An analysis of HEXCO programmes’ relevance in addressing the needs of the Zimbabwean industry

BY

Patrick Rusike
R910171H

A Dissertation Submitted in Partial Fulfilment of the Requirements of Master in Science Education (Curriculum Studies) Degree in the Department of Curriculum Studies

September 2015
Release Form

BUSE

Name of author:

RUSIKE PATRICK CHISANGO

Title of Paper:
An Analysis of HEXCO Programmes’ Relevance in Addressing the Needs of the Zimbabwean Industry

Programme:
Master in Science Education Degree in the Faculty of Science Education at BUSE

Paper grant:
Permission is hereby granted to the BUSE Library to reproduce single copies of this Paper and to lend or sell such copies for private, scholarly or scientific researches only. This author does not reserve other publication rights and the project nor may extensive extracts from it be printed or otherwise reproduced without the author’s written permission.

Signed

..................................................

2015
The undersigned certify that they have read and recommended to the BUSE for acceptance; a project paper entitled “An Analysis of HEXCO Programmes’ Relevance in Addressing the Needs of the Zimbabwean Industry” submitted by Rusike Patrick Chisango, in Partial Fulfillment of the requirements for the Master in Science Education Degree in Faculty of Science Education

Supervisor(s)

Coordinator

External Examiner

Date: 2015
Abstract

TVET education has been hailed for bringing needed development and poverty eradication in Zimbabwe if harmonised with industrial production. This study seeks to investigate how polytechnics and the Ministry of Higher and Tertiary Education, Science and Technology Development (MHTE-STD), can have their TVET trainings collated with the prevailing conditions in the industry. This agrees with the ministry’s 2009 – 2014 vision which promises to “Guarantee Zimbabwe as a regional leader in the creative use of new and existing knowledge, skills, attitudes and resources through the local mobilization and provision of quality higher and tertiary education” that attempts to produce competent and qualified graduates under the reforms of competence based education and training (CBET) modularization. This study seeks to find how the gap between college training and industrial practice can complement one and the other. The study aims at examining how HEXCO’s curriculum review processes can have an impact where TVET graduates acquire the required competencies for the occupations they are preparing thereby meeting the needs of the industry. Harmonisation of the training curriculum and the prevailing conditions in the industry prepares a competent and productive industrial labour force that will benefit the industry, the ministry, the colleges and the society.

Harmonisation of the training curriculum with the industry is the mission of the council. The ministry’s arms are involved in carrying out the education mandate of the ministry, and HEXCO is here seeking to play its part in aligning the college curriculum with the industry. The period of study was from January 2015 to August 2015. The study interviewed six skilled informants from the college teaching staff and the industry namely the Principal, Head of a Department and Head of Subject; and in the industry, the company director, the department supervisor and the shop-floor manager. Also the study distributed twenty questionnaires to TVET trainers and trainees which were collected at the point of distribution. The data obtained was analysed using narrative and descriptive statistics as shown below. The main challenges obtaining from the data collected showed that students were trained in large numbers without adequate facilities, training materials and obsolete training equipment, and thus absence of industrial synergies and poor exposure to TVET trainees during On Job Training (OJT). The research study also noted that there was a weak performance of the economy, poor curricula review and there was a lot of variance on industrial expectations. In all, the study uses questionnaires and structured interviews to gather data. The descriptive analysis method had been viewed as the most appropriate method to analyse the data gathered.

The study shows that curriculum disharmony with prevailing industrial experiences is a result of a disaggregated review process that excludes the industry and was done by armchair theorists and educationists during the colonial era and even after Independence, meant to benefit the European industrialist and to assemble European products rather than create solutions for the African market. While this study does not drive this point home, it is seen as one of the contributing factors: lack of harmony between the training curriculum and the needs of industry. Resource limitations, lack of exposure, inadequate training, globalisation and other external factors seem to militate against indigenising the curriculum and thus harmonise with the industry.

The study therefore recommends that HEXCO should invest in curriculum planning and review in relationship to the needs of industry and society. It is also recommended that HEXCO should direct how tertiary resources can be used to enhance its skills acquisition in colleges as well as ensure competence of polytechnic graduates to fit into the existing industrial infrastructure. Finally, HEXCO needs to ensure that its training curricula are reviewed periodically and are pacing with the global market and technology.
# Table of Contents

Release Form .............................................................................................................................. ii
Approval Form .......................................................................................................................... iii
Abstract ..................................................................................................................................... iv
Acknowledgements .................................................................................................................. Error! Bookmark not defined.
Table of Contents ....................................................................................................................... v

**CHAPTER ONE** ........................................................................................................................ 1
**INTRODUCTION** ..................................................................................................................... 1
1.1 Background to the Study ..................................................................................................... 1
1.2 Statement of the Problem ................................................................................................. 2
1.3 Objectives of the Study .................................................................................................... 3
1.4 Assumptions of the Study ............................................................................................... 3
1.5 Significance of the study .................................................................................................. 3
1.7 Delimitations of the study ............................................................................................... 4
1.8 Limitations of the Study .................................................................................................. 5
1.9 Definition of terms .......................................................................................................... 6
1.10 Summary ....................................................................................................................... 7

**CHAPTER TWO** ................................................................................................................... 8
**REVIEW OF RELATED LITERATURE** .................................................................................. 8
2.1 Introduction ...................................................................................................................... 8
2.2 Theoretical Framework .................................................................................................... 9
2.3 Importance of TVET programmes to industry ............................................................... 11
2.4 TVET programmes’ implementation in institutions of higher learning ....................... 12
2.5 Obstacles hindering implementation of TVET in institutions of higher learning .......... 14
2.6 Strategies that can be used to overcome the encountered obstacles ............................. 18
2.7 Summary ....................................................................................................................... 19

**CHAPTER THREE** ............................................................................................................... 21
**RESEARCH METHODOLOGY** ............................................................................................ 21
3.1 Introduction ..................................................................................................................... 21
3.2 Research Design ................................................................................................................. 21
3.3 Population of the Study ...................................................................................................... 22
3.4 Sample and Sampling Procedure ...................................................................................... 22
3.5 Data Collection Instruments .............................................................................................. 23
  3.5.1 The Questionnaire ....................................................................................................... 24
  3.5.2 Interviews .................................................................................................................... 25
3.6 Reliability and Validity ...................................................................................................... 26
3.7 Data Collection Procedure ................................................................................................. 27
3.8 Data Presentation and Analysis Procedure ......................................................................... 28
3.9 Summary ............................................................................................................................ 29

CHAPTER FOUR ........................................................................................................................ 30
DATA PRESENTATION, ANALYSIS AND INTERPRETATION ................................................. 30
  4.1 Introduction ........................................................................................................................ 30
  4.2 Demographic characteristics of the Participants ............................................................... 31
  4.3 The importance of TVET programmes to the industry ...................................................... 32
    4.3.0 Introduction ................................................................................................................. 32
    Table 4.2: Experiences of college students in the industry .................................................. 33
  4.4 TVET programmes’ implementation in institutions of higher learning ............................. 36
    Table 4:3: Adequacy of polytechnic training to needs of industry ...................................... 36
    Graph 4:2: Reasons why polytechnic graduates lack adequate skills ................................. 37
  4.5 Obstacles hindering implementation of TVET in institutions of higher learning .............. 44
  4.7 Strategies that can be used to overcome the encountered obstacles .................................. 46
  4.8 Summary ............................................................................................................................ 49

CHAPTER FIVE .......................................................................................................................... 50
SUMMARY, CONCLUSION AND RECOMMENDATIONS .................................................. 50
  5.1 Introduction ........................................................................................................................ 50
  5.2 Summary of the Project .................................................................................................... 50
  5.3 Conclusion ......................................................................................................................... 51
  5.4 Recommendations ......................................................................................................... 51
CHAPTER ONE

INTRODUCTION

1.1 Background to the Study

According to Konayuna, 2008 a significant number of African countries have adopted Technical and Vocational Education and Training (TVET) reform which has resulted in formulation of policies that make TVET relevant and accessible while addressing issues of quality. Policy makers across Africa, Zimbabwe included have attached much value to TVET as reflected in their various poverty reduction papers or national development plans (Woyo, 2013) In Zimbabwe, the Ministry of Higher and Tertiary Education, Science and Technology Development (MHTE-STD) has put tremendous effort to promote TVET with particular reference to Competency Based Education and Training (CBET) and this innovative CBET has been spearheaded by the department of Quality Assurance and Standards (QAS) through its units. In its 2015-2021 strategic plan, the ministry’s vision is to “Guarantee Zimbabwe as a regional leader in the creative use of new and existing knowledge, skills, attitudes and resources through the local mobilization and provision of quality higher and tertiary education” (MHTE-STD, 2015). All Technical and Vocational Education Training (TVET) programmes in Zimbabwe are derived from industry and private colleges that are supervised by the MHTE-STD. This ensures that graduates from these institutions will find employment after training with some of them engaging in small to medium businesses. This arrangement then dictates that what is taught in the institutions is relevant to the world of work. Graduates who come out of the polytechnics are supposed to come out of college and be able to run a workshop or an office with little or no help. This is achieved by the fact that students studying at under the TVET
programmes have On the Job Education and Training (OJET) fused in their training enabling them to get practical (hands-on) experience in their chosen areas of training as outlined by the Nziramasanga Commission.

According to Woyo, 2013, the new system is to ensure that there is quality delivery of TVET which would contribute towards social and economic development outcomes in the country. The demand for TVET is influenced by economic goal which stem from the income that accrues to those individual enterprises or nations that poses quality knowledge, skills with strong attitudinal change (Mupinga, Burnett & Redmann). In addition, demand for goods and services in the global or domestic economy translate into demand for particular knowledge and skills therefore TVET can be taken as a means of acquiring knowledge and skills (Mandebvu, 1988). It is against this background that the researcher sought to explore TVET programme relevance in addressing the needs of the Zimbabwean industry’

1.2 Statement of the Problem

In Zimbabwe TVET products should be equipped with requisite knowledge, skills and attitudes to enable them to be functional in the world of work within or outside the borders. However, frustratingly products have failed to match qualifications on certificates, resulting in industrialists using interns and consistent work supervision to bridge the gap. This prompted the researcher to conduct a study guided by the following main objective: Analyse TVET programmes’ relevance in addressing the needs of Zimbabwean industry.
1.3 Objectives of the Study

The study was guided by the following objectives:

- Identify importance of TVET programmes to industry.
- Established how TVET programmes are implemented in institutions.
- Identify obstacles hindering implementation of TVET in institutions.
- Find out strategies that can be used to overcome the encountered obstacles.

1.4 Assumptions of the Study

In this study there was an underlying assumption that TVET programmes are an important aspect in the formation of a complete graduate that is functional in the work place. It was further assumed that selected participants valued the importance of the phenomenon under study; hence they contribute truthfully towards the same. The other assumption was that policy makers would appreciate the value of the findings in relation to curriculum development decision making. Last but not least it was assumed that the selected sample was representative of the target population, which inference was made to.

1.5 Significance of the study

It is anticipated that this study might be of benefit to the policy makers in that the findings will enable them to identify the existing gap and come up with informed decision related to TVET.

Industry on the other end will have a clear picture of what is happening in training and would come in and help in training so that they will get the product they would desire.
Administrators would benefit from this research in that they will be able to measure and evaluate programmes in institutions.

Lectures would be able to identify the gap in their teaching strategies and find out how best to improve their teaching strategies.

The graduates coming from these polytechnics would be competent to deal with all issues pertaining to their trade. The mode of training is also anticipated to change so that all stakeholders participate as to add value to training. The human capital base of Zimbabwe would also improve.

The researcher would be able to put into practice the acquired methods, knowledge and skills into practice.

1.7 Delimitations of the study

In Zimbabwe there are at least ten (10) public tertiary institutions and many private institutions that offer TVET programmes scattered across the length and width of the country such as Harare Polytechnic, Belvedere Technical Teachers’ College, Bulawayo Polytechnic, Gweru Polytechnic, Kushinga Phikelela Polytechnic, Masvingo Polytechnic, Mutare Polytechnic, School of Hospitality and Tourism, Joshua Mqabuko Nyongolo Polytechnic, Kwekwe Polytechnic, Msasa Industrial College, Mupfure Self Help College, Westgate Industrial College and St Peters Kubatana Technology Centre (MHTE, 2005). This list is not exhaustive, however, a number of serious challenges were noted within TVET institutions that affect the quality of practical skills graduates will acquire as they aspired to get from TVET training and thus affect the resultant
levels of competencies of the trainees (MHTE 2005). This study was centred on TVET programme offering tertiary institutions in Harare Metropolitan Province namely: Belvedere Technical Teachers’ College and Harare Polytechnic. At the selected institutions focus was mainly on analysis of HEXCO programmes’ relevance in meeting the needs of Zimbabwean industry.

1.8 Limitations of the Study

There are policy guideline which do not permit the researcher from getting information from institutions and getting the permission was a hassle

Getting information from key informants was not easy as the researcher had to visit a place more than once due to the busy schedule of this group

This study was supposed to look at all the HEXCO courses being offered in the ten regional centres including the privately owned colleges but due to the financial constraints the research zeroed on two disciplines, that is, the Information Technology and the Automotive disciplines. The funds did not permit to visit all the Ten State owned colleges, but only two, that is, Harare Polytechnic and Belvedere Technical Teacher’s College and Pace College which is a private owned college. The researcher only managed to sample industries in Harare not the whole country.
The other constraint is that the study is being carried out when the industries in Zimbabwe have closed down and as a result this does not allow the researcher access to the fully fledged industry.

1.9 Definition of terms

Curriculum is all the learning of the student which is planned and directed by the school to attain its educational goals. It includes everything that takes place within the aegis of the learning environment. It prepares one for life after school as a result it has to be relevant.

Industry is any type of economic activity producing goods and services. Thus it is part of a chain - from raw materials to finished product, finished product to service sector and service sector to research and development. Industry can be represented by bodies like Confederation of Zimbabwean Industries (CZI) and Zimbabwe Chamber of Commerce (ZCC).

Programme Relevance - is the extent to which some information is pertinent or applicable to the matter at hand.

Polytechnic – a multi-disciplinary institution designed to offer tech/voc education from national certificate to post graduate level (MHTE, 2005).

TVET – consists of technical education and training which in addition to its vocational aim cannot neglect the general objective of education. Vocational training and education include
training on OJET in training centres. The comprehensive term TVET is used to describe Technical education and Vocational education (MHTE, 2005).

1.10 Summary

This chapter has dealt with the introduction to the study and the following chapter will deal with literature review, Chapter 3 with Methodology, Chapter 4 with data presentation, analysis and discussion while Chapter 5 will conclude the study with summary, conclusions and recommendations.
CHAPTER TWO

REVIEW OF RELATED LITERATURE

2.1 Introduction

Zimbabwe adopted Technical and Vocational Education and Training (TVET) reforms along with many African governments since the early nineties resulting in the formulation of TVET policies across Africa (Konayuma, 2008:2; Chinyamunzore, 1995). Policy makers are concerned about ensuring TVET training is relevant to the needs of industry and that those who access it have relevant qualities and qualifications after the training because of the critical role TVET plays to develop nations. In Zimbabwe, TVET is highly regarded resulting in a number of papers aiming at reducing the poverty levels of ordinary people (Konayuma, 2008). In fact the Zimbabwean government through the MHTE-STD, and in particular HEXCO, been renewing efforts to promote TVET, based on CBET (www.sderu.org.zw). Standards Development and Research Unit (SDERU) was formed in 2011 as MHTE-STD’s efforts to spearhead CBET as influenced by industrial experiences from the spectrum of occupational profiles in the country’s economic sectors (www.sderu.org.zw). TVET in Zimbabwe is being fine-tuned to respond to CBET demands, to ensure that quality delivery of the programme can contribute to socioeconomic development in Zimbabwe.

Furthermore, CBET owes to On Job Education Training (OJET), which is a credit- based practical skills and industrial attachment programme. OJET was designed to deepen TVET trainee skills in acquiring occupational standards; in line with MHTE,STD’s vision of standards
and occupational profiles (MHTE, STD 2005). CBET thus is a mode of TVET training delivery approach being used to meet often conflicting and contradictory social and economic goals in the country. CBET is thus being used as a poverty alleviation strategy across Africa, making TVET motivated by economic goals as individuals’ incomes will improve by possessing superior skill qualities, knowledge and attitudes to change their situations (Mupinga et al., 2005). These skills can only be exhibited when demands in the global economy increase (Mandebvu, 1989), and often when career and technical education is required to service the development needs of the people (Mupinga et al., 2005). In the following pages, we are going to discuss how TVET is key to the Zimbabwean HEXCO programmes, and in particular quality education for the industry and society.

2.2 Theoretical Framework

This study is motivated by HEXCO’s TVET training based on CBET approach. TVET training prescribes that students should get practical skills and occupational competency standards and should be assessed by experienced industrialists who hopefully have an appreciation of skills in pedagogy and using TVET guidelines to evaluate trainee performance (www.sderu.org.zw). The ministry through HEXCO has developed training competencies, assessment schedules, and needed academic and professional resources to deliver TVET training needs for the industry and society (Mazani, 2015). Thus, CBET approach unifies industrial occupational competencies with the academia (Afeti, 2005: 9). This comes as a realization that TVET addresses issues of skills development to deal with poverty and youth unemployment in view of projected opportunities and challenges (McGrath, 2005). Competencies are crucial to our dignity and survival in a fast-changing global environment, and thus
African countries and their governments have been challenged to take cues from their industrialized counterparts to seriously consider the role of higher education and training in the quest for economic emancipation and social stability. In developed countries, higher education, for its part, is facilitating the elevation of human intellectual capital well above other forms of human endowment (Phuthi & Maphosa 2007: 1).

Theoretically this study is based on TVET training using CBET approach. This is out of the realization that the modern society is no longer driven by possessions but by knowledge and skills, human capital. Education is a major political priority for “High quality human capital is developed in high quality education systems, with tertiary education providing the advanced skills that command a premium in today’s workplace” (World Bank 2000). This study observes that the paradigm shift towards practical skills is increasingly reshaping TVET education curricula to be more effective, efficient and attractive (Woyo, 2013: 183). In this way TVET in Zimbabwe has adopted the African Union vision in developing STERP (2009) to alleviate poverty. TVET and CBET thus aims at promoting skills acquisition using proficiency testing and occupational profiles in training to produce graduates who are responsible and can be able to create employment and livelihood for self and others.

The MHTE-STD thus established SDERU to produce modules to guide in curricula formulation on occupational standards (www.sderu.org.zw). SDERU’s duty is to provide “a responsive interface between industry occupational needs and the TVET curricula” (Woyo, 2013: 183). In all, this study is based on the theory that TVET and CBET can provide needed competencies and thus proficiencies to work in the industry after graduating from polytechnics and vocational training colleges.
2.3 Importance of TVET programmes to industry

TVET programmes have been adopted by a number of African countries since the early nineties (Konayuma, 2008). Zimbabwe has too has been involved in TVET training after realizing that practical skills training effectively addressed the needs of the skilled labour force, artisans and technicians in the country (Ngome, 1992). Interestingly, Zimbabwean programmes, and in particular TVET training offering institutions are modeled after British institutions “to produce graduates whose competencies raise the prospects of getting a job” (Woyo, 2013: 184). This has led to a greater variance on TVET graduates and the needs of industry (and commerce), resulting in these institutions being criticized for failing to be relevant to the needs of the country because TVET institutions are not able to train workers with competencies and skills that effectively meet the occupation’s requirements of industry; while on the other hand, industry is unaware of the need for continuing education (Atchoarena & Esquieu 2002). This results with graduates of TVET institutions in Zimbabwe being on the list of the unemployed in the country. As Mazani (2015) argues about competence and competency, TVET institutions have failed to adapt to new demands of the job market. Partly this failure is caused by lack institutional autonomy from the parent ministry, MHTE-STD (MHTE, 2005). However, TVET training can be hailed for its contribution to poverty alleviation, eradication of poverty and job creation, thus institutions need to be helped to realign their trainings according to the ever changing job requirements in the industry.

Finally it needs to be appraised that a number of hindrances have affected the effectiveness of TVET undermining the importance of its programmes to industry. However, TVET is highly
useful for the industry in Zimbabwe and other African countries and demands that it be properly
given space to produce the best results for the developing nations.

2.4 TVET programmes' implementation in institutions of higher learning

The implementation of TVET programmes is largely controlled by curriculum experts employed
by ministry in a specific area “to determine curriculum content by following a systematic
process” (Mazani, 2015: 3). The curriculum is reviewed every five years in an attempt to
respond to the demands of stakeholders. Unfortunately most polytechnic curriculum ‘experts’
are artisans who are not well versed in curriculum theory, and cannot provide sound guidelines
on student learning. HEXCO thus implements its curriculum department through these officers,
some of whom never improved in pedagogical skills. Unfortunately suitable experts from
different sectors of industry cannot be identified in content selection and review (Mittal et al,
1999: 35). In this, the development of the TVET curriculum lacks a number of things to
culminate in the development of a comprehensive polytechnic curriculum. This is worsened by
what Mazani calls ‘problematic’ as he states,

HEXCO curriculum board members are Zimbabwean polytechnic
principals who make important decisions that affect their
individual polytechnics. This arrangement is rather problematic as
they have conflicting interests that compromise the quality of
polytechnic curriculum effectiveness. Such workshops are
normally dominated by principals who decide what to include in
certain curricula at the expense of the recommendations of industry
(Mazani 2013: 4).

Further, the National Manpower Advisory Council (NAMACO) should design curricula that will
implement Zimbabwe Occupational Standards Framework (ZOSF), and the main beneficiaries of
NAMACO are HEXCO and CRADU in the MHTE-STD. NAMACO should liase with industry
to come up with relevant and up-to-date job profiles. Unfortunately this role is not practically
evident in the development of TVET training curricula. In the end, this curriculum should be
given to relevant authorities like CRADU and polytechnics to implement. Unfortunately this
link is weak although CRADU has appointed some senior lecturers to become discipline
coordinators of curriculum planning in the ministry (HEXCO, 2000). It is during external
assessment that experts from industry are involved to validate quality of theory and practical
examinations (HEXCO, 2004).

Further, CRADU is not legally incredible because it is not established by an act of parliament
and thus operates as a department in the MHTE-STD. Unfortunately TVET quality assurance
has no committee but departments like CRADU to arbitrarily monitor polytechnic academic
performance against set benchmarks as they check for HEXCO compliance on coursework
requirements through internal assessment to verify quality and quantity of assignments and tests.
This process involves formative evaluation (Mittal et al, 1999: 35, 80). HEXCO recommends
that students be assessed on the basis of “two theory assignments weighing 22% and two
practical assignments weighing 31% and two tests weighing 7% giving a total of 60% for
coursework” (Mazani, 2015: 8), and the final exam 40%; where both coursework and the
examination should be passed at 50% or better. Internal assessment is done by Heads of
Departments (HODs), who verify HEXCO requirements compliance (HEXCO, 2004). HODs
should also ensure that

The departmental academic files should be in place with schemes
of work, assignment list per subject as well as marking schemes
per assignment. A file room for each department should be
prepared where students present their academic files with marked
assignments. Internal evaluation is done as preparation for external
assessment (Mazani 2015: 8).
In the end, the process is finally decided by the external assessor (Mittal et al, 1999: 35: 80) in a summative evaluation process. External assessors come from the industry for each discipline. This may be difficult to achieve since most of the TVET courses are highly theoretical the way they are done. Furthermore, polytechnics inviting assessors is problematic, and recommendation could be given that HEXCO should appoint assessors on merit rather than polytechnics calling external assessors who are not pooled by a disinterested party. In this view, it is also prudent to decentralize TVET training curricula assessment to ten regional centres following the decentralization of marking and external assessment (HEXCO, 2006).

In all, the implementation of TVET programmes in institutions of higher learning is commendable although there are elements that need review.

2.5 Obstacles hindering implementation of TVET in institutions of higher learning

TVET in institutions of higher learning has been hindered by a number of things such as social and economic factors, the legal framework, employment patterns, and resources among many. TVET is affected by socioeconomic and contextual factors in the country of implementation for instance lack of coordination and regulation due to fragmented systems (Konayuma, 2008). In this section we are going to look at hindrances to implementation of TVET in Zimbabwe.

TVET in Zimbabwe is affected by curriculum development and programme design. Curriculum being everything that takes place within the aegis of the learning environment, written and unwritten (Tyler 1949), it directs the student to attain curriculum educational goals and prepares
him or her for life after school. This is a key process that determines the learners’ destinies, that is, what the learners would become after undergoing their training. Unfortunately, as Mazani (2015) mourns, curriculum irrelevance has been with HEXCO since the colonial times.

According to Professor Tichaona Mapolisa in collaboration with Zimbabwean Open University (ZOU) team of Prof Chrispen Chiome, Prof Boniface Chenjerai Chisaka and Prof Ignatius Isaac Dambudzo in the Education edition of Sunday Mail of 15 February 2015 gave the following as sign of an irrelevant curriculum, one, lack of market value to immediate and subsequent graduates; two, lack of societal acceptance and approval to your graduates; three, lack of practical skills from graduating learners, and four, lack of curricula diversity during training.

This is done in reference to college and high school graduates who end up migrating into other countries, learners who fail to become responsible citizens and graduates who have no idea of how to solve problems within their areas of training. Colleges thus are being challenged by this to consider how curricula are drawn up, socioeconomic factors and issues pertaining to human behavior. It must be held that TVET evolved with a view to producing artisans, technicians and technologists in areas that the only university in the country then could not offer. In engineering these included areas like automotive engineering, fitting and turning, fabrication, refrigeration, Radio and TV repair, hairdressing, surveying, environmental health, plastics engineering, water engineering among many. In commerce, these included Secretarial Studies, Computer Studies, Purchasing and Supply, Record Management, Marketing, Stores Management, among many.

Universities that were established later in the 1990s took up some of these courses and upgraded them to academic degrees, particularly the National University of Science and Technology (NUST), Harare Institute of Technology and polytechnics among others.
Furthermore, in Zimbabwe, TVET education is done by different ministries like MHTE, STD, Ministry of Education, Sports, Arts and Culture (MOESC) and the Ministry of Youth, Indigenization and Economic Empowerment (MYIEE). This fragmented approach leads to duplication, lack of coordination and lack of jurisdiction in some areas resulting in poor performance in TVET training planning and implementation. It is also critical to note that lack of relationship between government and the private sector is a cost to institutions on curriculum development (Mazani, 2015).

Furthermore, the training system with undue emphasis on theory and certificates rather than on skills acquisition and competencies testing lowers the quality of TVET training in Zimbabwe. Notably most African countries, with the exception of South Africa and Mauritius, “about 85% of the workforce is informal and non-wage employment sector” (Woyo, 2013: 184). TVET institutions in Zimbabwe are strategically located in big commercial towns and cities to tap into the geographical and economic resources of the country. Unfortunately there are inequalities in the way leading TVET institutions are situated, run and controlled because being in Harare, Bulawayo, Gweru, Kwekwe, Masvingo and Mutare, TVET institutions are not accessed by all Zimbabweans. This is despite that TVET in Zimbabwe is generally considered a career path for the less economically and intellectually endowed, making the entry requirements generally lower compared to those of candidates entering universities. This is further worsened by diverse TVET management structures resulting in inefficiencies such as “duplication and segmentation of training and the absence of common platform for developing coherent policies and joint initiatives” (Woyo, 2013:8). In all, TVET training in Zimbabwe, like in other African countries,
is often supply driven and not designed to meet industrial needs or labour market demands (AU 2007:22-25).

Furthermore, TVET is a more expensive model of training compared to academic education for the relative cost of equipping training workshops and classrooms and teacher training demands that institutions outsource (Fullan, 1991). TVET implementation thus challenges in that its programmes should develop appropriate knowledge, skills, technologies, values and attitudes in line with new financial policies in the country, region and the world at large. TVET therefore is regarded second or even temporary to higher education and the job market, making TVET innovation remotely successful in implementation (Sharma, 1999a). This result in poor quality delivery of TVET programmes in African institutions where TVET is expensive to deliver compared to academic learning (Nyankov 1996). It is further unfortunate that TVET disregards the informal sector and the poor making it unsuited for the actual socioeconomic conditions in the country (Nyankov, 1996; Foster, 1987). Thus to be relevant to the job market and the needs of industry, TVET needs to continue to restructure its programmes and curricula to embrace skills knowledge and attitudes outcomes required by industry and commerce (Reddan & Harrison 2010).

Finally, “TVET reforms have rarely been accompanied by changes in labour laws, improved salary structures, appropriate recruitment and selection criteria, human capital development strategies, and the general social and political frameworks” (Woyo, 2013: 184). This due to negative stereotyping held by many including policymakers that TVET is lesser in importance compared to academic education. If TVET has to yield good results, it needs to consider
changes in labour laws and how they impart the process of job selection, remuneration, further education training, among other conditions of service. In other words TVET needs not be seen as ideally relevant for the job market only because in our current industrial distress and poor socioeconomic prospects, may interfere with the prospects of human resource development for fear that many TVET graduates will end up becoming disappointed due to the complex changing employment market.

2.6 Strategies that can be used to overcome the encountered obstacles

TVET training has acquired competency-based education and training (CBET) strategy in TVET programmes to promote the quality of the programmes and to ensure sustainability in the modern society due to its complexity and changes. CBET primary focuses on “lifelong learning, holistic and integrated pedagogy, whole-person development, multi-skilling, flexibility and world class workforce” (Woyo, 2013: 185). With this, CBET produces intellectually and technically competent workforce for the industry and society. Owing to CBET success in other countries, the Zimbabwean government has adopted CBET in their education and training programmes. With CBET, graduates become competent performers in terms of effectiveness, efficiency and quality. In this way CBET graduates should have the capacity to both perform in their work and technical job contexts as well as having the capacity to transfer knowledge and skills to others and in new tasks and situations (Woyo, 2013: 185). As is the case in other countries, TVET in Zimbabwe purposes at providing core skills to all college and university graduates such as business communication skills, computers and information technology, interpersonal skills and problem-solving (Woyo 2013: 185; Watson, 1994). Thus today, higher education and training institutions in Zimbabwe are in the process of introducing CBET frameworks in their education
and training programmes, and for HEXCO programmes, SDERU is in the process of developing a national qualifications framework to be integrated with the Southern Africa Development Community (SADC) regional vocational qualifications framework. It is with CBET and related approaches that TVET education is gaining currency in Zimbabwe.

There are new developments concerning HEXCO’s work through CRADU which uses NAMACO sectoral committees to determine curriculum content so that courses offered address national needs in line with the 1999 recommendations from the Nziramasanga Commission. Some of the things recommended being implemented include among others, technology, although the ministry cannot brag about being up-to-date with technological developments. It is essentially the availability and use of computers and related technologies such as cell phones to access and pass information. The developments are in line with the foundational principles of HEXCO with the aim of meeting the needs of industry. In this, a number of developments can continue to impact the work of TVET institutions and the quality of graduates from there in Zimbabwe

2.7 Summary

TVET training institutions are trying to harmonise their programmes with what is being practiced in industry. This is done in order to produce graduates who are competent and able to take any challenge or responsibility in the industry after graduation. In this way a number of players need to be encouraged to participate in curriculum review as well as implementation rather than narrowing it to ministry and polytechnics only. Experts from industry need to bring in their perspectives and those from colleges should faithfully tap into the wisdom of industry
and prevailing conditions. Also it needs to be indicated that education is a lifelong journey, where qualification or ascendancy into higher management posts does not enable complacency on the part of the graduates. In all, TVET training institutions should seek for a symbiotic relationship with industry. This thus means government ministries involved in TVET and NAMACO have to devise effective ways of dialoguing with these constituencies to enhance TVET training and to produce meaningful programmes for the industry and society.
CHAPTER THREE
RESEARCH METHODOLOGY

3.1 Introduction
This chapter examines the research methodology adopted for this study. Research methodology is described as an explanation as to why and how certain research methods are used to answer specific research questions (Clough & Nutbrown, 2005:22). This chapter describes the research design, data collection tools and the analysis process used in the study. The study also provides ethical considerations, the consent process and field work.

3.2 Research Design
Bryman (2011:31) describes a research design as a framework for the collection and analysis of data. The phenomenon under study was done under the guidance of mixed method approach in a bid to find answers to the indentified gaps. This study uses descriptive statistics wherein data was open through narrative processes as well as questionnaires. In this research design, both qualitative and quantitative data gathering methods were used. This created a better understanding of research problems encountered by tertiary students leaving polytechnics and entering into the industry. The mixed method research design was used because of the advantages it has in using both the research methods in generating new knowledge and providing a better understanding of the research problems. This combined approach also helps in overcoming deficiencies found in each of the methods if used in isolation. The approach has the
ability to match the purpose of the method to the needs of the study. This research design adopted the questionnaire as the principal research instrument for collecting quantitative data from participants as well as the interview method for collecting qualitative data.

### 3.3 Population of the Study

The study targeted Harare Polytechnic and Belvedere Technical Teacher’s College. Both institutions are located in the Harare Central Business District and were chosen for the study because they both are involved with students during training and attachment. Harare Polytechnic is the largest polytechnic college in the country and the companies they send their students for attachment are some of the most progressive companies in the country. Harare Polytechnic was chosen because it has a student population of six thousand (6000) of which two thousand (2000) are students that are eligible for going on attachment or graduation into the world of work every year. Harare Polytechnic, alongside Harare Institute of Technology and Belvedere Technical Teachers’ College were historically created to produce graduates who can fit into the modern world of industry. A similar description can be given to Belvedere Technical Teacher’s College.

### 3.4 Sample and Sampling Procedure

A sample is a percentage of the population used in a study with characteristics deemed to represent what is found in the whole population under study. For this study, a percentage was sought from the two disciplines examined namely automotive and information technology. The study could not use an actual number of students in TVET colleges in Harare or Zimbabwe but looked at the estimate of those undergoing industrial attachment at the time, which is estimated at 500 thus on average 50 student interviewees were used in the study. Unfortunately using
purposive sampling, especially for the selection of captains of industry, policy makers/administrators and lecturers, we could only reach those to whom we were referred and thus a non-probability sampling was used. For the students, stratified random sampling was employed. In both cases, the the goal of sampling participants who are strategically relevant for the study and can provide relevant information on the topic was done (Bryman, 2012:418).

In this sampling strategy, the theoretical approach allowed sampling of interviewees on the basis of emerging theoretical focus and themes (Bryman, 2012:418). For students, the study targeted final year students who were either on attachment, just finishing attachment or was preparing to graduate after having had industrial attachment experience. The study worked with 50 students. For the lecturers, the principal, deputy, head of department and head of subject were interviewed. For the industry, the company director, the foreperson, and the floor manager were interviewed. Interviews were also extended to HEXCO officials dealing with curriculum research and development unit (CRADU), quality assurance and related professions. Studies contacted captured perceptions of students, lecturers, industrialists and the ministry on the relevance of training curricula to industrial needs.

### 3.5 Data Collection Instruments

Data collection instruments are tools used in gathering information for the study. In this study, document analysis, questionnaires, observations and interviews were used as data gathering instruments. In each case, literature review formed the basis upon which the theory was established. Secondly, questionnaires were useful for gathering information from students who are beneficiaries to the system and may not actually display skills of how the system operates.
On the other hand, interviews were appropriate for captains of industry, lecturers and HEXCO administrators and the ministry since they plan and implement the programmes. Finally as a student in the field, it is prudent to make conclusions on spoken and unspoken information. It is on the basis of these instruments, seen to be appropriate for each level of data gathering and analysis, which was used in the study.

3.5.1 The Questionnaire

The questionnaire is defined as “a document containing questions deigned to solicit information appropriate for analysis” (Chikoko and Mhloyi, 1995:69). This research design was useful in providing a practical framework for the collection and analysis of data. The questionnaire with closed-ended questions was preferred for students because it is easier to answer and it does not take long to complete although the closed-ended questions limit the voice of the participants. This was distributed to 50 selected students from Harare Polytechnic. Questionnaires were given to students only.

The self-completion questionnaire with close-ended questions was distributed to students, and was written in English. The questionnaire was preferred for students because respondents were likely to give truthful responses as they did not have to identify their names and the process was faceless since the interviewer did not have a chance to deal with them individually. Davids, Theron and Maphunye (2012:183) explain that questionnaires are good to use because interviewees cannot be biased against the interviewer due to the “facelessness” of the process. Also respondents had more time to reflect on the questions before they wrote down their answers. In all, questionnaires were easier to administer because formal discussions could not be
done. With close-ended questions, specific answers that communicate similar meanings are made and are comparable to responses from respondents in interviews. While it is not expensive, the questionnaire has an obvious disadvantage of simplified questions and responses for respondents have limited choices to make in answering the questions which give them little space to explain.

The questionnaire was cost effective, timeous, and did not compromise validity and reliability. The interviewer explained how the questionnaires were to be filled to make sure every respondent comfortably answered the questions. Respondents took less than 30 minutes to answer all questions. Most of the responses were informative and useful for the study. This approach ensured a 100% response rate.

In the study, purposive sampling was used to select students eligible for attachment and world of work at the time of the research. This was the same for the lecturers and the industrialists. Purposive sampling is a technique of selecting a part of a population that represents the whole population in the study. All students selected for the study were in their final year after attachment or were about to graduate and ready to go into the world of work. All participants were above the age of majority age, 18 years, and thus the researcher could not seek for parental consent because participants are within the age of consent.

3.5.2 Interviews

Lecturers and industrialists were interviewed and their responses were written down by the interviewer. Interviews allowed the research participants to explain their points and to express their feelings and emotions regarding the subject. It was observed that some respondents had
attitudes towards the ministry or the industry or the training institutes. While interviews avoided the bias associated with questionnaires, respondents could not give limited answers to a question. Interviews revealed respondents’ logic and thinking on curriculum development, relevance to industry and involvement of the ministry in facilitating the process. The details in the interviews made information coding easier as well as clarifying the puzzles created by shortened responses of the students.

In the interviews, participants played an important role of informing and correcting research biases. Interviews had open-ended questions and were done with 6 lecturers and industrialists. These people were hoped to have a deeper understanding of the issues under discussion. The voices of the participants were clear in the study and gave detailed perspectives on the research problem. The responses by interviewees permitted this study to grasp the problems in the study in a much better way compared to the responses of the students on the questionnaires.

### 3.6 Reliability and Validity

This study uses the method of triangulation in data analysis. Triangulation is when three or more sources of data gathering instruments were used and the processes of analysis involves verification and correction or filling of missing or tying up of loose ends. Triangulation was seen to provide a reliable and valid conclusion on the study after valid and reliable methods of questionnaire and interviews were used as supported by document analysis and observation. It is in this that this study is seen to be using reliable and valid approaches.
Reliability and validity was also located in the ethical contact of the study, wherein participants voluntarily gave information after they have given verbal or written consent and could terminate at any time. All participants were thus informed that the research maintained protection of privacy and that no harm was intended on the participants and their institutions who in any way were volunteering to participate in the study (Bryman, 2012:135).

Ethical consideration is a perspective for deciding how to act and analyse problems and issues without doing harm to the community being assisted (Resnik 2011), and research participants need to be treated with respect and consideration as the participants are also informed about the study and the importance of their responses. In this, the purpose of the study is explained as well as the process. Thus all participants were informed that their information was going to be used discreetly for the purposes of the study.

### 3.7 Data Collection Procedure

The collection of data was purposed at using the most minimum amount of time to increase on data congruence, reduce travel costs and manage work and study. The researcher wanted to enlist the help of a research assistant, but it was difficult to come up with finances for the purpose. Data collection began with distribution of questionnaires, which were collected at the point of distribution while interviews were carried out waiting to collect some of the questionnaires. Questionnaires for this study had close-ended questions while the interviews were carried out with open-ended questions. After all questionnaires were filled and collected, and interviews finished, the researcher compiled the data into a report.
MHTE-STD permitted the researcher to interview students and members of staff on this study. The study was believed to be useful for the work of HEXCO and the ministry as well as polytechnics and industry. Thus the letter of permission was obtained from the Director of Quality Assurance in the ministry. The researcher further contacted the college staff by telephone as well as at the places of student attachment. After making appointments, interviews were conducted as well as filling in of questionnaires. Questionnaires were only given to students who were on attachment, or have just finished attachment or were ready to graduate after they have successfully finished industrial training (OJET). These are students who should have attained the age of majority, and were eligible to consent, avoiding the long process of seeking parental or guardian consent.

3.8 Data Presentation and Analysis Procedure

In data analysis the research is reduced to sensible data that can be coded and processed, or labelled. The data can be linked to ideas from all the tools used to gather data, and thus can be compiled and organised into themes. Coding and organising of data enabled categorisation of data along themes and thus group data with similar characteristics together. Wherever recurrence of issues was noticed, in line with research questions and objectives of the study, data was grouped to create themes required by the study. The study gleaned this data from both qualitative and quantitative aspects of the study. Quantitative data was coded using numbers to ease the process of data entering into spreadsheets and convertible into charts and graphs.
3.9 Summary

This chapter provided details on the research methodology employed in the study and how data was to be collected and the instruments for collection of data described. This included a self-administered questionnaire and open-ended questions for interviews. This enabled data gathering on the relevance of technical training to industrial needs in Zimbabwe.
CHAPTER FOUR
DATA PRESENTATION, ANALYSIS AND INTERPRETATION

4.1 Introduction

The purpose of the study is to investigate how polytechnic trainings can be put in line with the prevailing conditions in the industry as well as appraise how the MHTE-STD can make policies on harmonising college training and industrial practice. This is in line with the ministry’s vision between 2015 and 2021 which says “Guarantee Zimbabwe as a regional leader in the creative use of new and existing knowledge, skills, attitudes and resources through the local mobilization and provision of quality higher and tertiary education”. This chapter analyses, interprets and presents the research findings with the aim of impacting how HEXCO’s curriculum review on polytechnics can complement the needs of the industry. It is hoped that harmonised training curricula and the prevailing conditions in industry prepares a competent and productive industrial labour force that can benefit the industry, the ministry, the college and the society. The findings are presented in the following order of data collection, data obtained from key informants and data from responses by students.

The research study firstly records interviews of key informants (leaders) who are from middle to top management in polytechnics, industry and the ministry. Fifteen key informant interviews were carried out with the help of a research assistant, and all interviewed experts carried degrees and diplomas from colleges and universities, with a minimum of a higher national diploma to Masters Degrees levels.
The research study further distributed fifty questionnaires to students on industrial attachment. All respondents successfully completed the questionnaires while the researcher waited or was carrying out interviews with key informants at the host premises. The study controls were taken from interns who had recently graduated and were successfully employed in industry.

The chapter attempts to answer the following research questions:

- What is your view on the adequacy of Polytechnic training to the needs of industry?
- Do polytechnic graduates possess adequate skills to man the workshop alone?
- What areas do you think polytechnics should work on to be competent?
- What strategies do you suggest can fill the competency gap in polytechnics?
- Where do you locate the problem of competence deficiencies in polytechnic graduates?
- How does infrastructure at college differ with that at the workplace? How does this difference affect student acquisition of required skills?
- What levels of competence and knowledge exist in the polytechnic lecturing staff? Are they familiar with the prevailing conditions in the industry today?
- What is the MHTE.STD’s responsibility to improve skills acquisition at polytechnics?

4.2 Demographic characteristics of the Participants

Table 4.1: Gender

The gender differences in numbers of people interviewed can be represented on both the table and pie chart as below.

<table>
<thead>
<tr>
<th>Gender</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>21</td>
</tr>
<tr>
<td>Female</td>
<td>29</td>
</tr>
</tbody>
</table>
Fifty students on industrial attachment answered questionnaires, twenty-one of whom were males and twenty-nine were females. This is a 42% male to 58% female ratios respectively. The questionnaire indicates that more and more women are taking up formerly male-oriented jobs and professions, while more men are opting on seeking for greener pastures in the Diaspora. Of all the fifty respondents, 80% were Christian while the 20% refused to disclose their religious affiliation.

4.3 The importance of TVET programmes to the industry

4.3.0 Introduction

Students in the industry are exposed to modern and better machinery compared to the machines they were using at the training institution. The following sections discuss the importance of TVET programmes to the industry which is pertinent for skills impartation and competency development. In this way, the study is going to look at how the industry and the college can be
harmonized through ministerial (HEXCO) oversight to bring up the training standards to the demands of the 21st century industrial experiences.

**Table 4.2: Experiences of college students in the industry**

<table>
<thead>
<tr>
<th>Variable</th>
<th>MHTE-STD</th>
<th>College</th>
<th>Student</th>
<th>Customer</th>
<th>Industrialist</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fully</td>
<td></td>
<td>❋</td>
<td></td>
<td>❋</td>
<td></td>
<td>40%</td>
</tr>
<tr>
<td>Not at all</td>
<td></td>
<td></td>
<td>❋</td>
<td></td>
<td>❋</td>
<td>20%</td>
</tr>
<tr>
<td>Partially</td>
<td>❋</td>
<td>❋</td>
<td></td>
<td></td>
<td></td>
<td>40%</td>
</tr>
</tbody>
</table>

As indicated in the above table, students are viewed as having full training experience in the industry by 40% of the respondents while the other forty says partially. The reasons for this dissonance are because the industrialist and the college are functionaries in the process and benefit either from free labour or placements. Unfortunately the consumers are diametrically opposed to all respondents arguing that industrial attachment is neither facilitating student learning nor result in useful experience for the student. The student and the ministry on the other hand are claiming that industrial training provides partial experience because the syllabi and the expectations are not aligned. The student fails to appreciate the industrial training due to a lack of highly qualified personnel for most of them have gone into the Diaspora and thus loss through brain drain. The ministry thus is fully aware of the need for useful industrial experience and thus is working on harmonizing the college training curriculum with the industry. For instance, all respondents appreciated the importance of industrial attachment, and the importance of experiential training to acquire competencies to the future workforce. To this effect, HEXCO, the ministry’s arm in carrying out its education mandate to the nation, is in the process of aligning the college curriculum with the industry.
Observing and evaluating these responses in view of consulted literature, student skills development seem to have some challenges that incapacitate either the college or the ministry to adequately equip a student for the place of work such as the “teaching of defunct courses not useful in the students’ own professional preparation or the world of work” (Ndlovu, 2014). In this way, graduates from different institutions, including private colleges and international programmes, end up with varying levels of competencies even though they will receive the same qualification designation. This deeply removes graduates from the industry, society’s needs and their own career paths, resulting in a nation of lettered but unemployable workforce. This thinking resonates with assessment reports that the syllabi was reviewed for a long time ago in 1995, but “It is pleasing to note that Head Office is currently in the process of reviewing a number of syllabi and hopefully next year [2016] we shall be talking about implementing new syllabi in most disciplines” (Ndlovu, 2014: 26). Thus graduates are affected by an old curriculum that needs to be reviewed continuously to update the syllabi to satisfy current technological trends.

Further, statistics previous internal and external assessments of competency testing indicate that most student in the hard sciences struggled in competency performance while in the other sciences most of the students were doing very well, From the 2014 reports, Machine shop Engineering got 45.4% pass rate, Technical Graphic 50% and Construction 82.15% pass-rate (Ndlovu, 2014: 17ff). Students also got 100% pass rates in other sciences where a course had 1 to 4 students. This differs significantly to 100% pass rates in commercial subjects where more than 150 students who registered for their final exams all passed.
Some observations also indicate that students are being very practical and benefitting from their attachments in the industrial sites. The report for the 2014 examinations by the external assessor indicate that Lomsec was applauded for having a student who was very practical who went to a church to understand their sources of income and how they were doing their books. The church in turn provided a letter to acknowledge the services of the student to the work at the church. In this way students who undergo industrial attachment are seen to be candidates for future employment (Ndlovu, 2014: 26).

Further, in the 2014 internal assessor’s report, students who underwent industrial attachment were given skills that gave them ability to start their own companies especially in the wake of most companies closing down. In this way, practical skills students acquired enabled them to start their own small to medium enterprises. In this way, industrial attachment provided an opportunity for student employment creation as students acquired practical skills in the learning process that exposed them to the true rue world of competitive production, marketing and service provision. This was facilitated by students being attached to relevant departments, allowing students to develop high functional and innovational skills. An example came from students in the construction industry who were able to work with construction companies and built houses. Some were also attached in the clothing industry and were taught marking, designing and sewing of clothes, gowns, tracksuits and jerseys. In this way, industrial training was viewed as a positive development that would result in permanent employment for students which allowed them to apply theory to practice during their attachment durations. In this way, students stayed abreast with technology for example use of internet in their studies and training (Mbofana, 2014: 8).
4.4 TVET programmes' implementation in institutions of higher learning

TVET programmes are believed to be useful and adequate for the industry and the following graph summarises the thoughts.

Table 4:3: Adequacy of polytechnic training to needs of industry

<table>
<thead>
<tr>
<th>Variable</th>
<th>MHTE-STD</th>
<th>College</th>
<th>Student</th>
<th>Customer</th>
<th>Industrialist</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fully</td>
<td>✗</td>
<td>✗</td>
<td></td>
<td></td>
<td></td>
<td>40%</td>
</tr>
<tr>
<td>Not at all</td>
<td></td>
<td></td>
<td>✗</td>
<td></td>
<td></td>
<td>20%</td>
</tr>
<tr>
<td>Partially</td>
<td>✗</td>
<td></td>
<td></td>
<td>✗</td>
<td></td>
<td>40%</td>
</tr>
</tbody>
</table>

In this table, adequacy of industrial training has been applauded by the college and the industry while the ministry and the customer have different views. Students undergoing academic training in the polytechnics are still looking for job opportunities leading them to view industrial attachment as a beginning place for their employability. While the industry and the ministry feel that colleges are inadequately training students for the industry, the indication is that colleges and students see industry as a positive partner for their training. While the ministry is aware of the inadequacy, it still has a mammoth task of aligning student courses with technological developments where HEXCO syllabi needs to keep in step with the technological developments in the industry. So dealing with outdated syllabi to align it with current technical developments is a major challenge that industry and ministry feels colleges’ training needs to be sensitive towards as it brings up its training competencies to the levels of the competencies required in the industry. This information can be represented on a pie chart as indicated below.
Responses by students concerning reasons for the problems discussed in the preceding graph have been indicated as lack in a variety of training necessities. In the graph above, shows that 12.5% (45 degrees) of respondents attributed inadequacies to lack of computerized machines in the polytechnic. Current technological developments require that industrial production be controlled by a computer device while others use it for quality control and others for mass product production. In embroidery, computerized machines use CAD and CAM, and students need to be introduced to such machines during college training as well as in the industry. This has been exacerbated by inability of students to use computers and internet as seen in their own handwritten assignments. To this effect, students in all disciplines sometimes submitted handwritten assignments yet colleges have computers and printers that charge very affordable prices. The fact that some of their lecturers also submitted handwritten marking guides that were
often very difficult to read during assessment was an indicator of the competency challenge even among their lecturers.

In the internal assessment, it was indicated that computers offer a wide and wild opportunity for adults who can dream and design projects that will become future major business entities. He states “Promotion of the hidden power of creativity through conceptualization by allowing students and staff to dream wild and present their concepts in poster format through the use of computer packages” (Mbofana, 2014: 24).

Further, another 12.5% bemoaned that they were using manual machines in their training as indicated in the old syllabus resulting in their inability to go along the demands of the industry where production needed to use electric machines especially industrial machines in areas like clothing and textiles. This lack of modern trends in the syllabus for instance Investigative Accounting or Tax Planning in Commercial Courses undermined graduate employability. In this way, college training continued to be threatened by international programmes like ACCA, CIS, CIP, CIM among others. For the most part, college students suffer from this lack due to the slow transformation in the conception of their training programmes. Those who believe in the lack in the training institution also ascribe 25% (90 degrees) to lack of facilities. In any case “private colleges and TVET institutions continue to meet a lot of challenges in the quality of facilities they have for their students but improvements are continuously being implemented. Equipment, Material and Human Resources are generally inadequate in these colleges but we need to continuously work on the improvements” (College principal). Furthermore, the principal bemoaned the influx of private institutions offering short term courses like Secretarial Studies,
Cookery, Sewing, among many, as the reason for the reduced enrolment of students in most colleges for full diploma studies resulting in inadequate planning and equipment for inconsistent numbers of students every year.

Furthermore, students indicated that some of their lecturers used recycled competency tasks and old notes in the lectures. As was discovered in the external assessment and indicated in both internal and external assessors’ reports (2014), some lecturers used lower order tasks which focused on student recall of concepts rather than application of knowledge for productive work. In this way students were given multiple choice questions or yes and no or true and false questions. In this way, lecturers exhibited a high lack in task (item) development, and thus requiring that “institutions should staff develop their members to ensure that professional standards are maintained” (HEXCO director). In this way “competency tasks need to be moderated by expert external examiners before administration” (HEXCO director).

Notwithstanding that lecturers are not working in the industry, their competencies and skills also need to be updated by taking sabbatical tours and attachments in modern industries as well as encouragement to have publication done by lecturers who wish to continue in the tertiary education system. In this way lecturers’ lack of continuous skills development have also been a major impediment, not only to the development of the curriculum and syllabi, but to the development of competency testing tasks since they are the key generators of the exam questions.

Finally it needs to be understood that problems with competency acquisition has been cited by 25% of students who outline that there are poor monitoring methods in the studies. During
industrial training, most students are left to do everything on their own, especially in the shrinking industries and commercial departments. Some students go for weeks without supervision, and due to limited industrial attachment opportunities, stay in very unproductive placements. Some students find attachment towards the end of the attachment period due to the shrinkage of industry. As a result they will not exercise their full potential. Some are even attached to departments not relevant to the area of their study. Some companies have the latest machines but due to reduced production, some of the best machines lie idle and students do not appreciate the use of such machines. In this way most students go to their places of attachment and back to college without having benefited much from the time out into the industry. This also goes back to the institutions needing them to follow up on their attachees, which may be struggling to acquire resources to follow up on their own students. For this reason the internal assessor suggested that “Institutions need to partner industry in order to get funding assistance, consumables, equipment and student placements during training” (Mbofana, 2014: 24). Also HEXCO needs to ensure that “TVET has proper and effective monitoring tools to ensure that TVET achieves its objectives of producing graduates with the requisite competencies” (Mbofana, 2014: 24).

In the following graph, of the 50 interviewed students, almost each student had been to an industrial site for placement. For this reason, students have a closer sense of needs in their colleges in relationship to their experiences in the industry.

Graph 4:3: Areas Polytechnics need to work on to improve their service delivery
As shown in the above graph, students indicated that meaningful TVET partnership with industry can yield better results to students and institutions if they partner with industry in the development, implementation, review and funding of the training programmes. This initiative can help in achieving the ministry’s vision in its 2015 – 2021 strategic plan of guaranteeing Zimbabwe to play a leading role in the region on use of available knowledge, skills, attitudes and resources in providing quality education at higher and tertiary levels.

Further, in response to resource mobilization, more women compared to men supported the idea that HEXCO and the ministry together with colleges and the industry need to engage in resource mobilization to support student training. Thus Mbofana, (2014) says “Colleges need to engage in resource mobilization in order to fully facilitate effective TVET implementation”. This is in line with the ministry’s 2015-2021 strategic plan, of local resource mobilization. This has not
been achieved in the stated period and colleges are still decrying lack of resources, machinery and facilities to adequately train competent graduates.

Colleges further need to improve on monitoring tools for students before, during and after industrial attachment. Seems more and more women are becoming concerned about the tools being used in monitoring student attachment compared to their male counterparts. This agrees with the external assessment that “TVET needs proper and effective monitoring tools to ensure that TVET achieves its objectives of producing graduates with the requisite competencies” (Mbofana, 2014).

Students further indicated the need for short courses in polytechnics because the industry is manned by inadequately trained workers who claim to have trained in one of the small mushrooming institutions in town. Surprising more males indicated the need for short term courses, probably because most of them fend for their own school fees. “HEXCO needs to seriously reconsider introducing short-term courses in the relevant areas in order to counter private colleges that have introduced short-term practical courses” (Ndlovu, 2014: 24).

Students further indicated that HEXCO examinations are challenging without specifying whether the HEXCO brand was marketable. In the reports however it was observed that “HEXCO programmes need to uphold stringent measures in all its exam processes” in order to provide “HEXCO programmes with a brand maintenance space” (Ndlovu, 2014: 24). To maintain its space thus, HEXCO programmes need to be continuously reviewed and realigned with prevailing needs because courses not ordinarily part of the profession under study bring a new
dimension that makes students experts in other fields for example forensic accounting to lawyers will assist in bringing meaningful forensic skills to the field of law and investigation in the criminal law department. Also it needs to be noted that most industries are closing down giving opportunity to students to explore the informal sector market for the provision of opportunities of student attachment and job creation in their entrepreneurial skills development. Students also indicated the need to align the curriculum with further studies in the fields in which students at polytechnics are currently undertaking in their fields of choice. Thus curriculum review and brand maintenance go hand-in-glove with each other and are key in the training of students.

Finally, fewer females accepted the need for maintaining facilities to uphold standards as compared to their male counterparts. Facilities development goes hand in glove with staff development, and thus “Institutions need to staff-develop their members to ensure that professional standards are maintained” (Ndlovu, 2014: 24). While students observed this need, they failed to recommend to who this development was to be done since it has to involve the college, ministry and sometimes the industry. The report however clearly indicated that facilities can be developed if the ministry takes the initiative. It says,

> There is need for Head Office (national exams and CRD units) to check on facilities available in all colleges registered with HEXCO 3 times a year and not wait to check them during external assessment. Time and resources need to be availed to visit all centres in one academic assessment exercise. [Also] “HEXCO needs to encourage colleges to improve the quality of their facilities (Ndlovu, 2014: 24).

In all, the responses indicate that polytechnics need to work hard in improving facilities if training of students is going to improve in their output.
4.5 Obstacles hindering implementation of TVET in institutions of higher learning

The chapter has looked at reasons why students fail to acquire adequate competencies in their studies and has looked at areas in which colleges need to improve. In this section we are going to discuss issues causing competency disaggregation between the industry and the college using the following two questions:

- Is there any policy and competency gap between Polytechnics and industry on the skills acquisition and exhibition by college graduates?
- Are college graduates able to adjust to the demands of the industry and how are they going to adequately prepare students for the workplace?

In this section, we are going to look at students’ experiences in both the college and the industry. In this way, we notice policy gaps by ministry dealing with students in tertiary institutions and the laws governing the training of the industrial workforce. This also touches on specific issues of government budgets and policy focus intent on dealing with student specific issues. Out of the five groups interviewed, 3 indicated that there was a gap in the policy framework while two indicated that colleges have their own structures to deal with policy gaps in the implementation of training.

Table 4.4: Policy gaps on tertiary education and acquisition of competencies

<table>
<thead>
<tr>
<th>Variable</th>
<th>MHTE-STD</th>
<th>Colleges</th>
<th>Student</th>
<th>Assessor</th>
<th>Industrialist</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td></td>
<td></td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>60%</td>
</tr>
<tr>
<td>No</td>
<td>✔️</td>
<td>✔️</td>
<td></td>
<td></td>
<td></td>
<td>40%</td>
</tr>
</tbody>
</table>

This table addresses the question of policy and structure in tertiary training, at the levels of ministry and polytechnics. In this way, two colleges training students for the industry, Harare Poly and Belvedere Technical Teachers’ College were involved in key informant interviews.
These colleges are directly run by ministry, and that have HEXO policies and structures to deal with tertiary training in these institutions. Students and assessors interviewed are part and parcel of the training consortia under review. At the same time, industry is not governed by state laws and similarly is part of the college customer. More specifically the industry argues that government is the cause of the problem because it takes time to review policies as well as curriculum and syllabi dealing with fast changing technological developments in the world today. In this way, they feel that government should address its problems in order to transform TVET training. In this way, transformed syllabi which are applicable to both the college and the industry will go a long way in addressing the current mismatch in industrial and polytechnic training expertise.

With this, the discussion goes further to explore the impact of college infrastructure and resources in training graduates that have competent skills in the industry.

Table 4.5: Infrastructure and resources in training the industrial workforce

<table>
<thead>
<tr>
<th>Variable</th>
<th>MHTE-STD</th>
<th>College</th>
<th>Student</th>
<th>Assessor</th>
<th>Industrialist</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>60%</td>
</tr>
<tr>
<td>No</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td></td>
<td></td>
<td>40%</td>
</tr>
</tbody>
</table>

From this table, administrators of colleges indicated that efforts and even funds for developing college facilities were being mobilised although the economic environment is currently very difficult. The plan is supported by 60% of the respondents while 40% refused indicating that improved infrastructure and resources for training the industrial labour-force is not affordable for government. Government is responsible for developing human capital for the national economy and thus has to put in place mechanisms to resource, facilitate, assess, monitor, promote or even
provide the training process. In any way, infrastructure development and resource mobilisation was supported by all as government’s responsibility in public training institutions.

4.7 Strategies that can be used to overcome the encountered obstacles
TVET training in Zimbabwe can use some of the following strategies to overcome obstacles such as lack of equipment by increasing funding strategies, improved policy by involving all stakeholders and ministry’s commitment to its work so that polytechnics and industry can fully participate in TVET training programmes. The following graph explains some of the possible strategies.

Graph 4.4: The place of MHTE-STD in skills development

Experts interviewed for the study indicated that ministry’s contribution to human capital skills development was being hampered by lack of funds. Funds however were not cited as representative of problems in the training institutions alone. Industry also decried of the lack of funds in their activities. The business community is currently on deflation, which interferes with
its willingness to support students or training institutions to a greater extent. Rather, industry has its own needs which do not concur with the needs of the training institutions. While training institutions may desire to partner with industry, there is need to read into the macroeconomic environment in terms of the country’s economic performance to tap into the promising sectors. In this way, the industry may fail to be the beacon of tertiary training because of financial and material stress.

It needs to be applauded that ministry has a very good policy on human capital skills development which observes that resources should be mobilized locally and that higher and tertiary education must be of competitive quality. The policy observes that higher and tertiary education must be globally competitive and that it must provide a sustainable source of the national industrial workforce. However the policy seems to be centralized in the hands of the ministry and government and thus fails to involve or appreciate the input of other stakeholders in the process of training and accrediting diplomas and degrees in the said fields.

The key informants also decried of lack of government commitment to its blue prints, as one of reasons why student training is failing. While lack of funds and other resources was mentioned, it seems ministry has not been able to achieve some of the benchmarks it set for itself. Ministry has been driven by different persona at different times, making the implementation of its plans insufficient for the most part. For instance computersation has taken very long to achieve among others.
Further the study continues to ask about competencies of students and how HEXCO and the industry can continue to improve them. The levels of competencies displayed by college graduates have been reminiscent of the levels of knowledge and competencies in the polytechnic lecturing staff. Most of the lecturers are unfamiliar with the prevailing conditions in the industry. This has made it difficult for colleges to faithfully produce graduates who can perform at any level in the industry. The following diagram answers the question of the college to produce an all round graduate.

### Table 4.6: Difficulties of producing an all round graduate

<table>
<thead>
<tr>
<th>Variable/ reason</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>MHTE-STD</td>
</tr>
<tr>
<td>Lack of resources and monitoring tools</td>
<td></td>
</tr>
<tr>
<td>Skills in current lecturing staff</td>
<td></td>
</tr>
<tr>
<td>The Industry and the economy</td>
<td></td>
</tr>
<tr>
<td>Private Colleges and international programmes</td>
<td></td>
</tr>
<tr>
<td>Outdated syllabi and machinery</td>
<td></td>
</tr>
</tbody>
</table>

The above frequency table is for the responses of expert interviews for this study, on their individual positions on the difficulties colleges are facing in producing an all rounder graduate. Almost all the respondents indicated that lack of resources and monitoring tools made it difficult for colleges to produce an all rounder graduate except the customer. Similarly on lecturers’ skills only the college administration did not indicate its lack and need. A question was asked, “What levels of competence and knowledge exist in the polytechnic lecturing staff? Are they
familiar with the prevailing conditions in the industry today?” and most of the respondents indicated that most lecturers do not even know how to operate a computer.

Further, on problems in the economy and industry, two did not regard them as factors namely the assessor and the industry, while on the effect of private colleges, only the ministry and college cited them as issues for tertiary training success.

In all, outdated syllabi and need for review was cited by all respondents as key to training. In some cases a syllabus becomes outdated before its implementation.

4.8 Summary

This chapter has presented data treated in the study. The chapter has investigated challenges TVET training faces with the demands in the industry. Data presentation, analysis and interpretation in this chapter were done using graphs, tables and narratives. The findings were presented in the following order of data collection, data obtained from responses by students and data from key informants, irrespectively. Questionnaires given to fifty students who had completed industrial attachment were supported by expert interviews that deepened the discussion into finer details that helped to fill gaps left by questionnaires. The study presented and analysed data from interviews with six key experts from the colleges and ministry, the industry and the student body.
CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter presents a summary of the research findings in this study, the conclusions drawn from these findings and the recommendations made.

5.2 Summary of the Project

The major findings of the study are as follows:

- Student training at polytechnics does not reach the level and standard of the productive industry making college graduates inadequate for the needs of industry.
- Lack of adequate competencies and skills in college graduates are situated in many things such as lack of computerized machines, outdated machines and syllabi, lack of facilities, lack of staff development and poor monitoring tools among others.
- The study further examined areas in which polytechnics can improve their service delivery in such as partnering with industry in resource mobilization and facilities development, improve monitoring tools through curriculum review, introduce short-term courses and maintain the product brand.
- Reduce competency disaggregation between college and industry by dealing with policy gaps, competency acquisition strategies, infrastructure development and resource mobilization.
The ministry should remain central in human capital skills development but consider involving all stakeholders at every stage of preparing and developing an all rounder college graduate for the Zimbabwean industrial labour-force.

5.3 Conclusion

It was concluded that the Zimbabwean polytechnic education through the HEXCO programmes is still the best conventional training for the industry. However lack of necessary requirements such as modernized machinery, competent staff and other resources have remained a predicament to the full achievement of the training process. The place of industry in Zimbabwe is a competitive advantage colleges have if partnering can allow industry to suggest new developments in the global market. In this way, polytechnics and the ministry in particular have to deal with issues of staffing and related competency development, resource mobilisation and improved training curricula.

5.4 Recommendations

In the light of the above conclusions, it is recommended that the ministry should require colleges to synergise with industries in their student training.

Educate college staff on the need for personal self improvement as well as attending staff development programmes.

TVET should ensure that monitoring tools are developed and are adequately followed.

Make sure that the syllabi should be reviewed regularly.
HEXCO should ensure colleges are providing adequate skills to students and that industrial training is done to improve the competencies and skills of students.

HEXCO should ensure that stiffer policies on competency testing and skills development are followed if the graduates are to be competent.
Bibliography


Clough and Nutbrown (2005), A Student’s Guide to Methodology, Sage Publications Ltd.

Creswell J. W (2014), A Concise Introduction to Mixed Methods Research, Sage Publications USA

Davids, Theron and Maphunye (2012), Participatory Development in South Africa: A


Mazani, W (2015), Strategies For Improving Polytechnic Curriculum Effectiveness: A Case For Zimbabwe, Harare Polytechnic: Department of Education and Staff development


Mittal, LN., Anand, YK., Singla, PK., Gupta, AB., Gupta, SK. & Thukral, TN. (1999). 
Curriculum Development for Polytechnics. Panchkula: Monica Printers Pvt. Ltd.
www.mhte.co.zw (accessed 07-09-15)
Appendix A: Participant questionnaire

Rusike Patrick Chisango is a Masters student at Bindura University of Science education doing curriculum studies. He is undertaking a project entitled the relevance of Higher Education Examination Council programmes to the industry. The objective is to recommend to the relevant authorities so that the programmes are tailor-made to suit the prevailing situation in the industry.

He has come up with a questionnaire for graduates from polytechnics and those students on, On The Job Education Training (OTJT) programme, where he tries to find out if the graduates and students will express how well they fit into the industry.

The information you will give will be treated in confidence. You should feel free to give the prevailing information. Do not write your name anywhere in the questionnaire. Your honest completion of this instrument will be greatly appreciated.

**Instructions**

Please answer all questions by ticking an appropriate box or filling in the blank spaces provided.

1. Sex □ Male □ Female
2. Age □ 18 years – 25 years □ 26 years – 30 years □
Above 30 years  

3. In which discipline did you train/ are you training?

..................................................................................................................................................

4. Is the training offered by the Polytechnic adequate to fit you in industry?

..................................................................................................................................................
..................................................................................................................................................

5. If yes on number 4, then are you competent enough to man the workshop in the absence of the supervisor?

..................................................................................................................................................
..................................................................................................................................................

6. If no to number 3 above, then what areas do you think the polytechnic should have stressed for you to be competent enough?

..................................................................................................................................................
..................................................................................................................................................

7. Do you feel an in-service course arranged by your workplace together with the polytechnic would be good enough to fill the competency gap?

..................................................................................................................................................

8. In your opinion what do you think caused the competence deficiencies?

..................................................................................................................................................
..................................................................................................................................................

9. (a.) How does infrastructure at college differ with that at the workplace?

..................................................................................................................................................

..................................................................................................................................................
(b.) Does this have a bearing at the acquisition of the required skills?

………………………………………………………………………………………………………………………………………………

10. How about the lecturing staff. Are they familiar with the prevailing conditions in industry?

………………………………………………………………………………………………………………………………………………

………………………………………………………………………………………………………………………………………………

11. What improvements do you think must be enforced by the Ministry of Higher and Tertiary Education, Science and Technology so as to improve skills acquisition?

………………

………………………………………………………………………………………………………………………………………………

………………………………………………………………………………………………………………………………………………

Yours faithfully

PC Rusike
Appendix B: Interview guide for college lecturers and Industry supervisors

1. In which area are you specialized in teaching/ training/ working?
2. What is your view on the adequacy of Polytechnic training to the needs of industry?
3. Do polytechnic graduates possess adequate skills to man the workshop alone?
4. What areas do you think polytechnics should work on to be competent?
5. What strategies do you suggest can fill the competency gap in polytechnics?
6. Where do you locate the problem of competence deficiencies in polytechnic graduates?
7. How does infrastructure at college differ with that at the workplace? How does it affect student acquisition of required skills?
8. What levels of competence and knowledge exist in the polytechnic lecturing staff? Are they familiar with the prevailing conditions in the industry today?
9. What is the MHTEST’s responsibility to improve skills acquisition at polytechnics?