

**IMPLEMENTATION OF APPRENTICESHIP TRAINING SCHEME IN
MALAWI TECHNICAL COLLEGES AND INDUSTRY: A CASE OF
GENERAL FITTING TRADE**

M.Ed. (POLICY, PLANNING AND LEADERSHIP) THESIS

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**UNIVERSITY OF MALAWI
CHANCELLOR COLLEGE**

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DECLARATION

I the undersigned hereby declare that this thesis is my own original work and has not been submitted to any other institution for similar purposes. Where other people`s work has been used acknowledgements have been made.

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CERTIFICATE OF APPROVAL

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DEDICATION

To my husband, Michael Freeman Chirwa and our sons, Muchenge Christian and Muwemi Karsten Chirwa for their unbounded patience.

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ABSTRACT

The study investigated the implementation of the apprenticeship training scheme in Malawi technical colleges and industry in general fitting trade using the perceptions of industrial foremen, general fitting instructors, technical education officers, and apprentices. It was carried out in purposively sampled public and private technical colleges and companies. The research problem emanated from literature review which showed that there are unskilled workers in general fitting industry despite the adoption of apprenticeship training scheme which aimed bringing change in the system. Given that situation, the study therefore sought to investigate on how apprenticeship training scheme is implemented based on stakeholders' perceptions; the differences between public and private technical colleges' gender-balance and factors that hinder or promote the implementation of apprenticeship training scheme in general fitting trade in Malawi. Contextual interaction theory and cognitive apprenticeship model were suitable theoretical frameworks for the study which followed investigative and confirmatory design of concurrent triangulation of mixed methods approach. The findings of the study will help Technical Entrepreneurship and Vocational Education Training (TEVET) stakeholders to develop policies that are feasible in apprenticeship training scheme in general fitting trade. The main argument of the study is that the implementation of the general fitting trade apprenticeship training scheme in Malawi faces challenges because of lack of stakeholders' coordination during the implementation process. This results in low skill acquisition by the apprentices. The study implies that knowledge sharing could minimize problems during implementation stage.

TABLE OF CONTENTS

ABSTRACT	vi
TABLE OF CONTENTS	vii
LIST OF TABLES	xii
LIST OF APPENDICES	xiii
CHAPTER 1	1
INTRODUCTION TO THE STUDY.....	1
1.1 Chapter Overview	1
1.2 Background to the study.....	1
1.2.1 Apprenticeship training scheme in TEVET system.....	3
1.2.2 Stakeholders in technical entrepreneurial and vocational education and training.....	5
1.2.3 The place of general fitting trade in technical entrepreneurial vocational and educational training	8
1.2.4 Women participation in apprenticeship training scheme	9
1.3 Statement of the problem	10
1.4 Purpose of the Study	12
1.5 Research questions	12
1.5.1 Sub-questions.....	13
1.6 Significance of the study	13
1.7 Definition of terms.....	14
1.8 Thesis structure	15
1.9 Chapter summary	15

CHAPTER 2	16
LITERATURE REVIEW	16
2.1 Chapter overview	16
2.2 Historical development of apprenticeship policy	16
2.3 Importance of apprenticeship in TEVET sector	21
2.4 Challenges of apprenticeship scheme	22
2.5 Access to apprenticeship training scheme.....	29
2.6 Theoretical framework	30
2.6.1 <i>Justification of contextual interaction theory for the study</i>	31
2.6.2 <i>Justification of the cognitive apprenticeship model for the study</i>	33
2.7 Chapter summary	37
CHAPTER 3.....	39
RESEARCH DESIGN AND METHODOLOGY	39
3.1 Chapter overview	39
3.2 Study approach.....	39
3.3 Research design	40
3.4 Sampling of research participants	40
3.5 Data generation methods and instruments	41
3.5.1 <i>In-depth interviews (IDI)</i>	42
3.5.2 <i>Focus group discussion (FGD)</i>	43
3.5.3 <i>Questionnaire</i>	44
3.6 Positionality of the researcher.....	46
3.7 Data processing.....	46
3.8 Validity, reliability and ethical consideration	48
3.9 Use of participants' verbatim quotes.....	48
3.10 Chapter summary	49

CHAPTER 4	50
PRESENTATION AND DISCUSSION OF RESEARCH FINDINGS	50
4.1 Chapter overview	50
4.2 Stakeholder’s perceptions on the implementation of apprenticeship training scheme in general fitting trade	51
<i>4.2.1 Mutual support in apprenticeship training scheme</i>	<i>51</i>
<i>4.2.2 Inception of apprenticeship training scheme</i>	<i>54</i>
<i>4.2.3 Discernibility of general fitting trade in apprenticeship training scheme</i>	<i>58</i>
<i>4.2.4 Access to information on recruitment.....</i>	<i>61</i>
<i>4.2.5 Lack of prior knowledge about general fitting trade.....</i>	<i>63</i>
<i>4.2.6 Low implementation of entrepreneurship skills in general fitting trade</i>	<i>64</i>
4.3 Differences and similarities among colleges in implementing apprenticeship training scheme in general fitting.....	66
<i>4.3.1 Management of the program and administration of colleges.....</i>	<i>66</i>
<i>4.3.2 Availability of infrastructure and training resources in colleges</i>	<i>67</i>
<i>4.3.3 Variations in performance of apprentices during training.....</i>	<i>71</i>
4.4 Issues of gender in the implementation of apprenticeship training scheme in general fitting trade.	72
<i>4.4.1 Recruitment according to gender.....</i>	<i>72</i>
<i>4.4.2 Treatment of apprentices according to gender</i>	<i>74</i>
<i>4.4.3 Performance and attitudes of apprentices towards work in general fitting trade.....</i>	<i>76</i>
4.5 Factors affecting implementation of apprenticeship training scheme in general fitting trade.....	81
<i>4.5.1 Trainers’ experiences and competencies</i>	<i>81</i>

4.5.2 <i>Inadequate coverage of modules</i>	86
4.5.3 <i>Apprentices' misconduct during training</i>	88
4.5.4 <i>Duration of industrial attachment for apprentices</i>	90
4.5.5 <i>Level of the industry to train general fitting apprentices</i>	92
4.5.6 <i>Monitoring apprentices' progress</i>	93
4.6 Chapter summary	95
CHAPTER 5	96
CONCLUSIONS AND IMPLICATIONS	96
5.1 Chapter overview	96
5.2 Conclusions	96
5.3 Implications of the study	99
5.4 Areas for further study	101
REFERENCES.....	102
APPENDICES	110

LIST OF FIGURES

Figure 1: Bar Graph - Recruitment according to Gender	73
Figure 2: Bar Graph- Trainers` years of experience	81
Figure 3: Pie Chart - Subject areas which apprentices had difficulties with.....	87
Figure 4: Bar graph -duration for industrial attachment for apprentices	90

LIST OF TABLES

Table 1: Decrease in Growth Rate	25
Table 2: Downfall in production.....	26
Table 3: TEVET modules and certification.....	28
Table 4: Sample frame	41
Table 5: Summary for research question, data sources, and techniques.....	45

LIST OF APPENDICES

Appendix 1: Introduction letter from Chancellor College	110
Appendix 2: Introduction letter from south east education division.....	111
Appendix 3: Interview guide for industrial foremen	112
Appendix 4 : Interview guide for technical education officers part (A).....	115
Appendix 5: Interview guide for technical Education officers part (B)	117
Appendix 6: Interview guide for technical instructors	121
Appendix 7: Questionnaire for apprentices	124
Appendix 8: Focus group discussion guide for apprentices	131

LIST OF ABBREVIATIONS AND ACRONYMS

ADB	African development bank
AQ	Apprentices` Questionnaire
BIDPA	Botswana Institute of Development Policy Analysis
CBET	Curriculum Based Education and Training
CIT	Contextual Interaction Theory
DANIDA	Danish International Development Agency
DEVPOL	Development policies
DTVT	Director of Technical and Vocational Training
EFA	Education for All
EMIS	Education Management Information Statistics
FGD	Focus Group Discussion
IDI	In-depth Interview
IF	Industrial Foreman
JICA	Japanese International Corporation Agency
MANEB	Malawi National Examination Board
MC	Malawi Craft
MGDS	Malawi Growth Development Strategies
MOE	Ministry of Education
MOEC	Ministry of Education and Culture
MOEST	Ministry of Education Science and Technology
MOLVT	Ministry of Labour & Vocational Training
NESP	National Education Sector Plan
NTT	National Trade Testing
OSHA	Occupation Safety and Healthy

P	Participant
SATRIN	Southern African Trade Research Network
SPSS	Statistical Package for Social Scientists
TCI	Technical College Instructors
TEVET	Technical Entrepreneurial Vocational Education and Training
TEVETA	Technical Entrepreneurial Vocational Education and Training Authority
TI	Technical College Instructor
TO	Technical Educational Officer
TQF	TEVETA Qualification Framework
TVE	Technical and Vocational Education
TVET	Technical Vocational Education and Training

CHAPTER 1

INTRODUCTION TO THE STUDY

1.1 Chapter Overview

This chapter introduces the study which investigated the implementation of apprenticeship training scheme in technical Colleges and industry in general fitting trade. The purpose of apprenticeship scheme is to promote the dual-mode of training involving the interaction among apprentices, and technical instructors on the other hand and skilled craftsman on the other within a fixed period of study (Hornby, 1997). The chapter begins with the background to apprenticeship training scheme. This is followed by the description and discussion of the apprenticeship training scheme, stakeholders in Technical Entrepreneurial Vocational Education Training (TEVET) sector and general fitting trade, statement of the problem, purpose of the study, rationale and an outline of chapters of the study.

1.2 Background to the study

The overall goal of the Malawi Growth Development Strategy is to achieve sustainable economic growth and wealth creation in order to bring about the well-being for all Malawians and make Malawi a hunger free nation (Malawi Government, 2006). The strategy direction sees Malawi moving from an importing and consuming country to predominantly producing and exporting country and gradually emerging as an industrial

nation (Malawi Government, 2006). In order to meet such goals Malawi needs competent skilled general fitters to produce quality products which could be marketable.

The Malawi Poverty Reduction Strategy paper's goal also is to achieve sustainable poverty reduction through empowerment of the poor (Malawi Government, 2001). Poverty is characterised as a state of continuous deprivation or a lack of the basics of life (Malawi Government, 2001). Poverty levels have not changed significantly over the years (Malawi Government, 2006). According to 1997/98 integrated household survey, it shows that 65.3% of the population live below the poverty line and the poorest people consume Mk10.47/day. Seven years later, another integrated household survey (2004/2005) was conducted. The findings of this survey showed that 52.4% of the population lives below poverty line (Malawi Government, 2006). Furthermore, the MGDS aim at providing the academic basis for gainful employment in the formal private and public sectors and to produce high quality professionals join with relevant knowledge.

These legislations direct that the socio-economic structure of the country could be transformed if the country could produce competitive products which are marketable locally and internationally. In view of this, there is a need for quality skilled and competitive workforce in manufacturing and production sectors in the Malawian industry, hence the study.

Furthermore, Malawi Government (2006) refers education as a key to prosperity, a catalyst for socio-economic and industrial growth and an instrument for empowering

the poor, weak and voiceless. The Malawi government's policy in Ministry of Education Science and Technology (MoEST, 2004), aims at developing an efficient and high quality system of education of a type and size appropriate both to available resources and to the political, social and economic aspirations of the nation. Furthermore, the vision of TEVETA join to provide: "an adequate and sustainable generation of internationally competitive skilled workforce capable of spearheading the country's production and export-led social-economic growth in a socially responsible manner" (TEVETA, 2007)

Despite the efforts that the education sector has on the implementation of these policies, the quality of TEVET education is low. The factors that contributed to low quality education are issues of management, governance, access, equity, quality and relevance (NESP, 2008; ESIP, 2009). Therefore, the paper investigates on how these are being tackled through apprenticeship training scheme in general fitting trade.

1.2.1 Apprenticeship training scheme in TEVET system

The apprenticeship training scheme is a government backed, work based training framework specifically tailored to meet the skill needs of employers. It seeks to provide artisans a work like situation for them to acquire adequate and necessary competencies for the world of work (Phiri, 2009). The main principle of the apprenticeship training scheme in general fitting trade is the dual training in technical college and industry under the supervision of skilled instructors and technicians respectively. The training is done within a fixed term during which the service provider and apprentices are in agreement (Pearson education Limited,

1978). The apprenticeship training scheme enables the apprentice to have theory which is complemented by the practical in industry.

Apprenticeship is the flagship program of technical education in Malawi that aims at enrolling students into the public and private training colleges and is the main mode of the training for artisans in Malawi (Jimat, 2009). In Malawi, the apprenticeship training scheme has been implemented in the technical trades since 1962 to date (Jimat, 2009) with different objectives depending on the needs of the industries.

This study considers the two main events that the apprenticeship training scheme has gone through as phases. The first phase was from 1962-1998. This period catered for formulation and adoption of the policy decision to implementation and abolishment of apprenticeship Act in 1998, as Haddad (1995) acknowledges that the implementation plan start from the adoption stage then the policy is also regarded as being implemented in 1962. In 1966, the policy changed its name from Apprenticeship Ordinance Act to Apprenticeship Act. It was guided by the industrial Act 55:08 (Malawi Government, 1972). The policy aimed at ensuring the availability of sufficient skilled workmen in TEVET trades. During its implementation, the apprenticeship was run using funds from the industrial training fund. This money was collected from different companies which could be given to apprenticeship board so as to assist in implementation. The money was calculated on how many apprentices were there at a company.

The second phase aimed at review of apprenticeship policy, formulation and implementation of the TEVET policy. This phase saw the restructure of the TEVET system that had poor management and governance (Malawi Government, 1997) that

it could meet the demand of the industry in terms of increasing access of artisans that are competent and skilled for both the public and the private sector (Chitera, Kaphesi , Banda , Mgawi , (2010). The result was the inception of TEVET policy which replaced the apprenticeship Act that was abolished in 1998. In 1999, the TEVET Act was approved.

1.2.2 Stakeholders in technical entrepreneurial and vocational education and training

Technical and vocational education training (TEVET) is being handled by several stakeholders who have various roles in the sector. One of them is the Directorate of Technical and Vocational Training (DTVVT) in the Ministry of Education Science and Technology. It was established in 1998 to provide policy direction in all Tevet matters (Malawi Government, 2007). It was moved from Ministry of Education Science and Technology (MoEST) to Ministry of Labour and Vocational Training (MoLVT) then relocated to MoEST in 2006 (Malawi Government, 2007). However, this relocation has shown an intention to re-emphasize the importance of vocational and technical training in education. The aim of DTVVT is to help in supplying skilled human resource to the labour market in order to meet the goal of MGDS of creating wealth and economic growth. It also aims at coordinating its activities with TEVETA (Malawi Government, 2007). It trains approximately 2950 artisans in all seven public technical colleges. DTVVT provides human resource to teach various trades in the seven public technical colleges.

Another stakeholder in TEVET is Technical Entrepreneurial and Vocational Education and Training Authority (TEVETA). This is an autonomous body which

was instituted in 1998 to take the responsibility of the Industrial Training Unit which was abolished in the same year. The body was established under the stipulated guidelines of the Technical Entrepreneurial and Vocational Education and Training Act (No 6 of 1999) which replaced the apprenticeship Act of 1965 and industrial training Act of 1972 (Jimat, 2009). The body was established so that it could oversee employee-based and informal technical entrepreneurial vocation education training in Malawi. This is done by coordinating and regulating various programs within TEVET system (Jimat, 2009). This could mean the establishment of the TEVET system that would be flexible and demand-driven focusing on skills and competencies required in the labour market. In view of these, TEVETA was mandated to sponsor, recruit and place students in employing organizations (Malawi Government, 2007) through various programs with apprenticeship program as the main one. Currently, TEVETA develops a curriculum, assesses and certifies artisans in various Tevet trades (Matemba, 2010).

The current Tevet policy also has increased employer participation in training efforts at integration of artisan into national training qualifications. In addition, entrepreneurship skills have also been integrated into all programs so as to make the graduates to be self-employed hence a tool into macro poverty alleviation and achievement of MDGS (Jimat, 2009). TEVETA also manages Skill Development Initiative (SDI) which operates in a non-formal way, at a tertiary level, the SDI aims at equipping the unskilled youth with skills which are needed in employers' labour and skill gap. To achieve this, TEVETA attaches the youth to local companies so that they may acquire on the job training. This in turn will improve their livelihood (Malawi Government, 2007).

Furthermore, another stakeholder in TEVET system is Malawi National Examinations Board (MANEB) as an examination board which administers examinations in various sectors of education in Malawi including general fitting trade. The board administers two examinations namely; Malawi Craft (March series) and Advanced Craft examinations (November series) every year. A Malawi craft syllabus is covered in two years while the advanced craft is covered in four years of study. These qualifications enable artisans to access jobs in industry even in technical colleges as assistant technical instructors.

The National trade testing board is another stakeholder which was established in 1956 under the Employment Act in the Ministry of labour vocational and training (MOLVT) to allow for general recognition of skills gained on the job and facilitates portability of skills and experience across companies (Jimat 2009). Currently, the board attracts many formal technical students because it is favoured by most employers and other stakeholders (Jimat, 2009). The board administers three papers namely; grade 3, 2 and 1 certificates. Grade 3 is for beginners; grade 2 is based on the passing of grade 3 examination. Grade 1 is the final and highest grade for the board. These certificates are well known in companies since they have been advocated since 1973. The holder of these certificates could be employed in either technical college or industry.

Technical colleges also constitute a critical stakeholder in Malawi, the apprenticeship training scheme has been applied in all technical trades in the seven public technical colleges and some other private and mission technical colleges. These are training institutions which are registered to train artisans in various commercial and technical trades. The technical trades are grouped into three

categories namely: Engineering (General fitting, welding and Fabrication, electrical installations); Construction (Plumbing, Carpentry and Joinery, Brick laying); and Auto mobile (Motor vehicle, Vehicle body repair and Auto electrics). Not all technical trades are being offered in every college, such that general fitting trade under study is offered in Lilongwe, Salima, Nasawa and Phwezi technical colleges.

Finally, industries are also constitute an important stakeholder since they play a role in complementing practical training of apprentices in industrial modules in general fitting trade. They provide real work situations and experience which enable artisans to learn and work well in the following industries: construction, textile, food production, engineering production and maintenance and road infrastructure.

Despite the various roles which these stakeholders have played in the TEVET system throughout the years, Malawi's industries still lack the competitive skill in general fitting workers (Chitera, Kaphesi, Banda, & Mgawi, 2010). It is against this background that this study investigated on the implementation of apprenticeship training scheme in general fitting trade in technical colleges and industry in Malawi.

1.2.3 The place of general fitting trade in technical entrepreneurial vocational and educational training

General fitting trade is regarded as the basis of all technical and vocational trades for its contents has all aspects of other technical trades in industry such as welding, construction and automobile industry. The sector saw the maintenance and production of machinery whose use in production shall bring out economic growth. Artisans that undergo the general fitting training could start from craftsmanship,

then technician level later engineer. These craftsmen are the ones that do much of hands-on work in industry unlike the technician and engineers who take most of supervisory work in maintenance and production. These craftsmen are the interpreters of drawings or design into a real working object, hence their skill and competencies need to match with the current technology and need to be available in various industry category for example in textile, transport, and food processing industries. It is in this view that the industrial expectation is high in coordinating training of general fitting trade so as to produce competitive skilled workforce that can be easily absorbed by the industry. The well manageable apprenticeship training scheme in general fitting trade could also contribute to the development of a country with an outstanding industrial economy. This will help in fighting against challenges of unemployment, low income and lack of industrial exposure.

1.2.4 Women participation in apprenticeship training scheme

In Malawi, since the gender advocacy cropped-in in education sector, the TEVET system also has embarked on campaign to increase women participation in technical trades. This is due to under representation of women in the sector (Antchoreana & Delluc, 2002). Malawi government (2008) in EMIS, showed that out of 109 lecturers in TEVET system only 18 are women. EMIS also indicates that girls' participation in the first year was 21%, which is minimal. There is low women participation in the technical trades as the pre-apprenticeship documentation indicates (Phiri, 2009).

The labour market survey to stakeholders reported that companies also face the challenge of low women participation. Out of 257 companies that took part in the

survey, only 0.09% were women. These percentages are too minimal compared to the advocated 30% of the SADC region (TEVET, 2010). In order to reduce the underrepresentation of women in TEVET system, TEVETA Malawi is broadly advertising and encouraging women to apply for the so-called male dominated courses, for example, general fitting trade. The impact of the campaign in TEVET system has been positive such that in the current implementation of the apprenticeship training scheme, 30-50% women are recruited. In 2009, TEVETA recruited 50% women in class of 20 students at a Technical College (TEVETA, 2009). The turn up of these women remain questionable for most of the apprentices do not turn up to pursue the trade after recruitment due to marital issues and pregnancy (Phiri, 2011). Literature is silent on whether the 30-50% is the need of the industry and also why these women apprentices leave general fitting trade which they have applied for. Therefore, this paper shall unveil how gender is addressed in general fitting trade.

1.3 Statement of the problem

The TEVET Act of 1999 highlights the functions of TEVETA board and one of them is to satisfy the demand of the labour market for employees with trade skills in order to improve production, and to ensure maximum efficiency and relevance of technical education. Section 11c of the Act also stipulates that the board has powers to prescribe rules with respect to apprenticeship training and such other rules which may be necessary for the implementation of the objectives and provisions of the Act (Malawi Government 1999). However, current technical students who are joining industry lack skills in their work. Studies have shown that there is a mismatch between the skills demanded by the industry and the type of graduates from TEVET training programs (ILO/Malawi Government, 2010). This results in low production

of vital items for exports and home use. This means that country could export a little to other countries hence dwindling in foreign currency. The problem also affects the employment sector, because once the industrial economy dwindles, huge population may lose jobs hence raising poverty levels.

Several studies pointed out that there is a need to invest in skilled labour development to sustain the industrial economy. Apprenticeship theory according to Pratt (1998) states that successful development through apprenticeship involves one to become a master of the field; the learning process must be active, social and authentic. These key factors enable apprentices to understand greatly and improve in their future contributions to socio-economic development.

In addition, the overall goal of the MGDS is to transform the country from predominantly consuming and importing country to a producing and exporting country (Malawi Government, 2007). One of the themes to achieve the goal is infrastructure development which requires increased availability of engineers, technicians and craftsmen in general fitting sector. Furthermore, MGDS acknowledges that TEVET contributes in economic growth such that once the system produces enough skilled graduates for labour market, it shall meet current and future economic needs. Despite this effort MGDS recognises the significant shortage of skilled workers and technicians (Jimat, 2009).

All the legislations are looking at the missing skilled workforce in general fitting trade apprentices. The question is with the aims of TEVETA board and revival of technical college education how is apprenticeship scheme being done in general

fitting trade? To the best knowledge of this researcher, no study was conducted on the implementation of apprenticeship training scheme in general fitting trade. Therefore, there was a need to investigate the implementation of the apprenticeship training scheme in technical colleges and industry in general fitting trade in order to fill the gap on the training process which was not clear to stakeholders and policy makers in the past. The main observation in this study was that various studies such as Jimat (2009); Chafa (1989); and Gunde 2014) focused on TEVET policy, issues of technical colleges. Therefore, more consideration should now be shed on how implementation of apprenticeship training scheme in general fitting trade is being done.

1.4 Purpose of the Study

The purpose of this study was to investigate the implementation of the apprenticeship training scheme in technical colleges and industry in general fitting trade using the perceptions of industrial foremen, general fitting instructors, technical education officers, and apprentices.

1.5 Research questions

The study was guided by the following main research question:

How is the apprenticeship training scheme being implemented in Malawi technical colleges and industry in general fitting trade?

1.5.1 Sub-questions

To explore this question deeply, the following sub-questions were employed:

- What are the stakeholders' perceptions towards the implementation of the apprenticeship training scheme in general fitting trade in Malawi?
- How do the technical colleges differ in implementation of apprenticeship training scheme in general fitting trade in Malawi?
- How is gender-balance addressed in the implementation of apprenticeship training scheme in general fitting trade in Malawi?
- What are the factors that hinder or promote the implementation of apprenticeship training scheme in general fitting trade in Malawi?

1.6 Significance of the study

The significance of the study are to provide the body of knowledge in the TEVET system, which shall assist policy makers to improve and sustain technical and vocational education training programs in Malawi. The findings of the study may also guide the stakeholders to improve the implementation of apprenticeship training scheme in general fitting trade; furthermore it may explain the skills gap among workers in general fitting industry despite the stakeholders interventions and finally it may uncover the privileges of accessing the apprenticeship training scheme in the general fitting trade and persuade the industry to increase access to general fitting apprentices in their world of work.

1.7 Definition of terms

Apprentice/ Artisan: A person who does skilled work making things with their hands (Hornby, 1997).

Apprenticeship scheme: It is a system of training an apprentice through dual mode i.e. alternating training in college and industry within specified training duration

Industrial attachment: Practical lessons carried out by apprentice who has been connected to industry

Technical instructor: A person whose job is to teach practical use of machinery in colleges (Pearson education limited, 1978).

Industrial foreman: An officer in charge in the industry's workshop who manages the workshop activities

Trade: A job especially one that involves working with hands and that requires special training and skills (Hornby, 1997)

General fitting trade: A course that involves production and maintenance of mechanical equipment

Vocational education: Technical education that involves development of practical skills in a given trade (Pearson education limited, 1978).

1.8 Thesis structure

This thesis has 5 chapters as follows: chapter 1 is the introduction to the study and this followed by second chapter where literature review pertaining to apprenticeship is written. Third chapter is methods and research design, this is followed by chapter 4 which is research findings and discussion. Finally, chapter 5 which is about conclusion.

1.9 Chapter summary

This chapter introduced the study which investigated the implementation of apprenticeship training scheme in technical colleges and industry in general fitting trade. The purpose of apprenticeship is to promote the dual training involving the interaction among apprentices, skilled craftsman and technical instructors within a fixed period of study, Pearson education limited, (1978). It furthermore described the key stakeholders in Tevet sector and general fitting trade who have been administering various examinations, trainings and services to the sector. The chapter described the statement of the problem that shows the gap that the study is to fill that the training process has to be improved in order to curb the problem of graduating unskilled artisans.

The next chapter is literature review which comprises of various documents which describe general fitting trade in TEVET system.

CHAPTER 2

LITERATURE REVIEW

2.1 Chapter overview

This chapter discusses local and international literature on apprenticeship training scheme in general fitting trade under Tevet system. The literature covers different aspects in developing and implementing the scheme from various countries. The themes discussed include: the historical background of apprenticeship, implementation of apprenticeship, importance of apprenticeship, challenges of apprenticeship and gender, and the current situation of the apprenticeship training scheme. The final section describes and justifies the theoretical framework for this study based on cognitive apprenticeship model and contextual interaction theory.

2.2 Historical development of apprenticeship policy

The apprenticeship is very concisely described as learning on the shop floor, that is, learning by doing (Munck, Kaplan, & Soly, 2007). The implementation of apprenticeship training scheme was copied from the tradition practice of the medieval era when masters could get an apprentice and train him in a specific skill of a trade within a fixed time and upon signing an agreement with his/her parents.

In Sub-Saharan region most countries developed their apprenticeship Act, the idea that they got from the colonial masters. In 1970's Zambia begun to consider of providing human resources in a wide range of skills rather than the already established technical disciplines. With the influence of several reforms of 1980-1990

such as liberalisation, informal sector employment rate rose up to 80% (Nkaza, 2003).

Zambia as one of the developing countries could not resist this ‘wind of change’ in technical and vocational education training. In 1994, she began to develop the Apprenticeship policy which in return led to the development of a Technical Entrepreneurial Vocational Education, and Training (TEVET). The government of Zambia through the Ministry of Education Science and Technology presented the TEVET policy document in 1996 (Konayuma, 2006). This aimed at allowing apprentices to self-employ and being employed in the formal and informal sectors. The Zambia TEVET policy’s objectives are: to balance the supply of skilled labour at all levels with the demands of the economy; to act as a vehicle for improved productivity and income generation; and to act as instrument for the minimisation of inequalities among the people (Nkaza, 2003).

The policy is being implemented in several trades that are being offered in various technical and vocational education centers. It facilitates the development of local curricula for training institutions (Konayuma, 2006). The centers are found in different geographical positions with the leading institutions being located in the big towns and cities such as Copper belt, Lusaka and southern provinces, which are along the railway line. These invite many apprentices to an institution where they are trained in hence gain a lot of skills and become skilled personnel.

Malawi could not resist the transformation of the 1960’s which led her to develop its industry by setting an organised system to assist in provision of skilled personnel in various trades within the industry sector. The first apprenticeship statement in

Malawi was called Apprenticeship Ordinance Act which was changed to Apprenticeship Act in 1966 (Gunde, 2010). This Act guided Apprenticeship training scheme (named Apprenticeship policy then) before Malawi became independent. The Act was part of the statement of development policies (DEVPOL-1980) which were meant to bring development and boost industrial economy since it is bedrock of country's economy (Oguntuase, 2010). The apprenticeship policy in Malawi has been changing since its inception therefore this paper categorizes the existence periods of the scheme in two phases namely; first phase (1962-1998); second phase (1994- to date). The policy aimed at estimating the number of apprentices required by the nation and ensuring that the apprentices were attached to industry. It also guided the government to establish the section known as Apprenticeship Board under the Ministry of Labour and Employment (MoLE), to look into TEVET management and apprenticeship training scheme.

The sector was meant to coordinate and regulate the training of apprentices in different technical disciplines to meet the industrial need of the skilled workers such as: to assist in construction of infrastructure in transport and building sectors; to assist in terms of recruitment; wages and conditions of service for industrial training for both craftsmen and technician training programs in technical colleges and the Malawi Polytechnic respectively. Ministry of Education and Culture (MoEC) was responsible for teaching and academic issues (Chafa, 1989). The second phase is characterized with the review of the Apprenticeship policy in order to meet the demands of technical education within the TEVET sector. In early 1990's, Malawi as other sub-Saharan African countries adopted several reforms that prompted the government to review the apprenticeship policy like the Jomtien declaration of Education for all (EFA) (Tiongson, 1990). The declaration guided the government to

adopt education policies like repetition policy; abolition of school fees; gender equality policy which prompted the government to encourage the participation of girls in schools through GABLE project; the adoption of multiparty system of government also played a role in education such that there was an adoption of the free primary education policy in 1994.

All these policies directly affected the TEVET system because many people could be attracted to attend school but the capacity for TEVET system could not accommodate them. These reforms made Malawi emphasize on the need to promote self-employment and entrepreneurship in response to the policy issues such as management and governance, quality and relevance; and access and equity as outlined in NESP 2008-2007 (Malawi Government, 2008). In 1997, the government instituted a task force which noted the challenges of the TEVET system in management and governance; quality and relevance; access and equity (Malawi Government, 2007). The government with several TEVET stakeholders formulated the TEVET policy (Act No. 6 of Parliament) in July 1998, which became a law in 1999. This meant that the apprenticeship Act and its regulations were abolished; instead the TEVET policy took over the outlined issues concerning technical and vocational training. The policy encompasses different policies that were drawn from previous TEVET programs with some changes and it was desirable.

The funding for the formulation process of the TEVET policy was drawn from TEVET levy and donors like DANIDA and JICA because there were no funds for its implementation (Gunde, 2010). One of the major functions of the TEVET policy was to establish an autonomous body that regulates the TEVET system in Malawi known as Technical Entrepreneurial, Vocational, Education and Training Authority

(TEVETA) (Malawi government, 1999). The TEVET policy empowers TEVETA to regulate and coordinate TEVET programs in order to achieve its main goal of broadening equitable access to quality TEVET system (TEVETA, 2007). The TEVET Act mandates TEVETA: to prescribe rules with respect to the following matters: syllabi –trade testing; examinations and certification; registration; accreditation and inspection of technical education and training institutions; guidance and counseling; technical teacher education and training; apprenticeship training and such other rules which may be necessary for the implementation of the objectives and provisions of the Act; (TEVET Act No. 6 powers to the board sub-section gii-viii:9).

In addition, second phase of apprenticeship training scheme saw the implementation with TEVET Act No 6 1999. Its main objective is to produce competent and skilled workforce for both the public and private sectors. Currently, technical education apprenticeship programs have improved because there is an increase in accessing apprenticeship from 780 to 1300 (Alide, 2009). However this is a small number compared to the population of the youths who are in search for occupational trade since many people apply for the training but a few of them are enrolled due to space. Government through TEVETA coordinates the program in public institutions while board of trustees and TEVETA coordinate the same programs in private technical institutions.

2.3 Importance of apprenticeship in TEVET sector

The importance of apprenticeship training scheme in various trades cannot be skipped because it is widely recognised within all sectors of TEVET system. TEVET plays an equally important role in the social, economic and political development of any nation together with its academic counterpart. Education is regarded as the key to development; however, TEVET is seen as ‘the master key’ because it has the ability to open all the ‘doors’ of life-long learning and improve the vocational expertise and consequently the quality of living. Therefore, TEVET can transform the world of work hence alleviate poverty among many and improve their quality of life.

The importance of apprenticeship training scheme to apprentices is: it provides them with available and affordable alternatives to University by enabling them to earn while they learn and gain very useful experience (Wall, 2012). In addition, apprentices can benefit from paying little or not paying fees for their training (Florida department of education, 2014). A survey that aimed at describing the importance of apprenticeship in Ghana found that there are two types of apprenticeship training scheme, these are; Contract one, of which apprentices pay fees on their own and the other, of which they are paid for. This enables the poor to benefit the apprenticeship at the same time gain the skill (World Bank, September, 1995). In Malawi, apprentices benefit a lot from the program in terms of subsidised fees throughout the training. These apprentices are also exposed to industrial training, receiving allowances and safety boots; this could be the reason why most of the people apply for the training through apprenticeship. However, non-apprentices pay a lot of money for the same general fitting trade and are not privileged as apprentices.

2.4 Challenges of apprenticeship scheme

The primary purpose of technical education and vocational training system is to equip sufficient people with the right skills to meet labour market demands. One of the challenges of which all TEVET systems are facing is lack of the skills, knowledge and attitudes of the apprentices to those needed by the labour market (Nkaza, 2003). This challenge is mainly observed in various apprenticeship programs including general fitting trade. Despite the importance of apprenticeship training scheme in various countries and well organisation of the system, apprenticeship still faces different challenges through decades. These challenges are concerned with the following areas; access and retention of apprentices in the programs; growth and employment rate; governance and management; imbalance of apprentices in formal and informal sectors; and mismatches between the education impacted and the needs of labour market etc. (Gunde, 2014).

Another report on *'Apprenticeship's issue related to challenges facing Canadian manufacturing industries'* discussed the issue related to skilled labour shortages and apprenticeship in manufacturing sector. The report's findings showed that the sector has experienced the low output and low growth; the completion rate of apprenticeship programs is low compared to other post-secondary education due to unstable employment patterns, inadequate basic skills, and limited compulsory certificate for manufacturing trades. The growing shortages underline the importance of the sector to train and retain employees despite the poor market conditions prevailing in the sector of manufacturing. New sets of skills that are emerging need apprenticeship programs to integrate them as a way of stakeholders' participation in improving aspects of the programs (Sharpe, Arsenault, Laponte, 2008).

Tevet delivery system in Africa is by social economic environment, which is in return characterised generally by uncoordinated, unregulated and fragmented delivery systems. For example, Zambia's Tevet provision is spread over different ministries like MoEST, MoE, etc; this could be solved if there was harmonisation of the system management (Nkaza, 2003). On the other hand, achievement of the poverty reduction strategy is deemed because of lack of skills in business management and entrepreneurship that could equip graduates with skills for self-employment. In Malawi, several documents have reported on the Technical and Vocational education training in Malawi. Their recommendations led to improvement of Tevet system, these documents ranged from education papers, consultants and individuals. For instance, a study on the management of technical colleges found that the apprenticeship training scheme had the challenge in industry that it could not absorb the entire trainees for attachment because the industry was small, despite the fact that the apprenticeship training scheme was meant to be dual training i.e. college and industry base (Chafa,1989). This actually made ex-apprentices to be mongering around looking for other fields or attaining the job within the sector but lacking skills due to insufficient training. In response to this the current curriculum advocates for industrial training. However this is not well managed that most of the apprentices still face challenges of lack of industrial attachment.

Another study that made strides in TEVET system, wrote on the need for skilled manpower in various levels and provisions of training facilities. The study highlighted the need for government to support Tevet systems by increasing access of artisans into training schools so that they could fill vacant posts in industry (Blair, 1969). During this time, there were only two government schools: Lilongwe and

Soche technical colleges which could not supply the sufficient number of artisans. On the other hand, some trade schools were manned by missionaries who were giving little support (Chitera et al. 2010). The findings showed that the industry was very weak due to lack of skilled manpower (Jimat, 2009).

A study on the actual potential contribution of education to the development of Malawi, focused on the expansion of the education system by targeting primary and secondary schools. The findings showed that by incorporating technical and vocational education in the sectors, learners should acquire skills and positively contribute to the country's economy (Wedell, 1973). Legislations outlined strategies that emphasized the importance of revamping technical and vocational education in Malawi. The papers emphasized on introducing skills that were required in industry in order to meet the required number of skilled men in industry and reduce unemployment levels amongst school leavers and drop outs . In response to this, in 1986, technical schools of Nasawa, Namitete and Salima were structured into technical colleges. The government started assisting mission colleges of Livingstonia, Mzuzu and Namitete. Technical and vocational education became part of primary and secondary school curriculum. This led to introduction of metalwork, woodwork and technical drawing subjects in schools (Chafa, 1989). Currently, a few schools are teaching technical subjects though with limited resources and few students are attracted to it.

The Government of Malawi statement also outlined the challenges that the TEVET encountered like poor funding, unsystematic management, low gender consideration in terms of management positions and relevant equipment and infrastructure. These contributed to low number of skilled workforce in industry for both genders (NESP,

2008-2017). It has been noted that this challenge has occurred since the TEVET system was fragmented and implemented with so many stakeholders and poor governance. To curb this, TEVET sector was moved from MoEST to MoLVT. However, this movement could not manage the hassle of teaching and learning process in the system (Antchoreana & Delluc, 2002; Mbekeani, 2010; Malawi government, 2008).

A study on financial statistics by IMF showed that the country's GDP fell significantly to 37% in 2003 from 49% in 1993. This affected the industrial growth that fell from 31.5% in 1992 to 14.6% in 2003 (see table 1). The fall in industry brought huge loss in manufacturing/production industry from \$539.8 million to \$239 million in 1998 (Mbekeani, 2010). The significant drops shown in tables 1 and 2, contributed to the closure of industries like Brown and Clapperton, Cold Storage, Pew limited. Later these drops led to retrenchment of large number of workers leaving the industry with a few whose capacity could not produce competitive products

Table 1: Decrease in Growth Rate

	1981 – 1900	1991 – 2000	2001	2002
GDP percent growth (constant 1995 \$	2.2	3.2	1.7	1.5
GDP per capita growth (constant 1995 \$	-1.0	1.37	-0.4	-3.5

Source: IMF (2009) financial statistics

Table 2: Downfall in production

PRODUCT CATEGORY	YEAR					
	1989- 91	1992/93	1994/95	1995/96	1996/97	1997/98
Textile	57321	86400	24886	18539	23309	13459
Industrial chemical	28460	34908	32195	32461	38001	21814
Fabricated metal products	28658	30170	13371	12607	16827	18521
Machinery except chemical	14879	14056	10486	10550	10624	6121

Source: UN COMTRADE (Mbekeani, 2010)

The fall of industry growth directly affected general fitting apprentices in terms of places of attachment and skilled personnel to train them. Due to lack of skilled men in industry and dwindling of industrial economy, the apprenticeship training scheme could not resist the change in order to meet societal needs. As a matter of implementing the powers of TEVET Act, a number of changes were introduced such as capacity building, examination and certification, syllabi, accessing of apprenticeship programs improved etc. In 2002/03 technical college instructors were sent to industry for refresher course in the newly developed machines and factory situations, so as they could be equipped with modern and high technology in their specific areas of study. TEVET upgraded 70 technical instructors to diploma level since 2005. These instructors had only expertise in their technical fields but had no

status of existing gap between demand and supply of general fitting instructors in the technical colleges; however it gives the total number of instructors in all technical trades (TEVETA, 2009).

A study on change of behaviour of apprentices after attending industrial attachment argued that the apprentices behave differently after attending first industrial training. The argument was based on lack of assessment in industry and this made apprentices to change their behavior when they are back to college (Chirwa, 1990). This was in line with what Chafa (1989) who found that ex-apprentices could not secure job because they lacked the skills and qualifications demanded by the industry. This notion as well does not specifically establish as to what extent did apprentices in general fitting were doing. However, the findings cover all the technical trades, assessment only, hence the study.

A paper on TEVETA qualification Framework (TQF) presented in South Africa, reported that prior to 1999, the TEVET system could not face the reality of the industry for it was implementing the apprenticeship Act (1962) which was inactive and there was no national policy to guide the sector which was fragmented. During this time, apprentices were sitting for external examinations whose mandate was not suitable for Malawi (Chakwana, 2008). In order to curb this problem, TEVETA with expertise from industry, developed the Competence Based Education Training (CBET) as a method of delivering Tevet curriculum. The syllabus contains aspects from the syllabi of MC and NTT. In 2000, TEVETA piloted CBET in few technical colleges namely, Mzuzu and Soche, later, in 2006 TEVETA advocated for the compulsory of teaching using CBET in all trade. The development of CBET policy was done by the industry, as they wanted skilled workforce in the areas of their

needs. Completion of industrial modules is questionable in industry since not all charge hands are equipped with knowledge; most of them have hands on experience. Industry and technical instructors were also oriented in the delivery of CBET, and are mandated to assist apprentices in completing their modules. TEVET curriculum has some of its courses like Entrepreneurship and Occupational Safety and Health so as to equip the students with skills in business and safety, once working in their own fields as shown in table 3 Chakwana, (2008) bemoans that the success of the CBET programs relies on the core implementers both industry as well as the training institution.

Table 3: TEVET modules and certification

LEVEL	MODULE TITLE	TEVET Qualification
1	- Occupation module - Fundamentals- Science - Calculations - Communications and graphics - Occupational safety and health	Foundation Certificate
2	- Entrepreneurship - Occupational module - Fundamentals – science - Calculations - Communication and graphics - OSHA	Intermediate Certificate
3	- Entrepreneurship - Occupational module - Fundamentals – science - Calculations - Communication and graphics - OSHA	Advanced Certificate

Source: field work

2.5 Access to apprenticeship training scheme

The implementation of apprenticeship in TEVET sector starts with the recruitment of apprentices into various trades in the system. Since the inception of the apprenticeship Act in 1960 many people could apply for these training programs but a few were taken. For instance, in 1986/87 school calendar, 1484 artisans were shortlisted to sit for aptitude test in general fitting trade, only 30 that is 2% were selected. In 1987/88 academic year, 728 applicants were shortlisted and only 30 i.e. 4% were selected. Chafa (1989), argues that the reason for short listing many applicants and selecting a few is not known, however, the system could have had some internal management problems. On the other hand, the validity of the aptitude test that was administered was questionable (Chafa, 1989). The large number of applicants for TEVET trades could be an indicator of either the importance of TEVET trades to the nation or lack of jobs by many people.

The current apprenticeship training scheme criterion could see approximately 3000 applicants applying for technical college trades yet a few 780 have been taken to public technical college due to bed space (Chafa, 2007). For each recruitment year, TEVETA recruits 20 students per general fitting class. This makes a total of 80 apprentices in general fitting for every year since the trade is being offered in three public and one private technical college. Currently, TEVETA also recruits apprentices for private technical college such that in total the recruits are 1300. However, the retention of the recruited is also questionable since after completion the industry is still lacking the skilled and competencies which it has been looking for. The recruitment change could not itself explain how the policy has been investigated but gives a gap of why apprentices are scarce yet the government through TEVETA has trained them.

Current recruitment in general fitting trade invites artisans with MSCE with a pass in science and mathematics to pave way for technological development (Phiri, 2007). This recruitment screens the candidates with an aptitude test, which examines the speed, logic and knowledge. The aptitude test is questionable because the contents are not in line with general fitting syllabi. The discussed challenges and reforms in TEVET sector are translated into improved quality of skilled personnel in industry. This means that the apprentices could be competitive enough to easily access the industrial attachment and companies could employ them. On the other hand, they can start a business hence being self -employed and reduce unemployment rate and poverty, which is rampant among the youths. This expectation has not come out for some of the general fitting apprentices.

Furthermore, upgrading of teachers, training facilities and curricula improvements would improve the image and quality of TEVET, draw more students and provide a solid technical manpower base for the nation (TEVETA 2010). However, general fitting industry faces the challenge of skilled personnel. (TEVETA, 2009; Chitera et al., 2010). Literature is clear that the general fitting workers in the companies are from technical colleges where apprenticeship training mode is the main training scheme. However, there is literature gap on the implementation of the apprenticeship training scheme in general fitting trade since the start of TEVET policy inception, hence the study.

2.6 Theoretical framework

Theoretical frameworks guiding this study are contextual interaction theory (CIT) and cognitive apprenticeship model. The CIT was developed by the USAID team who were analysing the policy implementation barriers on an HIV policy in Asian

countries (Kai, 2006). CIT was developed in order to provide a framework for systematically identifying and addressing factors that implementers have some chance of influencing the implementation process (Kai, 2006). These factors are information, power and motivation. They assumed that implementers can influence the implementation process based on these factors, and this could lead to either active or passive implementation which can lead to positive or negative implementation of apprenticeship scheme.

2.6.1 Justification of contextual interaction theory for the study

The study is on the implementation of apprenticeship training scheme, therefore the CIT could assist in analysis of the responses on implementation process of this scheme which has to come out from participants. The theory also assumes that the course and outcome of the policy process rely not only on inputs but more crucially on the characteristics of the actors involved. This means participants' motivation, information and power could influence either positive or negative implementation of the scheme.

According to Bressers (2004), the theory does not deny the value of a multiplicity of possible factors, but claims that theoretically their influence can best be understood by assessing their impact on the motivation, information and power of the actors involved. Therefore, the study on implementation of apprenticeship training scheme focus on how stakeholders (apprentices, instructors and implementers) are implementing the scheme. This means their power, and information indicates their involvement in the implementation of scheme hence the application of the theory to the study is suitable and shall assist in exploring more about them.

One of the CIT's key assumptions is that the factors influencing the implementation process are interactive. The influence of any factor, whether positive or negative, depends on the particular contextual circumstances. The theory distinguishes a set of core circumstance or constructs related to the actors involved, which jointly contribute to implementation. The construct include motivation that when it has been examined it helps stakeholders understand the perspectives of implementers (Sabatier, 1991).

Secondly, sufficient information assist implementers to successfully implement the policy. Information about technical knowledge that assist actors to know the levels and patterns of communication; have guidelines and protocols been developed, and are they readily available? How is the information and communication between actors coordinated? Do the beneficiaries have sufficient and appropriate information to benefit from the program? The study sought to establish if the implementers and beneficiaries have knowledge of the program hence application of this theoretical framework is suitable.

Thirdly, power is an important factor to understand in policy implementation as to who is empowered to implement a policy and to what degree they can implement it? Power may derive from formal sources such as legal or regulatory systems or informal sources that are dependent on another for the achievement of the objectives (Simwaka, 2008). In most interactive processes, informal sources of power may be highly important for they can balance more formal powers of the implementing authorities. Interactions between actors must be considered to further analyze barriers to implementation. Types of interaction can be cooperation where active (both parties share a common goal (blocking or implementing the policy), or passive

cooperation (more actors adopting a relatively passive approach to implementation of the policy instrument. Forced cooperation is a form of passive cooperation imposed by a dominant actor (Simwaka, 2008). The study on implementation of apprenticeship training scheme shows issues of power, therefore the theory used is suitable because it examined the kind of power among actors.

The study on implementation of apprenticeship training scheme, is based on the interaction of stakeholders in all stages, i.e. in colleges, apprentices are interacting with technical instructors, technical officers and in industry, apprentices interact with technical education officers, industrial foremen, hence the application of the CIT theory is appropriate. The interpretation of each other's interactions gives the answer as to how the apprenticeship training scheme is being implemented.

Finally, the CIT theory was developed in qualitative paradigm hence its application in the study of mixed methods approach is appropriate.

2.6.2 Justification of the cognitive apprenticeship model for the study

Cognitive apprenticeship model was developed by Allan Collins, John Seely Brown in 1989. The authors proposed an alternative model of instruction that is accessible within the framework of the typical American classroom. It is a model of instruction that goes back to apprenticeship but incorporates elements of schooling. The constructivists learnt that (masters/ teachers) of a skill often fail to take into account small things implicit processes involved in carrying out complex skills when they are teaching novices (Brown, Collins & Duguid, (1989). Then they designed cognitive apprenticeship so that they must combat these tendencies. Cognitive

apprenticeship model is designed to bring these tacit processes into open where artisans can observe, enact and practice them with help from the teacher.

Firstly, cognitive apprenticeship is a way of learning through experience guided by an expert. Motivation for this approach came from criticisms of formal education that usually separates learning from practice and teaches skills and knowledge in an abstract manner, making it difficult for the artisans to apply the learned knowledge in real-world situation. According to Brown et al., (1989), the central issue in learning is becoming a practitioner, not learning about practice.

Secondly, cognitive apprenticeship model focuses on four dimensions that constitute any learning environment and these are; content type, method, sequencing and sociology. Cognitive apprenticeship model advocates learning of the following knowledge types: domain knowledge where they get concepts, facts, and procedures for making different artefacts within the trade; Heuristic strategies where they learn general techniques for accomplishing tasks; Control strategies which are about general steps for directing one's solution process; and Learning strategies that shows knowledge about how to gain new knowledge. These content types assist artisans to be practitioners, hence the model is appropriate in the study. The methods of learning in cognitive apprenticeship model are effective in teaching novices under apprenticeship training scheme.

Firstly, this includes modelling which posits that an expert should demonstrate a task explicitly artisans experience and build on conceptual model of task. Artisans model a decision-making process by observing an expert reasoning. In general, modelling can be behavioural (learning a motor skill through imitation) or cognitive

(modelling a decision-making process by observing an expert reasoning), but cognitive apprenticeship is oriented mostly on cognitive modelling (Bandura, 1997).

Secondly, there is coaching or mentoring, that involves observing novices task performance and offering feedback and helps to sculpt novices performance and to that of an expert. Usually, those processes include an expert offering advice, hints, verbal descriptions, diagrams, questioning, assistance, support, exercises and explanations to learners trying to perform the task. Scaffolding is a third method which involves the act: acting of putting in place strategies and methods to support the artisans learning (Sawyer, 2006). These supports can be teaching manipulative activities and group work. Teacher must execute parts of the task that is the artisan is not yet able to do. This requires the teacher to have the skill to analyze and assess artisans' abilities in the moment. According to some, scaffolding is just a form of coaching. Expert supports artisans when they need it, but then gradually removes his support as they advance (Collins, Brown & Newman, 1987). There are two types of scaffolding: directive (a teacher-centred approach where expert provides learners with strategies of successful artisans) or supportive (a learner-centred approach where he provides strategies that fit to artisans current interests and needs).

Another method is that of articulation where an instructor encourages students to verbalise their knowledge and thinking, solving a problem and draw conclusion to develop their own explicit conceptual models. This is followed by reflection through which an instructor may encourage artisans to compare their ways of problem-solving with others, this could make artisans look back at how they solve their problems and improve towards the behavior of an expert (Collins et al., 1987).

Another method is exploration, where an instructor encourages artisans to pose problems and solve it on their own. The later require the master to show artisans how to explore research and develop hypothesis. Furthermore, Sequencing the cognitive apprenticeship model advocates on keys to ordering learning activities that the task should be increasing to complexity that is the work given to artisans be of variety with meaningful tasks gradually increasing in difficulty at every level; increasing diversity, artisans be able to practice in a variety of situations to emphasize broad application; and global to local skills focus on conceptualising the whole task before executing the parts (Collins et al.,1987). This is shown in apprenticeship training scheme where artisans are expected to move from level one to level three of which they learn various skills from simple to complex, hence the application of the model is not questionable.

The last dimension is that of sociology. The cognitive apprenticeship model explains that for artisans to be a practitioner there must be social characteristics of learning environments that is situated learning where artisans learn in the context of working on realistic tasks. Sociology emphasises that the artisans should have actual experience of applying knowledge in real-work situations; have chance of community of practice that is communication about different ways to accomplish meaningful tasks; intrinsic motivation where artisans set their personal goals to seek skills and solutions; and cooperation that is artisans work together and share experiences to accomplish their goals (Heeter, 2005).

It should be noted here that the characteristics of cognitive apprenticeship model are clearly shown in its approaches. The first approach is during classroom (decontextualised, inert) the artisans are given all the information about tools in the workshop, how to care for them and how useful are they to the work of others. The

second approach is when it is authentic (situated in real world problem to solve) artisans are told to design the billboard and write the message about dangers in the workshop. The instructor or foreman demonstrates and supervises but most of the work is done by themselves as to explore what tools they should use and how to go about it until they finish the work, hence, the model is best suit to the study.

The two theories are interrelated in this study, that is the CIT explains on the contextual and interactions among stakeholders whilst the cognitive apprenticeship model explains content and skill acquisition of the artisans during apprenticeship training scheme in general fitting trade.

The theories shall be used in presentation of research findings as a bench marks in support or not it shall also linked with literature review and study findings in order to further explain their application to the study.

2.7 Chapter summary

The chapter discussed local and international literature on apprenticeship training scheme in general fitting trade under Tevet system. The literature covers different aspects in developing and implementing the scheme from various countries. The chapter begins with the historical background of apprenticeship where it explains the source as mediaeval era where a master could assist artisans to develop a skill; it further explained the two phases of apprenticeship scheme in Malawi. This is followed by importance of apprenticeship scheme as it provides room for lifelong learning to artisans and help in development of vocational skills. The chapter further describes the challenges of apprenticeship as size of the industry is small to accommodate apprentices for training. It also depicts a mismatch of training and needs of labour market. The chapter, furthermore, discuss the current situation of the

apprenticeship training scheme. Finally, section describes and justifies the contextual interaction theory and cognitive apprenticeship model as theoretical frameworks to guide this study on presentation of findings. The contextual interaction theory describes how stakeholders` character affects the implementation of programs and cognitive apprenticeship model looks at how training of artisans takes place within the institutions. The next chapter documents methodology used during this study.

CHAPTER 3

RESEARCH DESIGN AND METHODOLOGY

3.1 Chapter overview

This chapter describes and justifies the research design and methodology used in this study. It first begins with study approach, followed by research design, sample, techniques, data generation methods, data generation procedures, data processing, validity and reliability of the research and ethical consideration.

3.2 Study approach

The study employed mixed method research design with qualitative approach being predominant. Mixed method approach is an inquiry approach that combines both qualitative and quantitative forms of data. Creswell (2003). Bryne (2007), defines mixed methods research as a design that incorporates techniques from quantitative and qualitative approaches in the overall design. Mixed methods is also defined as a generation and analysis of both qualitative and quantitative data in a single study in which data is generated either concurrently or sequentially, given a priority and involve the integration of data at one or more stages in the process of research (Creswell, Plano & Hanson, 2003). Qualitative methods have techniques that are rooted in direct contact with people involved in a program, while quantitative methods translate experience into units that can be counted, compared, measured and manipulated statistically (Carlson, 2002). Therefore, the mix of these two

methods strengthen and complement each other (Bryne & Humble 2007; Creswell, 2003).

Mixed methods enabled an expansion in the breadth and range of inquiry; a deeper understanding of the problem by using qualitative approach to elaborate, enhance, and clarify the results from the quantitative approach (Green & Caracelli, Graham 1989). Therefore, the mix of both methods has enabled the researcher to yield the best results for it considers both techniques of inquiry. The mixed method approach allowed the researcher to incorporate multiple approaches in data generation and analysis as well as integration stages in order to answer research questions. Furthermore, the mixed method approach made the results rich because the two approaches cancelled each other's weaknesses (Brewer Hunter, 1989; Bryne & Humble, 2007; Tasshakkoir & Teddie, 1998).

3.3 Research design

In this study, the explanatory concurrent triangulation design was employed by collecting and analyzing quantitative and qualitative data at the same time. This design assisted the researcher to generate data within a short period of time (Creswell, 2003). The design was also chosen in order to confirm, cross validate and corroborate findings in a single study (Greene, Caracelli & Graham 1989). The two types of results were triangulated during interpretation of the study (Bryne, 2007).

3.4 Sampling of research participants

Sample is the collective group of participants from whom data is generated. In this study the sample frame is shown in Table 4.

Table 4: Sample frame

Sample	Justification
45 level 3 general fitting apprentices	They were in final level hence they had wider knowledge on the problem understudy
5 general fitting technical instructors	They were the only technical instructors implementing apprenticeship training scheme in general fitting trade in the technical colleges understudy
3 industrial foremen from 3 different companies	They are some of the prominent companies that support training of general fitting trade through apprenticeship in industry.
2 technical education officers in Tevet system	They are coordinators, providers of policy direction in the matters of TEVET system, and implementers of apprenticeship training scheme

Source: Field work

3.5 Data generation methods and instruments

In mixed method approach, data generation techniques are many for it combines both qualitative and quantitative techniques. In this study, three data generation methods were employed namely interviews, questionnaire and focus group discussion. These were administered to various participants of the study. This section documents the data generation methods and instruments and justify the use

of the methods. Table 5 summarises the use of such methods by outlining the method, sources of data and the research questions the participants were asked on.

3.5.1 In-depth interviews (IDI)

An in depth interview enabled participant to express the meaning of the responses freely hence yielded rich data for the study (Weiss, 1998). In order to capture a detailed account of the implementation of the apprenticeship training scheme understudy, these interviews were taken place in the participant's place of work. The interviews were conducted using semi-structured guides (appendices 3- 6) for they gave room to a researcher to probe more information that has been useful for the study. Semi structured interviews also give room for an interviewer to collect more information by teasing a problem and seek solutions to the study (Cohen & Manion, 1994). The following respondents were interviewed: three industrial foremen and 1 training manager, 5 technical instructors, two technical education officers in Tevet system. From these respondents the researcher inquired on how apprenticeship training scheme is being implemented with respect in public and private technical colleges; on gender issues and finally factors that affect implementation of the apprenticeship training scheme in the trade. Place for interview was a challenge because it was in the offices of interviewees, people could come to ask for or access some of the materials which in turn disturb the interview process. The researcher had to ask the interviewee to place a tag of `NO DISTURBANCE, INTERVIEW IN PROGRESS` on the door. This reduced disturbance completely.

3.5.2 Focus group discussion (FGD)

The focus group discussion is one of the methods, which exposes more hidden details of the topic of discussion through direct flow of information through interaction among group members. The FGD was employed in order to gain knowledge on the problem under discussion. It was being conducted to apprentices of similar characteristics as peers, colleagues and this study targeted level 3 apprentices. The participants were organised in a free environment to ask questions and freely give responses. The researcher introduced the topic and the participants could answer and interact with each other hence yield more data. This interaction exposed issues on the introduced topic hence emerged the data for the study (Morgan; 1998).

Focus group discussion guide (appendix 8) was used to generate data from the apprentices who were also participants of survey questionnaire. The study employed 2 focus group discussions of 8 participants (apprentices) each of the technical colleges understudy in order to understand on how the apprenticeship training scheme is being implemented in general fitting trade. The focus group discussion utilised the probing questions in the semi-structured guide to allow free response that has yielded rich data because the participants were free in expressing themselves. In addition, the focus group discussion was developed in order to clarify and expand the choices that they made in quantitative data in order to cross validate the responses in the earlier method. Some participants could dominate in responding to questions, this was corrected by directing the question to other people and involving all genders to respond to the questions.

3.5.3 Questionnaire

Questionnaire is a method used in collecting survey information, providing structured, often numerical data, being administered without the presence of the researcher (Wilson & Mclean, 1994). Structured set of questions were administered to investigate on what is really happening during the implementation of apprenticeship training scheme in general fitting trade. The questionnaires consisted of close and open ended questions. The researcher administered the questionnaires to apprentices in general fitting trade in technical colleges. Appendix 7, gives a summary of a survey design of the study. At first the college instructors could give all TEVET students who were in third year, this was realised during administering that they had challenges in responding to some of the questions. Then it was realized that some of the participants were under parallel program and they were eliminated right there.

Table 5: Summary for research question, data sources, and techniques

Institution	Data Source	Research Questions	Data Collection Technique
Technical College	Apprentices	What are the stakeholders' perception on the implementation of the apprenticeship training scheme in general fitting in technical colleges and industry?	Focus group discussion
Technical College	Technical Instructors		Interview
Industry	Industrial Foremen		Interview
TEVET system	Technical Education officer		Interview
Technical College	Apprentices	To what extent are the colleges different in implementing the apprenticeship training scheme?	Focus group discussion and questionnaire
Technical College	Technical Instructors		Interview
Industry	Industry foremen		Interview
TEVET system	Technical Education officer		Interview
Technical College	Apprentices	How is gender addressed during the implementation of apprenticeship training scheme in general fitting?	Focus Group discussion
Technical College	Technical Instructors		Interview
Industry	Industrial Foremen		Interview
TEVET system	Technical Education officer		Interview
Technical College	Apprentices	What factors affects the implementation of apprenticeship training scheme in general fitting?	Focus group discussion and questionnaire
Technical College	Technical instructors		Interview
Industry	Industrial Foremen		Interview
TEVET system	Technical Education officer		Interview
TEVETA	Technical Education officer		Interview

Source: Field work

3.6 Positionality of the researcher

The researcher is not a new member in the field of technical education that interaction with the participants of the study was part of the daily activity, being a technical personnel, the researcher had interacted with students, industrial foremen, before. These contacts have enabled the researcher to access entry in the institutions. However, this could have been a barrier to generate the actual data due to objectivity- ‘the separation of the perceiver from the thing perceived’ (Ballenger, 1994). This is highly valued principle among peers for some colleagues may look at the researcher as a friend and be biased in giving the information. However, the use of multiple data sources and methods has assisted in checking the objectivity from the generated data.

3.7 Data processing

Data Processing involves editing, coding, classification and tabulation of collected data. In this study data was processed according to the mixed methods approach. The study required a variety of data analysis procedures due to multiple data sources and methods used. Furthermore, the analysis has integrated across all employed data sources of the study. The Quantitative data from questionnaires were analyzed using Statistical Package for Social Scientists (SPSS). This is a package through which quantitative data is manipulated to bring out information as descriptive or inferential. Descriptive statistics is a statistical procedure that summarises a set of numbers in terms of central tendency, variation, or relationships while inferential data is the extent to which the variable has occurred. In this study quantitative data was coded by assigning numbers to responses such that 1 = yes, 2 = no, while the questions were just phrased. This quantitative data from the questionnaire has been

manipulated to give frequencies of the various variable occurrences that have assisted in understanding the implementation of the apprenticeship training scheme. On the other hand, qualitative data collected using focus group discussions, and interviews, were analyzed using thematic analysis. This procedure involves re-reading of data, coding and developing themes. The qualitative data was firstly cleared, ensure their completeness and make them easier to study, later data was read in order to become familiar with the data and identifying potential themes in it (Cohen & Manion, 1994).

Data was classified into codes categories later themes were developed according to the responses of participants in answering the key research question. Tables and figures were developed in Microsoft excel and SPSS such that text would just explain further on the figures and information in the table.

In this study, quantitative data was run into SPSS such that data was then kept in soft copy and hard copy in several areas. Figures were manipulated into percentages to describe frequencies of occurrences. Qualitative data was recorded on a laptop sound recorder and file was created as audio. Data was further transcribed and well written in a hard cover. During recording some information were not clear, the researcher could call the interviewee for further clarification on the issue of which the interviewee responded well.

3.8 Validity, reliability and ethical consideration

The terms of validity and reliability are commonly associated with quantitative research, however qualitative research also apply it to establish credibility and triangulation of the results (American Education Research Association, 1982). In order to improve the validity of the instruments, piloting was conducted to apprentices of level 3 in general fitting trade and one technical instructor from a certain technical college. Colleagues in the same professional critiqued and edited the instrument to clear out errors like repetitions of questions, vague statements which could yield irrelevant data. Furthermore, the researcher administered data generation instruments that has increased response rate and enabled the researcher to provide support to participants who had problems in filling questionnaires and answering interview questions (Weiss, 1998).

Permission was sought by both letter and phone from the institution understudy. The researcher sought the consent from the participants before conducting in-depth interview, focus group discussion and administering the questionnaire. The participants were also assured of confidentiality by not asking them to give their names on either of the data generation methods (Creswell 2003; Marshall & Rossman, 1999).

3.9 Use of participants' verbatim quotes

Verbatim quotes are basics of raw data in qualitative inquiry, which reveals respondents depth of emotion, the way they organize their world, their thoughts about what is happening their experiences and their basic perception (Becker, 1970). In this study verbatim quotes have been gathered from respondents of in-depth interviews and focus group discussion in order to capture the respondents insider's

perspective on reality of the issue in their own words. This has helped the researcher to understand the grave of the problem understudy because respondents have revealed the experiences on the ground (Fetterman, 1984).The quotes have been quoted starting with the method then followed with participant then venue. The quotes are acknowledged by the codes for the respondents' particulars.

3.10 Chapter summary

This chapter describes and justifies the research design and methodology used in this study. It begins with study approach of mixed methods in which the quantitative and qualitative research have been employed in order to expand the breadth of understanding of the problem understudy. This is, followed by research design of the chapter further more discussed on the data collection techniques as questionnaires, interviews, and focus group discussion. It further discuss the structure of questions in each technique and its justification. In addition the data collection procedures are explained in a table form as source of information, data collection technique and the research question, it further describe how data is being processed. Explanatory concurrent triangulation which was employed in collecting and analyzing data at the same time. The chapter discusses on the sample that it was 120, however only 51 participated due to their availability. Purposive sampling techniques were used due to nature of the study. The chapter also discusses the validity and reliability of data generated that use of multiple data collecting techniques and various categories of respondents made it valid and reliable, finally the chapter discusses credibility and trustworthiness as well as ethical consideration that names of respondents should not be used on questionnaires. The next chapter presents discussion of research findings.

CHAPTER 4

PRESENTATION AND DISCUSSION OF RESEARCH FINDINGS

4.1 Chapter overview

The chapter presents the findings of the implementation of apprenticeship training scheme based on the research questions in answering as to how apprenticeship training scheme is being implemented in general fitting trade. These findings are discussed in relation to literature review and theoretical framework of contextual interaction theory and cognitive apprenticeship model.

The findings are in four sections namely; perceptions of stakeholders towards the implementation of apprenticeship training scheme in general fitting trade, differences and similarities among colleges in implementing the apprenticeship training scheme in general fitting trade, gender issues in the implementation of apprenticeship training scheme in general fitting trade, and factors that affect implementation of apprenticeship training scheme in general fitting trade. These findings show either positive or negative implementation of the scheme. The findings are in the form of texts, charts and quotations. The participants are apprentices, instructors, technical education officers and industrial foremen. The participants verbatim codes used for the study are as follows: for the two technical education officers' it ranges from TO 1 to TO 2, for the 45 apprentices' in general fitting trade who participated in the study through a questionnaire the codes used range from AQ 1 to AQ 45. For those apprentices who participated in the study in

focus group discussion the codes range from (P1 to P8) in FGD 1 and (P1 to P8) in FGD 2 representing participants in the two focus group discussion. For the five technical college instructors, the codes used range from TCI 1 to TCI 5 while codes ranging from IF 1 to IF 3 have been used for the industrial foremen.

4.2 Stakeholder's perceptions on the implementation of apprenticeship training scheme in general fitting trade

The section presents and discusses positive and negative perceptions of various stakeholders in the implementation of apprenticeship training scheme in general fitting trade. The section starts with the positive perceptions followed by negative perceptions.

4.2.1 Mutual support in apprenticeship training scheme

According to the responses from participants on the stakeholders' support towards apprenticeship training scheme, it shows that there is good support from various stakeholders for they benefit out of it. The apprentices, foremen, and technical education officers unanimously agreed that various stakeholders do support apprenticeship by contributing towards training of apprentices. For instance one apprentice said in a focus group discussion that:

Some companies where we are attached offer us library services that have current information' (FGD 2, P4, technical college 2).

It can be argued from a contextual interaction theory (CIT) perspective (Kai, 2006) that information given to apprentices during industrial attachment helps the apprentices to excel in their training. In this case, apprentices need information which is suitable for frequently changing technological world. Therefore, the

opportunity to study in libraries of the industry is recommendable and good support for the apprentices as they interact with experienced workers.

On support, given to apprentices, one foreman observed that:

Once the apprentices have joined our company, they are given personal protective equipment, transport to and from college, tuition, examination fees, safety and healthy rules and regulations for the company, medical services from our clinic; and they also receive a high pay compared to their friends from other companies because we pay them a package of machine operators hence they increase our production, (IDI 2, IF 2, Industry 2).

The apprenticeship training scheme is beneficial to apprentices themselves for they are paid fees and get all the listed benefits. In addition, by interacting with experienced workers in an industrial context, they get experience of work and knowledge before they are employed. One foreman highlighted that there is mutual support between apprentices and trainers. For example, this is what he had to say:

The apprenticeship training scheme is systematically implemented because we train them until four years elapse. During this period we get cheap labour hence gain more profit to boost our company. On the other hand our objectives are being met while the apprentices are gaining skills. (Industry, IF Interview 1).

The foremen comments indicate what the sociology of cognitive apprenticeship model emphasises that the artisans should have actual experience of applying knowledge in real-work situations (Heeter, 2005). This is in line with what is highlighted in literature that apprenticeship is good because it provides artisans with available and affordable alternatives to university education by enabling them to earn a living while they learn and gain very useful experiences (Wall, 2012). This resonates with (Florida department of education, 2014), observations that through apprenticeship artisans pay low fees.

The industry as a stakeholder also assists in the development of the curriculum and other academic issues as one technical officer stated that companies do assist in training apprentices and also module production. The participation of the companies in curriculum developments creates a room for them to include the labour market needs hence equip the artisans with updated skills and knowledge for the production of competitive items. This is related to literature that the current policy has increased the employers' participation in training efforts at the integration of artisan into nation training qualifications (Matemba, 2010).

When asked further on the benefits of apprenticeship training scheme in terms of employability one of the participants confirmed that apprentices are employed regardless of no certification because their companies do not have enough workers and they are planning to continue training them once employed. This was confirmed by one of the foremen who stressed that;

Companies are there to train apprentices but when need arises we do employ them based on their performance and behaviour. In some companies they interview them so that they compete with their friends after advertising but in other companies there are few experienced workers apprentices are automatically employed (IDI 2, Industry, 2 IF2, Interview 2).

The employability of apprentices itself is a sign of motivation. This can be argued in the sense of contextual interaction theory that when apprentices are motivated they are then encouraged to influence positive implementation of the program. In this case, the apprentices gain skill so that they are equipped enough to compete for the employment. There is good support from various stakeholders towards apprenticeship training scheme in general fitting. This shows positive perception on implementation of the apprenticeship training scheme in the trade.

4.2.2 Inception of apprenticeship training scheme

The wind of change in the Tevet system led to development of Tevet policy in 1998 which incorporated the change of implementation of apprenticeship training scheme. When stakeholders were asked on the inception of this Tevet policy, there were mixed perceptions over the inception of the apprenticeship training scheme which had changes including curriculum and its coverage and certification. Some participants expressed that it was done well while others expressed that it was not effectively done. One technical officer felt that the inception of apprenticeship training scheme was effectively done because there was involvement of stakeholders at regional level to bosses who could advocate to their subordinates on the implementation process as quoted saying:

This was effectively done in all regions, if some people did not understand it, may be the bosses who did not do their job rightly, hence the misunderstandings (IDI 2, TO 2, TEVET centre).

Stakeholders also perceive that the implementation of apprenticeship training scheme is not effectively done in general fitting trade. This was indicated in their responses as follows:

One technical officer said that people welcome the wind of change in vocational training system for they expressed that the transfer of responsibility from government to TEVETA was a recommended one, as he explained:

TEVETA is an autonomous body that took over the responsibility of Tevet system from government, this was a good idea, and later the body confused the whole purpose by starting to develop a curriculum and assessing students. Public is not happy and industry is shrinking for it has been filled with apprentices who have no certificate and also currently there are multiple curriculums (3 certificates namely National Trade Testing (NTT), Malawi Craft (MC) and Competency Based Education and Training (CBET)). Therefore industry does not know which certificate is valid and its weight is not known even by apprentices themselves (IDI 1, TO 1, TEVET centre).

When asked on which certificate is an official one, the officer quickly answered to stated that:

CBET is emphasized to be official curriculum for apprentices in the system that is both college and industry. Authorities do not advise apprentices to sit for NTT because it is meant for prior learning unlike CBET (IDI 1, TO 1, TEVET centre).

Technical education officers acknowledged that the system has three curriculums namely CBET, Malawi Craft (MC) and National Trade Testing (NTT). CBET is different from other curriculums for they use summative assessment. The last two surfaced within the TEVET system long time ago while CBET came in 2006 and it is failing market in industry for the industry doesn't know it. This has made the apprentices to sit for former curriculums as well but companies are confused for they do not know which certificate they should accept. One technical officer commented in an interview on the issue of multiple curriculums by saying:

However acknowledged that the CBET (official syllabi), have graduated students without certificates for levels 1 and 2 till now they are finishing training. This encourages apprentices to sit for NTT which is recognized and favoured by employers and stakeholders. In addition some companies support apprentices by paying them examination fees for NTT and MC (IDI 2, TO 2, TEVET centre).

Industrial foremen expressed that companies feel that CBET qualification is questionable and it's not quite clear to them; some companies' human resource manager could not equate a grade 3 NTT certificate to CBET levels and explained as follows:

We encourage the apprentices to sit for NTT and MC because we do not know the CBET certificates. We employ them because they have NTT or MC certificates only (IDI 1, IF 1, Industry1).

This was agreed by another industrial foreman who said:

As a matter of supporting the students in apprenticeship, we do assist them by giving them time to study for their NTT/ MC exams (IDI 3, IF 3, Industry 3).

When asked on which curriculum are the trainers using when training apprentices in general fitting trade, there were mixed answers. Colleges do implement CBET while in industry, some foremen implement it while others they are not implementing CBET. They admitted that they train artisans how to use the machine without following any module. When asked on why they do not follow the CBET, they added on to say that they have no idea because they were not informed others claim that they heard inception of the apprenticeship training scheme was in a hurry because there was inadequate sensitisation of the apprenticeship training scheme; its implementation was inadequately advocated to stakeholders and lastly; participants felt that implementers were not involved much on the changes made about the implementation of the apprenticeship training scheme. This was indicated that they knew little and others indicated that they knew nothing about it. This is in line with what the paper has found out on knowledge base, that there is also no forum of the trainers from both sides to monitor the training progress and share information on changes in apprenticeship training scheme.

When asked for further explanation on certification issue, the industry admitted that they encourage apprentices to sit for NTT and Craft exams because they felt that though they cover the industrial module with the apprentices effectively, if these apprentices are not verified they are not certified as well. Certificate according to Merriam Webster is defined as an official document that acknowledges

achievement of a student in any program. The technical education officers pointed that the challenges which system is facing emanates from management level due to the hasty inception of apprenticeship training scheme. The participants explained that the changes made were done in a hasty such that other people could not get it. The participants highlighted some of the problems such as; lack of information among stakeholders on changes which were made in apprenticeship training scheme and its implementation.

From the analysis, it shows that firstly, clear instructions were made to a few such that in college, the apprentices are taught and assessed on CBET. In industry there are mixed reactions, some do not know about it while others, they know and train the apprentices, yet no assessment neither certification is done. This shows lack of monitoring and evaluation system of the apprenticeship training scheme in the general fitting trade so as to find out what is happening or not. The act of failure to monitor the program agrees with NESP (Malawi government, 2007) and PIF (Malawi government, 2005) that the governance and the management of Technical and Vocational Education (TVE) is weak, unsystematic hence low skilled personnel. This is taken from the lack of information on the part of implementer.

This does not agree with CIT that advocates for need of sufficient information to assist implementers so that they can successfully implement the program. Information about technical knowledge assists actors to know the levels and patterns of communication; to check if the guidelines and protocols developed are readily available for the implementation of the scheme. This can also be argued in terms of the CIT that implementers have some chance of influencing the implementation process (Kai, 2006), because they lacked information of new implementation process, hence they decided to use the old method which is not in

line with the current demands of CBET. When it's time for monitoring, the current objectives will not be achieved, hence a negative implementation of the apprenticeship training scheme in general fitting trade.

In addition, it is not in line with Haddad (1995) who argues that once a policy has been implemented, it needs to be monitored to see the progress of the executed programs and assess the implementation and correct the problems that arose during implementation. The negative effects on the implementation of apprenticeship training scheme in general fitting is not having three curriculums in the system only; but the mastery of the skills and competences is questionable since apprentices attempt to sit for all examinations whose coverage are of sub-standard. However, apprentices do this in order to secure jobs in the industry, where they will master skill after being retrained. This is time lost, because the period of 36 months one has to master skill unlike to wait for retraining.

4.2.3 Discernibility of general fitting trade in apprenticeship training scheme

Technical officers revealed that there are mixed reactions from various stakeholders in the industry over the future of general fitting trade in apprenticeship scheme. Some are positive while others are negative comments, as one technical education officer perceived that the demand is high because industries demand for more general fitting apprentices.

The perception of stakeholders that the demand is high is a positive perception in the implementation of apprenticeship training scheme in general fitting for it advocates for more artisans to be trained and reduce shortage of skilled manpower

in the labour market like what (Jimat, 2009) states. On the other hand, participants felt that the future of general fitting trade will be dim because of uncontrollable challenges they meet during training. The technical officer cited an example of a certain big company which pleaded for large number of apprentices to be trained. Later, the company got only two apprentices for attachment. This made one technical officer to wonder on the conduct of companies as he said:

I thought you were looking for a large number of apprentices, why are you asking for only 1 or 2 yet we have trained a large number of apprentices? (IDI 2, TO 2, TEVET centre).

Apprenticeship training scheme is a dual-mode training program (college and industry) such that failing to attend in industry shows incompleteness of the program for it contributes to lack of skill attainment. The tendencies of companies to train few apprentices, creates a backlog of non-attached apprentices. When asked on what the authorities do with the backlog, the participants reported that some colleges did not receive apprentices for two years as a way of accommodating backlog of apprentices from previous cohorts in industry for attachment. Furthermore, when probed on whether there should be a prearrangement of deploying apprentices to various industries such that after year one of college training apprentices could start industrial attachment, technical officer felt that it would be the same thing the industry may forget about the prearrangement hence apprentices will suffer.

This can be argued through the contextual interaction theory in terms of motivation. This means that when the demand is high stakeholders are motivated to increase the number of recruits. On a negative note stakeholders are demotivated when training institutions are not providing space for industrial training. This negatively affects

implementation of the scheme because the apprentices are not gaining the required skills for industry. This conduct makes the discernibility of general fitting trade industry to be dim and shrink, because it will continually receive unskilled workers.

Technical officers were asked on whether TEVET system has met the millennium goals, through apprenticeship training scheme in general fitting, they reported that the general fitting trade has not reached the millennium goals despite the wish of a country to move from consuming and importing to producing and exporting country (Malawi government, 2006).

For this to occur the country needs to have skilled personnel who can apply knowledge and produce tangible and internationally competitive products. As one technical officer said:

lack of innovative skills is found in our apprentices to the fact that they just do what they learn hence failing to apply the skills and fail to develop; producing neither researching in the field of their study (IDI 1, TO 1, TEVET centre).

This is not in line with cognitive apprenticeship model on two folds, that is, learning strategies that bemoans knowledge about how to gain new knowledge and reflection method where one could look back and rework on the problem and improve towards the master level. However, others argued that these apprentices lack proper role models because their trainers lack innovative skills. As one technical officer cited his observation on machine planted in the colleges:

Some colleges have planted their machines whilst others are waiting for government to do it for them. This shows lack of the so much needed innovative skill I wonder as to what such people can deliver to students (IDI 1, TO 1, TEVET centre).

It can therefore be argued that there is a need for thorough consultation meetings specifically for the general fitting trade as of how apprentices could be assisted in applying knowledge learnt because this has got a negative effect on the future of general fitting industry and its production.

4.2.4 Access to information on recruitment

In terms of accessibility to information, some technical officers observed that most people who access the information about recruitment are from towns and cities who could join the technical college courses later they drop out before they finish. A technical officer agreed with these other technical officers that it is so due to inaccessibility to information by the rural masses but it is due to lack of facilities in several districts as he explained:

Over the years there were two offices where people could access information about TEVET system. This was not accessible to all hence people who were in need of the training could not access (IDI 2, TO 2, TEVET centre).

The technical officer continued arguing that:

Currently, things have improved because TEVETA have erected offices in three regions that are catering for the inhabitants of these regions, this is an improvement because many people are accessing information and apply for various programs' (IDI 2, TO 2, TEVET centre).

The technical officer further explained that situation will improve for the better because there are plans to increase accessibility to information by having an office in each and every district to reach out to the most remote areas. He added that these structures would assist people within district to access information concerning recruitment and programs which TEVETA provides.

Some participants also felt that technical training is taken as a second thought such that when TEVETA recruits before other sectors like University of Malawi, Teacher education and so others on the students in the technical colleges may decide to go for those other courses hence increase in drop out. One technical college instructor narrated the ordeal that happened in his college.

During recruitment we received a list of 20 students as general fitting, only 7 turned up, 4 continued with their training the other 3 dropped out because they could not withstand the pressures of lack of attachment, (IDI 2, TCI 2, Technical College 2).

In addition, recruitment data for cohorts 2006, 2007 and 2008 shows the dropout rate as 31%, 54% and 34% respectively for two colleges understudy. This act deprives those who were interested to pursue the trade fully but they did not access the information on time hence misses the chance of securing training in the program. This can be argued in terms of what Sharpe et.al (2008) wrote that the completion rate of apprenticeship programs is low compared to other post-secondary education due to unstable employment patterns, inadequate basic skills, and limited compulsory certificate for manufacturing trades. Furthermore, the impact of this drop out has negatively affected the implementation of apprenticeship in general fitting trade because there is only one intake per year in the scheme; once the number of drop out is high it reduces the number of graduates for that cohort. This can also be argued that it is a loss to have these drop outs in the trade because it is an expensive trade by nature. At level three of the study period, industry expect to have an artisan who could have been productive because the apprentice have been equipped with a lot of most challenging skills necessary for the trade. Dropping out at this level it could be wastage of resources.

4.2.5 Lack of prior knowledge about general fitting trade

According to the participants in both FGD 1 and 2, and apprentices' questionnaire, they indicated that 50% knew the program before joining the training by hearing from other quarters not advert while the rest did not know about the program. Apprentices said that adverts for the TEVET program lack information of sensitising people on general fitting and apprenticeship training scheme. Some of the apprentices argued that adverts for the trade did not have a brief explanation about the trades and the training scheme hence negatively influenced their training for example; encountering different problems during the training. When asked on how prepared the apprentices were during the early days of the lesson, the apprentices unanimously reported that they do come without any preparation for the general fitting trade even the apprenticeship training scheme. This was supported by one technical college instructor, who openly expressed that:

Lack of prior knowledge affects teaching process in the class. Artisans seemed not to be sure of who they will become after training. It also affects their performance as they attempt an outcome twice or thrice especially in workshop technology. (IDI 1, TCI 1, Technical College).

One technical college instructor further highlighted that apprentices are usually oriented by the authorities once they are enrolled in the system but still it is not timely done because they are already in the system hence the decision made might not be fruitful unlike if they could make it before being enrolled. This can be argued through CIT that when information is insufficient, implementers have difficulties to make decisions. These apprentices learn not with whole heart due to lack of direction, hence negatively affect attainment of skills because they are not doing it fully.

It can be argued that officers in authority should embark on career guidance to technical college prospects and advocate the programs fully before time of recruitment so that artisans should come prepared for the training. Introduction of bridging information for prospect general fitting artisans should be introduced so that artisans should be able to link other subjects with general fitting trade.

With those recruited, well informed apprentices may attain the necessary skills in the trade because they wanted to not being directed to, hence high interest in the field and gain skills properly to the required standard. In turn, they may be innovative enough to develop, produce high quality products and boost economy as well training highly skilled workforce for the general fitting industry.

4.2.6 Low implementation of entrepreneurship skills in general fitting trade

When asked on how the stakeholders perceived the incorporation of entrepreneurship in general fitting trade, technical officers admitted that it is a very important aspect however; little has been achieved in general fitting trade due to nature of the resources for the trade. They narrated that for proper entrepreneurship implementation in general fitting trade, an apprentice has to purchase lathe machines whose cost is higher compared to other trades' machine tools. As one technical officer had this to say:

I know few general fitting business men one in Lilongwe and another one in Mzuzu who have small lathes which they use but little is being accumulated. Therefore it is difficult for general fitters to get the resources (IDI2, TO 2, TEVET centre).

This does not meet with the goal of integrating entrepreneurship skills in programs that aim at making artisans self-employed as a way of reducing poverty (Jimat,

2009). In addition achievement of the poverty reduction strategy is not being achieved because of lack of skills in business management and entrepreneurship that could equip graduates with skills for self-employment (Nkaza, 2003). When asked on whether TEVETA could give loans to graduates in groups as said by some of the participants, the technical officer pointed out that sometime back TEVETA had that program with a certain company that gives loans but it failed because the company required the borrower to have collateral like a house. This worried technical education officer as to where a newly graduate without a job, can get a house for collateral.

The technical officer reported that there are plans to restart the program with another bank as a revolving fund where graduates could borrow money to start a business, later reimburse so that another group may borrow. Despite the plan, the technical officer wondered if apprentices of general fitting can manage to borrow money due to high cost of the equipment in the trade.

This can be argued through cognitive apprenticeship model in two folds that apprentices lack content of control strategies which are about general steps for directing one's solution process; and they lack the method of articulation which advocates for apprentices to verbalize knowledge and solve their own problems (Heeter, 2005). As a way of improving entrepreneurship in this trade, artisans needs to network and form groups to access loans from prominent banks hence start their business. Failure to practice entrepreneurship in general fitting trade shows poor implementation of apprenticeship training scheme.

4.3 Differences and similarities among colleges in implementing apprenticeship training scheme in general fitting

This section presents the differences and similarities between the public and private technical colleges in implementing general fitting trade. It will firstly present the similarities then differences in the issues pertaining to management of the program and administration of colleges, infrastructure and training resources and performance of apprentices.

4.3.1 Management of the program and administration of colleges

The public and private colleges are similar in terms of the management of the apprenticeship training scheme in issues of recruitment process and deployment into industry for attachment and funding. This is done by Teveta which is the overseer of the Tevet system in Malawi. This implies that the apprentices' treatment is the same. However, the colleges differ in terms of administration and academic issues which in turn affect the implementation of apprenticeship training scheme in the trade. The administration of these colleges differs depending on the proprietor. In public colleges, the MoEST through DTVT coordinates all the programmes concerning administration and academic while in private technical colleges the board of trustees does everything on administration and academic. On this point, the public technical colleges have their operations in line with government policies and mandates who is the main funder of the programs and supports the administration fully unlike the private ones whose sources of money relies on revenue of fees. These financial issue demarcates the two cohorts for there is always a compromise in terms of program activities hence affect its implementation, later the two cohorts differs in skill attainment of apprentices.

4.3.2 Availability of infrastructure and training resources in colleges

Apprentices, firstly pointed out that there is shortage of classrooms in both public and private technical colleges. At a certain private college there are two classrooms and at another public college there is one classroom for the trade against four classes, such that most of the times, the apprentices do learn from instructor's office. This can be argued that proper training requires conducive environment, where apprentices interact and share their training experience. Use of an office does not only affect interaction among apprentices but disturbs the process of teaching and learning. Secondly, apprentices mentioned that public colleges do have library while other private colleges have no library. In addition, they hinted that in these college libraries there are few but the relevance of such books is questionable because they noted that they have books that are outdated and some books are of the same edition and written by the same author hence they have limited information. As one apprentice had this to say:

We have problems, we don't have relevant books for the trade such that it is difficult for us to know things that are new. The books that are in our library are of the same author that means we have limited information. (FGD 2, Participant 4, Technical College).

Apprentices acknowledge that apart from books and library service, the colleges are similar in terms of lack of modules for training. Modules are guides in training artisans through CBET curricular which is modular based hence lack of modules affect knowledge acquisition in artisans. Apprentices reported that in public technical colleges instructors have modules for technology and they lack science modules levels (1-3). They added that there are no modules for apprentices such that they rely on what their instructors tell them. This shows lack of information of the training as CIT by Kai (2006) advocates that people try to influence their needs.

In this case, trainers have no training modules, hence they take advantage of implementing the old system hence low or no improvement and negative implementation of the new training process.

In addition, apprentices observed that in public technical colleges, apprentices have access to computer which they access information from internet. They feel that computers with internet could have complimented their learning since they do not have enough books in their college library and with the photocopiers they could photocopy some materials which are complicated and scarce, hence need to have the services accessible to apprentices during training.

Thirdly, apprentices pointed out that the public and private colleges have similar problems of lack of lab chemicals neither lab equipment for them to carry out various experiments for general fitting trade like hardness, elasticity, tension on metals as part of science. They also differentiate that public technical colleges have science labs unlike private colleges which doesn't have such that they learn in class as one of them complained:

We do lack experiment in science especially the following: testing of plasticity, tension, and hardness. This is because at our college we do not have laboratories and equipment for general fitting trade which is scientifically oriented and experiments are a must (FGD 1, Participant 3, Technical College 1).

When asked on the importance of such experiments, one apprentice said;

These experiments enables apprentice to apply the knowledge on a metal in production or maintenance of various metal products e.g. when producing a hearth one needs to know the strength of the bricks so that they can be used for lining it (FGD 2, Participant 1, Technical college 2).

Apprentices expressed their concern that their training is affected because they lack practice in machine workshops. In addition, these apprentices acknowledged that both public and private technical colleges have similar problems of scarcity of materials for practical training. In some colleges, they are rejoicing over the acquisition of versatile machines, however, they are worried about raw materials for practical training of artisans during workshop practice. Apprentices and technical college instructors reported that materials which are needed for the trade ranges from sheet metal, rods, bars, plates and round bars. These materials are expensive hence scarce for the training.

On the other hand, apprentices reported that at a certain private college there is no machine workshop for training unlike in public technical colleges. When probed on why some colleges have machines and others not; technical college instructors reported that the difference is some colleges are privately owned while others are public hence differs in terms of acquisition of machines to support training. These public colleges get funding and support from government such that they also acquire much needed machines easily compared to the private ones whose source of funds for the training is minimal.

It can be argued that the implementation of the apprenticeship training scheme in general fitting is negative because one is deprived of the resources of training in the requirements of the program but still is expected to show the much needed skills in industry, hence shrinking the industry. Although colleges receive funding from government and TEVETA, sometimes the funding came in late or the money is insufficient for the items of the course. This negatively affects the implementation

of apprenticeship training scheme in the trade, as one technical college instructor explained:

Funding is a hindrance to implementation of apprenticeship training scheme in general fitting trade for it comes late after students are already in here, due to bureaucracy issues (IDI 3, TCI 3, Technical College 3).

This can be argued that workshop practice is the base of general fitting trade, therefore apprentices must acquire such training to avoid training apprentices who have theory only.

Another instructor concurred with a colleague as he emphasised:

Funding is a problem because the trade needs more resources which we feel that we are challenged; we are always given little money to run the trade. These compensate on the quality and quantity of raw materials which we buy for training hence our students do little or no practice at all (IDI 2, TCI 2, Technical College 2).

This agrees with cognitive apprenticeship model as Brown, (1989), states that the central issue in learning is becoming a practitioner, not learning about practice. This means that, if becoming a practitioner cannot be achieved, the artisans have failed to reach masterly level hence negative implementation of the apprenticeship scheme. This agrees with literature (Jimat, 2009) that the apprentices acquire little skills in their study hence low production in industry. It can also therefore be argued that effective training of general fitting trade requires infrastructures such as science laboratories, classrooms and workshops and training resources so that they can practice various skills required in industry for them to be able to produce items of good quality.

4.3.3 Variations in performance of apprentices during training

When asked on how apprentices perform in industry, participants appreciated that general fitting trade is a practically oriented trade that its key subjects involve use of machine for practical training and workshop theory, training materials and skilful trainers. These participants noted that despite good theory and knowledge acquisition from colleges, apprentices gained a little from practical work in colleges hence affects their performance as one foreman stated:

We ask them to do simple bench work for example, tin smithing; maize mill beater production, they don't do it, because they seem to know nothing of that nature, they fail to do; Squareness; surface finish; marking out and measurement; dot and centre punching and drilling skills, the very basics in general fitting. These are the basic skills and knowledge expected of general fitting workshop practice and supposed to be covered by first years. The tin smithing skill equips one with fabrication skills like, marking out, development, soldering, bending skills I wonder if this is covered in the current syllabi, hence they lack the skill and attain theory only (IDI 2, IF 2, industry 2).

Industrial foremen and technical college instructors, noted that the performance of the apprentices from the private and public technical colleges understudy is different due to the type of resources acquired by the colleges as one instructor added:

The difference of these apprentices emanates from the type of resources that the colleges have, public colleges have vast machines unlike private colleges' hence poor performance from the private college artisans (IDI 4, TCI 4, Technical College 3).

One of the apprentices concurred with an instructor and had this to say:

Our fellow apprentices from other colleges have a great exposure to machine and perform different operations like turning; facing; yet we do not have hands on experience we just saw these machines in the books (FGD 1, Participant 2 Technical College 1)

A technical college instructor concurred with an apprentice on the negative effect of lack of resources and he explained:

This affects performance of the students because one group is able to do workshop practice in college hence prepared them for industry while another group of the same cohort and trade are just oriented in theory hence fail to adapt to industrial settings (IDI 3, TCI 3, Technical College 3).

4.4 Issues of gender in the implementation of apprenticeship training scheme in general fitting trade.

The section documents the findings pertaining to how gender is being addressed in the implementation of apprenticeship training scheme in general fitting. The section mainly tackles on how female apprentices are being incorporated in the training and how various stakeholders accept them.

4.4.1 Recruitment according to gender

Technical college instructors perceive that recruitment for artisans in apprenticeship training scheme is done well with consideration of gender and qualifications. However, the participants noted that many females don't turn up for general fitting trade despite securing the place.

When asked further on how gender policy issues are addressed in general fitting trade in apprenticeship training scheme, participants acknowledged that the goals to such policy are not fully met in general fitting trade. The participants explained that several documents including Tevet policy and adverts for its programs advocates for equal opportunities in all trades including general fitting, but to date the system is failing to meet even the most advocated 30% women representation.

During data collection exercise, it was found that the visited industry had 16.5 % of female apprentices, yet these are big industries. This concurs with Jimat (2009) that found that there are gender-based variations on the completion of training. The mean duration of training for male artisans is slightly higher than that of females this means that males take long time to be trained whilst the ladies take a short time, hence more ladies in short programs compared to long programs like general fitting trade. This concurs with literature that there is underrepresentation of women in the trade (Antchoreana & Delluc, 2008) because there are indications that disparities exist between men and women in actual power sharing, participation and control over decision-making processes. These favour men and put women in subordinate positions.

Figure 1 shows a bar graph depicting statistics of apprentices according to gender in general fitting in the technical colleges understudy.

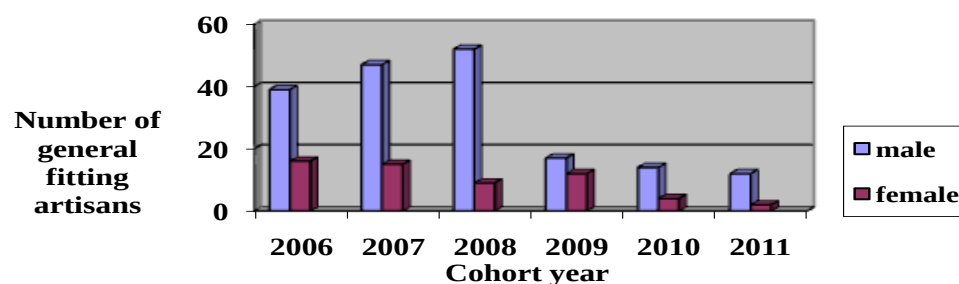


Figure 1: Bar Graph - Recruitment according to Gender

This is in line with literature that the 1998 population and Housing Census, only 35% of the female employees were in the professional and technical category while 15% were in the administrative and managerial category. The majority of women were in the agricultural sub-sector (i.e. 55%) (NSO, 2000). It can be argued

therefore that the gender imbalance in tertiary education emanates from the disparities in basic education both primary and secondary especially in science and mathematics subjects. One of the requirements of recruited general fitting apprentices, is a pass in mathematics and science (Phiri, 2009). This alone deprives those who did not pass well the said subjects.

According to Maluwa Banda (2003), girls do fail science subjects because of subject restrictions that were there in the past which barred them from opting certain subject areas (particularly sciences). This limited most of the girl's participation to stereotyped areas. Therefore the efforts to increase female apprentices in general fitting trade remains futile for they are failing to meet the requirements for the trade. However, these requirements for the trade cannot be compromised for it will mean compromising the quality of the needed skills in industry. Therefore there is need to sensitize girls in the basic education on the importance of science subjects in tertiary education specifically general fitting trade.

4.4.2 Treatment of apprentices according to gender

When asked on how the female apprentices are treated in the program, apprentices acknowledged that currently there are no differences between male and female apprentices in colleges under study, whether in class or workshop activities. They also reported that they are encouraged to work together to enhance uniformity in performance. In addition, they further reported that during college training there is no favouritism and they are not spared to hard work because it is what they will meet in industry. The female apprentices also appreciated that the structures for

ladies in both industry and college are available and at their disposal hence they are not deprived their welfare.

The creation of conducive environment and equal treatment of these apprentices is in line with literature that advocates for Education for all (EFA) by providing equal opportunities and benefits to both males and females during their training (Malawi government, 2000, Tiongson, 1990). This could encourage them to work and pursue the course till end. One technical officer pointed out that at first female apprentices were given a bursary to encourage them but now the bursary is for both needy males and female apprentices. He also pointed out that there are plans in pipeline to introduce scholarships which will be funded by African Development Bank (ADB) as an incentive to promote women participation in the so called '*male dominated trades*'.

When asked on how the bursary profited the beneficiaries, the technical officer felt that the bursary, showed a good response, however, it dwindled abruptly and he hopes that the upcoming bursary will improve and achieve the purpose. It can be argued that bursary for girls could attract them in the traditionally field of men as general fitting trade hence reduce the disparities as gender policy states that there is need to advocate for the increased enrolment in science and technology training program (Malawi government, 2000).

Some of the industrial foremen felt that female apprentices are treated differently from their fellow male apprentices because of the policies that are in companies. One of the examples they gave was of the night shift. They said that female apprentices are not given night shifts due to other reasons while male apprentices are

given a night shift to manage as a way of protecting them from night activities. He further commented that female apprentices do not complain for it is for their own good.

When asked on the retention of female apprentices, one participant noted that the retention of these female apprentices depends on the following factors: performance and behaviour, (they are not favoured anyhow; availability of vacancies in companies and demand for them. On the vacancy issue, companies may analyse one's behaviour and performance then may be considered for the available position. This may happen after training period has ended. He also added that companies may terminate the attachment contract during training once they are not satisfied with the apprentices' behaviour and performance despite gender. This could avoid the problem of having unskilled personnel in the industry.

This is commendable and shows good implementation of apprenticeship training scheme in general fitting because it agrees with literature that the DTVT aims at supplying skilled personnel to the labour market. If the females are skilled, they can be employed if not they cannot. On the other hand it is shown that women participation is hindered due to attitudes of the male domain aspect hence creates barriers to female apprentices. This is a negative implementation of the apprenticeship training scheme in general fitting trade.

4.4.3 Performance and attitudes of apprentices towards work in general fitting trade

According to their responses in the questionnaire on how they perform in college institution modules, 75% of apprentices ticked good while 25% ticked excellent. The

same question also was asked on industrial module the results showed that 100% of the apprentices ticked 'good' this was complimented with response from FGD 1 and 2 that female apprentices also work better in both theory and practical. One of the female apprentices said that some girls also work extra hard compared to boys. However, their hard working in college could be because during training they produce models or small items compared to real industrial work.

Technical college instructors noticed that some of the female apprentices are easily frustrated with lack of attachment and a few who continues pursuing the trade lack interest as some of them do undermine themselves during class work and workshop practice. The technical college instructors admit that they do encourage these female apprentices but still they do not change hence they leave them like that. This affects women presentation in technical trades because poor performance of these female apprentices shall continually contribute to under representation of females in decision making in the field of general fitting. One technical officer noted that the presence of female apprentices in the male dominated trade brings in mixed reaction as he said:

Some companies do not prefer female apprentices for they are regarded as lazy and they are fond of absenting themselves from duty due to maternal issues while others demand female apprentices. (IDI 2, TO2, TEVET centre)

This was agreed by an apprentice who stated that:

In industry, till date many people still regard female apprentices as lazy, weak people such that they cannot work well. (FDG 1, Participant 2, Technical College 2).

On the same vein, one technical college instructor alluded that the female apprentices do contribute to an unacceptable situations as he said that:

Some of the female apprentices undermine themselves in doing things may be they joined it after frustration or they had nowhere to go; they are lazy when doing work and when they did not secure attachment, they seem not to believe in themselves hence they perform poorly in their studies than before (IDI 3, TCI 3, Technical College 3).

Another apprentice felt that female apprentices' attitude towards work determines the perspective of instructors at institutions as she said:

It also depends on how female apprentices have established themselves at an institution, if you tend to rush for simple jobs and deny heavy and challenging ones you are defeating yourself. (FGD 1, Participant 2, Technical College 2)

Another apprentice concurred with the colleague to say:

General fitting is regarded as a male dominated trade such that our coming in the trade brings resistance in many people, therefore ladies have to work extra hard to match or compete with boys if these ladies are to be accepted in the field (FGD 1, Participant 1, Technical College 1).

Apprentices also pointed out that some companies refuse taking in female apprentices because of the past experience which previous female apprentices showed e.g. laziness then they generalize as all female apprentices are like that. In addition, foremen facilitate this attitude by assigning heavy duties to male apprentices as one participant complained:

Male apprentices are assigned heavy and challenging duties while ladies are given little and light jobs. This pains me more because as a male apprentice I am exposed to such kind jobs and become skill full while my fellow apprentice is at a disadvantage because they cannot gain the skill. On the same vein the female apprentice shall be regarded as incompetent by the same foremen.' (FGD 1, Participant 6, Technical College 1).

Apprentices continued to complain that female apprentices are given light jobs, for example they are not allowed to work in heights but only male apprentices should do for fear that they can fall down.

One male apprentices commented that ladies can fall down when working on heights because they easily become dizzy with heights unlike males. This means that within the same cohort, male apprentices undermine female apprentices. This can be argued through CIT that implementers have chance to influence implementation. In this case females' undermining attitudes towards work, influence passive implementation of the training scheme hence they gain little and unchallenging skills unlike their fellow male colleagues. On the other hand, foremen who are already demotivated with having female apprentices are being influenced by the female apprentices' attitudes hence assign them light jobs. There is need to advocate for positive attitudes and behaviors among trainers towards apprentices education. This could improve female participation and implementation of apprenticeship training scheme in general fitting trade. Industrial foremen acknowledged that in industry there are mixed reactions over inclusion of female apprentices in the trade as one recommended the job done by female apprentices as he expressed:

We do prefer both male and female apprentices because female apprentices regard it as their chance to compete with male apprentices, hence they have proved to be outstanding therefore we don't want to lose them. (IDI 1, IF1, Industry 1)

Talking whilst pointing at the female apprentice and nodding his head one foreman said:

That woman! Madam! eeh! She is a hard worker and we don't want to lose that girl, she works with all her minds and enthusiasm. She is better than boys who are in her group. (IDI 1, IF1, Industry 1).

The recommendation given by the foreman shows positive attitude and satisfaction with inclusion of females in the trade as literature states that TEVETA provides equal opportunities to both females and male.

Another industrial foreman showed stereotyping when he openly said:

Aah! There is a difference on the work done by a female apprentice to the one done by the male apprentice. This is seen clearly at the pace of an activity, ladies takes a lot of time whilst boys are fast which we need for our production. We do notice that the work has been done by a woman aah! We are forced to take the female apprentices otherwise we prefer male apprentices. We prefer male general fitting apprentices because of the following reasons: firstly, our company's objectives is to produce up to the target hence needs time consciousness which is not available in ladies. Secondly, ladies are not suitable for night shift as I have already stated (IDI 2, IF 2, Industry 2).

This can be argued through CIT that there are interactions among the implementers in training institutions; however they are of various types. In college, there are active interactions and high performance, while in industry there are mixed types of interactions i.e. active and passive. Forced cooperation is a form of passive cooperation imposed by a dominant actor (Simwaka, 2008). Much passive and forced interaction is between trainers and female apprentices. These mixed interactions affect the performance of the female apprentices for they gain little skill hence once employed they are not performing to the rightful standard.

The way gender is addressed in the implementation of apprenticeship training in general fitting is negatively affecting the acquisition of skill especially to female apprentices. The female apprentices gain little and unchallenging skills which are of

low standard especially in industry unlike their fellow male apprentices who are given heavy and challenging jobs.

4.5 Factors affecting implementation of apprenticeship training scheme in general fitting trade

This section presents the positive then the negative factors that affect implementation of apprenticeship training scheme in general fitting trade. The factors are issues pertaining to trainers` experiences, training materials, curriculum and capability of training centres, monitoring of apprentices progress and areas of difficult.

4.5.1 Trainers` experiences and competencies

The study found that trainers are experienced within the range of 3 to 22 years as shown in figure 2.

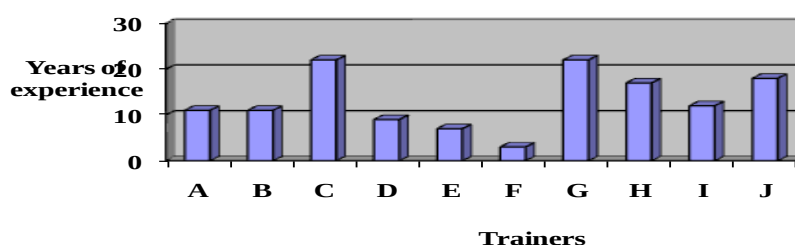


Figure 2: Bar Graph- Trainers` years of experience

Source: field work

Technical college instructors observed that the qualifications and experiences that the trainers have, assisted them in implementing apprenticeship training scheme and general fitting trade despite being a few in the system. They also added that this is possible because their experience is cemented on the background of apprenticeship which they have undergone as one stated:

I strongly believe that our college has enough facilities to start revamping other areas, however, currently we are only 2 personnel with general fitting background and relevant qualifications and we have managed well the implementation of the apprenticeship training scheme in the trade (IDI 2, TCI 2, Technical college 2).

This can be supported that qualification of an instructor should have mastery of content in the trade hence strength to the facilitation of training. In addition, it is in line with the cognitive apprenticeship that masters who impart knowledge and skill to artisans must be well equipped so that the artisans can gain the so required industrial skill to their level.

When asked on whether trainers have been involved in further training the past two years, participants also admitted that trainers have been exposed to various training and workshops and refresher courses for the past two years. These trainings have assisted them to polish up their skills in teaching as one reported:

I have attended a pedagogical study at Domasi and this has improved my teaching skill and class management. I also attended a Tevet induction workshop where we learnt on how to go about CBET curriculum in our trade at Peters lodge. This has complimented with the Domasi programme because I have improved tremendously, in scheming, lesson planning its writing pattern and importance and delivering of learner centered approach than the one I was using of teacher centered approach. (IDI 3, TCI 3, Technical College 3).

Another instructor concurred with the colleague that the refresher course on setting of items was of help to general fitting teaching and assessment. However, the participants hoped if these trainers could have other trainings especially in the field of general fitting so that they could match with the new technologies, and be updated. In addition they also look forward to upgrade to degree level in the field of mechanical engineering so as to have clear understanding of concepts in general fitting trade.

This is in line with what (Nkaza, 2003) states, that current problem in TEVET is mismatch of the skills gained with what the labour market wants. Trainers are the masters of knowledge and skills. If they are equipped with such skills, they will manage to impart such needed skills. Modern world advances daily, hence needs trainers to be updated with current technologies in order to improve productivity.

When probed further on what are the roles of trainers in general fitting under apprenticeship training scheme, it was learnt that trainers' role is to assist apprentices in coverage of institutional modules and assessment and it is well monitored. This is in line with cognitive apprenticeship on that the masters are there to assist novices to gain the skill so that they are able to work independently. However, they noted that not all instructors were trained through apprenticeship training scheme. This was clearly indicated when probed further on what they actually do, some instructors reported that they normally teach the key subjects these are (workshop technology and workshop practice). As of associated subjects that is science, calculation, and technical drawing and communication, they are taught by other instructors within the department whose background is neither general fitting nor apprenticeship training scheme.

When asked further on competencies of such instructors in imparting associated subjects, instructors admitted that those who teach associated subjects in the trade are graduates not specifically in the general fitting trade hence they only apply general knowledge previously learnt. Some industrial foremen added that these instructors lack expertise of linking the associated studies and technology of general fitting as one of them retorted:

Currently, things are out of hand! Apprenticeship is not implemented well! Report this madam to the authorities; trainers have little or no knowledge of the main aspects of the trade hence they impart sub-standard skill and knowledge to apprentices hence affect production!, Apprentices are being taught theory only, with no hard staff, teachers in College should be practically oriented so as to train the apprentices through workshop practices. All what they teach is of low standard (IDI 1, IF1, Industry).

The foremen`s observation shows that it is not in line with cognitive apprenticeship model of domain knowledge and heuristic strategies. The domain knowledge is where they get concepts, facts, and procedures for making different artefacts within the trade; Heuristic strategies where they learn general techniques for accomplishing tasks. These could equip them with basic skills of their trade.

One foreman concurred with a colleague and he had this to say:

When these apprentices come here they know nothing even to bend a sheet of metal, which is very basic skill in general fitting (IDI 2, IF2, Industry 2).

Another foreman added that:

These teachers lack expertise in major subjects like workshop technology and practice in general fitting trade; the associated studies which they learn are not of practical related to general fitting as a result they produce low skilled apprentices (IDI 1, IF1, Industry 2).

This is in line with Gunde (2014) that there is a mismatch in skills which are attained by apprentices in colleges and those actually in demand. The skills in employment is vocational skills whilst college output is theory hence a mismatch. This can be argued that indeed the current apprentices are more theory oriented than practice. This is a negative implementation, because the industry needs skilful artisans who can handle practical work than paper work hence dwindles skills. Indeed, lack of technical teachers in the general fitting field is high due to lack of technical teacher training such that it lies on Malawi Polytechnic which trains students in a degree program in technical education. In addition, this can be argued that delivery of the skills is not advancing according to cognitive apprenticeship model which advocate modelling, coaching, scaffolding, articulation, reflection and exploration. The first two are more of providing knowledge later when moving to the last four they are practically oriented with support from the master. However, apprentices' responses indicate that they are still on theory hence difficulties to perform in industry.

These findings can be seconded because general fitting trade is based on science and mathematical concepts like measurements when assembling components; strength of materials when producing or maintaining machines etc. hence its associated subjects should be related. Secondly, since the technical education graduates instructors are already technically sound in knowledge of technical drawing and science, there is a need for in service training for such instructors in the general fitting trade for them to be conversant with its content so they can apply to the subjects they teach.. Thirdly, there is need for team teaching with the experts in the field in subjects which such instructors have problems with, that they can enhance training process.

4.5.2 Inadequate coverage of modules

When asked on whether apprentices have completed institutional modules 65% indicated that they have finished; 15.9 % indicated that they did not finish the remaining 19.1% indicated that they didn't know whether they have covered the modules because they have never seen the modules they were only told by their trainers. This is in line with what Chakwana (2008) bemoans that the success of the CBET programs relies on the core implementers both industry as well as the training institution. In this study, trainers seemed not being open with apprentices on the coverage of the module.

Apprentices reported that coverage of the industrial based modules is questionable because they do routine jobs throughout training, for the company to meet its target it utilises each opportunity to achieve its objectives hence suffer the coverage of modules by apprentices. Some participants said that they have never seen the modules while others said they do not know about the modules if there are any as one foreman reported:

Not all companies have the capacity to train due to lack of personnel, materials, modules such that apprentices are fed up with either theory only or little practical hmm especially in Asian companies, apprentices learn nothing (IDI 1, IF 1, Industry 1).

Inadequate coverage of modules means that it is not in line with cognitive apprenticeship on how it is imparted to artisans that is from simple to complex through different methods hence negative implementation of the trade. When asked on why the industry is failing to train apprentices in the modules, some participants indicated that there is lack of technicians to train artisans. The foremen reported that the technician program which was done by the Malawi Polytechnic was so helpful

because it was linking the craftsmanship and engineering courses hence this group was imparting the skills to apprentices as one stated:

Apprenticeship training scheme is not effectively implemented in industry as it was in the past; the abolishment of technician program has increased the skill gap between the craftsmanship and engineering hence no technician to assist in training (IDI 2, IF 2, Industry 2).

In addition, responses from Apprentices' questionnaire highlighted areas of difficulties during their training as shown in pie chart below which indicates that 48% of them, have difficulties in the workshop practice of which 64% indicated that they have such difficulties in industry. Surprisingly, a few (6.8%) had difficulties in workshop technology. On the other hand 17% had problems with calculations. When asked on why they find difficulties in the highlighted areas, participants reported that they lack resources to practice on and other facilities that could support their training such as modules, books, photocopiers, computers.

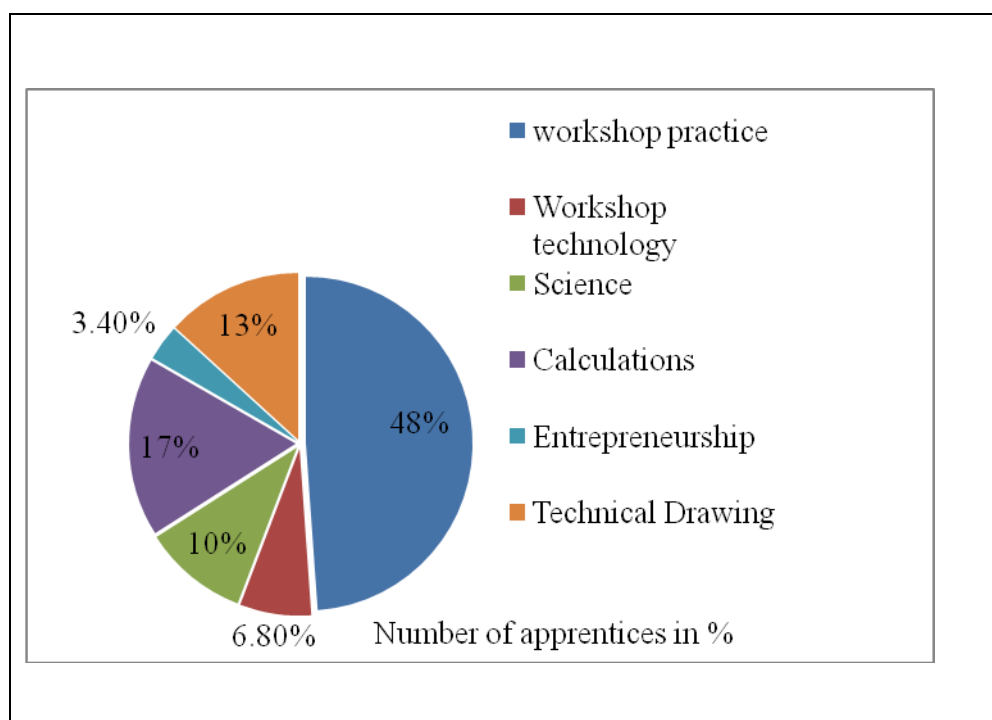


Figure 3: Pie Chart - Subject areas which apprentices had difficulties with

Source: data from apprentice questionnaire 1 to 45

This is in line with what Jimat, (2009), wrote that the industry was very weak due to lack of skilled manpower. During the ‘apprenticeship policy implementation’ (1962-1998), Malawi Polytechnic could train technicians under board of governors. These could work by translating design and produce or maintain machinery in industry. These filled the gap between engineers whose work was mostly paper and craftsmen whose work was to produce artefacts under supervision of the technicians. Currently, technicians are scarce hence lack of skills in the trade which in turn has lowered the standard of production due to poor imparting of skill and knowledge to a generation in the field. Hence, the need to revamp the training process by equipping trainers with relevant skills for the industry.

4.5.3 Apprentices’ misconduct during training

Foremen acknowledge that in industry apprentices misbehave especially during month-end after getting paid. Participants reported that apprentices may show laziness, absenting themselves from work and pretending as if they are sick yet they are drunk, others may become drunk during working hours and these are disciplined according to rules and procedures of the company as well as TEVETA. One participant said that others have been dismissed and suspended, depending on the gravity of misconduct.

This is not in line with contextual interaction theory that apprentices miss chance of interacting with the master to acquire knowledge, hence affect implementation negatively. Instructors also noted that there are issues of superiority and inferiority complex in the implementation of the apprenticeship training scheme especially

during college training, where apprentices who secured attachment feel much oriented than non-attached apprentices. The apprentices who are attached share skills and knowledge gained from industry during class sessions. This assists in clarifying concepts that were new to unattached artisans. To a certain extent, combination of attached and non-attached apprentices in class brings imbalance of skill acquisition among apprentices hence little participation in class by those who were non-attached. On the same point, those who were in attachment they misconduct themselves feeling more knowledgeable hence miss important aspects of their training as one technical college instructor admitted:

Students misconduct themselves especially when they are coming from industry they become unruly and others are fond of theft cases and pompous to both teachers and students. Furthermore non-attached apprentices feel disserved and humiliated as they regard apprenticeship training scheme not fruitful because they have never been exposed to industrial work (IDI 3, TCI 3, Technical College 3).

The study's findings of the pompous behaviour of apprentices after attending industrial training is in line with what Chirwa (1990) observed in her study that students misbehave when they are coming from industry. She stated that this is due to lack of assessment in industry. Currently, apprentices are assessed through verification yet they still misbehave. This can be argued that an assessment itself cannot discipline unruly apprentices or may be the modules themselves are not all that challenging enough that could make them disciplined. This can be argued that there is a need to look into issues of class management by instructors that they should be prepared to discipline such pompous students and set conducive learning environment for all the apprentices. Otherwise, this is a negative implementation of apprenticeship because it hinders the knowledge and skill acquisition of these artisans.

4.5.4 Duration of industrial attachment for apprentices

When asked on the duration of industrial attachment, it was noticed that there were variations in the duration of industrial attachment at the same time such that not all recruited apprentices had the chance of industrial training. This is shown in figure 4.

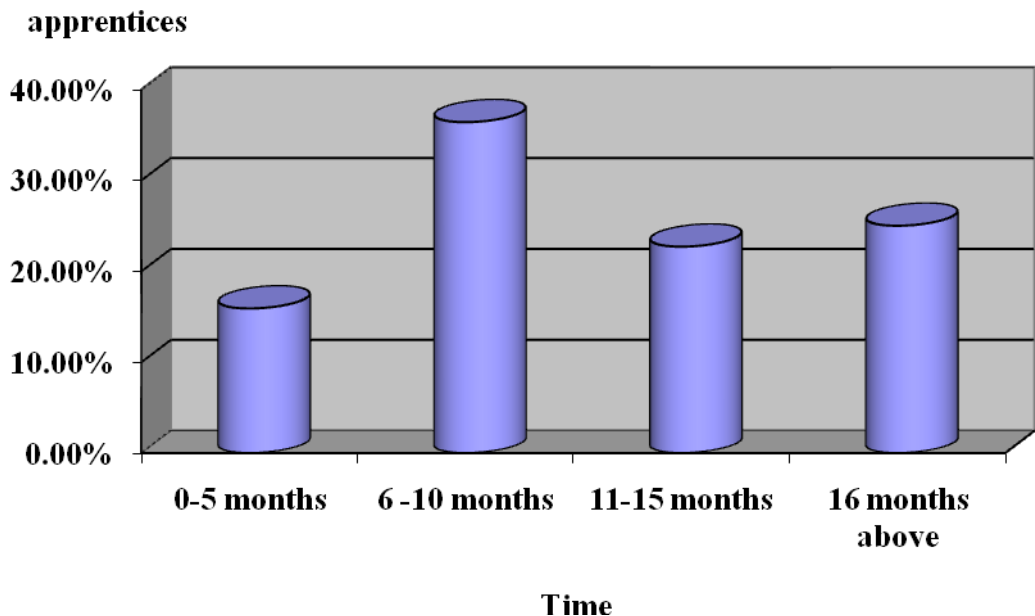


Figure 4: Bar graph -duration for industrial attachment for apprentices

Source: data from apprentice questionnaire 1 to 45

When asked on why there are differences in attaining industrial training, participants observed that apprentices were attached at different times hence the differences. A good number of those who indicated 11 to 15 and 16 months above explained that they found attachment places on their own such that they could work without proper arrangement of contract with TEVETA. This deprived the terms and conditions of apprenticeship training scheme because they were not verified and industrial

modules were not followed properly. Technical officers also noted that some apprentices could wait to be attached to high paying companies hence limit duration of industrial training. When probed on the effects of not accessing industrial training, participants observed that it is a must for one to be trained in all concepts of this training modules to get competencies, as one technical college instructor said:

Personally, I feel that when one did not complete industrial training, he misses a point that means he is not fully baked. This was good using other syllabi for example NTT, MC which was summative assessment but CBET is continuous assessment hence need to finish the modules even for themselves. (IDI 1, TCI 1, Technical College 1).

When asked on how they can be assisted apprentices felt that they could go in search of other places to finish their modules in industry despite that time for their training is over. This can be argued according to sociology in cognitive apprenticeship model through its characteristics that shown in its approaches. The first approach is during classroom (decontextualised, inert) the artisans are given all the information about tools in the workshop, how to care for them and how useful are they to one's work. The second approach is when it is authentic (situated in real world problem to solve). This means that for the apprenticeship training scheme to be completely done properly there is a need for artisans to be exposed to college and industrial training.

Literature also noted that TEVET is not systematically planned (Malawi government, 2008) that once an apprentice has finished college module he will go to industry A for training. As such industrial modules could be completed according to what apprenticeship training wants. This could improve time for completion of industrial training and also uniformity among apprentices in gaining skills from industrial modules. This can be argued with literature as (Nkaza, 2003)

states that there is a mismatch between the kind of training in industry and what the apprenticeship training scheme wants. Therefore the apprenticeship training scheme is not implemented well in general fitting trade.

4.5.5 Level of the industry to train general fitting apprentices

Apprentices reported that the industry is not at advanced stage and it's not wide; hence general fitting industry shrinks for it has limited resources and fails to absorb apprentices for attachment. As one apprentice said:

General fitting companies that have Centre lathe are few unlike other trades like automobile (FGD 1, Participant 2 Technical college 1).

This is in agreement with what Chafa (1989) in his study managing technical colleges; acknowledged that the failure to absorb the apprentices for industrial training was because the industry was small. Secondly, routine jobs in the industry due to the size also demotivate apprentices. This is a challenge because their experience is narrowed hence limit their scope that they were to cover in industry. On the other hand, the industry has a role to meet its mandated products.

When asked on the way forward on the size of the industry, technical officers said that TEVETA paused recruitment for two colleges so as to create room for the backlog of apprentices to be trained in industry and being verified. They acknowledged that CBET curriculum demand training in both institutions and it noticed that the 2008 cohort was not attached; therefore it arranged the industrial training for the said cohort and paused recruitment for two years in small colleges, as one of the technical officer said:

Currently some 2008 cohort apprentices are not yet attached therefore our office is in search of companies which wants general fitters so that we can attach them despite that their time for training is over (IDI 2, TO 2, TEVET centre).

Throughout the study it has been revealed that companies do not want to take more apprentices due to monetary issues. It was noted that those companies with well-established training programs have fixed rate of the amount of money to pay apprentices which is higher than TEVETA's. When asked to take more apprentices for training, the companies do refuse them feeling that their budget would be stretched since they have a fixed number of apprentices to be trained in a year. On this notion, TEVETA agreed to pay for its fixed allowance for the apprentices and the companies would top up the balance as a way of easing the problem.

Technical officers reported that there are small companies which have no apprenticeship training scheme which also refuse apprentices because they feel stretched in paying the 1% levy per annum and also paying apprentices during training. The board accepted to pay apprentices who are attached to such companies. Some participants also noted that companies do refuse apprentices because they fear of indenture of which TEVETA ironed it out that apprenticeship training scheme requires industry to train the apprentices and once the training is over they could release them.

4.5.6 Monitoring apprentices' progress

When asked further on how they monitor progress of trainees in the institutions, one technical college instructor said:

We do not know apprentices' progress only the TEVETA does that by assigning other people to do it for them but as trainers we don't. (IDI 3, TCI 3, Technical College 3).

The Technical college instructor continued to say that there is no forum between the college and industry on the progress of the apprentices, hence they don't iron the problems, and they just rely on what apprentices tell them when they are back from industry. Based on these arguments of the participants, it shows the following; lack of follow up by trainers in the institutions. The developed curriculum is being done on one side and the industry is not aware of what is covered in college; and it shows that industry is not getting what it expects.

This means industry has its standard which is not matching with what the apprentices learn in college. This means there is a mismatch of areas learnt in college and needs of industry hence the industry look at it as a low skill attainment. Secondly, there is no monitoring of students by neither college instructors nor industrial foremen during training to check the progress of the students.

This showed that there is lack of information sharing among implementers of the apprenticeship training scheme program hence it is ineffectively implemented in the general fitting trade. Lack of dialogue between instructors and foremen creates a problem in skills gained by artisans because these trainers do not meet to share their experiences and sort out their challenges which they encounter during interaction with apprentices. This can be argued through CIT on the kind of interactions among implementers. Lack of interactions among trainers show the passive implementation

of apprenticeship training scheme hence the impact of such kind of training is observed on the kind of skill attained by apprentices which is of low standard.

4.6 Chapter summary

The chapter presented the findings of the implementation of apprenticeship training scheme based on what the stakeholders perceive during the implementation process in the training of general fitting artisans. The findings are based on the research questions in answering on how apprenticeship training scheme is being implemented in technical college and industry. The findings are being presented in relation to literature and theoretical frameworks of contextual interaction theory and cognitive apprenticeship model. These perceptions have been presented in the form of texts, tables and quotations. The next chapter presents conclusion implications and recommendations.

CHAPTER 5

CONCLUSIONS AND IMPLICATIONS

5.1 Chapter overview

This chapter first presents conclusions on the implementation of apprenticeship training scheme in Malawi technical colleges and industry as a case of general fitting trade followed by implications for policy and practice regarding technical and vocational education and training in Malawi. Thereafter recommendations are made followed by suggested areas for further study.

5.2 Conclusions

On the question of how the apprenticeship training scheme is being implemented in general fitting trade it can be concluded that it is being implemented in dual that artisan are trained in both colleges and industry. However there are still gaps that shows passive implementation of the scheme in general fitting trade. There are few links of knowledge and information sharing on the process of training hence creates gaps and assumptions that one side is not doing well. This in turn affect skill acquisition in artisans.

On the question of stakeholders' perceptions towards the implementation of the apprenticeship training scheme, it can be concluded that stakeholders perceived the scheme as beneficial despite that most implementers were not fully involved in the changes which were made in the TEVET system. This was because these

implementers lacked information about the current implementation process of apprenticeship training scheme. Apprentices joined the program without knowledge on how it is supposed to be; trainers from technical colleges are not informed on how the apprentices are progressing in industry; and trainers in industry are not aware on how the current apprenticeship training scheme requires of them. Furthermore, most of the foremen in industry do train apprentices in the old way because they are not aware of CBET. This has led apprentices to cover multiple curricula, that is CBET is covered partially during college period while in industry they are trained using MC or /and NTT. However the coverage for each curriculum is minimal hence lacked mastery of content and skills in the apprentices.

In addition, stakeholders' perceptibility of the general fitting trade is not good because of the mode of implementation. This has made most of the implementers to passively implement it due to its demands which call for expensive training resources; and requires advanced industrial attachment places which are scarce. However, without this CBET it could be progressing well. Furthermore, the study revealed that stakeholders perceived that entrepreneurship is a good idea and accepted however there is lack of capital for apprentices to start the business. The costs of vital equipment for high production of items need a lot of money hence a drawback to graduates of general fitting.

On the question of how technical colleges differ in implementing the apprenticeship training scheme in general fitting trade, it can be concluded that public and private colleges are similar in some ways and different in others. For instance they are similar in administering the recruitment procedures, management of the apprenticeship training scheme in general fitting trade. In addition they have similar

methods delivery of workshop theory. They also have similar challenge of acquiring materials for practical work due to inadequate funding. In terms of infrastructure and equipment, they have similar problems such as lack of science labs and lack of experiments. However the colleges differ in workshop practice delivery. Private colleges have no machines for apprentices to practice various machine operations whilst the public ones have various machines and apprentices are able to practice though minimal because of lack of adequate materials for practice. This also implies that performance of these apprentices in industry is also different because of their exposure to the workshop practice in college. The private college apprentices' performance is low unlike the ones from public colleges.

On the question of how gender-balance is addressed in the implementation of apprenticeship training scheme in general fitting trade, it has been learnt that the female apprentices are not favored anyhow, but they are protected from being harassed by not letting them to work during night shift which most of the companies follow. Secondly they are deprived from doing challenging jobs in the company due to their attitudes towards work despite being encouraged to participate in male dominated jobs. In addition, female apprentice's performance has been good in colleges and in industry however they are not appreciated because they are perceived to slow production hence not preferred most.

On the question of factors that hinder or promote the implementation of apprenticeship training scheme it can be concluded that trainers are experienced and their in-service training has improved their facilitation in class. As such their capability has been good because of the kind of apprenticeship training scheme they

underwent in the past. It has also been revealed that general fitting industry trainers in the institutions are few due to lack of technical teacher training college.

Another insight is that in some cases, apprentices misconduct themselves such that their contract is prematurely terminated. This is a loss to both an apprentice and to trainers because they lose time and other resources to train such artisan whose skill is not returned for. The study revealed that there is great difference of duration for industrial attachment from one cohort of apprentices to the other due to lack of places, late attachment as well as size of the company one is attached to. The study also found that some of the companies where apprentices are attached to have no capacity to train due to lack of well trained personnel. In addition, some of the training concepts are not found in the companies. As such apprentices fail to develop the required skills during their attachment sessions.

5.3 Implications of the study

The study on implementation of apprenticeship training scheme in general fitting trade implies to lobby with stakeholders of TEVET onto critically assist implementers to implement it effectively. The findings of the study implies the following:

Firstly, implementers have no forums of information sharing hence each party does what it knows best. This means that the fruits of the changes made were not fully adopted by implementers. Therefore any progress which the mode of training could bring in general fitting trade will be partially achieved hence the industry will continually flooded with lack of skilled personnel. Secondly, private colleges do not have enough capacity to train general fitting artisans because this trade seeks

practical lessons which are not fully covered in such technical colleges. The study findings also imply that apprentices will have challenges in industry because they will lack the basics hence difficult to perform in various applied jobs.

Thirdly, the nature of the industry prefer males than females hence the coming of females in the system is a challenge to males as such they create unconducive environment for females. In this regard, industry will have more number of males than females, and few females who will be there will not be skilled enough for the most challenging jobs, hence increasing skills gap. Finally, the study findings imply that general fitting experts are not enough to roll out fully the training of general fitting trade in both technical colleges and industry. The study findings also imply that there is different amount of skill acquisition of apprentices of the same cohort.

The study findings suggest that proper collaboration of stakeholders on various issues pertaining to apprenticeship training scheme in general fitting trade should be adopted so that there should be uniformity among apprentices. The study findings suggests that thorough inspection of the colleges should be conducted before recruitment to check on the availability of facilities worthy for general fitting training. In addition, the study findings suggest incorporation of gender based rules and adoption of gender advocacy not only in recruitment but retention of females in the system. For instance creating gender friendly policies for industrial female workers which may include creating conducive environment for both males and females.

Furthermore, the study findings suggests that stakeholders should embark on developing curriculum for general fitting trade for technical college teachers training

within technical education and mechanical engineering departments of the Malawi polytechnic to train teachers who will be specialized in general fitting trade. The study findings suggest that apprentices need to be attached at the same period and to industry which can train them in their module as a way of giving equal amount of skills to them.

5.4 Areas for further study

This section documents areas proposed for further study related to general fitting trade in technical colleges in Malawi.

- A study to investigate the competencies of lecturers and industrial foremen in general fitting in delivering training.
- A study to explore general fitting trade under parallel program.
- A study in any technical trade in TEVET system is also required to explore on how training is being done.

REFERENCES

- Alide, Y. (2009). *The journey towards a skilled workforce*. TEVETA, Malawi (1999-2009) Tevet times vol. 2 April-June 2009): TEVETA, Lilongwe, Malawi.
- America Educational Research Association, (1982). *Encyclopedia of education research* (5th Ed.). New York: Free Press.
- Antchoreana, D., & Delluc, A. (2002). *IIEP Revisiting technical and vocational education in Sub-Saharan Africa; an update on trends, innovations and challenges*. UNESCO: Paris.
- Ballenger, B. (1994). *The Curious researcher, a guide to writing research papers*. USA: Library for congress cataloging -in- publication.
- Bandura, A. (1997). *Social learning theory*. Englewood Cliffs: NJ: Prentice Hall.
- Becker, H. (1970). *Sociological work: method and substance*. New Brunswick: NJ Transaction.
- Bressers, H. (2004). Implementing sustainable development: how to know what works when, where and how. In Lafferty, W. M. (Ed.) *Governance for sustainable development: The challenge of adapting form to function*, pp 284-318. Cheltenham, Northampton Ma: Edward Elgar.
- Brewer & Hunter (1989). *Multimethod research: A synthesis of styles*: Newbury Park: NJ Sage.
- Brown, J. S., Collins, A. & Duguld, P. (1989). Situated cognition and the culture of learning. *Educational Researcher*, 18 (1), 32-42.

- Bryne, J. & Humble, A. M. (2007). *An introduction to mixed method research*. Atlantic research Centre for family work issues, Mount Saint, Vincent University.
- Carlson, M. (2002). *Winning grants step by step (2nd Ed.)*. San Fransisco: Jossey-Bass.
- Chafa, J. W. (2007, April-June). Promoting innovative skills. *TEVET Times*, 2. Lilongwe: TEVETA.
- Chafa, J. W. (1989). *Management of technical training in Malawi*. Blantyre, Malawi.
- Chakwana, R. (2008). *Development of TEVET qualification for (TQF), a step towards the Malawi national qualification Framework (MWQF)*. Presented in Johannesburg on 16/11/05; retrieved on 13th August, 2016 at 21.00 from <http://www.saga.org.za/doc/es>.
- Chirwa, C. (1990). *Some factors which influence the social behavior of technical education students in Malawi, students' perceptions & experiences*. Lilongwe, Malawi.
- Chitera, N. Kaphesi, E. Banda, H. & Mgawi, R. (2010). *Draft report on an assessment of TEVETA training programs since 1999*. TEVETA: Lilongwe.
- Cohen, L. and Manion, L. (1994). *Research methods in education (4th ed.)*. London: Routledge 11 new fetter lane.
- Collins, A., Brown, J.S. & Newman, S. E. (1987). *Cognitive apprenticeship teaching the craft of reading, writing and mathematics in technical report no 403*, BBN laboratories Cambridge, MA center for the study of reaching. University of Illinois, January, 1987.

- Creswell, J. W., Plano, V. L., Gutman, M. L. & Hanson, W. E. (2003). *Advanced mixed methods research designs*. In Tashakkor, A. and Teddie C. (eds). *Handbook on mixed methods in the behavioural and social sciences* (pp 209-240) Thousand, Oaks, Ca: Sage Publications.
- Creswell, J. W. (2003). *Research design: qualitative, quantitative & mixed methods approaches (2nd Ed.)* Thousand Oaks, Ca: Sage Publications.
- Fetterman, D., M., (1984). *Ethnography in educational evaluation*. Beverly Hills: CA SAGE.
- Florida Education Department. (2014). *Apprenticeship programs* (retrieved on 4th April 2016 from: www.fldoe.org)
- Greene, J. C. Caracelli, V. J. Graham, W. F. (1989). Towards a conceptual framework for mixed method evaluation designs. *Education Evaluation and Policy Analysis*, 11(3), 255-274.
- Gunde, B. (2010). *Analysis of TEVET policy*. Unpublished. Zomba, Malawi.
- Gunde, B. (2014). *Exploring factors that affect internal and external efficiency of TEVET programs in Malawi*. Chancellor College, Zomba, Malawi.
- Haddad, W. (1995). *Education policy planning process: An applied framework*. UNESCO International Institute for Education Planning, Paris: UNESCO.
- Heeter, C. (2005). *Situated learning for designers, social, cognitive and situated framework*. Michigan: Michigan State University, Department of Media & Information.
- Hornby, A., S., (1997). *Oxford dictionary*. (7th Ed.). Oxford: Oxford University Press.

International Labour Organization. (2010). *Final diagnostic Malawi: ILO/Ministry of Labour final Report*. ILO: Geneva.

JIMAT. (2009). *Malawi labour market survey final report*. Lilongwe, Malawi.

Kai, S. (2006). *Policy implementation barriers analysis conceptual framework pilot test in 3 countries, Washington DC: USAID*.

Khembo, W. (1995). *Factors contributing to high failure rate in MSCE*. Zomba: Maneb.

Konayuma, G. (2006). *Report on technical and vocational education and training in Zambia* presented at the UNESCO-UNEVOC International Experts Consultation Seminar held in Dublin, Ireland in August 2008).retrieved on 8th November 2011 from <http://bit.ly/suIwHW>

Malawi Government. (2000). *National gender policy (2000-2005)*. Lilongwe: Ministry of Gender Child Welfare and Community Services.

Malawi Government. (2001). *Malawi poverty reduction strategy*. Lilongwe: Ministry of Economic Planning & Development.

Malawi Government. (2006). *Malawi growth development strategy (final draft) main report*. (March 2006 vol. 1). Lilongwe: Ministry of Economic Planning & Development.

Malawi Government. (2007). *National education sector plan operation supplement containing education sectors analysis summary of program profiles financial details*. Lilongwe: Ministry of Education Science and Technology.

Malawi Government. (2008). *Education Management Information Statistics*. Lilongwe: Ministry of Education Science and Technology.

- Malawi Government. (2008, *September*). *Education sector implementation plan towards quality education implementing the NESP (2009-2013)*. Lilongwe: Ministry of Education Science and Technology.
- Malawi Government. (2008). *Statement on National education sector plan*. Lilongwe: Ministry of Education Science and Technology.
- Malawi Government. (June-2000). *A policy and investment framework for education in Malawi (1995-2005)*. Lilongwe: Ministry of Education Science and Technology.
- Malawi Government. (1997). *National development plan*. Lilongwe: Ministry of Economic Planning & Development.
- Malawi Government. (1999). *TEVET Act No 6 of 1999*, Lilongwe: Ministry of Labour Technical and Vocational Educational Training.
- Malawi Government. (2009). *Education sector implementation plan*. Lilongwe: Ministry of Education Science and Technology.
- Maluwa-Banda, D. (2003). *Gender sensitive educational policy and practice: the case of Malawi*. Zomba, Malawi.
- Marshal, C., & Rossman, G. B. (1999). *Designing qualitative research. (3rd edition)*. Thousand Oaks: CA: Sage.
- Matemba, A. (2010). *Draft report on roles and functions of the directorate of technical and vocational training* presented at the UNESCO-TEVET-Ministry of Education Science and Technology workshop on role of clarification in Tevet held at Sun and Sand holiday resort, Mangochi from 3rd to 4th September, 2009.

- Mbekeani, K. (2010). *Malawi students on past industrial trade reforms experience and economic implications*. Botswana Institute of Development Policy Analysis (BIDPA) and Southern African Trade Research Network (SATRIN).
- Morgan D. L. (1998). Practical strategies for combining qualitative and quantitative methods applications to, qualitative health research. *Qualitative Health Research*, 8(3), 362-376. Accessed on 8 November 2017 from <https://www.ncbi.nlm.nih.gov/pubmed/10558337>
- Munck, B., Kaplan, S. L. & Soly, H. (2007). *In social history, learning on shop floor, historical perspectives on apprenticeship*. New York: Oxford.
- National Statistical Office, (2000). *1998 population housing census*. Zomba: Statistical office.
- Nkanza, P. P. K. (2003). *Regulation of technical and vocational education in Zambia*. TEVETA, Zambia.
- Oguntuase, S. T. (2010). *Repositioning technical, vocational education in importance of education in Nigeria Lagos*, retrieved on 8/11/10, from <http://11enzinearticle.com>.
- Pearson Education Limited, (1978). *Longman dictionary of contemporary English*. England: British cataloging in publication.
- Phiri, A. (2007, October-December). A world of choices in promoting innovative development skills for economic development. *Tevet Times*, 4. Lilongwe: TEVETA.
- Phiri, A. (2011, January-March). Pre-apprenticeship recruitment-a closer look. *Tevet Times*, 1. Lilongwe: TEVETA.
- Pratt, D. D. (1998). *Five perspectives on teaching in adult and higher education*. Malabar, FL: Krieger Publishing Company.

- Sabatier, P. (1991, June). Toward better theories of the policy process in political science and politics. *Journal of American Political Science Association*, 24(2), 147 – 156. Retrieved on 7 June 2016 from: <https://www.scribd.com>
- Sawyer, K. R. (2008). *The Cambridge handbook of the learning Sciences*. New York: Cambridge University Press.
- Sharpe, A., Arsenaault, J., F., Laponte, S., (2008). Research Report No. 2008-2 *Apprenticeship's issue related to challenges facing Canadian manufacturing industries'*. Centre for the study of living standards for the industrial analysis and sector services branch industry. Canada: Ottawa
- Simwaka, L. K. (2008). *How power relations affect the implementation of policy on equity in access to anti- retroviral therapy: The case of rural health centers in Malawi. Equinet Discussion. Paper 69. EQUINET: Harare.*
- Tashakkair, A. and Teddie, C. (Ed`s) (1998). *Handbook for mixed methods in social and behavior research*. Thousand Oaks, CA: Sage.
- TEVETA. (2011, January-March). Promoting skills for sustainable economic development. *TEVET Times*, 1. Lilongwe: TEVETA.
- Tiongson, E. R. (1990). *Education policy reforms, analyzing the distribution impact of reforms*. Washington DC: World Bank.
- Wall, B. (2012). *Engineering careers*. Alstrom: Finley Media.
- Wedell, E. G., (1973). *Report on education development of Malawi*. Manchester: University of Manchester.
- Weiss, C. H. (1998). Have we learned anything new about the use of evaluation? *American Journal of Evaluation*, 19, 21-33.

Wilson, N. & Mclean S. (1994). *Questionnaire design practical introduction*. Newton Abbey, Co, Austrim: University of Ulster Press.

World Bank. (1995). *The World Bank economic review*. Oxford: University Press.

APPENDICES

Appendix 1: Introduction letter from Chancellor

College


CHANCELLOR COLLEGE

Principal: Richard Tambulasi,
B.A. (Pub Admin), BPA (Hon), MPA, Ph.D

Our Ref.: EDF/6/19
Your Ref.:

10th May, 2012

P. O. Box 280, Zomba, MALAWI
Tel: (265) 01 524 222
Telex: 44742 CHANCOL MI
Fax: (265) 01 524 046

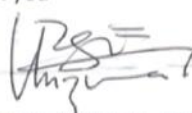
TO WHOM IT MAY CONCERN

**INTRODUCTORY LETTER FOR MASTER OF EDUCATION
(POLICY, PLANNING AND LEADERSHIP) RESEARCH**

Miss Carolynne Kumbukani Malowa is a student of Education in the Department of Education Foundations at Chancellor College, University of Malawi.

Ms C. Malowa is working on her thesis, "*Implementation of Apprenticeship Training Scheme in Technical Colleges and Industry: Case of General Fitting Trade.*" This is meant to be a request to your institution or organization to assist our student in her endeavor to collect data.

Thank you


Symon E. Chiziwa, PhD
Head, Education Foundations Department



Appendix 2: Introduction letter from south east education division

REF. NO. SEED/ADM/VOL. II/478

13th May, 2012.

FROM : THE EDUCATION DIVISION MANAGER, SOUTH EAST EDUCATION DIVISION,
PRIVATE BAG 48, ZOMBA.

TO : THE PRINCIPALS,
Nasawa Technical College
Salima Technical College
Lilongwe Technical College
Phwezi Rural Polytechnic

**AUTHORITY TO CONDUCT RESEARCH IN SCHOOLS ON THESIS IMPLEMENTATION OF
APPRENTICESHIP TRAINING SCHEME IN TECHNICAL COLLEGES AND INDUSTRY: A CASE STUDY
OF SELECTED TECHNICAL COLLEGES WITHIN MALAWI.**

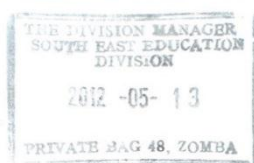
I write to kindly request your office to allow Ms Carolyn Kumbukani Malowa, currently a post graduate student at Chancellor College at the University of Malawi – to carry out a research related activity for her thesis Implementation of Apprenticeship Training Scheme in Technical Colleges and Industry: Case of General Fitting Trade at your institutions.

I will be most grateful if Ms Malowa is given all the necessary support and guidance so that his data collection exercise is carried out successfully.

I look forward to your usual support and hoping at the same time that you will accord this request all the attention and urgency that it deserves.


M.S.D. ALUFANDIKA

EDUCATION DIVISION MANAGER



Appendix 3: Interview guide for industrial foremen

SECTION A: DEMOGRAPHIC DATA

Name of Industry: _____

Industry ID: _____

Participant code: _____

Sex: _____

Position: _____

Year of experience on the post: _____

Venue: _____

SECTION B: KNOWLEDGE BASE OF APPRENTICESHIP

TRAINING SCHEME

College of apprentices	No of apprentices	Females	Males

1. How is apprenticeship training scheme implemented in your company?

Probe on:

- The process and organization?

- Do they have the required basic knowledge before starting industrial training?
- Does the basic knowledge they have help your company to meet the Labour standard?
- What is lacking in the beginners?
- How can it be improved?
- What practices/structures are there in your company that supports apprentices learning process during attachment? How?
- Which practices does not support learning of apprentices?
- Why? How?
- What is the role of industry in apprenticeship training?
- 2. Which sex do you prefer for apprentices? Why?
- How do they differ? Which one needs more support? Why?
- What structures are there to support female apprentices?

SECTION C: OUTCOMES OF THE IMPLEMENTATION OF APPRENTICESHIP TRAINING SCHEME

- 3. What is your perception towards apprenticeship training scheme in general fitting trade?
- How do general fitting apprentices perform-do they achieve the labour standards?
- How do other workers perceive the apprentices?
- Any misconduct of general fitting apprentices?
- What kind of misconduct, treatment and measures taken?
- What is the role of industry in apprenticeship training scheme?

- After the training, would your organization employ these apprentices?
Why?
 - Any benefit on implementing apprenticeship training scheme?
 - Who benefits?
4. What is the voice of the stakeholders on the profile of general fitting trade under apprenticeship training scheme?
- Probe on: strengths, weakness, opportunity, and threats.
- How can the profile and visibility of general fitting trade in apprenticeship training scheme being enhanced?
5. For those apprentices who did not finish modules in college /industry do you employ them?
- a. As what?
 - b. How do you assist them to learn those module concepts not covered?
6. What challenges do apprentices face?
- a. How do you address them?
 - b. Have you ever experienced any drop out?
 - c. Why?
7. How do you rate the apprentices from different colleges?
- Probe on:
- Differences and similarities? Why?
8. Any comment on implementation of apprenticeship training scheme in general fitting?

Appendix 4 : Interview guide for technical education officers part (A)

SECTION A: DEMOGRAPHIC DATA

Participant code: _____

Sex: _____

Position: _____

Year of experience on the post: _____

Venue: _____

SECTION A: GENERAL KNOWLEDGE ON APPRENTICESHIP TRAINING SCHEME IN GENERAL FITTING TRADE

1. Briefly explain what the TEVET policy say about apprenticeship training scheme especially in general fitting trade?
 - Has it been met?
 - What should be done?
 - How has it been received in technical colleges and industries?
 - What is the role of the ministry in apprenticeship training scheme; elaborate more on where do you begin and beyond training?
 - Any support to apprentices/industry/college?
 - What type of support? How do you give them?
 - What are the strengths/weaknesses/threats and opportunities of the apprenticeship training scheme in general fitting? What can be done?
2. What voices are out there concerning apprenticeship training program/general fitting trade?

- What is the demand for general fitting apprentices/Tevet in the Labour market?
- How marketable are general fitting apprentices in industry?
- Could the skills they acquire enable apprentices to adapt to the modern technology?
- To those apprentices who did not finish the industrial module are they regarded as qualified general fitting?
- Are they absorbed by industry?
 - As what?
 - Why?
 - How are they assisted?
- What should be the role of industry in apprenticeship training scheme?

SECTION B: IMPLEMENTATION OF APPRENTICESHIP TRAINING SCHEME

3. What structures are there to ensure the effectiveness of implementation of apprenticeship training scheme. Probe for human resources, machinery, equipment, time, industrial, attachment, support and feedback to college and industry.
 - What is working and not working? Why?
 - Who can help?
 - How?
 - How can the profile and visibility of general fitting trade/ apprenticeship training scheme be enhanced?
4. What challenges do apprentices/industry/colleges meet during the implementation of apprenticeship training scheme?

- How do you address them?
 - Who can help?
5. How are male and female apprentices different during the implementation of apprenticeship training scheme especially in general fitting?
- Mode of attachment? Any incentives to female apprentice; any priority during industrial attachment?
 - How do they get a job/business in the trade?
 - Any drop out? Why?
 - Any improvement?

SECTION C: THE OUTCOMES OF IMPLEMENTATION OF THE APPRENTICESHIP TRAINING SCHEME IN GENERAL FITTING TRADE

6. What are the perception of the industry on the quality and quantity of apprentices which are graduating from the general fitting trade? Are they retained in the field? What criteria are there to retain them?
7. How do other stakeholders perceive the implementation of apprenticeship training scheme?
- What is the general overview on training, assessment, competencies of apprentices?
 - Any comment on implementation of apprenticeship training scheme in general fitting trade?

THE END

Appendix 5: Interview guide for technical Education officers part (B)

SECTION A: DEMOGRAPHIC DATA

Participant code: _____

Sex: _____

Position: _____

Year of experience on the post: _____

Venue: _____

SECTION A: GENERAL KNOWLEDGE ON APPRENTICESHIP

TRAINING SCHEME IN GENERAL FITTING TRADE

- Briefly explain what the TEVET policy say about apprenticeship training scheme especially in general fitting trade?
 - Has it been met?
 - What should be done?
- How has it been received in technical colleges and industries?
- What is the role of the ministry in apprenticeship training scheme; elaborate more on where do you begin and beyond training?
 - Any support to apprentices/industry/college?
 - What type of support? How do you give them?
 - What are the strengths/weaknesses/threats and opportunities of the apprenticeship training scheme in general fitting? What can be done?
- What voices are out there concerning apprenticeship training program/general fitting trade?
- What is the demand for general fitting apprentices/Tevet in the Labour market?
 - How marketable are general fitting apprentices in industry?

- Could the skills they acquire enable apprentices to adapt to the modern technology?
- To those apprentices who did not finish the industrial module are they regarded as qualified general fitting?
 - Are they absorbed by industry?
 - As what?
 - Why?
 - How are they assisted?
 - What should be the role of industry in apprenticeship training scheme?

SECTION B: IMPLEMENTATION OF APPRENTICESHIP TRAINING SCHEME

3.What structures are there to ensure the effectiveness of implementation of apprenticeship training scheme. Probe for human resources, machinery, equipment, time, industrial, attachment, support and feedback to college and industry.

- What is working and not working? Why?
 - Who can help?
 - How?
 - How can the profile and visibility of general fitting trade/ apprenticeship training scheme be enhanced?

4.What challenges do apprentices/industry/colleges meet during the implementation of apprenticeship training scheme?

- How do you address them?
- Who can help?

5. How are male and female apprentices different during the implementation of apprenticeship training scheme especially in general fitting?
 - Mode of attachment? Any incentives to female apprentice; any priority during industrial attachment?
 - How do they get a job/business in the trade?
 - Any drop out? Why?
 - Any improvement?

SECTION C: THE OUTCOMES OF IMPLEMENTATION OF THE APPRENTICESHIP TRAINING SCHEME IN GENERAL FITTING TRADE

6. What are the perception of the industry on the quality and quantity of apprentices which are graduating from the general fitting trade? Are they retained in the field? What criteria are there to retain them?
7. How do other stakeholders perceive the implementation of apprenticeship training scheme?
 - What is the general overview on training, assessment, competencies of apprentices?
 - Any comment on implementation of apprenticeship training scheme in general fitting trade?

THE END

Appendix 6: Interview guide for technical instructors

SECTION A: DEMOGRAPHIC DATA

Name of College: _____

College ID: _____

Participants' code: _____

Sex: _____

Year of experience: _____

Venue: _____

SECTION B: KNOWLEDGE BASE OF APPRENTICESHIP

TRAINING SCHEME

1. Do the students come prepared when joining the apprentice training scheme?
 - Do they have prior knowledge on the trade/scheme?
 - Do they have a bridging course?
 - What is lacking in the beginners?

SECTION C: PERCEPTION ON THE IMPLEMENTATION OF APPRENTICESHIP TRAINING SCHEME

2. How is the apprenticeship training scheme in general fitting trade implemented in your college?
 - How is the goal of apprenticeship training scheme being met
 - Are the facilities enough and conducive for learning {i.e. machines, equipment, human resources, books, modules?}

- Are these facilities/resources providing information that is responsive to the needs of industry?
 - Have you done any refresher course the past two years?
 - Do you still need any training to support your teaching?
 - Is what you teach responsive to the needs of Labour market?
 - What is working/not working well? Why/why not?
 - Who can help? How?
3. What is your role during student industrial attachments?
- Have you ever visited apprentices during industrial attachment? How many times?
 - What do you do?
 - What organization structure/facilities are there those support the training of thee apprentices?
 - What challenges do the students meet when they are in industry?
 - How do you assist them to address those challenges?
 - Is there any chance that apprentices could be employed in company?
 - Why?
 - What should be done to improve employability of apprentices?

SECTION C: PERCEPTION ON THE OUTCOMES OF IMPLEMENTATION OF APPRENTICESHIP TRAINING SCHEME

4. What is your perception towards implementation of apprenticeship training scheme?

- How do general fitting apprentices perform-do they do only what is in their modules or the industrial work as well? Which category {female/male} perform better? Why?

- If an apprentice did not complete the module outcome till training period is over do you consider him/her qualified?
 - Why?
 - How can an apprentice be assisted to learn material not covered during industrial period?
 - How can this be improved?
5. How would you explain the perception of trainees towards apprenticeship training scheme?
- How do they perceive industrial attachment /classroom teaching?
 - Any aspirations/opportunities for apprentices to look for a job in the field of general fitting trade after completion of training?
6. Any comment on implementation of apprenticeship training scheme in general fitting?
- Any benefit on implementation apprenticeship training scheme?
 - Who benefits? Why?
 - Any misconduct of general fitting trade apprentices?
 - What kind of misconduct, treatment and measures are taken

THE END

Appendix 7: Questionnaire for apprentices

I am Carolyne Kumbukani Malowa investigating the implementation of apprenticeship training scheme in technical college and industry in general fitting trade. Your college has been purposively selected to assist in establishing the effectiveness of the scheme in general fitting trade, later in Tevet system; and you are requested to participate in this study. This questionnaire is used to ask questions about the implementation of apprenticeship training scheme program your college has been implementing to produce competent labour force. The results from this study will help the Ministry in its efforts to improve the quality of technical and vocational education in Malawi.

Tick in the box where appropriate and write in the spaces provided. You may add another sheet of paper if required.

SECTION A: DEMOGRAPHIC DATA

Name of college: _____ **ID** _____

Sex: **male** ☐ **female** ☐

Level: _____

Year of study: _____

SECTION B: KNOWLEDGE BASE OF APPRENTICESHIP

TRAINING SCHEME

1. Briefly describe what you know about apprenticeship training scheme?

2. Did you know about implementation of the apprenticeship training scheme in general fitting trade before joining it?

Yes ☐ No ☐

Explain how did this influence your training?

3. Why did you join apprenticeship training scheme in general fitting trade?

4. Did you have background of general fitting before joining it?

5. In your opinion what factors affects the implementation of apprenticeship training scheme in general fitting?

**SECTION C: IMPLEMENTATION OF THE APPRENTICESHIP
TRAINING SCHEME.**

6. Will you look for a job in general fitting trade?

Yes ☐ No ☐

Explain your answer.

Have you finished the institutional modules for the levels 1 and 2 in your
college?

Yes ☐ No ☐

b. if no how do you plan to learn material not covered?

c. which part is difficult?

How has been your performance in college?

Poor ☐ average ☐ good ☐ excellent ☐

b. in your opinion what would have helped you perform better in your studies?

7. Are you on industrial attachment?

Yes ☐ No ☐ SKIP to 1

b. if yes, with which company?

c. how were you attached?

8. For how long have you been attached to industry?

Less than five months ☐

5-10 months ☐

11 – 15months ☐

16 months and above ☐

Why? _____

9. Have you finished the industrial modules for levels 1 and 2 in
industry?

Yes ☐ No ☐

b. if no, how do you plan to learn the material not covered?

c. how will this affect your performance?

d. which part is difficult?

10. Are the industrial modules responsive to the needs of labour market?

Yes ☐ No ☐

b. If no, how can they be improved?

c. If yes, how?

11. How has been your performance in industry?

Poor ☐ average ☐ good ☐ excellent ☐

b. What would have helped you to perform better than this?

Briefly, explain the benefits the apprenticeship training scheme in general
fitting trade?

12. Which factors motivated you to continue with apprenticeship training scheme?

THANK YOU FOR ANSWERING THE QUESTIONNAIRE

Appendix 8: Focus group discussion guide for apprentices

Name of College - _____

No of participants _____

Gender _____

SECTION B: KNOWLEDGE BASE OF APPRENTICESHIP

TRAINING SCHEME

1. In your opinion, what are the benefits of apprenticeship training scheme to you?
 - Do you have any aspirations, opportunity to be employed in your industry?
 - Are you encouraged by these benefits? What do you do?
 - Can you encourage others to join apprenticeship training scheme? Why?
2. In terms of training resources are they enough?

Probe on: Human resources, modules; Laboratory; Classroom; equipment; Machines

 - Which subjects is well resourced?
 - Does the industry/college support you during your training? How? What kind of support/ how can it improve?
 - How can the implementation of apprenticeship training scheme improve? Why?
 - What should be the role of industry; DTVT?

SECTION C: IMPLEMENTATION OF APPRENTICESHIP

TRAINING SCHEME

3. In your opinion, is the apprenticeship training scheme being implemented well/effectively?
 - What is working well or not, why?
 - Which aspects do you find helpful, why/why not?
 - Do you acquire all the needed skills in college before industrial training?
 - What should be done?
 - Does the training prepares you for employment /self-employment?
Why?
4. What differences do you see between male and female apprentices?
 - Compare how they are treated in college and industry?
 - How do these groups perform-any difference/similarity?
 - Are the female apprentices receives any support-which support?
Why?
5. Any comment on the implementation of apprenticeship training scheme?

THE END