MIDLANDS STATE UNIVERSITY

ADEQUACY OF TECHNICAL AND VOCATIONAL EDUCATION AND TRAINING AT NATIONAL DIPLOMA LEVEL, FOR EMPLOYMENT IN THE CLOTHING INDUSTRY: THE CASE OF A TECHNICAL TEACHERS' COLLEGE IN HARARE.

BY

MUTEMA KATRAH

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A Dissertation Presented in partial Fulfilment of Requirements of the Degree of Master of Education in Fashion and Textiles

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TITLE

ADEQUACY OF TECHNICAL AND VOCATIONAL EDUCATION AND TRAINING AT NATIONAL DIPLOMA LEVEL, FOR EMPLOYMENT IN THE CLOTHING INDUSTRY: THE CASE OF A TECHNICAL TEACHERS' COLLEGE IN HARARE.

SUPERVISOR STATEMENT

The dissertation report, Adequacy of Technical and Vocational Education and Training at National Diploma level, for employment in the clothing industry: The case study of a Technical Teachers' College in Harare.

By

MutemaKatrah

(Signed)---------- Date----------

Nyoni Erick

Supervisor

ACCEPTANCE

The dissertation, **ADEQUACYOF TECHNICAL AND VOCATIONAL EDUCATION AND TRAINING AT NATIONAL DIPLOMA LEVEL, FOR EMPLOYMENT IN THE CLOTHING INDUSTRY: THE CASE OF A TECHNICAL TEACHERS' COLLEGE)**, was prepared under the direction of the candidate's dissertation Supervisor. It is accepted by the department in partial fulfilment of the requirements for the degree, Master of Education in the Faculty of Education, Midlands State University. The dissertation supervisor and the students' Department representatives of the faculty, certify that this dissertation has met all the standards of scholarship as determined by the faculty of Education concurs

---

Nyoni Erick

Dissertation Supervisor

Dr Chauraya M. PhD

Chair person, Department of Applied Education

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The author of this dissertation is:

MUTEMA KATRAH

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CHITUNGWIZA

The supervisor of this dissertation is:

Nyoni Erick

Department of applied Education

Midlands State University

Private Bag 9055

Gweru

Zimbabwe

AUTHOR'S STATEMENT

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DEDICATION

This research is dedicated to my husband Moriseni, my children, Tapiwanashe, Victoria and Millicent for giving me maximum support.

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ABSTRACT

The study sought to investigate the adequacy of Technical and Vocational Education and Training at National Diploma level, for employment in the clothing industry: The case of a Technical Teachers' College in Harare. The quality and quantity of equipment found in training institutions triggered the researcher's interest to carry out this research.A case study design was used to come up with answers to the research question. The population for the study was made up of thirty national diploma students who were pursuing Industrial Clothing Design and Construction course at a Technical Teachers' College in Harare and who have also done On Job Training, seven Lectures from the clothing and Textiles section who taught modules from the Industrial Clothing Design and Construction course and ten production managers from clothing industries within Harare where the students were attached. Stratified and simple random sampling was used to select a sample from both students and production managers, while purposive sampling was used to select a sample from lecturers. The sample was made up of twelve students, six production managers and two lecturers to make a total of twenty participants. Questionnaires, interviews and observations were used to collect data from participants.The findings revealed that the training provided to national diploma students pursuing the Industrial Clothing Design and Construction course does not adequately equip them with appropriate skills to meet the needs of the clothing industry. It was also revealed that there is a wide gap between the type of equipment found in clothing industries and in the training institution which made it difficult for students to meet the needs of the clothing industry.The study recommends that Technical and Vocational Training Institutions seek donor funding in order to improve the quality and quantity of equipment in their workshops, heads of Technical and Vocational Training institutions to enrol students who can be accommodated by the available equipment, and that lecturers to go on Industrial attachment during vacation so that they learn how to use all the different industrial sewing machines so that they will improve their instructional methods for practical lessons.

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ACRONYMS

Acronym	Meaning
TVET	Technical and Vocational Education and Training

CHAPTER ONE

THE PROBLEM AND ITS CONTEXT

1.0 Introduction

This chapter introduces the research by looking at the background information relating to the problem under study. The statement of the problem, research question, significance of the study, delimitations of the study, limitations of the study and definition of terms are provided.

1.1Back ground of the study

Technical and Vocational Education is provided at various levels in Zimbabwe. That is, at Secondary School level, post – secondary level as well as tertiary level. This study focused on the adequacy of Technical and Vocational Education and Training at tertiary level (National diploma level) for employment in the Clothing Industry. Udoutin (2001), highlights that, the ultimate aim of Technical and Vocational Education and Training is the acquisition of knowledge, attitudes and marketable skills for sustainable development.

Industrial Clothing Design and Construction is one of the courses which is offered under Technical and Vocational Education in most tertiary institutions in Zimbabwe. The major aim of this course is to produce industrial artisans for the clothing industry with the knowledge, skills and attitudes required in the Clothing Industry, Regulation and Syllabuses for National Diploma in Industrial Clothing Design and Construction (2013). Johnson and Adams (2001) are in support of this when they highlight that industries are in demand for high skilled labour in view of sophisticated technology. This also is in line with UNESCO (2006), which points out that the function of Technical colleges is to produce manpower for all sectors through institutionalisation.

The entry requirement to the National diploma level of this course is a National Certificate in Industrial Clothing Design and Construction. The National Certificate component is done in one year. Students are expected to do nine subjects, namely Industrial sewing Techniques, Clothing Factory Management and Operations, Textile Technology, Industrial Pattern Techniques, Introduction to Computers, Project, Basic Communication, Entrepreneurship and National and Strategic Planning (Regulations and Syllabuses for National Certificate in Industrial Clothing Design and Construction, 2013). Students are expected to pass all the subjects to be able to proceed to National Diploma level.

According to the Regulations and syllabuses for the National Certificate in Industrial Clothing Design and Construction (2013), some of the objectives of the course are to: operate and maintain industrial sewing machines, demonstrate different sewing techniques on clothes to meet design specifications and apply basic computer skills in industrial clothing designing.

The National Diploma in industrial Clothing Design and Construction is done in three years. That is one year in college and students will be taught and assessed in six subjects, namely History of Fashion, Garment construction, Advanced Pattern Making and Grading, Advanced Textile Technology, Research Methods and Principles of Marketing (Regulations and Syllabuses for National Diploma in Industrial Clothing Design and Construction, 2013). Students will then go On Job Training in the second year and finally come back to college to do their final year. In their final year, students are taught and assessed in seven subjects which are Garment Design, Project, Quality Control and Assurance, Computer Application, Human Resources Management, Principles of Purchasing and Supply Management as well as Clothing Factory Management and Operations, Regulations and Syllabuses for Industrial Clothing Design and Construction (2013).

The Higher Education Examination Courses Regulations (2013) stipulates infrastructure, tools and equipment as well as human resources required in place for effective implementation of the course. The extent to which students acquire skills is highly dependent on these factors. World Bank (2000), supports this by pointing out that high quality skills require appropriate training equipment and tools, practise by learners and qualified lecturers. The report on the Technical and Vocational Education and Training Policy Review Framework (2005) highlights that the lack of a refurbishment and replacement of policy has seen some infrastructure and equipment going down in Technical Tertiary institutions without renewal leading to underutilisation of institutions' facilities. On the other hand, introduction of new technology poses great challenges towards effective implementation of the course. Such a scenario has triggered the researcher's interest to investigate the adequacy of Technical and Vocational Education and Training at National Diploma level for employment in the Clothing Industry.

1.2 Statement of the problem

Technical and Vocational Education and Training programmes are important for the economic the competitiveness of a country. The Directorate for Education, Education and Training Policy Division (2010), highlights that countries require a well skilled labour force to be able to compete on the quality of goods and services. A well skilled labour force is achieved through availability of adequate facilities, material resources and the right calibre of human resources. Access to resources always differs with institutions. Such a situation poses the following question. To what extent do the resources available in Technical and Vocational Institutions allow for adequate skills development to suit the requirements of the clothing industry?

1.3 Main research question

The main guiding question for this research is:

To what extent do Technical and Vocational Education and Training Institutions adequately develop students' skills competences at National Diploma level to suit the needs of the Clothing Industry?

1.4 Sub - questions

The following secondary questions will help in guiding the research:

i)To what extent does the machinery available in Technical and Vocational Institutions allow for skills development in students to match the expectations of the Clothing Industry?

ii) What challenges do lectures encounter in effectively implementing the Industrial Clothing Design and Construction Course?

iii) What challenges are students pursuing the Industrial Clothing Design and Construction course facing in developing practical skills which are relevant to the clothing industry?

iv)To what extent does the clothing industry face challenges in working with students On Job Training?

1.5 Significance of study

This research will be of great importance to the following:

Self

This study will help the researcher to improve her research skills and will also boost her self-esteem on successful completion of the study. On the other hand, carrying out this research study will also boost the researcher's confidence in supervising students' Curriculum Depth Studies since she is a lecturer at a Technical Teachers' College. Through carrying out this

study, the researcher will come to know of any gaps, which exist between the Industrial Clothing Design and Construction Courses at National Diploma level and the Clothing Industry.

Practise

The study will help Technical and Vocational Institutions with solutions to match their training systems with Clothing Industry standards.

Academia

Students pursuing research topics relating to Technical and Vocational Education and Training can use this research study as a form of reference.

1.6 Assumptions

The assumption is that Technical and Vocational Education and Training institutions can develop practical skills in students.

1.7 Delimitation

This study was limited to one factor, adequacy of Technical and Vocational Education and Training at National Diploma level for employment in the Clothing Industry. The study was also limited to Technical Teachers' College students, doing the Industrial Clothing Design and Construction Course at National Diploma Level and all lecturers who taught various subjects in this course. It was also limited to Clothing Industries in Harare which offered students from the Technical institution places for On Job Training.

1.8 Limitations

The researcher had a number of limitations during the research process. Firstly, the researcher was fully employed hence time to visit all Clothing Industries in Harare which providesstudents from the Technical Teachers' College with places for On Job Training was

a challenge. To overcome this challenge, the researcher identified those Clothing Industries which operate during weekends and then visited them during such times.

Secondly, since the researcher used interviews as one of her data collection tools, interview bias could have been a limitation which impacted negatively on the research results, that is the researcher might only have focused attention to what she wanted to hear from the interviewee and ignored other important information relevant to the study which the interviewee provided hence undermining the validity of the gathered data. This is supported by Cohen et al (2011), who highlight that, one of the disadvantages of interviews is that it is open to interview bias. To overcome this challenge, the researcher recorded as much of the information provided by the interviewee as possible.

The use of observation as a data collection tool also has its own limitations. DeWalt and DeWalt (2001), state that the major limitation of observations is that while they help us to describe behaviour, we are usually not able to infer why the behaviour has occurred. Although the researcher had explained the importance of the study to the respondents and how the research findings will benefit both the Clothing Industry and all those who do the Industrial Clothing Design and Construction Course at National Diploma level, some of the respondents failed to provide answers to some of the questions in the questionnaire, which impacted negatively on the results of the research.

1.9 Definition of terms

The following are key terms which were constantly used in this research study.

Vocational Education

It is education that provides skills and competencies necessary for gainful employment upon completion of program, Burnett et al (1984), cited in the International Educational Journal (2006).

Technical and Vocational Education and Training

According to the Free Encyclopedia (2015), Technical and Vocational Education and Training is a process of developing skills in people to prepare them for specific trades, crafts and careers at various levels from a trade, a craft, technician or high profession practitioners.

1.10 Summary

The chapter has provided the necessary background to the area of study. The study sought to determine the adequacy of the Industrial Clothing Design and Construction course at National Diploma level at the Technical Teachers' College for employment in the Clothing Industry. Time, bias in some of the research instruments used as well as failure by some of the respondents to provide responses to some of the questionnaire questions were the limitations encountered when carrying out the study. The definitions of key terms were provided to give an operation framework of the study.The next chapter will focus on reviewing literature relating to the adequacy of Technical and Vocational Education and Training for employment in the clothing industry.

CHAPTER TWO

REVIEW OF RELATED LITERATURE

2.0 Introduction

The literature relating to the adequacy of Technical and Vocational Education and Training, for employment in the Clothing Industry was reviewed. Hart (2003), points out that literature review is part of the problem identification process enabling the researcher to develop with the research problem. The literature reviewed focused on the following sub headings: relevance of the Industrial Clothing Design and Construction curriculum to the Clothing Industry, impact of equipment in Technical and Vocational Training Institutions on skills acquisition, challenges in practical skills acquisition and challenges in implementing Technical and Vocational Education and Training programmes

2.1 Relevance of the Industrial Clothing Design and Construction curriculum to the clothing industry

Relevance is very important to all curriculum planners, implementers, students, society and the clothing industry. Peresu and Nhundu (1999), emphasize that curriculum should take into account the nature of the society in which it is trying to fit the individual. According to the Regulations and Syllabus for National Diploma in Industrial Clothing Design and Construction (2015), nine clothing industries have been consulted in coming up with the content of the syllabus to ensure that the content of the syllabus is relevant to the needs of both the clothing industry and the trainees. These include Concord Clothing (PVT) Ltd, Bernsten, Bravette, Michelle Fashions, CohCoh Taig, PridelInterprise, Paruche House of Fashions and LaineMennas clothing company. This indicates that the clothing industry has been taken into account to furnish the curriculum designers with their specific expectations, since they are the ones who will absorb the learners at the end of the course. This is also in

line with UNESCO (1999), which states that curriculum needs to be relevant to the interested groups.

2.2Impact of equipment in Technical and Vocational Training Institutions on practical skills acquisition

According to Manfred and Jennifer (2004), for Technical and Vocational Education to be effective and to meet the economic order, learning must take place in an environment where all the necessary tools, machines, equipment and facilities are in place and resemble the place for real work environment. In Technical and Vocational training institutions, the availability of appropriate machines and equipment will help in equipping the graduates with the prerequisite skills and competences required by the Clothing Industry.

Peresu and Nhundu (1999) are of the view that the nature of the institution and its material resources will determine how curriculum is implemented. For effective implementation of the curriculum, Technical and Vocational Education and Training institutions require adequate and relevant material and infrastructure. The report on Technical and Vocational Education and Training Policy review framework (2005) highlights that donors have complemented the government efforts in financing Technical and Vocational Education and Training institution through building institutions and equipping them. The report further high lights that, the lack of refurbishment and placement policy has seen some infrastructure and equipment going down without renewal leading to underutilisation of institutional facilities. This has affected the quality of products from Technical and Vocational Education and Training institutions.

A research by Kerre (2001) reveals that there is a rampant lack of training materials, equipment, tools and workshops in most Technical and Vocational Training Institutions to produce a competent graduate for the Industry. This means that if equipment and machines for training the national diploma students in the Industrial Clothing Design and Construction

Course are not adequate, students will not be able to acquire all the necessary skills to competently work in the clothing industry after completing the course. Mupinga et al (2005) also support this when they point out that, most Technical and Vocational Education and Training is being done using obsolete training equipment which does not help in producing graduates with the required competences for the industry.

According to the Directorate for Education, Education and Training policy division (2010) strong Technical and Vocational Education and Training programmes currently fail to meet the labour market needs because they do not adequately prepare young people for jobs due to inadequate training equipment. The production system used in clothing industries uses a variety of machines where every individual is expected to operate his or her own machine. This is in line with Cooklin (1997), who highlighted that, operations in clothing industries are performed by a variety of machines, each with a specific operation on a garment. This means that, students should be adequately equipped with skills and competences for using different machines for them to be efficient when they join the clothing industry.

2.3 Practical skills acquisition in Technical and Vocational Education and Training

According to Kanuyuma (2008), the objective of all Technical and Vocational Education and Training programmes is the acquisition of relevant knowledge, practical skills and attitudes for gainful employment. However, Nyankov (1996) states that poor quality of delivery of Technical and Vocational Education and Training programmes hinders skills acquisition in students. This is also supported by UNESCO (2004) by pointing out that, lack of resources have led to the reduction in the quality of training provided by Technical and Vocational Training institutions. Such a reduction hinders the critical objective of providing quality skills and competences in preparing the National diploma students for the world of work in the clothing industry

The Policy Review Framework (2005) highlights that a good Technical and Vocational Education and Training Policy Review would not be complete without looking at infrastructure development, equipment, training consumables, and maintenance of facilities. The Policy Framework reveals that in Zimbabwe, most Technical and Vocational Education and Training institutions were equipped through donor funding and the facilities have been left to deteriorate to the extent that it has started to affect the quality of products from the Technical and Vocational Training institutions.

Udoutin (2001), asserts that tools, equipment and technical facilities utilised in technical workshops constitutes the learning environment for skills acquisition. He also highlights that the utilization of instructional materials and other facilities as well as teacher quality play an important role in the acquisition of employable skills by students. To impart employable skills to National Diploma students who are pursuing the Industrial Clothing Design and Construction course, appropriate tools, machines and facilities are required and these need to be effectively utilised to facilitate acquisition of practical skills , which relate to the needs of the clothing industry. Udoutin (2001) also emphasized the need for competent or experienced teachers to train students to acquire practical skills. The World Bank (2000), supports the above assertion by highlighting that, high quality skills require appropriate training equipment and tools, practise by learners and qualified teachers.

Today's industries possess sophisticated machines as a result of the introduction of new technology. Johnson and Adams (2004) propose that, for students to cope with this change in technology, they must be trained and developed to acquire the new and improved technological skills and knowledge to meet the demands of the modern industry. In the clothing industry, computers are now being used for pattern making and grading yet in training institutions, this is still being done manually. It therefore means that training institutions should focus on developing, in students practical skills which are in line with the

use of the new technology so that they are competently equipped with skills which match the job market. This will only be possible if training institutions equip their training workshops with modern equipment which will also enhance the production of right calibre of graduates for the modern industry.

Ogwo and Oranu (2006), recommend that teachers in Technical and Vocational Education and Training should use field activity based instructional methods for instructional delivery as well as project method to enhance students' skills acquisition and sustenance of knowledge, skills and self - concept formulation as well as interest. In implementing the Industrial Clothing Design and Construction curriculum, most lecturers in Technical and Vocational Education and Training institutions make use of the project method especially in Pattern making and Garment Construction to enhance practical skill development in students. Nsa (2003), is in support of the use of project method when he points out that it is the best method which promotes originality in students.

The acquisition of employable skills empowers the students with competences to practise, create and develop new method sof doing things. Ukutt and Udofia (2001), suggest that such skills can only be acquired where the training institutions are adequately funded, equipped with adequate facilities and have competent and experienced teachers who adopt effective and efficient instructional methods. This would facilitate and improve students' skills acquisition as asserted by Bassey and Inyang (2001), who observed that there is a relationship between instruction and students' skills development.

Lecturers as implementers of the curriculum are responsible for translating curriculum into action. The lecturer is responsible for selecting and organising of content and learning activities. Whether students adequately acquire relevant skills or not is determined by the selection of skills and utilisation of appropriate equipment and media. This is supported by

Peresu and Nhundu (1999), when they point out that, teachers are the main agents of curriculum implementation, they are the ones who truly determine what experiences the students are going to get.

Udofia (2001), remarked that students' utilization of tools and equipment enhance practical skills development and that a well-equipped technical workshop is required to facilitate students practise. To develop practical skills in National Diploma students to suit the expectations of the clothing industry, students should be given adequate time to utilize the different equipment in their workshops.

According to Aina (1991), one major problem facing Technical and Vocational Education and Training institutions is that, most of the Technical teachers are incompetent and the training equipment and tools are inadequate, obsolete and worn out which hinders adequate skills acquisition in students.

2.4 Challenges in implementing the Technical and Vocational Education and Training Curriculum

The effective implementation of any Technical and Vocational Education Curriculum depends on teacher competence and instructional methods employed. Aina (1999), highlights that one major challenge faced in the implementation of Technical and Vocational Education Curriculum is that, some instructors are incompetent in demonstrating practical skills using some of the equipment available in workshops because they do not have the requisite industrial experience. Thus impacts negatively on students' skills acquisition. Since demonstration is required in the teaching of subjects such as Garment Construction in Industrial Clothing Design and construction, the lecturer may end up not teaching certain skills if he/she is not competent in demonstrating the use of specific equipment.

The other challenge in the effective implementation of the curriculum is lack of resources in training institutions. According to Akyeampong (2010), poor resource allocation to Technical and Vocational Training institutions persists and this has resulted in weaknesses in the system. The weaknesses include obsolete and inadequate training equipment. Since the primary objective of Technical and Vocational Education and Training is to adequately equip students with skills and competences required in the world of work, shortage of training equipment will therefore inhibit effective implementation of the curriculum.

Walenkap (2011), reveals that the content of the Technical and Vocational Education and Training programme does not meet the needs of the work place. He further suggests that such a situation create greater emphasis in classroom theoretical instruction to help students pass the exam and obtain qualifications based on theory. Such practice tends to neglect acquisition of practical skills which are necessary for development of skilled work force.

According to the Policy Review Framework (2005), a good Policy Review Framework should look into the supply of human resources through Technical and Vocational Education and training system. The Policy Framework also highlights that this factor has adversely affected Technical and Vocational Education and Training implementation in Zimbabwe because qualified personnel have left TVET in search for greener pastures.

Technical and Vocational Education is highly capital intensive and require huge sums of money to run the system. A study carried out by Uwaiyo and Uwaiyo (2009), revealed that Technical and Vocational Training institutions do not have enough funds to execute developmental projects and to buy new machines or repair the old ones. Their study also revealed that, a lot of capital is required to procure the necessary equipment, machinery, tools facilities and other consumables which are needed for effective instruction. To implement the Industrial Clothing Design and Construction course effectively, students require hands on

experience. Therefore if the machines, tools and equipment are inadequate or not there at all, students' skills competences will never be realised at all.

According to Uwaiyo and Uwaiyo (2009), the financial problem also makes it difficult for instructors to have more training to increase their competences and to keep abreast with the ever dynamic technological innovators associated with the ever changing needs of the society. This situation leaves Technical and vocational Education and Training lecturers behind the dynamics of technology which negatively affects the way they implement Technical and Vocational Education and Training Programmes. In the case of Industrial Clothing Design and Construction programme, computers can be used for designing as well as pattern making and grading. However, the manual method is still being employed because the lecturers have never been trained on how to use this technology for Pattern Making and Grading yet this is a component which should be taught to the National Diploma students according to the Regulations and syllabus for National Diploma in industrial Clothing Design and Construction (2013). On the other hand, the clothing industry where students will be absorbed after completing the course have already adopted them.

2.5 Summary

The chapter focused on reviewing literature which relates to the problem under study. This included literature on relevance of the Industrial Clothing Design and Construction curriculum to the clothing industry. impact of equipment in Technical and Vocational Education and Training on practical skills acquisition, challenges in practical skills acquisition in Technical and Vocational Education and Training institutions and challenges in implementing Technical and Vocational Education curriculum.

The next chapter will look at the methodology used in carrying out this research study.

CHAPTER THREE

METHODOLOGY

3.0 Methodology

3.1 Introduction

This chapter highlights the research design, population, sample and sampling procedures, research instruments, data collection procedures and data analysis methods employed to investigating the adequacy of Technical and Vocational Education and Training at National Diploma level, for employment in the clothing industry.

3.2 Research design

A research design is an arrangement of conditions for collection and analysis of data in a manner that aims to combine relevance to the research purpose with economy in procedure. This research study was carried out using a case study. Creswel (2012), defines a case study as an in-depth exploration of a bounded system for example an event, activity, process or programme based on extensive data collection.

A case study was considered as appropriate for investigating the adequacy of Technical and Vocational Education and Training for employment in the clothing industry ,to National Diploma students, pursuing the Industrial Clothing Design and Construction Course, for employment in the Clothing Industry because it helped to provide a detailed description of the phenomenon, which enhanced the evaluation of the adequacy of skills acquisition by National diploma students to meet the requirements of the clothing industry. This is supported by Gay et al (2012), who highlight that case study is useful when describing the context of study and extent to which a particular program or innovation has been implemented.

The use of case study in educational research has its own advantages and disadvantages. According to Aldelman et al cited in Cohen et al (2011), case studies have the following advantages and disadvantages:

Advantages:

-Case study data is strong in reality.

-They provide insight into other similar situations and cases, thereby assisting interpretation of other similar cases.

-They catch unique features that may otherwise be lost in large scale data, these unique features might hold the key to understanding the situation.

-They are immediately intelligible, thus they speak for themselves.

Disadvantages:

-The results may not be generalizable except where other researchers/readers see their application.

-They are prone to problems of observer bias, despite attempts made to address reflexive.

3.3 Population

The population for this study was made up of thirty National Diploma students pursuing the Industrial Clothing Design and Construction course at the Technical Teachers' College, who have also done their On Job Training, ten production managers from clothing factories within Harare, where students were attached, and seven lecturers who teach Industrial Clothing Design and Construction Modules at the Technical teachers' College. The total population was forty seven.

Students who had completed their On Job Training were included as part of the population because they had spent part of their training time in both the Clothing Industry and the training institution. This helped the researcher in getting views of both lecturers and clothing factory production managers on skills competences of students at this Level. Clothing Design and Construction Lecturers were also included as part of the population because they were the ones responsible for implementing the curriculum, therefore were in a better position to evaluate students' skills competences in relation to the requirements of the Clothing Industry. Production managers from clothing industries where students were attached were also included as part of the population because they were in a better position to judge the adequacy of skills acquired by students in relation to the clothing industry expectations at the time they started On Job Training.

3.3.1 Sample

Chiromo (2006), defines a sample as a group selected from the entire population for the purpose of study. Since the researcher was not able to interview or observe the whole population, a sample was therefore obtained to represent the population. Gay et al (2012), suggest that sample selection in case study should be that from which the most can be learnt from the phenomenon under study.

The sample for this study was made up of two lecturers from the Clothing and Textiles section, six production managers from clothing Industries within Harare, where some of the students did their On Job Training and twelve National Diploma students who have completed On Job Training. This brings up a total of twenty participants. This sample size was considered enough to be manageable. This is in line with Gay et al (2011), who propose that a small sample is what is recommended for qualitative research, since data collection procedures are time consuming. They also highlight that in qualitative research, there is no hard and fast number that represents the correct number of participants. A sample must be

representative of the population from which it was drawn. Therefore, the researcher selected a sample which was representative of the population under study by using a variety of sampling procedures.

3.3.2 Sampling procedure

Sampling refers to the process of choosing subjects from a population to participate in a study (Kothari, 2004).Three different sampling procedures were employed in selecting the sample for the study. These were stratified sampling, simple random sampling and purposive sampling. Stratified sampling is the process of strategically selecting a sample in such a way that guarantees representation of desired subgroups (Cohen et al, 2011). The researcher firstly subdivided students who have done On Job Training into three subgroups. That is those who were attached at clothing factories which major in producing men's wear, those who were attached at clothing industries which focus on producing ladies' wear and those attached at clothing industries which major in producing both men' swear and ladies' wear. The researcher then employed simple random sampling to select participants from each subgroup. Simple random sampling is the process of selecting a sample in such a way that each and every member of the population has an equal and independent chance of being selected. To select participants using this method, the researcher wrote the names of students who did On Job Training under each category on small identical cards and placed the cards from each category in small separate boxes. The researcher thoroughly mixed the cards for each group, raised each box above her heard and drew four cards from each, one at a time without replacement. Students whose names were on the selected cards automatically became part of the sample. A total of twelve students were selected.

The procedure which was employed to select a sample from students was repeated to select production managers from the clothing industry. That is, stratified sampling was firstly used to categorise clothing factories according to the type of clothes they produce. That is, men's

wear, ladies wear and both. Names of clothing industries under each category were written down on small identical cards, placed in separate boxes, shuffled, raised above the researcher's head and two cards were drawn from each box, one after the other without replacement. Production managers from each of the selected clothing factories became part of the sample. A total of six clothing factories were selected.

Lastly, purposive sampling was used to select lecturers from the clothing and Textiles section. That is one who taught Advanced Pattern Making and Grading and the other who taught Industrial Sewing Techniques. Cohen et al (2011), highlight that purposive sampling helps to gain a dipper understanding in a special situation. They also pointed out that the benefits of purposive sampling for case study research is the purposeful selection of cases that are "information rich" or those from which the researcher can learn a great deal about the research problem. The selected lecturers taught practical skills to National Diploma students therefore were placed in a better position to evaluate students' skills competences in relation to the clothing industry expectations.

3.4 Research Instruments

According to Gay et al (2011), research instruments are tools used to collect data by the researcher. To investigate the adequacy of Technical and Vocational Education and Training at National Diploma Level for employment in the clothing industry, the researcher used interviews, observations and questionnaires. These methods support the qualitative paradigm position that the searcher is the key instrument since the bulky of data collected depends on their personal involvement. On the other hand, Gay et al (2011), reveal that observation, interview and questionnaire are all sources of qualitative data.

3.4.1 Interview

The researcher used interviews as one of the methods of collecting data. Cohen et al (2011), define an interview as a purposeful interaction in which one person obtains information from another. The interview accommodates all types of questions and extensive probes to get more information and clarification of issues. They also provide room for the researcher to observe the participants' non-verbal cues (Nueman, 2000). Both structured and unstructured interviews were conducted to minimise weaknesses and improve reliability of the data obtained.

Interviews were used to collect data from clothing factory production managers on National Diploma students' practical performance when they were On Job Training. This is supported by Cohen et al (2011), who suggest that interviews can explore and probe participants' responses to gather in depth data about their experiences. On the other hand, they were also used to obtain data from students on their skills competences in relation to equipment available in their departments as well as that which they came across in the clothing industry. This is in line with Cohen et al (2011), who pointed out that one of the purposes of the interview is to evaluate or assess a person in some aspect. Through interviews, lecturers gave an evaluation of the type of product the National Diploma students who have completed On Job Training are in relation to skills competences expected by the clothing industry.

3.4.2 Observation

The observation method was also used as a data collection tool. According to Nueman (2000), observation entails the systematic description of events, behaviours and art-facts in the social setting selected by the researcher for the purpose of study. The observation method assisted the researcher to see for herself what took place during practical lessons. Cohen et al (2011), consider observation as a useful method in digging below answers to verify the results of an interview or questionnaire.

Two types of observation have been identified by Chiromo (2006), Cohen et al (2011) and Gay et al (2011) .These are, participant and non-participant observation. Cohen et al (2011), describe participant observation as an observation which is done while the observer engages in the very activities they set out to observe. Non-participant observation is described by Gay et al (2011), as observation which is done when the observer is not directly involved in the situation being observed. Thus the observer observes and records behaviours but does not interact or participate in the life or setting under study. Non-participant observation was used in carrying out this study. It was used to determine procedures used by lecturers to develop practical skills in students in both Garment Construction and Pattern Making. It was also used to determine whether students made use of the different equipment for the expected processes during their practical lessons as well as evaluating the quality of products they produced in relation to skills development. In the clothing industry, observation was used to determine the type of equipment available and compare them with those in the workshops in the training institution so that gaps between the two could be identified.

3.4.3 Questionnaire

Questionnaire was also used as a data collection tool for this study. Chiromo (2006), defines a questionnaire as a form of inquiry, a systematically compiled and organised series of questions that one send to the population sample. Questionnaires allow the researcher to collect large amounts of data in a relatively short period of time Gay et al (2011). The questionnaires used were short to ensure that they motivate respondents to answer all questions. To ensure validity and reliability of the data obtained using this instrument, simple language was used in constructing the questions to make them clear to the respondents. It was also pilot tested using students who had completed their National Diploma in Clothing and Textiles Technology at the institution and were currently doing Pedagogics in Education to determine whether they understood the requirements of the questions. Both closed and open

ended questions were included in the questionnaire to improve the validity of the tool. Cohen et al (2011), define closed questions as questions which prescribe the range of responses from which the respondents may choose. Gay et al (2011), define open ended questions as those questions that enable respondents to write a free account in their own terms, to explain and qualify their responses.

Questionnaires administered to students helped to provide data on students' skills competences in relation to the type of equipment found in both the Clothing and Textiles Technology section in the institution workshops and the clothing factories where they were attached during industrial attachment. It also provided data on types of garments which students were competent in making in garment construction. Questionnaires administered to clothing industry production managers provided data on areas which students were competent and those in which they were incompetent in relation to use of machinery and demonstration of processes. Lecturers provided information on the level of skills development of students in relation to the requirements of clothing Industry.

When constructing the questionnaire, questions which provided answers to the research question (sub-questions) were firstly identified. Both open ended and close ended questions were formulated. Simple language was used to ensure that respondents would understand the requirements of the questions. The questions formed were brief and easy to answer to motivate participants to answer all the questions. These were sequenced in chronological order. At most two closed questions were used to allow for greater depth of responses and insight into the reasons for the responses. The questions were well spaced to enable the researchers to read the questions clearly. Instructions on how to answer the questionnaire were provided at the top of the questionnaire.

3.4.4 Observation

An observation guide linking to the research question (sub-questions) was constructed in order to provide what to observe in the natural setting. Dates and times to carry out the observation were also scheduled.

3.5 Data collection procedures

Data collection procedure is the process of acquiring subjects and gathering information for a research study, McMillan (2003). To kick start the data collection process, the researcher wrote a letter to seek permission to carry out the study from the head of institution, Clothing and Textiles Section and clothing factory managers. After obtaining permission, the researcher then personally distributed questionnaires to both, lecturers and students as well as production managers who had been chosen to participate in the research. The respondents were given a time period of three days to respond to questions and then the researcher collected them and then filled them according to their categories before analysis was done.

The researcher also scheduled interviews for both, lecturers, students and production managers. Lecturers' and students interviews were conducted in the researcher's office during Garment Construction and Advanced Pattern Making sessions. Those for production managers were conducted in their respective offices. The researcher introduced herself to the production managers, but since she was already known by the participants in the training institution, the researcher stated by introducing the research title and purpose of the research to each participant. She also explained how their contributions would help in improving the existing training method. Through exposing the respondents to research ethics, informed consent was sought.

An observation schedule was prepared and students were observed using machines during practical lessons. Neuman (2003), considers observation method as useful in verifying results from questionnaires and interviews.

3.6 Data management

Questionnaires, interview guides and observation schedules were filed according to sources of information and the instrument used so that the collected data could be easily accessed for analysis. The file was safely stored in a locked cupboard to ensure confidentiality of the collected data.

3.7 Data presentation and analysis

The data collected through questionnaires, interviews and observation were presented using tables where each question from the research tools and its responses were presented. The responses were mainly in descriptive form. Questions from various research tools which provide answers to the same research question were categorised under one group.

According to Yin (2003), data analysis consists of examining, categorising, tabulating and combining evidence to address the problem under study. The data for this research was analysed by hand. According to Creswel (2012), hand analysis of qualitative data means that the researcher reads the data, mark it by hand, and divide it into parts. He further highlights that, hand analysis may be preferable when you are analysing a small data base and when you have not learnt any qualitative computer software programme. Questions from various research tools which provided answers to the same research question were categorised under one group. This was done by placing them into subheadings of research questions. The responses from each research tool were analysed separately to enable the researcher to evaluate the adequacy of Technical and Vocational Education and Training provided by the

institution for employment in the clothing industry. An analysis basing on findings was also discussed.

3.8 Validity and Reliability

Gay et al (2011), define validity as the degree to which qualitative data accurately gage what we are trying to measure. To ensure validity of collected data, the researcher made use of triangulation. Cohen and Manion (2011), describe triangulation as the process of using multiple method, data collection strategies and sources to obtain a more complete picture of what is being studied. Questionnaire, interviews and observations were used to triangulate the data obtained. On the other hand, questions for the research instruments were constructed basing on the sub questions of the research. The researcher also collected detailed descriptive data from interviews and observations

According to Elangovan and Mahon (2007), reliability means consistence in response if the researcher asks the same question and the same answer is repeatedly given by the respondents. The researcher ensured reliability of the questionnaires used through constructing questions which respondents could give one genuine response. The researcher also used simple language for the questions to ensure that respondents understand the question. This is supported by Creswel (2012), who proposes that, to get reliable data from participants, questions asked should not be ambiguous and unclear. Interviews were done during morning sessions when students' minds were still fresh to ensure reliability of the data collected as well.

3.9 Ethical consideration

These are beliefs about what is right and what is wrong. The ethical considerations which were taken into account in carrying out this study were informed consent and confidentiality. Diener and Crandal cited in Cohen et al (2011, define informed consent as procedures in

which individuals choose whether to participate in an investigation after being informed of facts that would be likely to influence their decision. The researcher sought permission from relevant authorities at Belvedere Technical Teachers' College and clothing industries to collect data from lecturers, students and production managers respectively for the study. She also sought informed consent from the respondents by revealing to them the title of the study and clearly explaining the purpose and benefits of study to practice so that they made their decision to participate in the study (or not). Howe and Moses cited in Cohen et al (2011), applaud that ,informed consent is the corner stone of ethical behaviour, as it reserves the right of individuals to exert control over their lives and to take decisions for themselves. The researcher also made it clear to the authorities and respondents that all the information collected, was going to be used for the purpose of study and therefore was treated as confidential.

3.10 Summary

The chapter presented case study as the appropriate research design for carrying out the study. The population for the study was made up of lecturers from the Clothing and Textiles Section, National Diploma students who were pursuing the Industrial Clothing Design and Construction Course, who have also done On Job Training and production managers from clothing factories within Harare, where students have been attached. Stratified sampling, simple random sampling and purposive sampling were used to select the sample for the study. Questionnaires, interviews and observations were used to collect data for the research study. Permission to collect data from the institution and clothing industries was sought from the responsible authorities. The chapter also outlined how validity and reliability were ensured. It also outlined how the data obtained was stored, presented and analysed.

The data collected will be presented, analysed and discussed in the next chapter.

CHAPTER 4

DATA PRESENATATION, ANALYSIS AND DISCUSSION

4.0 Introduction

This chapter focuses on presenting, analysing and discussing the data which was collected using an observation schedule, interviews and questionnaires. Data will be presented in tabular form in which reports and descriptions will be used. Focus will be on grouping together data from various research tools which provide answers to each and every research question.

Table4.1: Demographic data

Lecturer	Age	Experience	Qualification
X	40–45 years	6 – 8 years	Master of Education Degree in Fashion and Textiles
Y	46–50 years	9 years and above	Master of Technical Education Degree in Fashion, Textile, Clothing and Designing.

As evidenced in Table4.1, both lecturers are above 40 years but below 50 years. Both of them have a lecturing experience of at least 6 years. They also possess a relevant Master of Education Degree in the areas they teach. This means that they have the potential to effectively implement the Industrial Clothing Design and Construction Curriculum at National Diploma level so that students are adequately equipped with the necessary skills to suit the requirements of the clothing Industry.

4.2 Research question 1

To what extent does machinery available in Technical and Vocational Education Institutions allow for skills development in students to match the expectations of the clothing industry?

This question sought to establish the level of skills competences permitted by the equipment available in the institution.

Table4.2 Results for the state of facilities and equipment in the clothing department

Question	**Responses**
What is the state of facilities and equipment like in your department?	**Lecturer Y** *-Most of the equipment required to implement the course are fairly available.* *-Lock stich machines and over lockers are adequate but we have limited numbers of machines for special processes.* *-Machine such as button sewer and bar tack machine are not available so we improvise where we require their use.* **Students A, E, L** *-Most of the machines in the department are working* **Students B, C, D, F, G, H, I, J, K** *We have many lock stich machines and several over lockers. They function well except the buttonholer whichis sometimes down.* **Observation** The researcher observed that tables for pattern making are limited since students were overcrowded in lessons.

Analysis

From the results in Table 4.2, students and lecturer's responses confirm that the equipment in the department is in good working condition.Both lecturer and students' responses revealed that there are adequate Over lockers and Lockstitch machines in the department which can adequately promote the development of practical skills in students since the students have enough time to access them during practical lessons. From Table 4.2, it can also be noted that machines for special processes such as buttonholer are very limited hence negatively affects students' skills acquisition since they will not get enough practise in their use during practical lessons. The results also show that some important equipment for special processes are not available at all, therefore limits students' skills development. The results from the table also reveal that the working space for pattern making is limited since students were overcrowded during pattern making practical lessons which impacts negatively on their skills acquisition.

Table4.3 Results for comparison of equipment and facilities in the training institution and clothing industry

Question	**Students' responses**
How do equipment and facilities compare to those in the clothing industry	All the students indicated that lockstitch, over-locker, buttonholer and hemmer are common machines in both the clothing industry and training institution.
	The students also highlighted that training institution does not have a button sewer, binding, feed of arms and bar tack machines.

Analysis

The results from Table 4.3 reveal that there are some machines which were common in both the clothing industry and the training institution. This revealed that students were already familiar to the application of such machines during production. The results also reveal that the training institution does not have some of the machines required for doing special processes, which therefore inhibits students' skills acquisition on their application.

4.3 Research question 2

What challenge do lecturers encounter in effectively implementing the Industrial Clothing Design and Construction Curriculum?

The above question sought to determine the challenges faced by lecturers in implementing the Industrial Clothing Design and Construction curriculum.

Table 4.4 Results for challenges faced by lecturers in implementing the Industrial Clothing Design and construction Curriculum

Question(s)	**Responses**
What is your class size? Comment on your class size in relation to the equipment and facilities in your department.	**Lecturer X and Y** *-I have thirty students in my class.* **Lecturer Y** *-Equipment for basic processes like overlocking and straight sewing match the class size but those for special processes do not because they are very few.* **Lecturer X** *-Tables and working space for pattern making are not adequate which results in overcrowding during practical lessons.*

Analysis

The results from Table 4.4 indicate that equipment for doing basic processes in garment construction such as overlocking and straight sewing match the class size which enhances adequate acquisition of practical skill in the application of such equipment. The results also indicate that the class size does not match the machines for doing special processes which have a direct bearing on students' skills competence on their application, since their chances to access them to practise their application is limited.

The results from the table also reflect that space and tables for pattern making do not match with the class size since the number of tables and space is limited. This results in over-crowding during pattern making practical lessons, thereby hampering the rate of skills acquisition in students.

Table 4.5 Results for the amount of time of time students get to use the different machines in the department

Question(s)	**Responses**
Do you get adequate time to use the different types of machines in your department	-All the 12 students indicated that they get adequate time to use over-lockers and lockstitch machines. -8 students indicated that they have very limited chances of using the buttonholer because there is only one. -6 students indicated that it is difficult to get the chance to use the elasticator and the embroidery machine because there is only one of each.

Analysis

From table4.5, it is shown that all the twelve students get adequate time to use over-lockers and lock stitch machines which increase their chances of adequately developing the skills competences in their application during garment construction. The results also show that most students have limited time to access the buttonholer because there is only one such machine. This affects the students' skills acquisition on the application of such a machine since they have limited chances of practising. Six students reflected that they had difficulties in getting the chances to use the elasticator and embroidery machines since they are too limited. This also have a negative impact on their practical performance on how to use these machines.

Table 4.6 Results for lecturers' competences in using the different equipment during lesson delivery

Question	**Response**
Are you competent in using the different types of equipment in your department when delivering lessons?	**Lecturer Y** -I have challenges in preparing and using the elasticator hence difficulties in demonstrating it during garment construction. **Lecturer X** I am competent in using all the different equipment in the department.

Analysis

Results from table 4.6show that the garment construction lecturer is not competent in using the elasticator hence cannot effectively demonstrate processes which require application of such a machine. This can result in the lecturer leaving out all processes which require the application of this type of machine during lesson delivery, which impact negatively on students' practical skills acquisition on the use of this machine. The results also reveal that the other lecturer is quite competent in using all the machines even though she teaches pattern making.

4.4 Research question 3

What challenges are students pursuing the industrial clothing Design and Construction Course facing in developing practical skills which are relevant to the clothing industry?

This research question sought to determine whether students are having challenges in acquiring practical skills relevant to the clothing industry.

Table 4.7 Results for students skills competences in pattern making

Question(s)	**Responses**
Are you able to use a computer in pattern making and grading? Comment on your National Diploma skills competences in pattern making.	-All students indicated that they were not able to use computers to make patterns. **Lecturer X** *–Sleeve development and construction of collars for jackets is a challenge to most students. Students also face difficulties in developing the back pattern as well as the fly front when making patterns for pairs of trousers.* Observation -The researcher observed that pattern making and garment construction lessons mostly focus on ladies wear. Construction of men's wear is so limited.

Analysis

The results from Table 4.7 indicate that none of the students is capable of using computers in pattern making and grading. This reflects that they have not been exposed to the use of new technology hence cannot apply it for production purposes. The results also reflect that studentshave challenges in developing patterns for jackets and pairs of trousers. This indicates that the students are not competent in making up patterns for these two garments hence a negative impacton their skills development in garment construction since the two are interdependent. Observation results reveal that practical lessons for Pattern making concentrate mostly on ladies wear which hinders the development of pattern making skills for men's wear.

Table4.8Results for garments which students are competent in making patterns for

Students

Garment	A	B	C	D	E	F	G	H	I	J	K	L
Skirt	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Shirt	✓	✓	✓	✓	✓	-	✓	✓	-	✓	✓	-
Trousers	✓	✓	✓	-	✓	✓	-	✓	-	✓	-	-
Jacket	✓	✓	✓	-	✓	-	-	-	-	-	✓	-
Dress	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Key

✓ Means competent

\- Means incompetent

Analysis

From Table 4.8, it can be noted that all the students are competent in making pattern for a skirt and a dress. This reflects that students have adequately acquired the necessary skills for dealing with the various style features involved in pattern making for skirts and dresses. The results also reveal that pattern making for a jacket and pair of trousers gives problems to a number of students. It shows that there are some style features involved in constructing patterns for the two, which students have not adequately mastered. From the results, it can also be noted that the area in which these students are incompetent in making patterns for involves mostly men's wear.

Table 4.9Results for the types of garments which students are competent in sewing

	Students											
Garment	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**	**K**	**L**
Skirt	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Shirt	✓	✓	✓	✓	✓	✓	✓	-	✓	✓	-	-
Trousers	✓	✓	✓	✓	✓	✓	-	-	-	✓	-	-
Jacket	✓	✓	✓	✓	✓	✓	-	-	-	-	-	-
Dress	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Key

✓ Means competent

\- Means incompetent

Analysis

The results in Table 4.9 indicate that all the students are quite competent in constructing skirts and dresses. This shows that they have adequately acquired the skills of making the various style features involved in making such garments. From the results, it can also be noted that most of the students are also able to construct a shirt which reflects that they are competent in dealing with those style features involved in making up a shirt. It can be noted from the table that most of the students had challenges in constructing garments such as pairs of trousers and jackets. This shows that there are certain style features which are involved in the making up of such garments which students have not adequately developed. From the results, it can also be noted that the garments which students had challenges in making relates to men's wear.

4.5 Research question 4

To what extent does the clothing industry face challenges in working with students On Job Training?

This research question sought to establish the challenges which are faced by the clothing industry in working with students On Job Training

Table4.10Results from students' interviews on challenges faced in using equipment in the clothing industry

Question(s)	**Students responses**
Did you have any challenges in using some of the equipment in the clothing industry where you were attached?	**YES Student Explanation** A, F, E √- *Have never used some of the machines* B, G √ - *Some of the machines were new* C, J √ - *Have never used the feed of arms* F, H √ - *The binding machine was new* D, K, L √ - *Bar tack machine was new*

Analysis

The responses from Table 4.10 Show that all the students had challenges in using some of the equipment they came across in the clothing factories where they were attached during On Job Training. The results reveal that the students had never seen some of the equipment before and therefore did not know how to use them. The results from the table also reveal that the training institution where the students were doing their National Diploma Course did not have machines for special processes such as binding, bar tack and feed of arms. This implies that the students lacked the skills and competences on how to use these since they were never

taught. From the results, it can also be noted that students only had problems in using machines for special processes.

Table 4.11 Results from production managers showing challenges faced by students in using the machines they came across in Clothing Industry

Question	**Production managers' responses**		
Do students who come for industrial attachment face any challenges in using some of the machinery in the different departments in your company?		**YES**	**Production Manager Explanation**
	1	√	*- never used some machines before*
	2	√	*- Binding machine new to students*
	3	√	*- not competent in using elasticator*
	4	√	*- never used a button sewer*
	5	√	*- never used bar tack machine*
	6	√	*- never used computers for patterns*

Analysis

The results from production managers' responses in Table 4.11 also confirm that students who do On Job Training in various Clothing Factories have challenges in using the new equipment which they come across during line production. The results reveal that the students had never seen and used some of the machines which impacted negatively on their performance during the production process. The results show that some students had never used the button sewer, bar tack and binding machines during production which shows that they lacked the skills and competences of using these machines. The results also reveal that the Technical and vocational Education and Training Institution where the students are

receiving their training does not havethe above mentioned machines hence do not teach the students application of these machines thereby limiting their skills acquisition.

4.6 Discussion of findings

4.6.1 Research question 1: To what extent does machinery available in Technical and Vocational Training Institutions allow for skills development in students to match the expectations of the Clothing Industry?

The presented results reflects that, only those machines for doing basic processes such as straight sewing and over locking are adequate. This shows that students' skills and competences on application of these can be adequately developed since students can get enough time to access them during practical lessons. When students have adequately acquired appropriate skills, it means that they can effectively execute any operation which requires application of such skills hence would be able to apply them in any environment.

From the findings, it has been noted that the training institution has only one buttonhole machine. This does not provide students enough access to practise application of this machine thereby inhibiting adequate skills development in students. This implies that students will not be competent in using this type of machine during line production when they are exposed to a clothing industry environment. This is in line with Kerre (2001), who reveals that there is a rampant lack of training materials in Technical and Vocational Education and Training Institutions, to produce a competent graduate for the industry. The findings also revealed that, a number of machines for special purposes are not available in the training institution. These include button sewer, binding, feed of arms and bar tack machines. This implies that students are not taught how to use such machines thereby limiting the number of skill they acquire during practical lessons. Therefore, students are likely to face challenges when they encounter such machines in a clothing industry set up. Manfred and Jennifer (2004), proposes that, for Technical and Vocational Education to be effective and meet the economic order,

learning must take place in an environment where all the necessary tools, machines, equipment and facilities are in place and resemble the place for real work. On the other hand, Peresu and Nhundu (1999) highlight that, the nature of the institution and its resources will determine how curriculum is implemented. Thus the lecturers will adequately provide students with practical skillsin the use of machinery which students can adequately access. On the other hand,students are likely to be provided with limited practical skills if machines are scarce since they will have limited chances to access the machines. The findings also reveal that space for pattern making is limited which also inhibits adequate skills development in pattern making.

4.6.2 Research question 2: What challenges do lecturers encounter in effectively implementing the Industrial Clothing Design and Construction Curriculum?

From the findings, it has been noted that the class size is quite big which may be challenging for the lecturers to effectively supervise the students during practical lessons to ensure adequate acquisition of practical skills. The findings also show that, equipment for basic processes such as straight sewing and over locking match the class size. Therefore, students can get adequate chances to practise hence improve their skills and competences in the use of such machines. Contrary, the findings reveal that machines for special processes which are available in the institution are too limited for the class size which means that students have limited access in order to practise hence skills and competences cannot adequately develop.Udoutin (2001), remarked that, it is only through students' utilisation of tools and equipment that development of practical skills can be enhanced.

From the findings, it has been clearly revealed that the garment construction lecturer is not competent in using the elasticator therefore cannot effectively demonstrate processes which require the application of such a machine. This implies that the lecturer can leave out some of the processes which require the application of such a machine thereby impacting negatively

on students' practical skill acquisition on how to use the machine. This is in line with Peresu and Nhundu (1999), when they point out that, teachers are the main agency of curriculum implementation, they are the ones who determine what experiences students are going to get.On the other hand,Udoutin (2001), proposes that competent teachers are required for effective training which provides students with practical skills.

The findings also reveal that students cannot use computers for pattern making and grading. This implies that the students have never been taught how to use the computers for pattern making and grading although it is a component of the Industrial clothing Design and Construction course. This can also mean that the advanced pattern making lecturer is also not competent in using the computers for pattern making and grading hence does not attempt to teach this component. Johnson and Adams (2004), suggest that, for students to cope up with the new technology, they must be trained and developed to acquire the new and improved technological skills and knowledge to meet the demands of the modern industry.

4.6.3 Research question 3: What challenges are students who are pursuing the Industrial Clothing Design and Construction Course facing in developing practical skills which are relevant to the Clothing Industry?

From the findings, it can also be noted that students have adequately developed the skills and competences of making patterns and constructinggarments which are aligned to ladies' wear. That is shirts, skirts and dresses. It shows that students can effectively demonstrate their skills in making the different style features involved in making ladies wear because they have been effectively taught and got enough practise in making up such garments. The findings reveal that, students' major challenge is in preparing patterns as well as constructing men's wear which also reflect that students are not well versed with style features which are mainly used on men's wear. From the findings, it can be noted that the training which the students are receiving focus mainly on ladies wear than men's which is a contributory factor towards poor

acquisition of skills relation to processes involved in men's wear. Nyavkov (1996), support this when he pointed out that poor quality of delivery of Technical and Vocational Education and Training programmes hinders skills acquisition in students. It therefore imply that, for students to improve their skills acquisition in men's wear, focus should also be given to pattern making as well as garment construction for men's wear during practical lessons.

4.6.4 Research question 4: To what extent does the Clothing Industry face Challenges in working with students On Job Training?

The findings reveal that students On Job Training met new machines which they had never used before, in the clothing factories where they were attached, which gave them a challenge on how to demonstrate their use during line production. That is machines such as binding, feed of arms, button sewer and bar tack which are very crucial in doing special processes. This also reveals that the training institution where the students are receiving their national diploma in Industrial Clothing Design and Construction does not have adequate machines to enhance adequate skills development in students to meet the clothing industry expectation. This is in line with Islam and Mia (2007)'s research, which revealed that both formal and non-formal Technical and Vocational Education and Training lacked effective linkage between training and the world of work which is a result of imparting practical skills training which does not produce the prerequisite skills for the job market. From the findings, it can also be deduced that the students are never taught how to use most of the machines for special processes since they are not available which therefore limits the types of skills which the students acquire during training. A research carried out by ILO (2004), show that one of the dimensions to make to make Technical and Vocational Education and Training cost effective is by producing workers with needed skills of acceptable quality.

4.7 Summary

The chapter focused on presenting, analysing and discussion of data collected through observation, interviews and questionnaire. The major findings were that, there is an imbalance in the types of machines for training students which impacts negatively on students' practical skills development. The other finding was that, there is a wide gap between machines found in the clothing industry and that which is found in the training institution which creates challenges for students when they are expected to use them during On Job Training since they have inadequate skills to use them.The lecturer's incompetence on the use of some of the machines for special processes negatively affects students' skills acquisition. The findings also reveal that class size hinders acquisition of practical skills which relates to machines for special processes. It has also been noted thatthe training which students receive mainly focus on production of ladies wear, which inhibits growth of skills for producing men's wear.

CHAPTER 5

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.0 Introduction

The main focus of this chapter is to provide a summary of the research study, make deductions from the research findings obtained in chapter 4 and provide recommendations basing on these research findings.

5.1 Summary

The research sought to investigate the adequacy of Technical and Vocational Education and Training at National Diploma level for employment in the clothing industry (A case study of Belvedere Technical Teachers' College). Chapter one provided the relevant research questions to the study which helped in guiding the research. The significance of study was also determined to show why it was worthy carrying out the study. Chapter two provided literature review relevant to the area of study which helped the researcher to get a deeper understanding of the problem under study by getting opinions of other authors on problems of this kind. A case study design was used to carry out the study. Ten production managers from clothing factories in Harare which normally take National Diploma students from Belvedere Technical Teachers' College for On Job Training, seven lecturers from the Clothing and Textiles section and thirty National Diploma students from the Clothing and Textiles section at Belvedere Technical Teachers' College who had competed On Job Training made up the population for the study (forty seven elements). A sample of two lecturers, six production managers and twelve students (total of twenty) was selected using purposive, stratified and simple random sampling respectively, to participate in the study. Observation, interviews and questionnaires were used to collect data from respondents. In chapter four, the collected data was presented in tabular form in which descriptions were used. The data was also analysed

and discussed. Finally in this chapter, conclusions will be made basing on findings from chapter four and recommendations will also be made basing on the same findings.

5.2 Conclusions

The first sub-question focused on determining the extent to which the machinery available in the Technical and Vocational Training Institutions allow for skills development in students, to match the expectations of the Clothing Industry. The findings were that the training institution adequately developed students' skills and competences on using lockstitch machines and over lockers since they were adequate for practical purposes but, failed to adequately equip students with skills for using machines for special purposes since they had very few types which were also found in limited numbers. From this, the researcher concluded that the training provided to the National Diploma students only adequately equip them with basic skills for garment construction , but, these skills are not adequate to suit the production processes involved in the clothing industry where use of machinery for special processes is also highly involved.

The second sub question for the research sought to establish the challenges encountered by the lecturers in effectively implementing the Industrial Clothing Design and Construction curriculum. From the study, it has been found out that the class size was too big to promote effective class supervision during practical lessons, in a situation where the class size matched the available equipment, hence adversely affected the quality of skills acquired by the students. On the other hand, it has also been noted that class size did not match the available equipment for doing special purposes which implies that students had very limited practise to develop their skills and competences in using the machines. The other challenge revealed by the study was that, the garment construction lecturer's incompetence in using the elasticator to demonstrate practical skills. This negatively affected students' skills acquisition since the lecturer would not demonstrate the skills effectively or would completely leave out

those processes which require application of this machine in her teaching. From the findings highlighted above, it can be concluded that, the class size inhibited adequate skills acquisition by students to meet the expectations of the clothing industry.

The third sub- question sought to establish the challenges which were faced by students pursuing the Industrial Clothing Design and construction course in developing Practical skills relevant to the clothing industry. The findings were that the students had adequately developed the skills and competences for pattern making and garment construction for ladies wear but were having challenges in pattern making and garment construction for men's wear. It can therefore be concluded that the training which students are receiving gives more focus to ladies wear than men's hence inhibiting adequate skills development necessary for the production of men's wear. Therefore, if students are to be employed in clothing factories which focus on production of men's wear only, they will be incompetent during line production since they lack the prerequisite skills for the production of men's wear.

The fourth sub question sought to establish the extent to which the clothing industry is facing challenges in working with students On Job Training. The findings were that, students On Job Training came across new equipment which they had never seen and used before hence could not demonstrate how to use them during line production. From this, it can be concluded that the training institution does not have adequate equipment to enhance adequate skills development in students. Students are never taught how to use machines such as bar tack and feed of arms because they are not available in the training institution. Therefore the practical skills which the students acquire are inadequate.

Finally, it can be concluded that the Technical and Vocational training institution does not adequately equip the national diploma students with skills and competences to meet the clothing industry expectations since there is a wide gap between the types of machines in the

training institution and those found in the clothing industry and also since the training received by students is more inclined to ladies wear instead of both.

5.3 Recommendations

The researcher makes the following recommendations to various stake holders:

Technical and vocational training institutions

- Training institutions should seek donor funding to assist them in equipping their Clothing and Textiles Departments with the right type of equipment to match the Clothing Industry needs, so that they produce students with skills and competences required by the Clothing Industry.

- Technical and Vocational Training Institutions offering the Industrial Clothing Design and Construction course should give equal attention to both ladies' and men's wear during practical lessons as per syllabus requirement, to promote adequate skills' development in students so that they are familiarised with what they will meet in a Clothing Industry environment.

Heads of Training Institutions

- Heads of institutions should enrol students who can be accommodated by the facilities, equipment and human resources available in the Technical and Vocational Education and Training Departments.

Lecturers

- Lecturers who teach Industrial Clothing Design and Construction modules should be attached to Clothing Industries during vacation, so that they gain skills in using the various

types of machines available in a Clothing Industry set up, which will enable them to effectively demonstrate their uses during lesson delivery.

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LIST OF APPENDICES

Appendix 1

Introductory Letter

Stand number 30147

Unit L Extension

Seke

Chitungwiza

2 March 2013

Lecturer in Charge

Clothing and Textiles Technology section

Belvedere Technical Teachers' College

Box Be 100

Belvedere Harare

Dear Madam

RE: PERMISSIOM TO CONDUCT AN EDUCATIONAL RESEARCH IN THE CLOTHING AND TEXTILE SECTION: MutemaKatrah. Ec. Number: 0865269J

My name is KatrahMutema and I am a student at Midlands State University. I am currently studying for a Master of Education degree in Fashion and Textiles. I am conducting a research entitled, Investigation into the adequacy of Technical and Vocational Education and Training at National Diploma Level, for employment in the clothing industry (A case study

of Belvedere Technical Teachers' College). I am seeking for permission to carry out my research in your section.

Your assistance will be greatly appreciated

Yours Faithfully

MutemaKatrah

Belvedere Technical Teachers' College

Box Be 100

Belvedere

Harare

2 March 2015

The Clothing Factory Manager

…….

…….

Harare

Dear Sir/ Madam

RE: Request for permission to collect research data in your Company

My name is MutemaKatrah and I am lecturer at the above mentioned institution, I am seeking for permission to collect research data from your company production managers through a questionnaire and interview.

I am doing a Master of Education Degree in Fashion and Textiles with Midlands State University. I am doing a research study entitled Investigation into the adequacy of Technical and Vocational Education and Training, at National Diploma level, for employment in the clothing industry (a case study of Belvedere Technical Teachers' College.

The information obtained will help us to improve the Industrial Clothing Design and Construction Course to suit the requirements of the clothing industry. All the information obtained will be confidential.

I hope to get a positive response from you.

Yours faithfully

Mutemakatrah

Cell number 0734629606.

Appendix 2

Interview guide for the students

1) Why did you choose to do the Industrial Clothing Design and construction course?

2) What is the state of equipment and facilities like in your department?

3) Do you get adequate time to use the different types of equipment in your department?

4) Are you competent in using the different types of equipment in your department?

5) How do equipment and facilities in your department compare to those in the clothing industry where you did your On Job Training?

6) Did you have any challenges in using some of the equipment in the clothing industry where you did On Job Training?

Appendix 3

Interview guide for Lecturers

1) What is your qualification?

2) What is the state of equipment and facilities like in your department?

3) Are you competent in using all the different equipment when delivering your lectures?

4) Do you get sufficient supply of material for your lectures?

5) What is your class size?

6) Comment on class size in relation to equipment and facilities available.

7) Comment on your National Diploma 1 students' skills competence in pattern making and grading or garment construction.

8) Is the National Diploma in Industrial Clothing Design and Construction course relevant to the Clothing Industry?

Appendix 4

Interview guide for Production Managers in Clothing Industries

1) What limitations in terms of skills competences have you noted in students On Job Training in different departments?

2) Do students who come for industrial Attachment have challenges in using the machinery in different departments?

3) How do students on Industrial Attachment compare to workers trained within the company in terms of skills of doing various jobs in the departments?

4) What recommendations would you give to the Technical and Vocational Institutions to improve skills acquisition in students?

Appendix 5

Questionnaire for students

My name is KatrahMutema and I am doing a Master of Education Degree in Fashion and Textiles with Midlands State University. I am carrying out a research study entitled Investigation into the adequacy of Technical and Vocational Education and Training, at National Diploma, for employment in the Clothing Industry (a case study of Belvedere Technical Teachers' College).

May you kindly provide answers to each of the following questions in the spaces provided as instructed. Your responses will be for academic purposes only and will be treated as confidential. Do not write your name anywhere on the questionnaire.

1)Do you have adequate machinery and resources for doing your practical lessons?

(Indicate your choice of answer by a tick)

Yes ☐

No ☐

2) Are you able to use the different types of equipment in your department?

(Indicate your choice of answer by a tick)

Yes ☐

No ☐

3) Indicate (by a tick) the type of equipment you are competent in using in

your department.

Fusing machine

Buttonhole machine ☐

Button sewer ☐

Over locker ☐

Lock stitch ☐

Hemmer ☐

Straight knife ☐

Round knife ☐

Flossing machine ☐

4) Are you able to use computers in making and grading patterns? (Indicate your answer by a tick)?

Yes ☐

No ☐

5) Indicate (by a tick) the types of garments you are competent in making Patterns for.

Shirt ☐

Skirt ☐

Trousers ☐

Jacket ☐

Dress ☐

6) Indicate (by a tick) the types of garments you are competent in sewing.

Shirt ☐

Skirt ☐

Trousers ☐

Jacket ☐

Dress ☐

7) At the time you started On Job Training, were you able to operate the different equipment available in your company?

(Indicate your answer by a tick).

Yes ☐

No ☐

8) Briefly explain your answer in part (7).

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Appendix 6

Questionnaire for Lecturers

My name is KatrahMutema and I am doing a Master of Education Degree in Fashion and Textiles with Midlands State University. I am carrying out a research entitled Investigation into the adequacy of Technical and Vocational Education and Training, at National Diploma Level, for employment in the Clothing Industry.

May you kindly provide answers to each of the following questions as instructed. Your responses will be for academic purposes only and will be treated as confidential. Please do not write your name anywhere on the questionnaire

1) How old are you? (Indicate your answer by a tick)

30-34 years ☐

35-39 years ☐

40-45 years ☐

46-50years ☐

2) What is your experience in years as a lecturer? (Indicate your answer by a tick)

0 – 2 ☐

3 – 5 ☐

6 – 8 ☐

9 and above ☐

3) Does your department have all the necessary equipment for effective implementation of the National Diploma in Industrial Clothing Design and Construction course? (Indicate your answer by a tick).

Yes ☐

No ☐

4) Does the equipment in your department match class sizes to ensure adequate skills development students? (Indicate your answer by a tick)

Yes ☐

No ☐

5) Are you able to effectively demonstrate how to use the different equipment to ensure adequate skills development in students? (Indicate your answer by a tick)

Yes ☐

No ☐

6) Do your students get adequate time to use the equipment in your department during lectures? (Indicate your answer by a tick)

Yes ☐

No ☐

7) If your answer in (6) is no, briefly explain why.

---

8) How would you rate the relevance of the Industrial Clothing Design and Construction course to the Clothing Industry? (Indicate your answer by a tick)

Very relevant ☐

Relevant ☐

Irrelevant ☐

9) Briefly explain your answer in (8).

Appendix 7

Questionnaire for production managers

My name is KatrahMutema and I am doing a Master of Education Degree in Fashion and Textiles with Midlands State University. I am carrying out a research study entitled Investigation into the adequacy of Technical and Vocational Education and Training, at National Diploma level, for employment in the Clothing Industry.

May you kindly answer each of the following questions as instructed. Your responses will be for academic purposes only and will be treated as confidential. Please do not write your name anywhere on the questionnaire.

1)How do you rate the skills competence of students during their early stages On Job Training? (Indicate your answer by a tick)

Very good ☐

Good ☐

Satisfactory ☐

Poor ☐

2) Do students On Job Training face challenges in using some of the equipment in your company? (Indicate your answer using a tick)

Yes ☐

No ☐

3) If your answer in (2) is yes, specify the equipment.

---

4) What recommendations would you give to the Technical and Vocational Institutions to Help Improve the quality of student they produce?

---

5) In terms of performance, how do you compare students on attachment with company employees? (Indicate your answer by a tick)

Company employees perform better than students ☐

Students perform better than company employees ☐

Students and company employees perform at the same level ☐

6) Did any of the personnel in your company participate in the designing of the Industrial Clothing Design Construction Curriculum? (Indicate your answer by a tick)

Yes ☐

No ☐

Appendix 8

Observation guide

1) Use of media when lecturing

2) Classroom environment

-Student machine ratio

-Frequency of using the machine

-Space

3) Lesson

-strategies used

-demonstration of skills

-student practise

-monitoring of students work

-emphasis placed on procedure

-feedback

-quality of products