suggestions regarding ways to mitigate the negative impacts of social support and the adoption of competency based approaches to TVET?

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3. Can you suggest ways to encourage the positive impacts of social support and the adoption of competency based approaches to TVET?
4. How involved are stakeholders, particularly those outside of the education sector, in the development of TVET policy?

TVET Council members (regionally)

Adoption of Competency based Approaches to TVET

1. Which TVET qualification does the schools in your country offer, the Caribbean Secondary Education Certificate or Caribbean Vocational Qualifications? What would you attribute this to/ why do you think this is the case?
2. On what basis are the vocational qualifications offered chosen?
3. What are the challenges associated with the delivery of competency based approaches to TVET? Can you suggest ways to overcome those challenges?
4. Do you believe that TVET is being delivered effectively within the education system? If no, what can you suggest to change this?
5. What advice could you give policymakers regarding the development of TVET in your island, and in the Caribbean as a whole?

Goal Orientation of Stakeholders involved in TVET

1. Do you believe that TVET helps students become more creative and innovative? Can you explain how?
2. Can you suggest ways that TVET makes students more self reliant?
3. Which TVET qualification do you believe is more beneficial to students; Caribbean Secondary Education Certificate or Caribbean Vocational Qualifications? Why?
4. How has the decision to introduce the vocational qualification framework been accepted within the school environment? What do students, parents, teachers say about the introduction of the

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vocational qualifications?

5. Are you satisfied that the Caribbean's current education system meets current and future labour market needs?

Perceived social support of stakeholders involved in TVET

1. Does your society support competency based approaches to TVET, particularly the Caribbean vocational qualification framework? Can you identify ways in which this support is demonstrated?
2. How does government policy towards TVET translate into practical, tangible ways within the education sector?
3. What role can TVET play in the future of education and work in the Caribbean?
4. What do you think can be done to improve the level of social support for TVET and competency-based approaches to TVET?

Relationship between Goal orientation of stakeholders involved in TVET and Adoption of competency-based approaches to TVET

1. What is your view regarding the impacts of goal orientation on the adoption of competency-based approaches to TVET?
2. Can you suggest ways of reducing the negative impacts of goal orientation on adoption of competency based approaches to TVET?
3. Do you believe that your society sees TVET as invaluable to the nation's economic development and survival? Why or why not?