AN EVALUATION OF THE IMPLEMENTATION OF COMPETENCY BASED EDUCATION AND TRAINING (CBET) CURRICULA IN ZIMBABWEAN TECHNICAL AND VOCATIONAL EDUCATION TRAINING INSTITUTIONS IN 2014

BY

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A RESEARCH SUBMITTED TO THE DEPARTMENT OF EDUCATION IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE DEGREE OF MASTER OF SCIENCE EDUCATION IN CURRICULUM STUDIES

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DECLARATION

I certify that this dissertation has not already been submitted for any degree and is not being submitted as part of candidature for any other degree.

I also certify that this dissertation has been written by me and that any help that I have received in preparing this dissertation and all sources used have been acknowledged in this dissertation.

Juliana NyaraiMangwiro  B1338387  -----------------------------

Signature of Candidate
DEDICATION

This research project is dedicated to my mother Locadia Choto, my father Phibion Choto and my one and only beloved son Bongani Hugo Chisango, for their unwavering moral support during my period of study.
ACKNOWLEDGEMENTS

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ABSTRACT

This study sought to explore implementation of Competence Based Education and Training (CBET) in Technical - Vocational Education and Training (TVET) institutions in Zimbabwe. A qualitative method guided this study. The sample comprised of thirty-six respondents, purposively selected from six conveniently selected TVET institutions. Document analysis, interview guides, focus group discussions and questionnaire were used to solicit data from participants. The generated data was analysed according to emerging themes. The findings from the analyzed data revealed that the key stakeholders were not involved in creating the conditions necessary for CBET implementation in the selected TEVT institutions in terms of staffing, staff development and training resources. It was also observed that implementation of CBET in selected institutions is uncoordinated as there are no clearly spelt out policy to guide methodologies and assessment. It can therefore be concluded that in selected TVET institutions CBET implementation falls far short of the major principles of CBET (modularization, flexibility of examinations, quality and standards of teaching/learning environment). All stakeholders must be involved in the formulation of CBET implementation guidelines as well as sourcing of the required resources. There should be provision of training and follow up assistance for the trainers in terms of teaching and learning methodologies as well as assessment strategies.
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LIST OF ABBREVIATIONS

CBE- Competency Based Education

CBET- Competency Based Education and Training

CBT- Competency Based Training

COSATU- Confederation of Southern African Trade Unions

CRD – Curriculum Research and Development

GDE- Gauteng Department of Education

HEXCO- Higher Education Examination Council

ITTD-Industrial Training And Trade-Testing Department

KBET- Knowledge Based Education and Training

MHTE- Ministry of Higher and Tertiary Education

MHTESTD-Ministry of Higher and Tertiary Education Science and Technology Development

NAMACO- National Manpower Advisory Council

NQF- National Qualifications Framework (NQF)

OBET- Outcome Based Education and Training

RPL- Recognition of Prior Learning

RTO-Registered Tertiary Organisations

SDERU- Standards Development and Research Unit
TVET- Technical Vocational Education

UK- United Kingdom

VET- Vocational Education and Training
CHAPTER ONE

INTRODUCTION

1.1 Introduction

This chapter highlights the contextual background of the study, statement of the problem, purpose of the study, research questions, significance of the study, definition of terms, limitations, delimitations, assumptions and ethics in relation to this study.

1.2 Background to the Study

Competency Based Education and Training (CBET) is regarded as a magic bullet in promoting the work based learning (WBL) in industry (Boahin and Adriaan-Hofman, 2012). In line with world trends on Technical and Vocational Education and Training (TVET), the Ministry of Higher and Tertiary Education, Science and Technology Development (MOHTESTD) in Zimbabwe, adopted Competency Based Education and Training (CBET) as a vehicle to produce practically oriented graduates from public and non-governmental TVET institutions to keep track with world trends on TVET (MHTE, 2005).

A significant pressure behind CBET was the supposed lack of relevance of vocational provision and the inability to compete with other regional and international economies. Courses and programmes were alleged to concentrate on the gaining of knowledge and theory and to neglect performance (and it is performance which essentially characterizes competence), (MHTE, 2005).

Training programs offered by TVET institutions were failing to develop skills required for employment within the country and beyond. What was happening in
industry was completely different from what was in the curriculum, hence, the need to come up with a responsive curriculum which attends to the requirements of the nation. In addition, the teaching styles relied too much on “talk and chalk” followed by the repetitive practice of skills. The competency and capability of human resources play a pivotal role in developing and sustaining the economy, thus the sector of skills development and vocational education required a paradigm shift from a static framework to one that is dynamic and constantly adapting to meet industry and social demands hence the introduction of CBET in Zimbabwe (Mishra, 2014).

Ford (2014) further denotes that it is widely accepted that the CBET approach has value and produce benefit for students and employers, including employment readiness (such as gaining job-related skills and knowing what kind of job opportunity a student would want to have after graduation) but there is little actual research on the topic, especially in Africa.

In CBET, the industrialists stipulate the occupational competency standards and, thus, suggest practical assessment guidelines for evaluating the TVET graduate’s performance. CBET advocates for learning through problem solving techniques and less by rote memorization. The main aim of the CBET curriculum is to bridge the gap between what is taught at college and the real world of work (Ford, 2014). This entailed major adjustments to national curriculum development and implementation strategies which included the re-structuring and capacitating of MHTESTD units involved in the endeavour. The Curriculum Research and Development (CRD) unit was formed in 2012. Its mission being to contribute towards national human capital development through the formulation of competence based education and training curricula, programme accreditation, registration and monitoring of all TVET institutions.
In 2012 and 2013 CRD developed occupational profiles, occupational standards and skills proficiency schedules in collaboration with industry experts from a spectrum of economic sectors and reviewed the syllabi to be used as the new curricula of CBET. Higher Education Examination Council (HEXCO) board endorsed the curriculum.

The new curriculum was implemented by all TVET institutions in January 2014. TVET institutions in Zimbabwe consequently, developed learning strategies for TVET trainees, assessment materials, professional and academic resources needed to effectively deliver CBET to meet the needs of industry and sector specific competencies (Woyo, 2013). It is against this background that the researcher carried a process evaluation of the implementation of the CBET curricula to ascertain the extent to which CBET was being implemented in Zimbabwean TVET institution.

1.3 Statement of the Problem

Ideally, CBET implementation requires that intended outcomes be derived from industry, stressing on the specification, measurement and mastery of competencies. CBET approach also entail that: learning bestudent centred, flexible; allowing learners’ progress through units/elements at their own pace, designed around real life situations and the role of the trainer changes to that of consultant, facilitator and designer of learning opportunities (Mishra 2014).

Reports from various TVET institutions in Zimbabwe indicate that institutions are engaging different modes of lesson delivery, assessment and evaluation. Therefore, this study sought to investigate the extent to which the implementation of CBET in TVET institutions in Zimbabwe is uniform in the selected institutions and whether the underlying principles of CBET have been incorporated in their implementation.
1.4 Purpose of the Study

This study was a quality assurance measure which sought to ascertain the effectiveness and efficiency of the implementation since there is usually a gap between planning and implementation and assess if the program is acceptable to lecturers and students (Sattler, 2011). Evaluating the implementation of CBET enables the stakeholders to assess whether the curriculum is progressive, retrogressive or stagnant which will inform decision makers on whether to reject it, accept as it is or modify the implementation of the CBET curriculum (Ford 2014).

1.5 Research Questions

The research questions were formulated around three interrelated evaluation themes of the CIPP model:

1.5.1 What is the historical background of CBET?

1.5.2 What conditions are necessary for the implementation of CBET?

1.5.3 How is CBET curriculum being implemented in TVET institutions?

1.6 Significance of the Study

In view of the fact that wrong or unproductive implementation will generate the same type of middle-of-the-road or negative results that would be produced by accurate execution of a poor innovation, it is crucial that evaluation research assesses the execution process itself (Ford 2014). This study may contribute in ascertaining impediments in the implementation of CBET in TVET institutions. It may provide essential information to policy makers in the MHTESTD in Zimbabwe to see gaps in
the CBET approach which may provoke critical thinking for enhancement of curriculum development and examination of TVET students’.

Lecturers as implementers may be able to self-introspect, critically think about CBET implementation and make judgements about how they are doing. This may facilitate the improvement of the implementation of CBET strategies as a result of implementers’ developing themselves to match the needs of the new paradigm. Improving implementation strategies may help in bridging the gap between education and training and the real world of work.

Students in a competency-based learning setting are at the centre of learning, dictate their pace of learning and create their own knowledge marrying theory with practice (Smith, 2010). If implementers are appropriately staff developed, they may help students acquire the relevant knowledge, skills and attitudes required in the world of work.

In addition; industry absorbing CBET graduates may not have to spend a lot of time and resources on graduate training programmes as the graduates may be able to be productive upon joining the organisation. As a result, industry may become more efficient and enhance economic development in the country.

The researcher may fulfil the requirement for completion of the study. The study may also accord the researcher the opportunity to put into practice acquired knowledge of research methods and statistics, research practice and curriculum evaluation and enhance understanding of CBET principles and implementation.
Information from this study may be used by other researchers in carrying out related studies. It may also form a basis of follow-up studies in the evaluation of CBET implementation in Zimbabwe and other countries.

1.7. Definition of Terms

The following are operational definitions of complex or abstract ideas based on how they are used in this project.

*Competency Based Education and Training* is a system by which the trainee/student is trained or educated on the basis of demonstrated ability and related knowledge to proficiently carry out a task or job or specified activities to predetermined standards of performance rather than on the elapse of time (Schilling and Koetting, 2010). A CBET curriculum is a framework or guide for the subsequent detailed development of competencies through standards, associated delivery methodologies, learning outcomes, content, training and assessment methodologies, resources and subsequent qualifications (Scholtz, Cilliers, and Calitz 2012).

*Technical and Vocational education and training (TVET)* consists of technical education and training which in addition to its vocational aim cannot neglect the general objectives of education. Vocational training is defined as deliberately organised activities that bring about learning as preparation for work tasks in designated occupations, (Vaughan; 2010)

*Curriculum implementation* in this study refers to a process of applying the CBET curriculum in the form of learning activities which involves a lecturer-student in the context of TVET institution environment guided by qualification standards, proficiency schedules and syllabi documents supervised by principals (Miller and Seller 1985).
**Evaluation** in this study is formative which is a systematic process targeted at implementation, how the programmes intentions are being interpreted, the experience of conducting the activity and the continuing or changing perceptions of the various constituencies involved (Pratt, 2004).

### 1.8. Limitations of the Study

In TVET institutions lecturers and students are involved in continuous assessment and final examinations during the first and last term of the academic year made it difficult for the researcher to make appointments for data generation. As a way of minimising the encountered challenge, the researcher had to rearrange the data generation schedule taking into consideration the respondents’ spare time. This rescheduling of data generation programme brought with it financial constraints as the researcher had to foot extra transport fares. The researcher had to source extra funding to meet the extra transport costs.

Expression of one’s opinion is influenced by many issues, which include policy guidelines and psychological state of respondents at a particular point in time. The psychological state of respondents especially hostility of lecturers was a challenge. This was minimised through being patient, persuasive and persistent with the respondents to elicit authentic information.

Though the aforementioned constraints threatened the trustworthiness and reliability of the study, the use of multiple instruments (document analysis, questionnaire, focus group interviews and individual interviews) in sourcing the same information and data rendered the findings credible and dependable. Consequently, this aided the triangulation of various issues raised in the study by the respondents who made up the sample.
1.9. Delimitations of the Study

The Ministry of Higher and Tertiary Education, Science and Technology Development is composed of the following major units: University Education, Teacher Education, Technical Education Programmes, Quality Assurance and Standards, Research and Innovation. TVET institutions comprises of polytechnics, vocational training centres and private colleges offering technical vocational educational programmes. This study was limited to six (6) TVET institutions (that is Institution; A, D, Q, S, U and Y) out of the fourteen public/government polytechnics and vocational training centres that offer TVET programmes under the unit of Technical Education Programmes. The institutions were coded for ethical reasons. This study focused on the extent to which CBET was implemented in the selected TVET institutions.

1.10. Assumptions of Study

The first assumption was that TVET institutions in Zimbabwe are implementing CBET as mandated by the Government policy on human capital development.

The second assumption was that the selected respondents would see the worthiness of the study hence cooperate through giving accurate, authentic and reliable information relating to the topic under study.

The third and last assumption was that since the study includes respondents from different TVET institutions, the findings shall be representative of the extent to which CBET is being implemented in Zimbabwe.
1.11. Ethical Considerations

The research respondents were aware of their rights to make a choice that is good for them as rights of voluntary informed consent and privacy to all respondents were explained. Informing respondents thoroughly is ideal for ‘respect of persons’ is a main ethical concern in research (Creswell, 2003). Respondents received an invitation with a cover letter which educated them about the research. This helped the respondents make a free and informed choice as they were aware of the objectives of the research and that participation was voluntary.

The researcher refrained from soliciting participation from friends, workmates, classmates, subordinates as this may have resulted in social pressure and being colleagues their participation might not have been truly voluntary.

In a bid to protect confidentiality and anonymity, the questionnaires were anonymous; the researcher ensured that the interview and discussion respondents’ responses were kept confidential and also ensured protection of anonymity and confidentiality of research respondents by making sure there were no identifying characteristics in the data that allowed linking of people behaviour (Beins, 2013). An introductory letter from Bindura University of Science Education guaranteed research respondents that information to sought was purely and strictly for academic purposes only.

The researcher observed beneficence and non-maleficence which relates to maximising the positive outcomes of the research and minimising chances of harm by discerning fidelity and responsibility in dealing with others, integrity in presenting the research findings accurately and to correcting any errors in reporting and justice in recognising own biases and limitations of expertise.
In writing the report the researcher avoided claiming credit that belonged to others by proper referencing and citation. The researcher did not engage in ethically questionable practices such as falsifying or fabricating data and plagiarism as this violates the ethical guidelines as espoused by American Psychological Association (APA).

1.12 Summary

The chapter gave a brief background of the study, statement of the problem was defined followed by purpose of the study and research questions. The significance of the study outlining the envisaged benefits of the research was discussed. An attempt to provide definition of terms was done. Furthermore, limitations, delimitations, assumptions and ethics in relation to this study were explained. The next chapter features the conceptual base on which the study took reference.
CHAPTER TWO

REVIEW OF RELATED LITERATURE

2.1. Introduction

This chapter reviewed literature that relates to the evaluation process of the implementation of CBET curricula. The conceptual as well as theoretical framework, background of CBET, conditions necessary for the implementation of CBET internationally as well as regionally were explained and a range of approaches used by previous researchers were looked at in order to appreciate the gaps in knowledge.

2.2 Theoretical framework

Several authors compare CBET with Taylor’s scientific management theory. Although a number of fundamentals of CBE have similarities with Taylor’s theory and may possibly have been influenced by Taylor’s approach, CBE mainly originated from the 1950’s behavioural objectives movement in America (McCowan, 1998).

Development of CBET is premised on the concept and philosophy of behaviourism, which is based on the thinking that teaching and learning result in change of behaviour. Thorndike cited by Bowden (2000) advocated a stimulus response theory that argued that learning occurs if responses were reinforced by rewards, thus, demonstrating that human behaviour was controllable. This stimulus response theory may have established the roots of CBET frameworks in professional programmes by demonstrating that with appropriate stimulus and instruction specific behavioral objectives can be learned. They describe what is to be demonstrated by the trainee at
Behaviorism is a philosophy that extols the need for observable and quantifiable aspects of behavior and excludes subjective phenomena.

The thinking of gurus such as Benjamin Bloom (1974) whose centre of attention was on the projected outcomes of training programmes and, specifically, to urge trainers to articulate their instructional objectives as changes in observable student behavior is applied in CBET. Founders of CBE advocated the stating of objectives as ‘frankly recognizable behaviors’ which can be consistently noted as being there or not there, as highlighted by Bloom et al cited in Schilling and Koetting (2010). Authors of behavioral objectives were urged to articulate outcomes ‘in vocabulary which is operational, relating steadfast scrutiny, and permitting no latitude in interpretation’.

In a bid to attain this level of consistency, educational objectives were to be stated in verbs that describes student behavior for instance ‘identify’, ‘describe,’ ‘analyse,’ ‘choose,’ ‘explain,’ compare,’ and ‘compute’ (Bloom, 1974).

Learning outcomes describe different types of behaviors and competences. Bloom’s taxonomy of education objectives classifies behavior/outcomes into three domains: cognitive, psychomotor and affective domains. Cognitive behavior/competency illustrated through learning outcomes which outline knowledge, comprehension and understanding; psychomotor behavior/competency described through outcomes which outline motor skills and affective behavior/competency described through outcomes which outline values, attitudes and ethics.

The behaviorist movement express competence as distinct everyday jobs, recognized by practical examination of occupational responsibilities. Research of the advancement of proficiency over and above the constructivist view of learning
furthermore hint that people make judgments and reconsider, reflect on, and adjust behavior, recurrently recreating pertinent and functional knowledge as they relate with the state of affairs (Hodkinson and Issitt 1995, Hyland 1994). This examination is the origin of occupational standards on which proficiency is examined and accomplishment of CBET is focused. This study will examine the extent to which the accomplishment of the proficiencies is assessed in the implementation of CBET.

2.3 Conceptual framework

2.3.1 Principles guiding CBET implementation

Even though the requirements for the embracing of CBE have been dissimilar in different countries at diverse periods, and the conduct in which this notion has been implemented have transformed with the passage of time, the central principles and intentions of CBE have remained to all intents and purposes unaffected ever since the 1960s. The fundamental principles are:

- an emphasis on outcomes,
- superior workplace significance,
- outcomes as discernible competencies,
- enhanced skills acknowledgment,
- modularized,
- self-paced,
- assessment criterion-referenced and ungraded,
- flexible delivery,
- better expression and transferability of credits (Scholtz, Cilliers and Calitz 2012).
The research study is based on a conceptual framework that incorporates these principles. An understanding of these has an important bearing on how curriculum and, learning materials are developed, how assessment, including recognition of prior learning is done and eventually how articulation and certification are done (Ford 2014). These principles are inter-related, interact and influence each other, ending in the key decision of the effectiveness of the implementation of CBET.

2.4. CBET background

2.4.1. History of CBET

Brown’s (1994) historical account, largely informed by Australia’s competency based education model, traced the development of mastery learning models in the US during the 1920’s and 1930’s and suggests that the generation of CBET was primarily concerned with formative vocational education and training and reflected instructional design informed by psychology namely the work of BF Skinner hence the association with behaviorism. Scholtz, Cilliers and Calitz (2012) asserts that modern CBET movements began with US efforts to reform teacher education and training in the 1960’s and advanced through to other occupational training programmes in the 1970s. The teacher education movement in the US represented the fourth generation moving beyond vocational training to the education of primary and vocational teachers in the USA in the 1970s. Poor learning in vocational education programs was the reason for applying new principles to teacher education. In 1977, some 23 states had implemented performance-based vocational teacher education and in the late 1980s the concept shaped many programs of vocational education and training (VET).
In fact, Brown (1994) cited by Ford (2014) describes sequential generations of competency based learning and suggested that the models that emerged in 1980’s and early 1990’s actually represented the fifth generation of the competency model. Outside of secondary and higher education the CBE in the United Kingdom predominantly in Australia, the national reforms in the late 1980’s and early 1990’s required that all accredited vocational education programs be competency based (Hodges and Harris, 2012). Jones and Voorhees (2002) examination of the 4th and 5th generation competency based programmes targeting adult learners found out that most programmes in post-secondary education focused on development and transferability of competency or outcome based curricula in specific disciplines and to a lesser extent, specific work place skills and institutional effectiveness. Was this the case in TVET institutions in Zimbabwe before the introduction of CBET?

In South Africa this process of curriculum reform followed a new educational approach called outcomes based education (OBE) which focused not only on the acquisition of general knowledge but also the skills, values, attitudes and critical thinking. OBE would displace an emphasis on content coverage, make explicit what learners should attend to and signal what was worth learning in a content heavy curriculum; a measure of accountability. It was hoped that by 2003, all the grades would have been exposed to Curriculum 2005. According to Parker and Walters (2008), by 2003 the introduction and implementation of curriculum 2005 had reached grade nine in South Africa secondary schools.
Institution-based courses were believed to stress on academic or ‘book’ knowledge at the cost of the capability to execute practical tasks and to discharge workplace duties (Tuxworth 1989, Jessup 1989). Discontent with the workplace significance of many qualifications derived in the traditional form of curriculum development based on ‘knowledge,’ ‘understanding’ and ‘proficiency acquisition’ led to the prominence of CBET which is basically outcome based than input based. In Zimbabwe, there was a greater variance between graduates from institutions and demands of industry and commerce (Woyo, 2013). The recognition and the expectation that practical skills training as offered by TVET institutions through CBET addresses effectively the need of skilled labour, artisans, technicians, technologists and engineers informed the introduction of CBET.

2.4.2. Context of CBET

In CBET approaches, the remodelling of curricula to make it more applicable to workplace needs largely begins with an examination and recognition of workplace ‘competencies’, which are then structured into a set of ‘competency standards’ for an occupation. To ensure that standards are firmly based on the requirements of employment and not purely on uncertain presumptions regarding job requirements, CBET modifications in curricula involves industry in developing appropriate standards and engages persons in the workplace as extensively as probable in establishing and sanctioning competency standards thus bridging the gap between training in institutions and industry needs (Cross, Mungadi and Rouhani, 2014). Primarily, the trustworthiness of occupational benchmarks relies on how well they mirror standards in the world of work. A CBET programme is simply as valuable as the developmental process that identified the proficiencies. Once modest
concentration is set to classification of the crucial job skills, then the ensuing programme will be probably be less efficient.

Lehbrief (2014) also states that working environments change often and unpredictably which makes it difficult to identify competence standards that respond in a flexible and effective way to organisational changes and innovations. Harris et al (2003) vouch for the involvement of employers in the TVET because they are the expected employers of TVET graduates and also the strengthening of ties between TVET graduates and private sector through an online Jobs board and improved career placement services. In Australia, closer interaction with industry has led to outcomes appreciated by all client groups (Scholtz, Cilliers and Calitz, 2012). In the development of competency standards for CBET implementation in TVET institutions to what extent was the industry consulted?

Besides consultations with the business and industry, the community, training providers, teachers, parents, trainers and students/learners have a say in what is taught and learnt and how the training and assessment is conducted. This is a move towards participatory democratic planning and decision making in education and training. According to Bowden and Masters (1993) during the 1990s, numerous Australian professional bodies, with state aid, developed CB benchmarks for work in their occupations and used them in consultation with universities. Scholarly views concerning the inclusion of practicing experts, professional bodies and employers in the development of curricula, instruction and evaluation in higher education were positive (Ford, 2014).

Development and review of standards is a highly consultative process which, while it appears on face value to be desirable, in fact presents some challenges. The
consultation process can involve literally thousands of people and take extensive amounts of time. If people's views are not eventually included in the standards they may become disgruntled. The major stakeholder groups such as employer associations, trade unions and lecturers as implementers can block progress for considerable lengths of time (Martinez, 2005). Could this be the case with stakeholders in Zimbabwe?

Jansen (1997) highlights that outcomes as observable competencies are expressed as overt and noticeable workplace proficiencies. The aim is to articulate outcomes as lucid and precise ‘competencies’, so that (a) job requirements can be communicated effectively; (b) the objectives of educational programmes can be stated and communicated with better accuracy; and (c) clear-cut judgments’ can be made about the degree to which any particular competency has been accomplished. Rather than developing curricula to meet presumed needs, representative occupational bodies identify ‘occupational standards’ which are lucid and accurate statements which express what effective performance means in different professional areas (Mishra 2014).

Mansfield (1989) furthermore asserts that the standards are subsequently used to develop ‘new’ occupational credentials, the measurement and evaluation which supports them and in addition learning programmes which bring about the accomplishments identified in the standards. These outcome statements can also be thought of as learner goals and are measurable (Bowden, 2000). Were the standards set for TVET institution clear, the objectives of the programmes accurate and measurement and evaluation guidelines valid and reliable?
2.5. CBET environment

While the traditional educational approach is process oriented or driven by the subject matter, the CBET is outcome based or product driven and has a framework which commonly separates whole life roles into specific behavioral objectives that are assessed and measured against predetermined standards. The stress is on the specification and measurement of competencies emphasising on the product and reflects the expectations of performance in the workplace (Kaaya, 2012). Therefore, CBET requires facilities, resources and equipment that match the current trends in the industry (Jessup 1991, Allais 2007). In Tanzania number of factors including lack of modern materials for training affected the implementation of CBET. Do the facilities, resources and equipment in TVET institutions match those in industry?

CBET is individualized, that is, learning is student centred and the role of the trainer changes to that of consultant, facilitator and designer of learning opportunities. Learning programmes are designed around real life situations and group/team work. The focus of CBET is not on learning theory, but is more on the needs of the learner. Competency-based instruction generally provides the learner with immediate feedback and is paced to the capabilities of the student. Parker and Collins (2008) posit that CBET is a self-management/student centred approach that ensures that students attend to all learning experiences as this improves the rate of learning and achievement of competencies.

Student must or is supposed to achieve all competencies required, if they fail, they will recycle the teaching and encounter the assessments again. Students can concentrate on the skills they are confident of mastering. A student in a competency-
based program will continue in the class until he demonstrates a level of competency that shows mastery. There are typically multiple kinds of instructional styles used, including group activities, hands-on practice and individual performance to name a few. Automatically this calls for the instructor to be more creative and innovative so that instructional methods and materials are alternated to make learning interesting and participative as well as formulate different assessments of the same level and outcome (Mansfield, 1999). Given the characteristics as outlined, do the trainers in the TVET institutions in Zimbabwe who are the implementing CBET possess these teaching skills?

CBET emphasises accountability (responsibility) of candidates, educators and other role players. Martinez (2005) also notes that CBET, other than giving the student skills and knowledge, has the potential to build the personality of the student in terms of responsibility and habits that enrich performance. Learners using competency-based curriculum will build confidence in themselves as they move up in the level of competency attained since there is more time to provide individual attention and feedback, as well as time spent on actually practicing and learning the skill rather than listening to a series of lectures about the skill (Deibinger, 2011). To what extent do the learners in TVET institutions where CBET is being implemented are these benefits?

The CBET system being competency-based, no firm rules can be laid down concerning the amount of training time required for learners to achieve competence. Therefore, ‘nominal hours’ are allocated, which are quite political in their nature. The process of allocating nominal hours is therefore subject to lobbying from interest
groups (Bowden, 2000). What time is available and how is the time allocated to the CBET programmes in TVET institutions in Zimbabwe?

In Australia various government committees and working parties suggested a new approach to apprenticeship and other forms of training that should be based on standards and competence. An official statement called ‘Improving Australian’s Training System’ by the Ministry of Education and Training in 1989 called for reforms including CBET, more flexible, broadly based and modular training arrangements, nationally consistent in training standards and certification as well as better articulation of on the job and off the job training and credit transfer (Harris, 1995). This statement triggered the decision to establish a national framework for accreditation of qualifications. Competencies and standards bodies were established to develop standards and define coherent vocational qualifications that can be integrated into a national qualification framework combining secondary schools, TVET and higher education. The first framework was introduced in 1994.

As each country is developing its own type of NQF, there might be 126 different NQFs, transnational qualifications frameworks are being established to align regional networks, for instance the a. European Qualifications Framework (EQF) b. Southern African Development Community Qualifications Framework (SADCQF) c. Caribbean Vocational Qualifications Framework under the banner of Competency Based Education and Training (CBET) (Smith et al., 2006). Although Zimbabwe is a signatory to the SADCQF, a national qualifications framework in Zimbabwe is non-existent. This study will examine the extent to which the non-existence of a national qualifications framework affects the implementation of CBET in TVET institutions.
Tanzania introduced CBET curricula in secondary schools in 2005 and in primary schools in 2006. In Tanzania, the shift from knowledge-based education and training (KBET) to CBET/OBET system was influenced by the Development Vision 2025 policy, which advocates Tanzania to be a nation with high level of education at all levels and which produces the quantity and quality of people sufficiently equipped with requisite knowledge and skills to meet the challenges of development at local and international levels (Kaaya, 2012).

According to Parker and Walters (2008), in the mid 90’s, the national department of education in South Africa released a number of draft policies on curriculum reform. A policy decision was made to adopt the term outcome based education (OBE) to ensure a more holistic and constructivist view of learning that would not reduce competence to only the observable but would include the consciousness and conscience of the learner with respect to psychological theories associated with Piaget and Vygotsky (Moll, 2002). One of these curriculum reforms was called Curriculum 2005 because it represented a process of curriculum reform that was to be introduced in an incremental level from 1998-2005. OBE focused not only on the acquisition of general knowledge but also the skills, values, attitudes and critical thinking that would displace an emphasis on content coverage. By 2003 the introduction and implementation of curriculum 2005 had reached grade nine in South African secondary schools. These reforms were backed by national policy guidelines. Is the implementation of CBET in TVET institutions backed by any policies?
2.6. CBET implementation

CBET is very positively regarded by employers, management and learners in many countries like the Australian enterprises and it strongly supports the development of job-specific skills (Porter, 2014). CBET is highly valued for its instrumental, job-specific characteristics in enterprises and also has been very successful in linking more directly work place demands and vocational education and training. This is facilitated by an educational experience that prepares students for specific occupations by constructing an educational process based on attaining specific competencies, determining appropriate learning and assessment strategies and creating achievement standards. Enterprises are also very positive about the increased level of on-the-job learning (Kaaya, 2012).

CBET curriculum implementation must be done the way it was designed to be done that is with loyalty, in a consistent manner and with challenges to the student to facilitate the development and use of higher level thinking ability. However, reports from TVET institutions highlighted variations in teaching/learning methodologies and assessment strategies thus prompting the researcher to evaluate the implementation of CBET curricula in Zimbabwean technical and vocational institutions.

Prior to implementing CBET, initial training and follow-up assistance should be provided for the trainers, as there is a tendency of trainers to use traditional teaching/learning methodologies hence the need for training of TVET trainers on the application to students as well as assessment of CBE, (Kafyulilo, Rugambuka and Ikupa, 2012). Dasmani, (2011) buttresses the fact that unless initial training and follow up assistance is provided for policy makers, the educators, trainers and other key stakeholders. In this light, it has been noted that there is a tendency “to instruct
in the way we were trained” and CBET trainers swiftly reverse into the character of the long-established teacher. Was there any initial training for the stakeholders on the implementation CBET in TVET institutions in Zimbabwe?

A programme can only be classified as competency based, to the extent to which precise CBET teaching/learning materials and methodologies are planned to be employed as part of a CBET approach. If the materials and methodologies are CBET specific, it is doubtful that the consequential programme will be in actuality be CBET (Porter, 2014). From the afore-mentioned, it seems that whilst there is a general agreement of a need for a CBET education system, there is still much anxiety over the implementation plan, particularly with regard to the kind of support and training being offered to educators as well as the increase in workload that the new system brings with it. A very important issue highlighted in some investigations, which is very relevant to this research, is the role of the head of institutions, and in fact, the TVET institutions management team, in the implementation of CBET.

Parker and Walters (2008) point out that it is necessary to incorporate the pedagogy and methodologies of CBT into the formal technical and vocational education system. The findings in the study by Kafyulilo, Rugambuka and Ikupa (2012) in Malawi, indicate that although pre service teachers have learned about competency, competency based curriculum, competency based teaching approaches and the preparation of a competency lesson plan. However, when subjected to questions that required them to elaborate what they know about competency based practices, majority of them were only able to explain correctly about “competency” but unable to explain the competency based teaching approaches, state the characteristics of
competency based teaching approach or prepare a lesson plan that is competency based.

In another study by Kaaya (2012), although trainers were passionate regarding the execution of CBE approaches, they depended more on traditional practices and existing professional credentials. Young (2005) posits that TVET trainers using prescribed proficiency benchmarks managed to weaken them by functioning in different methods premised on the habits and practices of constructing understanding through expertise. Furthermore, Smith (2010) argues that although CBET is attractive in principle, enterprises and training institutions are still struggling with how to deliver it well. Lack of experience with the process resulted in sliding back into traditional teaching methods where follow-up and training for the facilitators was limited (Parker and Walters, 2008).

In Tanzania, since 2006 when CBET curriculum became operational in both primary and secondary schools there have been serious financial and human commitments to retrain and support teachers and other education professionals to develop the necessary competence and confidence to effectively handle competency based education. The quality and standard of the system was greatly affected by a problem of competent CBET trainers (Kaaya, 2012). What is the positon of TVET trainers’ competencies regards teaching/learning methodologies in implementing CBET in Zimbabwe?

According to Klein-Collins (2013), both the failure to link curriculum and training to specific competencies and the lack of valid assessment tools and methods for
evaluation of competencies limited the extent to which education providers were able to operationalise competency-based learning approaches.

The changes from TVET to CBET focus on curriculum, delivery and assessment issues and one major change in CBET over the past 20 years has been the convergence of institutional-based CBET practices and enterprise-based practices (Smith, 1999; Kellie, 1999). Assessment practices in the early days were often fragmented and based on observation of work performance only (often known as ‘tick and flick’ assessment) but in CBET there has been an effort to encourage practitioners to assess more holistically and to ensure that underpinning knowledge is adequately addressed (Henson 2011). However, if the assessment strategies are not carefully chosen and planned to ensure successful implementation, the curriculum will not be strong enough to support a true competency-based learning experience.

In South Africa, the first round of internal and external outcome based assessment was conducted in all the secondary schools in Gauteng Department of Education (GDE) in 2002. Assessment guideline documents were made available earlier in 2002, educators were trained in this regard for a term before a school based assessment had to be finalised. The level and quality of some schools were excellent as the educators had taken a proactive stance, familiarising themselves thoroughly with assessment guideline documents. Many schools however battled with the rushed time frame, having taken a reactive stance waiting for the GDE to give clarity on what had to be done (Rampersaal, 2003).

Klein-Collins (2013) concurs that, the increased emphasis on direct assessment of competencies rather than instructor led courses. Students earn their degrees by successfully completing series of project based assessments that enables them to
demonstrate they have mastered the stated competencies hence the need for valid reliable assessment instruments. The researcher endeavours to find out the situation obtaining concerning the availability of curricula documents and assessment strategies and the training of educators before the CBET implementation in TVET in Zimbabwe.

The notion of CBET approaches has the latent not merely to control the ways in which work-related skills are examined and acknowledged, but also and to afford improved opportunities for lucid expression of credits and mobility among sectors and across organisations (Young, 2005). Recognition of prior learning (RPL), often seen as being an integral part of CBET, proved problematic (Allais, 2007). While it is understood that RPL removed the need for unnecessary training and that it validates previous job experience, enterprises in Tanzania were highly suspicious of excessive recognition of prior learning. They often preferred to pay for their staff to undertake training again because they did not trust previous levels of attainment. Learners, too, wanted the chance to recap on their learning. The conclusion reached was that RPL should be used conservatively (Kaaya, 2012). The implication of the findings on delivery and assessment, including RPL, is that teachers and trainers, both in training institutions and in enterprises, needed high-level educational skills and qualifications in order to assess RPL so as to enable the portability and transfer of credits. What strategies are in place for RPL in the implementation of CBET in TVET institutions?

Since the development and implementation of competency-based qualifications involving standards, levels, skills recognition and institutional arrangements are very
costly in terms of training, infrastructure and staff capacity, piloting of the CBT approach in a few economic and employment growth areas is recommended, rather than a wholesale training reform strategy (Cross, Mungadi and Rouhani, 2014). Was the CBET strategy piloted in TVET institutions before the roll out,

Boahin and Hofman (2012) notes that although several CBET training programmes in technical and vocational systems in Ghana were accredited and quality assured, industry and polytechnics themselves did not significantly influence the implementation of CBET. As a result, few CBET features were adopted in the programmes making the current practice of CBET in the polytechnics lag behind the policy standards. To what extent have TVET institutions adopted CBET features?

2.7. Summary

The chapter has illustrated the theoretical as well as the conceptual framework of CBET. Back ground (context) of CBET implementation, environment conducive for CBET implementation in terms of inputs and strategies, curriculum implementation of CBET across the globe and gaps in knowledge on the implementation of CBET were described. The following chapter explains the research methodology used in collecting the information needed to provide answers to the research questions.
CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

In chapter two a literature review on CBET was undertaken. This chapter describes the process used to determine the experiences and developments associated with the implementation of CBET in TVET institutions by explaining the research design used, sample and sampling procedure, research instruments, data collection procedures and data presentation and analysis procedures and the justification thereof.

3.2 Research Design

An appropriate research design is determined by the nature of the study. This study employed the qualitative research design. Johnson and Christensen (2000) describes it as “naturalistic enquiry” where non-interfering data collection strategies are used to discover the natural flow of events and processes and how respondents interpret them, for example, the study undertook a description of the views and attitudes of those implementing CBET and their thoughts on how it could be improved (Sinnema, 2011).

The main aim of the researcher using the qualitative design in this formative evaluation to assess respondents’ individual and collective social actions, beliefs, thoughts and perceptions and experiences on the implementation of CBET in six out of the fourteen public TVET institutions in Zimbabwe (Gujarati & Potter, 2009).
This is in line with Patton’s (2002) assertion that subjective data, such as an individual’s account of his/her own experiences, should be viewed as data not to be rejected, but as quality data, comprising detailed descriptions based on authentic experiences in the social world of the respondents.

3.3 Population and Sample

Population refers to the group that the researcher wishes to generalize the results to and it is the accessible group of people from which the sample for the study is drawn from (Trochim, 2008). Ideally, the entire population should be used for research but the population size can render it impossible to involve everyone (Dawson, 2007). Hence, the need to come up with a sample which is a selected group of people representing characteristics of the total population through sampling as noted by Brady and Johnston (2008). The Ministry of Higher and Tertiary Education Science and Technology Development TVET institutions consists of polytechnics and vocational training centres which are government run institutions as well as non-government institutions which are run independently by private owners. The population of interest to the researcher were a total of fourteen (14) government run TVET institutions.

The researcher used convenience sampling, a non-probability sampling technique in choosing the institutions to come up with the sample of heads of government technical and vocational institutions in Zimbabwe. Convenience sampling is defined as a statistical technique of drawing representative data by choosing individuals because of the ease of their volunteering or selecting elements because of their accessibility or easy contact (Beins, 2013). Six out of fourteen heads of institutions which were close to the researcher in terms of proximity were selected. The researcher used convenience sampling because of the advantage of the
availability and the quickness with which data can be gathered by (Brady and Johnston, 2008).

In selecting the sample of lecturers from the institutions, stratified random sampling procedure was employed. According to Kothari (2004) a stratified sample can be defined as one in which every member of the population has an equal chance of being selected in relation to their proportion within the total population. In the first instance, then, stratified sampling continues to adhere to the underlying principle of randomness. However, it adds some boundaries to the process of selection and applies the principle of randomness within these boundaries. It is something of a mixture of random selection and selecting on the basis of specific identity or purpose.

It is used when the population is split into distinguishable layers or strata that are quite different from each other and which together cover the whole population. Fairfax County Department of Systems Management for Human Services (2003) noted that stratified sampling procedure can provide more precise estimates if the population being surveyed is more heterogeneous than the categorized groups, can enable the researcher to determine desired levels of sampling precision for each group and can provide administrative efficiency.

Separate random samples were taken from each stratum and put together to form the sample from the population. Thirty (30) lecturers (five from each institution) were randomly selected from the staff registers spilt into three categories of lecturers, senior lecturers and principal lecturers of each institution in a bid to save time from getting reference to various lecturers for the study. For this procedure, the lottery sampling technique was employed. This method involves the selection of the sample
at random number tables (Saunders, et al, 2003). Numbers were assigned for each lecturer in the main list at each of the participating six (6) TVET institutions and the lecturers picked at random.

3.4 Research Instruments

There are many instruments that can be used for collecting data. Data collection is the process by which the researcher collects the information needed to answer the research problem (Beins, 2013). Given that the nature of the study required the evaluation of the implementation of CBET, the analysis of implementation reports was necessary which led to the adoption of the document analysis. Questionnaires were used to elicit the feelings, beliefs, experiences, perceptions or attitudes of some individuals. The researcher sought to invoke various synergies and different viewpoints from a group perspective hence the use of focus group discussions (Beins, 2013). In-depth interviews were also adopted in a bid to authenticate responses and to remove biases from the focus group and to also complement the research instruments adopted, Berg (2001).

3.4.1 Document Analysis

Document and content analysis is a secondary data collection method of analysing written documents for the purposes of research (Beins, 2013). TVET and CBET Policy circular documents, institutional yearly reports, head office’s routine inspection reports, regional chief external assessors’ reports and national discipline officers’ reports were analysed to see the trends in terms of the introduction and implementation of CBET curriculum in TVET institutions in Zimbabwe. In soliciting data the researcher was guided by major themes derived from the objectives of the study. The themes were as follows:
• Background of CBET
• Conditions necessary for CBET implementation
• Implementation of CBET

One of the key advantages of document analysis was that access to information that would be difficult or impossible to get in any other way, such as people or cases who might not be willing to talk in a formal research was tracked down for example the head of institutions yearly report to the directors (Patton, 2002).

Using documents eliminated the effect that the researcher, as an individual, has on a person or situation when conducting research ('the researcher effect') (Johnson and Christensen 2004). In this case, issues of sex, age, race and other characteristics that were likely to have an impact on what people tell or do when they know they are being researched were removed.

Furthermore, using documents was relatively low in cost, since the documents were 1) easily accessible and already located in the workplace, and on the internet and 2) costs were borne by the record keepers not the researches. The yearly institutional reports were extremely detailed and yielded much more information than could be gained from a questionnaire or interview. The reports lacked a standard format. This created gaps in data (missing data) as well as coding difficulties. Hence, this led to the use of focus group discussions and in-depth interviews as other methods for data triangulation (Pelham and Blanton, 2006).

3.4.2 Questionnaires

According to Leedy (2000:187) “data sometimes lie buried within the minds or the attitudes, or reactions of men and women. As is with oil beneath the sea, the first problem is to devise a tool to probe below the surface. A common place instrument
for observing data beyond the physical reach of the observer is the questionnaire”. Self-administered questionnaires containing both closed and open-ended questions were utilized, to gather some of the data. Inclusion of open-ended questions provide for the expression of respondents’ views and understanding of issues as well as explanation for answers given to closed questions. The nature of the data that answers the research questions necessitated the use of a questionnaire (Vaac and Bright, 1999). Questionnaires were used to gather information from lecturers and heads of institutions of TVET institutions (See Appendix 1 and 2). Thus, through the questionnaire the respondents were asked to provide information about their perceptions with regards to the implementation of CBET in TVET institutions.

A semi-structured questionnaire consisted of four parts. The first section discussed the demographic data of the respondents. The second section sought information on the knowledge of CBET. The third section focused on strengths and weaknesses encountered by TVET institutions in implementing CBET. The strategies and inputs for CBET implementation were discussed in section four.

The self-administered questionnaire was an appropriate method of data collection since it was easy to administer and an ideal method, because the target population under-study was literate. With the use of the questionnaire, respondents were guaranteed anonymity such that they were free to give accurate and authentic information without fear of reprisals. The instrument provided a permanent verifiable record of data collection effort. The personal administration of the questionnaires established rapport between the researcher and the respondents, as well as explaining the terms that were not clear. The questionnaires permitted contact with more people at minimal cost, time and effort.
However, questionnaires did not probe the respondents if they either gave an inadequate answer or an interesting one, which needed expansion. Further, once distributed, it was not possible to modify the items even though they were unclear to some respondents (Sidhu, 2004). The respondents’ motivation, behavior, gestures, reactions, emphasis and emotions of the respondents also remained unnoticed. To minimize the above limitations, the researcher also employed focus group discussions and in depth interviews.

3.4.3 Focus Group Discussions

The focus group discussions tended to validate the findings of the questionnaire. Not only did they facilitate better understanding of the perceptions of lecturers towards CBET implementation, but they revealed some strong, almost emotional responses to the topic under-study.

Krueger and Casey, (2000:42) pointed out that, “focus groups have high validity, which is due in large part to the believability of comments from respondents … people open-up in focus groups and share insights that may not be available from individual interviews, questionnaires, or other data sources.” In addition, the United States International Agency for Development-USAID (2006) noted that a focus group interview has a flexible format, which allows the facilitator to explore unanticipated issues, and encourages interaction among respondents. In a group setting respondents provide checks and balances, thus minimizing false or extreme views.
In the study, respondents were divided into homogenous groups of six lecturers from different institutions to avoid polarisation and bias. A round table seating arrangement and the use of pseudonyms were adopted to allow for free and equal participation (Jansen, 2010). The researcher tried to establish rapport and promoted a relaxed environment as a way of encouraging openness and willingness to talk by immediately thanking the respondents for coming and explaining the goals of the study. A focus group discussion guide was developed and used to structure the discussion, and the researcher ensured that the guide did not limit or constrain the discussion. The development of focus group research questions was influenced by the research questions central to the gist of the study. In a way, they were designed as open ended questions so as to allow flexibility in the discussion (Bogdan and Biklan 2003).

The researcher facilitated the focus group discussions and took notes, the researcher being the facilitator guided the respondents in discussing their experiences, feelings and preferences about the topic under discussion (Dawson, 2007). The facilitator raised issues identified in a discussion guide and uses probing techniques to solicit views, ideas and other information. Key themes emerging from the groups were identified and summarized (Jody, 2007). The group discussion format inspired synergies that resulted in a rich discussion with the respondents. Attitudes of individuals, the intensity of the conversation were analysed by the researcher and also counted in the research result. Expressions other than those in verbal form provided the researcher with useful insights and information than might be provided in a written format of the institutional reports (Bryman, 2010).

Free and open discussion among the respondents resulted in generation of information on teaching and learning methodologies, teaching and learning facilities,
tools and equipment as well as timetabling of programmes. The researcher sought ways to fit all together, by gauging a group’s overall reaction to educational resources, not on an individual basis (Jody, 2007).

A particular disadvantage of the focus groups was the possibility that the members may not express their honest and personal opinions about the topic at hand. They might have been hesitant to express their thoughts, especially when their thoughts oppose the views of another participant (Krueger and Casey, 2000). Thus given these loopholes from focus group discussions, in-depth interviews had to be adopted to overcome the highlighted weaknesses in tracking respondents’ opinions.

3.4.4 In-depth Interviews

To remove the biases and shortcomings presented by focus group method, the researcher also used in-depth interviews to get detailed information about principals’ thoughts and behaviours and to explore new issues in depth. The main objective was to discover their perspectives on the implementation of CBET curriculum (Boyce, 2006). Face to face in-depth interviews were conducted with the heads of institutions. The format consisted of an unstructured interview where the interviewer had a skeleton outline survey to ensure that all key points were covered (Boyce and Neale, 2006). The interview guide specifies the topics on which information was sought (see appendix 4).

The strength of using the face-to-face interview when seeking in-depth information on the interviewee’s feeling, experiences, impressions and perceptions lies in its flexibility and adaptability (Babbie, 1992). In the study the discussion progressed at partnership level; the researcher sought clarification through probing and non-verbal
cues such as facial expressions, gestures and hesitation. This gave the researcher an opportunity of reconciling the words and non-verbal cues to get insights into the real feelings and attitudes of the respondents. Unstructured interviews were more conversational, long and conducted in a usual situation, this allowed the researcher flexibility in questioning the principals (Leedy and Ormrod, 2001).

As opposed to focus groups, in-depth interviews allowed respondents to share their opinions without bias from other respondents. In focus groups, it may happen, that a small percentage of respondents give the most feedback (Dawson, 2007). With in-depth interviews, each interviewee gives feedback. Also, group-think bias (where participant thinking is influenced by what they are hearing from other respondents) was avoided when conducting one-on-one interviews, providing a higher quality of information gathered from the respondents (Adamchak, 2000). In this case, the interview questions were developed in a way to trigger personal experiences with CBET implementation which was also central to the demands of the study.

In-depth interviews elicited more information and delivered more value from each participant, the return on investment can be considered greater than focus groups (Gujarati and Porter, 2009). More of the budget was used to gather information from each respondent rather than to cover the incidental costs of hosting a focus group.

The researcher had the advantage to probe further, giving the interviewees a chance to qualify their responses (Dhliwayo and Keogh, 2002). This resulted in the discovery of information, which the researcher was not aware of at the beginning of the study. Thus, it allowed the clarification of any misunderstandings and misconceptions.
Although interviews can be a time-intensive evaluation activity because of the time it takes to conduct interviews, transcribe them, and analyse the results; in planning data collection effort, care was taken to include time for transcription and analysis of this detailed data (Dawson, 2007). In-depth interviews provided valuable information for the extent to which CBET was implemented, particularly since it was supplementing other methods of data collection, thus justifying the adoption of in-depth interviews.

3.5 Reliability and Validity

According to Rossi et al (2004), a measure that is poorly chosen or poorly conceived can completely undermine the worth of an evaluation of curriculum implementation by producing misleading results. Only if outcome measures are valid, reliable and appropriately sensitive can evaluations be regarded as credible. According to Beins (2013), reliability is the consistency of your measurement or the degree to which an instrument measures the same way each time it is used under the same condition with the same subjects. In a broad sense, validity means that the data and the methods are 'right'. In terms of research data, the notion of validity hinges around whether or not the data reflect the truth, reflect reality and cover the crucial matters. In terms of the methods used to obtain data, validity addresses the question, 'Are we measuring suitable indicators of the concept and are we getting accurate results?' The idea of validity hinges around the extent to which research data and the methods for obtaining the data are deemed accurate, honest and on target.

Face validity was established for both the focus group and interview guides by asking experts to evaluate the instruments’ intent. Content validity relied on the assurance that adequate coverage of the known field was demonstrated. The researcher typically verified this by conducting a literature review to determine
which content should be covered and by asking experts to evaluate the instruments representativeness of the content (Patton, 2002). The instruments were piloted with two private technical institutions to establish validity and reliability of the instruments, which contributed to the refinement of the final research instruments.

Other methods provided in literature were used to address the issue of reliability and validity of the findings. These include triangulation, weighting the evidence, checking for the representativeness of the sources of data, obtaining feedback from informants, notifying researcher bias and thinking (Creswell, 2013).

According to Lincoln and Guba (1985), the issue of reliability and validity in qualitative research is embraced in the notion of trustworthiness, which is simply: “How can an inquirer persuade his/her audiences that the research findings of an inquiry are worth paying attention to?” They address trustworthiness as achieving results that are credible, transferable, dependable and confirmable. Credibility depends less on sample size than on the richness of the information gathered and on the analytical abilities of the researcher (Patton, 2002). It can be enhanced through triangulation of data. The numerous sources and types of data allowed for triangulation of data and the construction of valid universal explanation derived from the consistent formulation and reformulation of emerging themes during data analysis. Patton (2002) identifies four types of triangulation:

- methods triangulation,
- data triangulation,
- triangulation through multiple analyses and
- theory triangulation.
Lincoln, et al (1985) chose to speak of the dependability and conformability of the research. In a sense, they refer to the degree to which the researcher can demonstrate the neutrality of the research interpretations, through an audit. They propose one measure, which might enhance the dependability of the qualitative research. That is the use of an “inquiry audit,” in which reviewers examine both the process and the product of the research for consistency. This means providing an audit trail consisting of raw data, analysis notes, reconstruction and synthesis products, process notes, personal notes and preliminary developmental information.

The activities conducted by the researcher for achieving credibility, transferability, dependability and conformability are discussed under relevant sections in the stages of the research process. Other writers use different words of suggesting reliability and validity of findings. The generated themes should convincingly bring about awareness and insights into the perceptions of the respondents on the implementation of CBET in TVET institutions; the findings should be reasonable, believable and/or convincing-plausible (McMillan and Schumacher, 2009).

3.6. Data Presentation and Analysis Procedures

Here, the findings that have been outlined are subjected to scrutiny in terms of what they might mean. They are literally analysed and discussed with reference to the theories and ideas, issues and problems that were noted earlier in the report as providing the context in which the research was conceived. The researcher `makes sense' of the findings by considering their implications beyond the confines of the current research.
According to Babbie (1992), data analysis looked for the patterns on what is observed and where appropriate, compares what is logically expected with what is actually observed. Data analysis involves the separation of things into their component parts. More specifically, it involves the study of complex things in order to identify their basic elements. It calls on the researcher to discover the key components or general principles underlying a particular phenomenon so that these can be used to provide a clearer understanding of that thing. Thus, in the study care was taken to interpret the results based on sufficient data relating one characteristic to another and allowing descriptions and comparisons where possible.

The returned questionnaires were checked. The collected information was coded after editing the questionnaires. This was done in order to eliminate errors likely to be made by the respondents. The researcher checked the completeness of answers, the accuracy and uniformity of the interpretation of instructions and questions.

Data collected from the questionnaire was analysed using descriptive statistics. Fink and Kosecoff (1985) point out that descriptive statistics is the most commonly used and is the basis for more advanced techniques for data analysis. This includes frequencies and percentages.

After gathering all the completed questionnaires from the respondents, total responses for each item were obtained and tabulated. Frequencies and percentages were used to reduce the responses making them easier to work with and to interpret. Tables summarizing the collected data were employed and results presented were used to draw conclusions for the study. The research findings were presented on a
summary sheet and descriptions arising from the findings were used in answering the research questions.

The data was transcribed and the interview responses read looking for patterns or themes among the respondents. Patton, (2002) highlights that if you get a variety of themes, you can group them in any meaningful way, such as by type of participant. For example, identifying the responses that seem to have been given with enthusiasm, as opposed to those that the respondents answered in only a few words. Focus groups relied upon words spoken by respondents. A report based on focus groups featured patterns formed by words, called themes or perspectives. In this sense, it is noted that researchers must use specific methods to analyse patterns in spoken language (Creswell, 2013).

3.7. SUMMARY

The process evaluation study was a qualitative research design. The population consisted of all TVET institutions and a convenience sample of six government-run TVET institutions consisting of thirty lecturers was derived from the population. The data collection methods employed to collect general information about the current status of the implementation of CBET in polytechnic institutions in Zimbabwe were document analysis, in-depth interviews and focus group discussions. Justification for using these methods was outlined as well as the collection procedures.

Qualitative data was analysed systematically by using content analysis, triangulation and pattern matching. Quantitative data analysis was reported in terms of descriptive statistics through frequencies and percentages. The next chapter analyses and
discusses the data obtained from the document analysis, questionnaire, focus group discussions and in-depth interviews.
CHAPTER FOUR

PRESENTATION, ANALYSIS AND DISCUSSION OF FINDINGS

4.1 Introduction

This chapter presents, analyses and discusses the results attained from document analysis, questionnaires, focus groups and interviews. The research was centered on investigating the environment and background in which CBET curriculum is being implemented, the resources required for implementing CBET in TVET institutions and how the CBET curriculum is being delivered in TVET in Zimbabwe. The findings are presented descriptively according to emerging themes.

4.2 Characteristics of the respondents

The demographic information of the respondents in the study is summarized in Tables 4.1

Table 4.1: Respondents characteristics (n=30)

<table>
<thead>
<tr>
<th>Age Range</th>
<th>(n)</th>
<th>(%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Below 31</td>
<td>2</td>
<td>7</td>
</tr>
<tr>
<td>31-35</td>
<td>6</td>
<td>20</td>
</tr>
<tr>
<td>36-40</td>
<td>4</td>
<td>13</td>
</tr>
<tr>
<td>41+</td>
<td>18</td>
<td>60</td>
</tr>
<tr>
<td>Professional Qualifications</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Level</td>
<td>(n)</td>
<td>(%)</td>
</tr>
<tr>
<td>---------------</td>
<td>-----</td>
<td>-----</td>
</tr>
<tr>
<td>Certificate</td>
<td>4</td>
<td>13</td>
</tr>
<tr>
<td>Diploma</td>
<td>9</td>
<td>30</td>
</tr>
<tr>
<td>Degree</td>
<td>15</td>
<td>50</td>
</tr>
<tr>
<td>Masters</td>
<td>2</td>
<td>7</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Years Lecturing Experience</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Years</strong></td>
</tr>
<tr>
<td>1-5</td>
</tr>
<tr>
<td>6-10</td>
</tr>
<tr>
<td>Above 10</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Titles</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Job Title</strong></td>
</tr>
<tr>
<td>Lecturer</td>
</tr>
<tr>
<td>Senior Lecturer</td>
</tr>
<tr>
<td>Principal Lecturer</td>
</tr>
</tbody>
</table>

The sample comprised of (thirty) 30 respondents which included lecturers and heads of institutions. This section identifies the background of the respondents in, this case age, position at the concerned institution, work experience and professional qualifications. Though not central to the study, the personal data helped
contextualise the findings and to ascertain the credibility and authenticity of the findings from respondents.

The ages from the last birthday of the respondents as depicted in Table 4.1. It can be noted that the lecturers’ ages ranged from 31 years to above 41. Most respondents that is 73% were above 36 years. It was assumed that the respondents were mature enough to render credible data.

The respondents were comprised of lecturers, senior lecturers and principal lecturers. In this regard, the majority were the principal lecturers who were 18 (60%) and were the more experienced, lecturers had a frequency of 8 (27%) and senior lecturers, a frequency of 4 (13%). The work experience of most lecturers 60% was above 10 years. Because of the longer time in the TVET system, the lecturers have taken part in the development and implementation of other curriculum reforms, strategies and reviews. Hence they have enough background knowledge to articulate requirements of curriculum implementation and consequently give authentic information on the implementation of CBET in the TVET institutions.

Most respondents that is 50 % were holders of a first degree and 7% are holders of a master’s degree. Based on the qualifications the respondents are experts in their respective fields and their professional level of maturity, enabled them to give honest answers to the items in the questionnaire and the focus group discussions hence they are credible sources for the information solicited.
4.3 Historical Background of CBET

This section addresses the question of the respondents’ general knowledge about CBET, the principles underlying CBET.

4.3.1 General Knowledge of CBET

Understanding CBET as a concept and its requirements has an important bearing on how learning materials are developed and eventually how assessment is done.

Table 4.2: Knowledge of CBET (n=30)

<table>
<thead>
<tr>
<th>Variables</th>
<th>(n)</th>
<th>(%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Those who understood</td>
<td>15</td>
<td>50</td>
</tr>
<tr>
<td>Those who did not</td>
<td>8</td>
<td>27</td>
</tr>
<tr>
<td>Not sure</td>
<td>7</td>
<td>23</td>
</tr>
<tr>
<td>Total</td>
<td>30</td>
<td>100</td>
</tr>
</tbody>
</table>

In light of the responses made, it is an observable feature that 50% indicated that they were knowledgeable about CBET while the other half did not know exactly what CBET is about. The table indicates the frequency and percentage of those who understood and those who did not.

Findings from the focus group discussion concur with those the questionnaire with half the lecturers 27% who did not know about and 23% not sure stating that they do not have enough information on what CBET is and what is expected of them. If half of the implementers of CBET do not at least have general knowledge about CBET then they are not aware of its objectives, benefits and challenges this indicates of lack of info dissemination which then adversely affects the delivery of the CBET strategy in TVET institutions in Zimbabwe (Smith and Keating, 1997).
4.3.2 Underlying principles for CBET

The underlying principles for CBET implementation is that training should be modularised, examinations should be flexible, credits transferrable and qualifications should be portable. The respondents were asked to indicate whether the above principles were incorporated in the current CBET curricula being offered in Zimbabwean TVET institutions.

Table 4.3: Incorporation of underlying principles for CBET implementation (n=30).

<table>
<thead>
<tr>
<th>Variable(s)</th>
<th>True</th>
<th>False</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Modularization of training</td>
<td>0</td>
<td>30</td>
</tr>
<tr>
<td>B. Flexibility of examinations</td>
<td>0</td>
<td>30</td>
</tr>
<tr>
<td>C. Recognition of prior learning</td>
<td>17</td>
<td>13</td>
</tr>
</tbody>
</table>

4.3.2.1 Modularisation of Training

Among other principles of CBET, learning is modular in structure, training materials are directly related to the competency standards and curriculum modules. On modularisation of training in Zimbabwean TVET institutions all the respondents 100% indicated that the CBET curricular was not modularised but was still based on subjects. Training delivery is individualized, self-paced, based on both on and off the jobs components allowing the learners to enter and exit a chosen program at different
times and levels and to receive an award for modules (competencies) attained at any point (Deibinger, 2011). As underscored by the respondents, this is not the case in the TVET institutions where learners are only awarded after passing all the subjects in a course at the end of the course as stipulated by the duration in the course regulations. Thus, the principle of modularisation, which is a major component of CBET that allows multiple entries and multiple exits, is lacking.

4.3.2.2 Flexibility of Examinations

Emphasis of CBET programmes is placed on outcomes and competency achievement without specifying the length of time. In answering the question about the flexibility of examinations all respondents (100%) indicated that they were only two sessions the May and November examinations sessions. From the discussions, the current scenario is that learners will have to wait for the examination session to be tested on all the subject areas. These findings are against the CBET principle that once the students are confident of mastering certain competences they can be assessed on that and awarded credits on the specific areas that they are competent (Ford, 2014). Sonteya and Seymour (2012) concurs that CBET is not time-based but learners progress through units at their own pace, accelerating their course completion if they can.

4.3.2.3 Recognition of Prior Learning

Slightly above half the respondents 57% pointed out that, they was recognition of prior learning. From the discussion one lecturer highlighted that “…… students who had done National Strategic Studies and Entrepreneurship Skills Development were exempted from writing the subjects when doing another course”. However other respondents 47% indicated that recognition of prior learning was limited to subjects not to key the competencies of the occupation as required in the real world of work.
The implication of the findings on RPL, is that trainers, in training institutions, had mixed feelings about RPL and also they did not have a common understanding of RPL. While it is understood that RPL removed the need for unnecessary training and that it validates previous job experience, enterprises in Tanzania were highly suspicious of excessive recognition of prior learning (Allais, 2007). In Malawi, trainers needed high-level educational skills and qualifications in order to assess RPL properly often seen as being an integral part of CBET, proved problematic (Kaaya, 2012).

From the foregoing discussion, it is apparent that the core principles of CBET were not incorporated for implementation in TVET institutions. A few minor CBET approaches were adopted in the programmes making the current practice of CBET in the TVET institutions in Zimbabwe lag behind the international standards this concurs with results from the study by Young, (2005).

4.4 Context for CBET

This section highlights the findings on the interactions and networking among the relevant stakeholders in the development of CBET curricula.

4.4.1 Degree of Industry Participation in Development of CBET standards.

Very few respondents 27% indicated wide consultations with the industry on the development of CBET standards whereas 50% were of the opinion that the consultations were limited.

Table 4:4 Degree of Industry Participation in Development of CBET standards (n=30).

<table>
<thead>
<tr>
<th>Variable</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
</table>

63 | Page
Findings from the discussions concur with those from the interviews in terms of the limited consultations of the industry. CBET relates to training to knowledge, skills and attitudes and attitudes derived from the real world of work. This involves the development of occupational and qualification standards through wide interactions with the industry. The degree of participation of the industry determines the quality of CBET standards. A CBET approach is simply as valuable as the developmental process that identified the proficiencies. Once modest concentration is set to classification of the crucial job skills then the ensuing programme will be probably less efficient (Lehbrief 2014). Henson (2011), concurs that there is need for wide consultations to ensure standards are representative of the industry and relevant to the world of work.

4.4.2 Involvement of stakeholders in Curriculum Development and Review

In CBET approaches the remodelling of curricula is a highly consultative process. The respondents’ views on the consultative process in the development of the CBET curriculum are as shown in Table 4.5

Table 4.5: Involvement of stakeholders in CBET curriculum development and review (n=30)

<table>
<thead>
<tr>
<th>Variable(s)</th>
<th>True</th>
<th>False</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(n)</td>
<td>%</td>
</tr>
</tbody>
</table>

<p>| Wide consultations | 8 | 27 | 22 | 73 |
| Limited consultations | 15 | 50 | 15 | 50 |</p>
<table>
<thead>
<tr>
<th>Industry</th>
<th>Lecturers</th>
<th>Students</th>
</tr>
</thead>
<tbody>
<tr>
<td>15</td>
<td>8</td>
<td>0</td>
</tr>
<tr>
<td>50</td>
<td>27</td>
<td>100</td>
</tr>
<tr>
<td>15</td>
<td>22</td>
<td>100</td>
</tr>
<tr>
<td>50</td>
<td>73</td>
<td>100</td>
</tr>
</tbody>
</table>

It was noted that all the respondents (100%) pointed out that the students were not consulted in the development of the CBET curricula, a significantly higher number of respondents 73% indicated that the lecturers were not involved in the development of the CBET curricula. If implementers’ views are not considered, it is highly likely that the programme will face *tissue rejection* or the implementers’ will revert back to their traditional teaching and learning methodologies compromising the CBET standards (Ford, 2014).

From the discussion it can be noted that the implementation of CBET took a top down approach, being imposed on the trainers and the trainees whereas in a true CBET, business and industry, the community, training providers, parents, trainers and students/learners have a say in what is taught and learnt and how the training and assessment is conducted. This is a move towards participatory democratic planning and decision making in education and training (Henson ,2011).

### 4.5 Conditions necessary for implementation of CBET.

This section focuses on the policies available on the on the implementation of CBET, the situation of training facilities, teaching and learning materials, how strong are pedagogical skills of the trainers and time available compared with workload in the TVET institutions that are offering CBET.
4.5.1 Policy guidelines backing CBET

From the discussions respondents indicated there was no policy on the implementation of CBET. One respondent said ‘…it’s like following trends without proper policy, what happens if it’s no longer trendy’. Another respondent explained ‘…. without policy guidelines in place it is highly likely that the implementation of CBET will be varied and individualised as per institutions’ discernments of CBET expectations’. From these findings there are no specific policies or any frameworks controlling the implementation of CBET, thus impacting on the quality of CBET graduates.

In Australia the decision to adopt a CBET system triggered the establishment of a national qualifications framework for the accreditation of programmes and integration of qualifications from secondary schools, TVET and higher education for better articulation and portability of qualifications (Bowden and Masters, 1997). In Tanzania, the movement from KBET to TVET was guided by Development Vision 2025 while in South Africa, Curriculum 2005 steered the implementation of CBET. The policies gave succinct operational framework and guidelines.

4.5.2 Training Resources

A significantly higher number of respondents noted that TVET institutions were inadequately resourced for CBET implementation given 83% indicated inadequate facilities, 67% inadequate tools and equipment and 60% inadequate other learning materials.
Table 4.6: Training Resources (n=30)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Adequate</th>
<th>Inadequate</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(n)</td>
<td>(%)</td>
</tr>
<tr>
<td>Training Facilities</td>
<td>5</td>
<td>17</td>
</tr>
<tr>
<td>Tools, Equipment and Teaching and Learning Materials</td>
<td>10</td>
<td>33</td>
</tr>
</tbody>
</table>

4.5.2.1 Training Facilities

From the findings, most TVET institutions are operating with inadequate training facilities. In five out of the six TVET institutional reports institutions lack of adequate and appropriate facilities was raised as a major challenge. This concurs with findings from the interview were 83% of respondents also indicated inadequacy of facilities. Polytechnic ‘A’, D and ‘Q’ indicated that their workshops and laboratories had become dysfunctional given the lack of maintenance/ renovations/ modifications. Polytechnic ‘T’ had no laboratories for Applied Science courses like Environmental Health and Metallurgical Assaying. The institution relies on other institutions for these facilities and end up sharing one laboratory.

The above mentioned scenarios compromises the quality of practical training which is key to the attainment of competencies. According to Porter (2014) for attainment of quality competencies the standard of facilities in training institutions should be close to or match those in the respective industry. Nevertheless, polytechnic ‘S’ reported great improvements concerning refurbishments in the workshops adhering to Competency Based Education and Training standard expectations and also helped in promoting skills proficiency.
4.5.2.2 Teaching and Learning Materials

The availability of learning and teaching materials allows for appropriate learning and competencies as the affective, cognitive and psycho-motor skills are absorbed by the students easily as it becomes practically oriented as highlighted by Bloom’s behavioral concepts of education. 67% pointed out that tools, equipment and other teaching/learning materials were in short supply while 33% highlighted that, although their teaching materials they were facing difficulties in getting other latest technologies given that they were expensive and this has remained as a stumbling block for them to be in line with the changing technology.

Lack of adequate teaching materials and use of outdated materials, creates barriers for learning especially for the CBET students whose learning require more of practical learning. Ford (2014) points out that the credibility of competency standards depends on how they reflect industry standards, thus, failure to have adequate teaching materials then adversely affects the concerned competencies. This concurs with findings of Kaaya (2012) that the quality and standards of the CBET system in Tanzania were affected by lack of modern materials for teaching.

4.5.3 Induction of stakeholders

Orientation inculcates implementers with confidence in both their own capability to be effective - because they know they have the information they need - and the system which has had the foresight to provide them with that background, and made them feel a part of the operation.
Table 4.7: CBET Induction (n=30)

<table>
<thead>
<tr>
<th>Variables</th>
<th>Yes (n)</th>
<th>Yes (%)</th>
<th>No (n)</th>
<th>No (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heads of Institutions</td>
<td>2</td>
<td>7</td>
<td>28</td>
<td>93</td>
</tr>
<tr>
<td>Trainers</td>
<td>0</td>
<td>0</td>
<td>30</td>
<td>100</td>
</tr>
</tbody>
</table>

The respondents were asked whether they had received any induction on CBET. All the trainers 100% and heads of institutions 97% indicated that they had not received any orientation on the concept of CBET. From the discussions, it was also noted that there was no initial training for the relevant stakeholders before the roll out of CBET implementation. This differs from the situation in Tanzania where, when CBET became operational they were serious financial and human commitments to orient teachers and other education professionals to develop the necessary confidence to effectively handle CBET (Kaaya, 2012).

A suitably strategic induction programme aids in enlightening the implementers on policies, procedures and guidelines. Moreover, orientation plays a critical part in eradicating preliminary misperception and increasing the rapidity to implement the CBET programme as per expectations. Since it is clear in the very beginning what is expected of the trainers, they start working towards that goal from the beginning. When what the trainers as the CBET implementers do and what the policy makers target are in the same line, it will be easy to evaluate the effectiveness of the CBET implementation (Porter, 2014).
4.5.4 Time allocation

The issue of time management also emerged as another outstanding and challenging issue that is critical in the implementation of CBET in TVET institutions.

Table 4.8: Subject time allocation (n=30)

<table>
<thead>
<tr>
<th>Variable(s)</th>
<th>True</th>
<th>False</th>
</tr>
</thead>
<tbody>
<tr>
<td>Poor time management per subject</td>
<td>25</td>
<td>5</td>
</tr>
<tr>
<td>Too many subjects to comprehend</td>
<td>23</td>
<td>7</td>
</tr>
</tbody>
</table>

Most respondents from the research (83%) indicated time allocated for core subjects was limited since these are practical subjects and the students need to be proficient in the job specific competencies. This concurs with findings from the discussion where one respondent pointed out that “there was reduction of working hours in the Workshop technology particularly in Automotive and Mechanical engineering” A significant number of respondents 77% pointed out that they are too many subjects. One respondent highlighted that “more and more compulsory subjects are being introduced for example Computers, National Studies and Entrepreneurship but the duration of the course remains the same”. From these findings it can be noted that there is a mismatch between time available and number of subjects to be taught.

The squeezing of hours and workloads adversely affects cognition, psychomotor and affective skills, Bloom (1974), as other things are not fully comprehended leaving
out some important details worth noting. Although in CBET system no firm rules can be laid down concerning the amount of training time required for learners to achieve competencies but the use of nominal hours HEXCO course regulations on duration requires a minimum attendance of 85% failure of which one is disqualified attendance. It is in this view that time remains a crucial determinant in full comprehension of the implementation of CBET as well as the concerned deliverables.

4.6 CBET implementation in TVET institutions.
This section focuses on communication effectiveness, the problems teachers/trainers face in applying knowledge and skills, workload of students and evaluation of teaching/learning the level of cooperation /interpersonal relations between teachers and students.

4.6.1 Communication effectiveness
Effective communication is a basic prerequisite for the attainment of organisational goals. Co-ordination of work is impossible without communication.

Table 4.9: Communication

<table>
<thead>
<tr>
<th>Variable</th>
<th>True</th>
<th>False</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(n)</td>
<td>(%)</td>
</tr>
<tr>
<td>Communication is effective</td>
<td>8</td>
<td>27</td>
</tr>
</tbody>
</table>

A significantly high number of respondents indicated that communication was not effective. From the discussions, one respondent stated that the “...curriculum was centre to periphery.... with the national office telling institutions what to do through the heads of institution for transmission downwards, but most of the time the
communication is not conveyed to the implementers on the ground”. Another respondent pointed out that “the top down approach does not only hinder creativity but also feedback from the implementers”.

Effective communication presupposes a two-way flow of information from the top down and from the bottom up; whereby objectives, orders and policies are transmitted downward and desires and dissatisfactions are transmitted upward. A successful executive should have the ability to receive, analyse and transmit information in motivating his subordinates in the right direction (Porter, 2014). An idea, however great it is, is useless until it is transmitted and understood by others. As far as possible, the national office should supply all relevant information to CBET implementers for successful implementation of the dispensation. If the management does not provide information, the implementers will concoct information through grape vine rumours which may have damaging results for the quality and standards of CBET. In order to avoid such problems, it is the duty of the management to supply all the relevant information through appropriate media at the right time (Ford, 2014).

4.6.2 Availability of curricula documents

In the CBET system curricula documents outline programme regulations, certain principles and guidelines that trainers must follow in implementing CBET in TVET institutions.
Table 4.10: Distribution of curricula documents

<table>
<thead>
<tr>
<th>Variable</th>
<th>True</th>
<th>False</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(n)</td>
<td>(%)</td>
</tr>
<tr>
<td>Curricula documents availed</td>
<td>12</td>
<td>40</td>
</tr>
</tbody>
</table>

In response to the question of availability of curricula documents in TVET institutions, 60% of the respondents indicated that they had not received the reviewed curricula documents that were supposed hence they were using the old curricula. One respondent pointed out that, “...there was need to acquire all modules for the different subjects before implementation.”

On the same question another dimension arose from the discussion, where some respondents indicated that the curriculum on offer was outdated and this was also affecting student competency. One respondent specified that, “it is also worth mentioning that the curricula being offered in some respects seems also to be outdated thus the need for the reviews of the curricula is critical in maintaining the CBET standards.” The aspect of development and review of curriculum promotes the expected CBET standards given the behaviour adoption of the relevant competencies. Bloom (1974) asserts that educational objectives promote attention on the intended outcomes of learning programmes and, in particular, they encourage teachers to express their instructional objectives as changes in observable student behaviours; such a view then helps the teachers to remain in line with the expectations through what they deliver.
Of the 40% that indicated availability of curricula, the curricula in Information Technology and Business Studies, Clothing Design Technology, Wood Technology and Electronics was in agreement with the standard expectations of CBET although they indicated that much work needed to be done. Such conflicting views show a lack of updated information on the availability of curricula documents to trainers in the TVET institutions since there were supposed to implement the new curricula. The availability of curricula documents is key in the implementation of CBET since they are the guidelines to trainers on the content, methodologies as well as assessment strategies among other things (Ford 2014). Thus the erratic distribution adversely affects the implementation of CBET.

4.6.3 Staffing

In various studies, it appears that the notion of staffing has become a cause of concern with regards to curriculum implementation.

Table 4.11: Staffing (n=30)

<table>
<thead>
<tr>
<th>Variable</th>
<th>True (n)</th>
<th>True (%)</th>
<th>False (n)</th>
<th>False (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adequate staff</td>
<td>4</td>
<td>13</td>
<td>26</td>
<td>87</td>
</tr>
<tr>
<td>Human capital-staff</td>
<td>0</td>
<td>0</td>
<td>30</td>
<td>100</td>
</tr>
</tbody>
</table>

A significantly higher number of respondents 87% indicated shortage of lecturers as a major challenge in the implementation of CBET. This concurs with findings from the discussion were some respondents stated that staffing ‘was affected by the freezing of recruitment by the Public Service Commission’ while others attributed the
‘shortage of lecturers to death and attrition’. Some programmes especially in the Engineering Division and the B-Tech programme were said to be really affected since it was impossible to fill up the vacant posts of because of the ‘freeze’.

One respondent also indicated that their “work was overloaded and the student to lecturer ratio is too high with some classes as large as thirty (30) students. According to the Public Service Commission policy guideline on student/lecturer ratio, the student/lecturer should be 1:12. Given the pressure emanating from the hours of lecturing and practical work as well as the absence of other lecturers to help relieve the pressure, given such a deficit many students complained lagging behind in their concerned courses and curricula.

From the institutional reports it was noted that there is an outcry from both lecturers and students with lecturers were regarded to be complaining of overloading and students also pointed out that they are neglected by lecturers especially when the May intake is about to write their examinations as lecturers will be concentrating on exam classes. This posed a challenge on the learning of the concerned students who then stay behind with regards to their curricula expectations. It is in this view that the lack of adequate lecturers in various institutions has become a challenge and this, then, results in poor performance from the student’s side, thus, developing incompetent behaviors that affect work competency from an industrial perspective. Therefore, lecturers play a pivotal role in promoting behavioral objectives in line with the Competency framework and their absence or giving adequate time of learning to the students plays also a big role in the outcome assessment.
Bloom (1974), in his behaviorism framework, developed a stimulus response theory and it establishes the roots of CBET frameworks in professional programmes by demonstrating that, with appropriate stimulus and instruction, specific behavioral objectives can be learned. Kaaya (2012) points out that CBET is outcome based or product driven and has a framework which commonly separates whole life roles into specific behavioral objectives that are assessed and measured against predetermined standards and that the emphasis is on the specification and assessment of outcomes referred to as competencies. Inadequate staffing affects the learning process, the teaching and delivery process where the desired goal in producing skills proficiency becomes mired (Boahin and Hofman, 2012). In this light that the inadequacy of lecturers becomes a critical factor that limits appropriate stimulus and instruction in directing the students to the intended curriculum objective. This then affects the cognitive and psychomotor skills acquisition of the concerned students.

4.6.3.1 Staff human capital development

100% of the respondents indicated that staff were not developed in line with the new CBET teaching/learning methodologies. From the discussion it was noted that major challenges experienced relate to inadequate pedagogical skills and industrial experience on the part of lecturers. One respondent also brought in another dimension where pointed out that “many lecturers were not going for industrial attachments to improve their technological skills hence the competencies they possess might not match those in the industry as required by CBET”.

This mainly affects lecturers’ delivery and assessment capabilities, especially with respect to application of knowledge, skills and attitudes. In a study by Parker and Walters (2008) lack of experience of trainers with the CBET process resulted in
sliding back into traditional teaching methods where training and follow-up for the CBET implementers was limited. They further denote that lack of CBET teaching/learning methodologies affects successful implementation of the CBET curriculum be strong enough, hence the learning experience will consequently not be true competency-based.

Kafyulilo, Rugambuka and Ikupa (2012) found out that Ghana preservice teachers although trained about CBET and were passionate regarding the execution of CBET approaches they depended more on traditional approaches because they could not apply CBET teaching approaches, which affected the quality and standards of CBET. Smith (2010) concurs that although CBET is attractive in principle, enterprises and training institutions are still struggling with how to deliver it well therefore human capital development in CBET pedagogical skills is of utmost importance in the effective implementation of the CBET dispensation.

**4.6.4 Assessment guidelines and strategies**

The respondents were asked whether they had enough knowledge about assessment guidelines and strategies to employ in the implantation of CBET.

**Table 4.12: General assessment guidelines (n=30)**

<table>
<thead>
<tr>
<th>Variable(s)</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adequate</td>
<td>5</td>
<td>17</td>
</tr>
<tr>
<td>Inadequate</td>
<td>25</td>
<td>83</td>
</tr>
<tr>
<td>Total</td>
<td>30</td>
<td>100</td>
</tr>
</tbody>
</table>
Most respondents 83% indicated that they were no general assessment guidelines resulting in individual institutions administering continuous assessment in varied ways. One respondent pointed out that “...no clarification on the assessment requirements of the new curriculum for example we are not clear on what are field based assignments or competency tests”. Another respondent indicated that “... we are not sure whether assessment of competencies is meant for core subjects or supporting subjects and who is supposed to do the assessing”. The responses show that they are several interpretations of assessment strategies to be used by the implementers in the TVET institutions. This also hinges on the lack of policy guidelines clarifying the delivery and assessment strategies of CBET.

Another point raised from the discussion is that the validation of continuous assessment by external assessors was inconsistent resulting in the changes of students marks with different reasons being stated by the different assessors as they were no induction on the continuous assessment exercise. Assessment practices in the early days were often fragmented but in CBET there has been an effort to encourage practitioners to assess more holistically and to ensure that underpinning knowledge is adequately addressed (Henson 2011). What is happening in the selected TVET institutions disagrees with the tenets of the smooth running of continuous assessment. Kleins-Collins (2013) also states that lack of valid assessment tools and methods for evaluation of competencies limit the extent to which education providers operationalize CBET approaches.

4.7 Summary

Chapter four presented data collected from a sample of 30 (thirty) respondents of lecturers and heads of institutions using multiple data collection instruments. The collected data was presented in tables with frequencies and percentages. The data
collected in terms of emerging themes was verified through triangulation where necessary. The results are succinctly described according to emerging themes. The answers to the research questions were provided through analysis and discussion of the collected data. In the next chapter the study is summarized, conclusions drawn and recommendations made.
CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

Chapter five reports on the focus of constraints and problems encountered during the study and how these were overcome. Answers to the research questions are presented, linking these to the relevant perspectives. Recommendations are suggested concerning the research problem and these act as the way forward. This chapter is divided into four sub-sections: introduction, summary, conclusions and finally recommendations.

5.2 Summary of the Project

This study sought to evaluate the implementation of CBET in selected Zimbabwean TVET institutions. Stratified random sampling method was used to select the respondents (thirty), drawn from six TVET institutions in Zimbabwe.

The study was guided by the behaviorist framework by Bloom (1974), with the centre of attention on projected outcomes of training programmes and, specifically, to urge trainers to articulate their instructional objectives as changes in observable student behaviors which can be consistently noted as being there or not there.

The researcher was the chief instrument in, which qualitative and quantitative data was collected from the respondents with document analysis, questionnaires, focus group discussions and interviews. A technique of constant comparative analysis was employed to the findings, as the process of data collection progressed. Post field data
analysis; interpretation and discussion were achieved through the procedures of content analysis. Descriptive statistics accompanied narrations in the presentation of results and findings.

5.2.1 Summary of findings

The following were the findings of this study:

- No policy framework or guidelines in place to direct CBET methodology and assessment
- Staff establishment too low to meet new CBET requirements
- Inadequate training resources at institutions to match CBET requirements
- Major principles of CBET such as modularisation, flexible examination system, among others not incorporated
- One-way communication- (top-down approach) in form of circulars and memos from the National office and feedback from implementers not sought
- Erratic distribution of key CBET documents
- Limited involvement of key stakeholders (industry, lecturers and students) in the development and review of CBET curricula
- Limited staff development on the demands of CBET

5.3 Constraints

In TVET institutions lecturers and students during first and third term of the year are involved in continuous assessment and final examinations so it was difficult for the researcher to make appointments with selected respondents. As a way of minimizing the encountered challenge, the researcher had to rearrange the data generation schedule taking into consideration the respondents’ spare time. This rescheduling of
data generation programme brought with it financial constraints as the researcher had to foot extra accommodation and transport costs. The researcher had to source extra funding to meet the extra costs. Despite the challenges encountered in the study, the researcher managed to get the much-needed information to provide answers to the research questions.

5.4 Conclusions

The findings from the analyzed data revealed that the key stakeholders were not involved in creating the conditions necessary for CBET implementation in the selected TEVT institutions in terms of staffing, staff development and training resources. It was also observed that implementation of CBET in selected institutions is uncoordinated as there are no clearly spelt out policy to guide methodologies and assessment. It can therefore be concluded that in selected TVET institutions CBET implementation falls far short of the major principles of CBET (modularization, flexibility of examinations, quality and standards of teaching/learning environment).

5.5 Recommendations

The following recommendations are proposed:

All stakeholders must be involved in the formulation of CBET implementation guidelines as well as sourcing of the required resources. There should be provision of training and follow up assistance for the trainers in terms of teaching and learning methodologies as well as assessment strategies.
REFERENCES


Ford, K. (2014). *Competency based education: history, opportunities and challenges,* UMUC Centre For Innovation in learning and students Success (CILSS) Briefing Paper


Namibia Qualifications Authority Act (1996)


Temkin, J. (2007) "How Focus Groups Work".


APPENDICES

Appendix 1

QUESTIONNAIRE FOR THE LECTURERS

This questionnaire has been designed to fulfil the research interests; “An Evaluation of the Implementation of Competency Based Education Training Curricula in Zimbabwe Polytechnics” The main focus of this study is to understand the Lecturers perspectives regarding the implementation of CBET at their respective institutions. This research is being conducted by Juliana NyaraiMangwiro, a Masters Student in Curriculum Studies at Bindura University of Science Education (BUSE).

I kindly request that you respond to the best of your knowledge to the questions on the questionnaire. Your cooperation in answering the questions will be greatly appreciated. Information attained shall be used only for the purpose of this research. Please note that the replies to the questionnaires will be kept private and confidential and will not be used for any other purposes other than this project at hand.

Section A

(Please tick in the appropriate boxes provided)

1. Respondent details

   (i) Name of TVET Institutions

<p>| Harare Poly |            |
| Bulawayo Poly |            |
| Mutare Poly |            |</p>
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<tr>
<th>Masvingo Poly</th>
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<td>Gweru Poly</td>
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<td>Kwekwe Poly</td>
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<td>JM Nkomo Poly</td>
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<td>KushingaPhikelela Poly</td>
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<td>Belvedere Technical Teachers</td>
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<td>Msasa Industrial T. C.</td>
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<td>Danhiko Project</td>
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<td>St Peters Kubatana V.T.C.</td>
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<td>Westgate V.T.C.</td>
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<td>Mupfure V.T.C.</td>
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<tr>
<td>School of Hospitality and Tourism</td>
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</table>

(ii) **Region of location**

<table>
<thead>
<tr>
<th>Harare</th>
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<tbody>
<tr>
<td>Bulawayo</td>
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<td>Mutare</td>
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<td>Masvingo</td>
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<td>Kwekwe</td>
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<td>Gwanda</td>
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(iii) Age of respondents

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<td>26 - 30</td>
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<td>31 – 36</td>
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<td>37 – 40</td>
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<td>41 and above</td>
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(iv) Sex

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<tbody>
<tr>
<td>Male</td>
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<tr>
<td>Female</td>
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</table>

(v) Grade

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<tr>
<th>Grade</th>
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<tbody>
<tr>
<td>Lecturer</td>
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<td>Senior Lecturer</td>
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<td>Principal Lecturer</td>
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Section B

(1) What is your understanding of Competency Based Education Training (CBET)?

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(2) Do you think Polytechnics are adequately prepared for CBET implementation?

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(3) In your own experience, are lecturers applying CBET principles from Occupational Standards and Skills Proficiency Schedules in their teaching and learning methodologies?

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<tr>
<th>Yes</th>
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<tbody>
<tr>
<td>No</td>
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</table>
Section C Strengths and Weaknesses

(1) In your own assessment, do you think there is a missing link between CBET implementation and current status polytechnics?

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<td>Yes</td>
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<td>No</td>
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(2) In your teaching and learning methodologies, have students faced any difficulties in comprehending the required skills?
(3) Are there any challenges that you have experienced so far in the implementation of Competency Based Education Training CBET?

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<tr>
<th>Yes</th>
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Explain your Answer

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Section D Strategies and Inputs for Implementation

(1) Can you identify the strategies or resources used in CBET implementation at your institution?

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(2) In your own opinion, do you think the resources/inputs provided are enough for the student’s competency in the Industry?

<table>
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<tr>
<th>Yes</th>
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Explain Your Answer

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(3) In your own assessment, do you think CBET is the best solution for a competent labour force?

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<tr>
<td>Yes</td>
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Explain Your Answer

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*****The end******
Appendix 2

QUESTIONNAIRE FOR HEAD/PRINCIPALS

This questionnaire has been designed to fulfil the research interests; “An Evaluation of the Implementation of Competency Based Education Training Curricula in Zimbabwe Polytechnics” The main focus of this study is to understand the Lecturers perspectives regarding the implementation of CBET at their respective institutions. This research is being conducted by Juliana Mangwiro, a Masters Student in Curriculum Studies at Bindura University of Science Education (BUSE).

I kindly request that you respond to the best of your knowledge to the questions on the questionnaire. Your cooperation in answering the questions will be greatly appreciated. Information attained shall be used only for the purpose of this research. Please note that the replies to the questionnaires will be kept private and confidential and will not be used for any other purposes other than this project at hand.

Section A

(Please tick in the appropriate boxes provided)

1. Respondent details

   (i) Name of TVET Institutions

   | Harare Poly | |
   | Bulawayo Poly | |
   | Mutare Poly | |
   | Masvingo Poly | |

   (Please tick in the appropriate boxes provided)
<table>
<thead>
<tr>
<th>Institution</th>
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<tbody>
<tr>
<td>Gweru Poly</td>
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<td>Kwekwe Poly</td>
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<td>JM Nkomo Poly</td>
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<tr>
<td>KushingaPhikelela Poly</td>
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<tr>
<td>Belvedere Technical Teachers</td>
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<tr>
<td>Msasa Industrial T. C.</td>
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<td>Danhiko Project</td>
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<td>St Peters Kubatana V.T.C.</td>
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<td>Westgate V.T.C.</td>
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<td>Mupfure V.T.C.</td>
</tr>
<tr>
<td>School of Hospitality and Tourism</td>
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</tbody>
</table>

(ii) Region of location

<table>
<thead>
<tr>
<th>Region</th>
</tr>
</thead>
<tbody>
<tr>
<td>Harare</td>
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<tr>
<td>Bulawayo</td>
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<td>Gwanda</td>
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</table>

(iii) Age of respondents

<table>
<thead>
<tr>
<th>Age Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>31 – 36</td>
</tr>
</tbody>
</table>
SECTION B Background

(1) In your experience, do you think Competency Based Education and Training (CBET) is the best approach for Technical and Vocational Educational Training (TVET)?

<table>
<thead>
<tr>
<th>Yes</th>
<th>No</th>
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Explain Your Answer

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(2) Do you think your institution is taking the right initiatives in staff developing lecturers in line with CBET?

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<th>Yes</th>
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<td>No</td>
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Explain Your Answer

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(3) Do you think Polytechnics are adequately prepared for CBET implementation?

<table>
<thead>
<tr>
<th>Yes</th>
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<tr>
<td>No</td>
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</table>

Explain Your Answer

………………………………………………………………………………”
(3) In your own experience, are lecturers applying CBET principles from Occupational Standards and Skills Proficiency Schedules in their teaching and learning methodologies?

| Yes | No |

Explain your answer

Section C Strengths and Weaknesses

(1) What do you think are the issues at stake with regards to CBET implementation?

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(2) As the Head of Institution, have you received reports from lecturers who fail to apply their acquired job skills on CBET implementation?

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<thead>
<tr>
<th>Yes</th>
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Explain Your Answer

(3) In your own experience, what are the challenges that you have come across in the Implementation of CBET curricula at your institution?
(4) In your own opinion, do you think that your institution has adequate resources for the full implementation of CBET?

Yes  
No  

Explain Your Answer


Section D Strategies and Inputs

(1) What strategies have you provided for the full implementation of CBET curricula?


(2) Can you identify the inputs/resources available for the implementation of CBET curricula at your institution?

(3) In your opinion, what are the strengths of Competency Based Education System

(4) In your own assessment, do you think CBET is the best solution for a competent labour force?

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Appendix 3

FOCUS GROUP DISCUSSION QUESTIONS

1. What can you say about CBET implementation at polytechnics in Zimbabwe?

2. Given the background of TVET in polytechnics, are institutions adequately addressing the requirements of CBET curricula?

3. In your own view, is CBET really making an impact on the learner vis-à-vis industrial requirements? (Please provide explanation to your answer)
3. In your own assessment, are there any challenges worth mentioning concerning CBET implementation?

4. In your experience, can you identify the perceived strengths of implementing CBET at your polytechnics
5. What input strategies and designs (resources) for implementing the curricula are available?

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6. As an overall assessment, what can you say about CBET as an approach to TVET given your experience since its implementation in 2014?

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7. Are there any weaknesses that you feel need to be addressed concerning CBET implementation in Zimbabwean polytechnics?

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Appendix 4

Interview Guide Questions Unstructured

1. What can you say about CBET implementation at polytechnics in Zimbabwe?

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2. Given the background of TVET in polytechnics, are institutions adequately addressing the requirements of CBET curricula?

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3. In your own view, is CBET really making an impact on the learner vis-à-vis industrial requirements? (Please provide explanation to your answer)
4. In your own assessment, are there any challenges worth mentioning concerning CBET implementation?

5. In your experience, can you identify the perceived strengths of implementing CBET at your polytechnics?

6. What input strategies and designs (resources) for implementing the curricula are available?

7. As an overall assessment, what can you say about CBET as an approach to TVET given your experience since its implementation in 2014?
8. Are there any weaknesses that you feel need to be addressed concerning CBET implementation in Zimbabwean polytechnics?

.******The end******