Developing Sector Specific VET for the Ethiopian Leather Product Manufacturing Sector
(Work-Process Oriented Approach)

Dissertation
Leading to the Degree
of
Doctor of Philosophy (Dr.phil.)

Division D – Faculty of Architecture, Civil Engineering, Mechanical Engineering, Safety Technology
of the
Bergische University of Wuppertal
Department of Mechanical Engineering

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Wuppertal 2013

Die Dissertation kann wie folgt zitiert werden:

urn:nbn:de:hbz:468-20140508-105622-3
[http://nbn-resolving.de/urn/resolver.pl?urn=urn%3Anbn%3Ade%3Ahbz%3A468-20140508-105622-3]

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Date of examination: Nov. 18, 2013

Dedication

In memory of my mother, **Alem Wubneh Workie**

Acknowledgments

While conducting this research I received support from many people in one way or another, without whose support this dissertation would not have been completed in its present form. First and foremost I thank **Almighty God** for being with me all the time I need his help. I also owe my deepest gratitude to my research supervisor, **Univ.Prof. Dr.phil. Ralph Dreher,** who has been there for me at every step of the way from the very beginning of this PhD work. His encouragement, excellent guidance, creative suggestions, and critical comments have greatly contributed to my work. He provided me with the freedom to explore research directions and choose the routes that I wanted to investigate. It is an honor for me to have his support and encouragement and be able to benefit from his rich experience and wisdom. I have deeply appreciated his regular supervisions; I enjoyed our discussions and have learned a great deal from him.

I would like also to express my gratitude to a number of people who helped me in many ways to complete this dissertation work. Special thanks to **Bizuayehu Tadesse**, junior researcher and expert at the Leather Industries Development Institute and his associates, who helped me across bureaucratic lines to access research data in the Ethiopian leather sector. My special thanks also goes to the management and staff of the sample leather product manufacturing enterprises, the Ethiopian Leather Industries Association and the Leather Industries Development Institute for their cooperation in providing data, information, and freedom of investigation. I would like to express my deepest gratitude to all experts and production line workers of the selected companies for their unreserved cooperation during the data collection phase of the research. I owe my deepest gratitude to my colleague, **Katharina Gleitze**, who has been there for me specifically in the final phase of the process. I would like to thank her for her kindness, personal support and encouragement at every step of the way.

During my stay at the Bergische University of Wuppertal, I have been very fortunate to have the unreserved support of **Brigitte Fricke**, office management of the chair, members of our group and **Ada S. Osinski**, German Academic Exchange Service coordinator. I thank all of you from the bottom of my heart.

Last but not least, I wish to express my love and thanks to my wife **Bethlehem Kindu** and my daughter **Hannah Sisay**, for their patience and lasting love that have been the sources of my encouragement on this journey.

Finally, I would like also to apologize to those I have not mentioned by name here. In every case I highly valued your kind support.

Sisay Geremew Gebeyehu

Nov. 2013

Declaration

I declare that this PhD dissertation entitled ―Developing sector specific VET for the Ethiopian Leather Product Manufacturing Sector (Work-Process Oriented Approach)*"* is my work and that all the sources that I have used or quoted have been indicated and acknowledged by means of complete references. I also hereby declare that I have not submitted this material, either in whole or part, for a degree at this or any other institution before.

Sisay Geremew Gebeyehu

Wuppertal, Nov. 2013

Table of Contents

List of Tables

List of Figures

List of Abbreviations

AGOA	African Growth and Opportunity Act
AOS	Advanced Occupational Standard
ASQ	Advanced Supplementary Qualification
AVTS	Australian Vocational Training System
BIBB	Federal Institute for Vocational Education and Training (Germany)
CoC	Certificate of Competence /Center of Competence
CSA	Central Statistical Agency (Ethiopia)
EBDSN	Ethiopian Business Development Services Network
Ecbp	Engineering Capacity Building Program
EIA	Ethiopian Investment Agency
ELIA	Ethiopian Leather Industries Association
ELLPTI	Ethiopian Leather and Leather Product Technology Institute
ETB	an acronym for Ethiopian Birr
ETP	Education and Training Policy (Ethiopian)
FDRE	Federal Democratic Republic of Ethiopia
GDP	Gross Domestic Product
GTP	Growth and Transformation Plan (Ethiopian)
ILO	International Labor Organization
ISCED	International Standard Classification of Education
ISO	International Standards Organization
ISS	Institute of Social Studies
MDG	Millennium Development Goals
MoE	Ministry of Education (Ethiopian)
MoFED	Ministry of Finance and Economic Development (Ethiopian)
MoL	Ministry of Labor (Ethiopian)
MoTI	Ministry of Trade and Industry (Ethiopian)
NBE	National Bank of Ethiopia
NQF	National Qualifications Framework
NTQF	National TVET-Qualification Framework
NVQ	National Vocational Qualification
OECD	Organization for Economic Cooperation and Development
OS	Occupational Standard
PASDEP	Plan for Accelerated and Sustained Development to End Poverty (Ethiopian)
PVE	Professional and Vocational Education
QSAE	Quality and Standards Authority of Ethiopia
TVET	Technical and Vocational Education and Training
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNEVOC	International Centre for Technical and Vocational Education and Training
UNIDO	United Nations Industrial Development organization
USAID	United States Agency for International Development
VET	Vocational Education and Training

Abstract

Ziel dieser Dissertation ist es, die Entwicklung der Lederverarbeitungsindustrie in Äthiopien unter dem Aspekt der Ausbildung von Facharbeitskräften zu untersuchen. Die Analyse der Eigenschaften des Herstellungsprozesses, der angewandten Technologien sowie des Levels an arbeitsplatzbezogener Kompetenz der Facharbeiter dient hierbei als Begründung, wie hoch der Einfluss dieser Faktoren auf die Produktivität der Branche ist. Im Einzelnen beschäftigt sich die Forschung mit den Voraussetzungen für die technische Qualifizierung der Facharbeitskräfte. Hierbei wurden arbeitsplatzspezifische und branchenspezifische Arbeitsverhaltensweisen definiert und ein Model zur Minimalqualifizierung in dem Subsektor der Lederverarbeitungsbranche entwickelt.

Um die notwendigen Daten und Informationen von repräsentativen Unternehmen der Lederverarbeitungsindustrie zu erhalten, wurden sowohl qualitative als auch quantitative Forschungsmethoden genutzt. Die Methode der geschichteten Zufallsstichprobe wurde hierbei angewandt, um die ausgewählten Produktlinien sowie alle Arbeitskraftebenen anzusprechen. Es wurden hierbei 16 Unternehmen mit den unterschiedlichsten Größen, Sparten und Unternehmensorganisationsformen ausgewählt. Verschiedenste Varianten von semistrukturierten Fragebögen sowie Interviewleitfäden wurden als Hauptinstrument genutzt, um die konkrete Arbeitsprozessanalyse zu unterstützen.

Die Forschung wird auf der Basis der etabliertern Methoden von der Berufsbildungsforschung von Felix Rauner und Rupert Maclean (2008) durchgeführt. Es beabsichtigt, diese international anerkannte Schwerpunkte der Berufsschulen zu nutzen, um branchenspezifische Berufausbildungprogramme zu entwickeln. Genauer gesagt, hat die Forschung nicht die Absicht, grundlegende pädagogische Theorien zu schaffen und grundlegende Forschungsmethoden zu entwickeln. Es versucht vielmehr, die verschiedenen Funktionen des weltweit anerkannten Methoden wie sie stark genug sind zu verwenden, um eine Idee wie man die Methoden der Berufsforschung übertragen can. Darüber hinaus hat der Autor nicht daran interessiert, neue Formen der wissenschaftlichen Arbeit an den Forschungsergebnis entwickeln zu lassen. Die empirischen Ergebnisse werden verwendet, um nicht zu immaginieren, aber fast realistischen Plan von der Berufausbildungssystem in diesem speziellen Sektor zu reformieren und um zu zeigen wie es gute Praxis in Äthiopien sein can.

Basierend auf der empirischen Studie sowie der detaillierten Arbeitsprozessanalyse wurden die Forschungsergebnisse formuliert und dargelegt. Die Ergebnisse zeigen, dass es in der aktuellen Ausbildungssituation hoch präskriptive Programme gibt, welche weder eine Kostendeckung vorweisen können, noch den Ansprüchen des Marktes gerecht werden. Dies deutet darauf hin, dass die Ausbildung und die bildungstechnischen Voraussetzungen durch die sich wandelnden Technologien, die unterschiedlichen Demographien der Facharbeitskräfte, die sich verändernden organisatorischen Kontexte sowie weitere Entwicklungen einen hohen Effekt auf die effektive Gestaltung von Bildungs- und Ausbildungssystemen haben.

Eine der Hauptimplikationen ist die, dass die politischen Entscheidungsträger und betroffenen Interessensgruppen einen realistischeren Ansatz zur Entwicklung einer kompetenten Facharbeitskraft in diesem Subsektor benötigen. Die Entwicklung und Verbreitung von branchenspezifischer beruflicher Bildung und Ausbildung (Vocational Education and Training [VET]), basierend auf den eigentlichen Arbeitsprozessanalysen und einer Einbettung in die notwendigen Rechtsrahmen, ist ein unmittelbarer positiver Eingriff, um die Produktivität des Subsektors zu steigern.

Die Forschung erstreckt sich des Weiteren darauf, wie arbeitsprozessorientierte und berufsbegleitende Bildung/Weiterbildung entwickelt und akkreditiert werden können und wie durch Lernen am Arbeitsplatz technische Fähigkeiten und arbeitsplatzspezifische Kompetenzen von bereits qualifizierten Auszubildenden gesteigert werden sowie Facharbeitskräfte im Betrieb gehalten werden können. Dies soll durch ein speziell entwickeltes betriebsinternes VET-Modell realisiert werden. Die Arbeit beleuchtet den Einfluss der VET-Lehrerausbildung auf die kompetenzorientierte Arbeitskraftentwicklung und hebt gleichzeitig die betriebsinternen VET-Lehrerausbildungsstrategien des Subsektors hervor.

Schlussfolgernd lässt sich die Arbeit so zusammenfassen, dass ein Fokus auf die Arbeitsaufgabe an sich sowie eine Kompetenzorientierung etabliert werden müssen, um die Produktivität und die globale Wettbewerbsfähigkeit der Unternehmen in der Lederverarbeitungsindustrie nachhaltig zu steigern.

Abstract

The overall aim of this dissertation is to investigate the Ethiopian leather product manufacturing sector in light of skilled manpower development. Through an analysis of the nature of the manufacturing work process, the technology employed, and the level of workplace competence of the skilled manpower, the research seeks to justify how these might impact the sector‘s productivity. Specifically, it focuses on identifying technical workforce qualification requirements by defining core job/sector-specific work behaviors, and it develops a model for establishing minimum qualifications required by the leather product manufacturing subsector.

Both qualitative and quantitative research tools were employed in order to gather the necessary data and information from representative leather product manufacturing enterprises. A stratified random sampling technique was chosen to address the targeted product lines across all levels of workforce within the major leather product manufacturing firms. Sixteen enterprises with different sizes, different lines of business, and different types of business organization were selected. Semi-structured questionnaires of varying format and interview guides were used as a major tool to aid direct study of the work-process.

The research is conducted based on established methods of vocational education and training research by Felix Rauner and Rupert Maclean (2008). It intends to use those internationally accepted focuses of vocational sciences to develop sector specific VET programs. More specifically, the research has no intention to create basic educational theories and develop fundamental research methodologies. It rather tries to use the different functions of globally recognized methods as they are powerful enough to give an idea how to transfer the methods of vocational research. Moreover, the author has not been interested to develop new forms of scientific work to come to the research result. The empirical results have been used to create not envision but nearly realistic plan to reform the VET system in this specific sector and how it can be good practice in Ethiopia.

Research results were formulated and presented on the basis of the findings of the base survey empirical enquiry and detailed analysis of the manufacturing process. These findings show that the current training arrangements are highly prescriptive: they are neither cost-effective nor capable of satisfying the demands of the labor market. This indicates that the identification of training and educational requirements that arise from interactions among changing technologies, changing workforce demographics, changing organizational contexts, and other developments are likely to have implications for the design of effective educational and training systems.

The major implications of the findings are that policy-makers and stakeholders need to take a more realistic approach to the development of a competent workforce for the subsector. Developing and delivering sector-specific vocational education and training (VET) based on actual work process requirements, and setting up the necessary regulatory frameworks, is an immediate requirement for the subsector and one that will significantly enhance productivity.

With its conceptual model of in-company VET, the research elaborates how work-process oriented, in-company training can be developed and accredited, and how through work-integrated learning technical skills and workplace competence for graduates can be strengthened and used as a means of employee retention. It also seeks to provide insights into the influences of VET teacher training on competent workforce development, and highlights in-company VET teacher-training strategies for the subsector. Finally the research indicates the need to focus on both work-task and competence orientation in order to enhance the productivity and global competitiveness of Ethiopian leather product manufacturing enterprises.

CHAPTER ONE
INTRODUCTION

1.1 Background

Ethiopia is one of the developing countries of sub-Saharan Africa. Its economy is predominantly based on agriculture, which accounts for over 85% of the employment of the country's workforce and 41.5% of gross domestic product (GDP) (Altenburg 2010 p.5). Over 45.5% of the country's GDP comes from the service sector, while the industrial sector contributes only 12% (Ministry of Finance and Economic Development of Ethiopia MoFD 2010 p.4). Currently the country is implementing a five year Growth and Transformation Plan (GTP[1]) to achieve the Millennium Development Goals (MDG[2]s). The main objective of the growth and transformation plan is to transform the country from an agriculture-based to an industry-based economy and to achieve the vision of Ethiopia as a nation with at least medium income level by 2020. On the other hand, globalization of the world economy has forced all nations including Ethiopia to be prepared to face a challenging business environment. The driving sectors of the Ethiopian economy are also exposed to this competitive atmosphere and, as a result, the leather sector is currently receiving more attention due to its economic importance for enhancing numerous other activities. The Ethiopian leather sector is one of the most unexploited sectors, with high potential for the country's industrial development. However, its contribution to the national economy so far is negligible compared to its potential.

The country has a major comparative advantage in the raw materials needed for the leather sector, which makes it in principle very appropriate for leather product exporting. According to the report released by Business Development Service Ethiopia[3] (2008 p.2), it has the largest livestock production in Africa, and the 10th largest in the world. Ethiopia's livestock population is currently estimated to be 50.9 million cattle, 26 million sheep and 22 million

1 GTP is the Ethiopian national strategic plan for the years 2010/11-2014/15.

2 The Millennium Development Goals (MDGs) are the eight development goals set during the UN Millennium Summit in September 2000. These goals include reducing extreme poverty, reducing child mortality rates, fighting disease epidemics such as AIDS, ensuring environmental sustainability, and developing a global partnership for development by 2015.

3 Business Development Service Ethiopia is an Ethiopian Business Development Services Network (EBDSN) which targets small and medium-sized enterprises for business information services, and all institutions involved in private sector development, as well as business consultants, by providing the necessary business information services for their advisory activities.

goats. Annually it produces 2.91 million hides, and over 10 million sheep and goat skins (Ethiopian Investment Agency 2008 p.2). This comparative advantage is further underlined by the fact that the cost of raw hides and skins constitutes on average between 55-60% of the production of semi-processed leather. As a result, one of the manufacturing sectors in which Ethiopia (and most other African countries, too) seems to have a clear comparative advantage is the leather industry.

The highly labor-intensive nature of the industry, its not overly sophisticated technological requirements, combined with Ethiopia‘s large resource base for the raw material needs of the industry and its international reputation as a producer of good quality leather, makes the leather sector a good candidate for a concerted effort to expand production and achieve competitiveness at the international level (Berhanu and Kibre 2002 p.7). The leather sector is the second biggest contributor of export earnings after coffee. Given the existing abundant livestock resource, it has the potential to become a major source of revenue. The country produces two of the world‘s finest and most sought-after varieties of leather, and its goatskins are widely recognized in international markets for making high quality suede for fashion products (Ethiopian Investment Agency 2008 pp.13).

Although Ethiopia has a large livestock population, its leather sector significantly lags behind many countries that are less abundantly endowed. Berhanu and Kibre (2002 pp. 24-25) concluded that a low level of capacity utilization, which increases the unit costs of products, lack of sector-specific skilled manpower, low quality raw material supplies, and unreliable and periodical raw material supply are the major negative factors affecting the sector. All of these detract from the quality of the leather products.

It has been also reported in various ways that a number of quality problems relating to the source, the technology deployed in the process of tanning, and the know-how of labor and technical management are impacting the quality of leather and leather products. Estimates of the loss to the Ethiopian economy due to such problems reach US $14 million per year, according to Business Development Service Ethiopia (2008 p.3). The low level operating capacity of the leather industries and their product quality problems is an indication of their weak potential for competitiveness in the international market, as achieving competitiveness requires effective utilization of available resources, both human and non-human. In order to address these problems, extensive study directed toward improving the competitiveness of Ethiopian leather and leather products is very important. One possible area of interest, therefore, would be to implement sector specific training programs to develop the level of technical and managerial skills of the sector. This would involve an analysis of the nature of

the manufacturing process, the technology employed, and the level of technical know-how of the skilled manpower, in order to assess how these might impact the sector.

There are, then, three arguments why the leather-industry sector is very useful as a pilot sector for outcome-based vocational education:

- The leather industry has a high priority in Ethiopian national economic development, as it is the country‘s leading exporter of manufactured products.
- The leather industries must be able to produce high quality goods at high commercial standards to compete in the international market; this means raising standards of productivity.
- The Ethiopian leather industry is very HR-intensive (Berhanu and Kibre 2002 pp. 2), so analyzing this sector will provide an excellent example for transferring the methods of vocational research to Ethiopia and other countries in a similar situation.

1.2 Functions of VET for the Ethiopian Leather Product Subsector

In Ethiopia only 10% of the urban population has post-secondary school education and as a result, 75% of the workforce is concentrated in low skill employment sectors such as commerce, services and elementary occupations (Ministry of Education Ethiopia MoE 2008 p.8). The industrial development strategy of the country also highlights the tremendous human resource deficits in Ethiopia as a major reason for the low level of industrial development. In a country with urban unemployment of above 20% and low educational attainment and skills, promoting vocational education and training is a necessity, not an option.

In a world that is experiencing rapid globalization and technological change, the need for a competent workforce is unquestionable. It is also a major tool of business competitiveness. But workers‘ capability and performance is the result of the education and training structures in a particular sector. One of the most important issues facing the further development of the Ethiopian leather and leather product manufacturing industry is, therefore, the quality of its supply of indigenously trained personnel. Despite a spectacular increase in the size of the Ethiopian leather and leather product manufacturing industry over the last decade, there is a danger that this growth will not be sustainable, owing to the increasing shortage of skilled staff. So far, the labor issue may have seemed a minor problem in the manufacturing subsector in particular, because unskilled or semi-skilled workers can do a relatively large share of the work. The occasional problem of the lack of skilled workers should, however, not be underestimated, especially when enterprises need to move up the value-added ladder. A

competent workforce market is the most immediate, if not the most fundamental, requirement for the emerging leather manufacturing industries. Due to its human intensive nature, the subsector needs a workforce that has high performance and capability to drive its growth and competitiveness.

For similar reasons, sector-specific training programs are now firmly established within vocational education and training (VET) systems in many countries, and have been a powerful feature of VET reform agendas over the last few years. Vocational education is considered a key factor for improving or maintaining the competitiveness of enterprises and national economies (Rauner and Maclean 2008 p. 13).

Therefore, the Ethiopian leather and leather product manufacturing sector, rather than waiting for a government blueprint for training programs, should take the initiative to develop its own training packages. At the same time, sector-specific and outcome-based training enterprises should maximize linkages with state and federal training facilities to integrate their operation and resource utilization. There are also conflicting relationships between the training levels of employees and their performance in the real workplace, and employers have urged the need for longer periods of practical work experience and on-the-job training. This shows that current VET for the leather product manufacturing subsector is not in itself a sufficient condition for delivering skilled manpower. Thus it is likely that developing outcome-based VET systems will have a major positive impact on technical workforce productivity and business competitiveness, although much depends on the actual content of the particular training, the quality of the teaching, and the motivation of the students.

Following these principles, the Ethiopian leather and leather product manufacturing sector will be able to offer in-house accredited courses within the emerging national training system. The research, therefore, is not introverted or preoccupied with responding narrowly to organizational training needs. Rather, it has sought to tap into national and international developments, with special reference to the TVET standards declared at the Bandang Conference in 2008 for developing countries (Dittrich 2009), as a means of establishing best practice training and skill development strategies. An important outcome of the research will be the development of sector-specific work-process oriented training program strategies, and analyzing their role in productivity improvement of the subsector.

So the first task of the present research is to analyze the detailed work processes of leather product manufacturing in order to identify skill requirements and develop competency standards. Showing the relationship between skill levels of the workforce and productivity will enable the subsector to think its way into specific training arrangements.

1.3 General Overview of Methods of Vocational Education Research

There is no such thing as the method of technical and vocational education and training (TVET) research (Neuweg and Putz 2008 p. 699). Research in the vocational disciplines is based on work organized along the lines of occupations, and on vocational education and training that relates to this organization (Pahl and Rauner 2008 p. 193). Traditionally, vocational education was generally viewed as direct preparation of the workforce for a certain type of job. It was perceived as providing specific training that was reproductive and based on teachers' instruction, with the intention of developing understanding of a particular industry, comprising the specific skills or tricks of the trade (Pavlova 2009 p.7). However, according to Pavlova (2009), changes associated with innovations in science and technology and the requirement to prepare knowledge workers, together with the demands imposed by the changing nature of the working world, posed challenges to vocational education. Changing patterns of economic competition and work organization have led to a greater call for soft skills such as teamwork, a work ethic, and a readiness to be flexible and to embrace change (Curtis & McKenzie, 2002) as quoted by Pavlova (2009). As a result, modern day vocational education research must be based on multiple aspects of organizational work and on the actual circumstances of a particular sector or trade. One of the many research areas in the field of vocational education is the identification of substantial skill gaps in a particular economic sector, and responding to the actual demand of that economic sector with the appropriate skill development strategies and programs. Research in this area therefore, has to be directly linked with the organizational and sector goals of a particular trade, and the overall mission of VET planning in that particular sector. However, Pahl and Rauner (2008) state that the particular character of research in the vocational disciplines results from the marked divergence of national vocational education and training systems, and the different patterns of the transition from vocational to higher education.

1.4 Research Objectives

The general objective of the research is to investigate Ethiopian leather product manufacturing enterprises from the point of view of labor productivity improvement, and hence also business competitiveness. The clear focus is on human resources development. A generic model of work-process oriented and sector-specific skill and competence development training strategies is established for the sector. This in turn gives rise to an on-

the-job training program that will be accredited, modularized and certified. Special emphasis is also laid on teacher training.

Specifically, the objectives of the research are:

- to define and work out the level of technical qualifications required by the HR side of the Ethiopian leather product manufacturing subsector by analyzing each step in the manufacturing process
- to define the scope of the occupation and skills required to perform competently in the subsector workplace, and to develop appropriate occupational standards
- to develop a model for establishing minimum qualifications required by the leather product manufacturing subsector by identifying job/sector-specific work behaviors
- to identify teacher training requirements and qualification standards that meet the needs of the subsector vocational education and training systems.

1.5 Scope and Limitations of the Research

The study focuses on systematic work process analysis in order (1) to identify the skill and qualification requirements of a particular job in the industrial work process, (2) to develop an occupational standard for that particular job, and (3) to generate a job-specific model training program for the entire Ethiopian leather product manufacturing subsector. The scope of the thesis is thus limited to the end-product manufacturing industries, whose problems of productivity and competitiveness may, of course, be rooted in the lowest level of the value added process of leather product manufacturing – i.e. outside the scope of the present investigation. This research is confined, then, on the one hand to analyzing work processes and jobs in the footwear and leather garment industries, which are the two main branches of the subsector in terms of job creation and exports, and on the other to developing training program models for jobs and job trainers. The research does not, therefore, investigate either raw material quality problems, or financial and business regulation barriers, or the poor national infrastructure and under-capacity utilization of the leather sector, which are among the major causes of low productivity and low competitiveness in the Ethiopian leather industry. The focus here is on how a sector-specific training program based on an actual job needs assessment can be developed and implemented to tackle one of the prominent problems of manufacturing industries in Ethiopia: low labor productivity.

1.6 Research Questions

A natural tension exists in all organizations between the needs of the organization, as defined by key stakeholders, and those of the individual organizational member (Stohl and Cheney 2001). One of the manifestations of this organizational tension is to be found in the role of human resources development (HRD) practitioners and researchers (Swanson and Holton 2001), who must account for and design remedies to this tension throughout all phases of organizational training programs. Thus, the challenge for HRD practitioners and researchers is twofold: to provide training that meets the operational needs of the organization, while at the same time ensuring that the individual employee receives personalized training for the purpose of performance improvement and self-fulfillment. To achieve not only vocational training but vocational education in the wider sense means to design course-types that will also fulfill the second of these criteria. Such vocational education should enable workers to plan work-processes by themselves and to solve unknown problems with a high level of accountability (in line with the novice-expert-model of Dreyfus/Dreyfus).

Overcoming these challenges is critical to the successful implementation of any HRD training intervention, but further research indicates that a competence-based approach to training is an effective and efficient means of accomplishing both the above-mentioned goals. Competency development promotes accountability among individual organizational members and, therefore, may have greater impact on organizational outcomes than other types of interventions (Naquin and Holton 2003 p.2). This approach ensures that all training programs are integrated to produce the desired organizational results, while simultaneously providing an overall emphasis on continuous employee skill development (Naquin and Holton 2005 p.6).

Since there is very little empirical evidence relating to this area in Ethiopia, the present study will investigate Ethiopian leather product manufacturing industries to identify the challenges that their businesses face from globalization, and to determine how strategic initiatives, and in particular productivity improvement efforts, can be used to respond to them. For Ethiopia, the study will have the character of a pilot-study as an example for growing a system of vocational education. In this context the following research questions arise:

- What are the core work-processes in the Ethiopian leather product manufacturing industry (describing as advanced occupational standard)?
- Why does the national training system fail to educate the right qualifications for the local industries in general, and how can outcome-based training fill this gap more effectively than the usual conceptual view of training systems?

- What are the key technical qualification requirements of the sector and how can occupational profiles be developed for training programs?
- What kind of teacher-education must be installed to guarantee the implementation of an outcome-based training system?

1.7 Research Methodology

The research begins with the selection and formulation of research questions and the ensuing design of a range of techniques to be used to evaluate the extent to which outcome-based approaches will impact productivity across the sector. These techniques include a nation-wide survey of leather goods industries and a detailed investigation of selected training institutions within the sector, as well as consultations with stakeholders in the subsector. Close attention is also paid to the identification of core technical work processes that need especial attention in terms of skill development.

The survey is designed to assess the industry‘s level of understanding of outcome-based and sector-specific skill development training, and to gather information that can be used to interpret the knowledge, beliefs, attitudes and practices of individual enterprises with regard to such training scheme. The survey can be seen as a way of assessing the extent to which VET has been accepted by enterprises in the leather sector, and the extent to which they understand the principles underlying VET, and how satisfied they are with their progress in establishing sector-specific skill development in practice. Furthermore, the survey permits the identification of a range of factors that influence the way enterprises have responded to such training programs. Table 1.1 summarizes the major research questions and corresponding methodologies.

Table 2.1 Breakdowns of major research questions and their specific methodologies

Research questions	Objectives	Methodologies
What are the main causes of low labor productivity in the leather sector – looking especially at the competence issue?	to investigate appropriate methods for work standards development	analyzing core operations and working conditions along with major performance indicators
Why does the national training system fail to educate the right qualifications for the local industries?	to identify possible intervention areas of improvement in the current VET system of the sector	showing how outcome-based VET can fill the gap more effectively than the usual conceptual view of training
What are the core work-processes in the Ethiopian leather product industry	to define and work out levels of technical qualification requirements	analyzing all the steps of the leather product manufacturing process in the subsector
What are the key technical qualification requirements of the sector?	to develop a model for developing a minimum qualifications requirement	describing the skills and knowledge needed to perform competently in the subsector workplace
What kind of teacher-education must be installed to guarantee the implementation of an outcome-based training system?	to establish sustainable VET teacher training for the subsector	developing VET teacher training models for the particular sector

Generally the research methods include use of questionnaires based on a standard format to obtain mainly quantitative responses from subsector enterprises, government policy makers, educators etc.., complemented by guided interviews and focus groups. Analytic and evaluative methods, including standard statistical packages (SPSS), are used to examine any cross-tabulation, associations, or grouping that emerges. The whole survey, and the deduction of the consequences for the Ethiopian system of vocational education, is supported by a review of literature about productivity improvement in general and the relationship between sector/job-specific skills development and productivity in particular. This includes journals, articles, books, international and national statistical data, and published and unpublished articles on related issues of HR productivity and job standardization with respect to leather products and leather product quality specifications, as well as other relevant materials.

1.8 Benefits and Beneficiaries of the Research Results

The expected outcomes and work packages from this research include setting the scene, job analysis, skills and competence identification, model training program development, and development of competency and prior-learning assessment procedures and related standards, as well as a strategy for implementation. These outcomes will help the Ethiopian leather and leather product manufacturing sector to define and achieve appropriate goals in the recruitment, training, development and maintenance of a skilled workforce, and to ensure that occupational requirements are designed to increase productivity and competitiveness. In

addition, they will provide a means for better HR planning, supporting the upgrading of existing employee skills, and the development of training plans and courses that will address both organizational and individual learning needs.

The standards thus developed can be used to inform the content of training programs, as they will specify in detail what constitutes best practice, and can therefore be used for the assessment of competence and the achievement of qualifications.

The primary beneficiaries of this research work will be the Ethiopian leather and leather processing industries and related sectors that can use the different practical models and standards developed by the researcher. Besides, the research results will be used in training practices to help business organizations to acquaint themselves with the significance and role of advanced occupational standards for global competitiveness and profitability.

1.9 Structure of the Dissertation

The structure of this dissertation is organized as follows: the present chapter gives a brief description of the research. Chapter 2 presents the detailed outlines of the methodology used to conduct the research. It briefly explains how the appropriate research strategy has been selected on the basis of the research goals.

Chapter 3 describes the theoretical concept of VET and exploits the different models of VET available in literature from different sources. Thus the concept of outcome-based VET is defined, and different models are compared from the point of view of pathways, processes of delivery, and private sector involvement. At this stage the research question ‗what kind of foundations in Ethiopia are necessary to accomplish such a study?' is answered. The major characteristics of vocational training and education in Ethiopia are also identified, and the current VET system compared with that in more advanced countries. Thus the research question ‗is it possible to conduct a sufficient base survey – or what must be done to arrange such a survey?' is clearly identified.

Chapter 4 is about overall sector analysis. It presents the general overview of the Ethiopian leather sector, its status in terms of employment generation, and its market situation within national and international perspectives, and it indicates the importance of justifies research in this area, particularly with the focus of workforce productivity improvement.

Chapter 5 is the crucial body of the research; it is all about analysis and presentation of results. It begins by discussing the current status of the leather product manufacturing subsector and analyzes the sources of longstanding productivity and profitability problems in the Ethiopian industry, of which low practical education and skill levels are one prominent

cause among others; and it analyzes the sector-specific skill-development education problems by investigating the manufacturing process and identifying core work processes. The national policy framework for increasing the productivity of the sector and a variety of institutional and sector-specific frameworks are also taken in to consideration. The chapter also explains the results of the work process analysis. Descriptions of manufacturing process steps are highlighted. The detailed procedures of job analysis and the resulting job descriptions and job specifications are discussed. In this chapter the main questions of the survey – What are the core-work-processes in the Ethiopian leather product manufacturing industries? What are the key qualification requirements of the sector? – are answered. The chapter also elaborates the association of different variables using a variety of statistical tools to help the identification of root causes of observed effects.

Chapter 6 presents the development of Advanced Occupational Standards (AOS) for the core occupations of footwear manufacturing in Ethiopia, which provides a basis for the development of model training packages and trainer development strategies in subsequent chapters. The chapter briefly describes the Ethiopian TVET qualification framework and generates AOS for sample jobs in leather footwear manufacturing at different levels of qualification.

Chapter 7 details the development of models for establishing work process oriented VET that can be accredited and certified on the basis of a national qualifications framework. It compares the different modes of VET delivery, explain the key features of the proposed model and describe the system of accreditation and certification processes.

Chapter 8 Deals with VET teacher/trainer development strategies for in-company training packages developed for Ethiopian footwear manufacturing enterprises that will enable the sector to achieve internal demand oriented objectives with regard to the provision of a skilled workforce. The chapter proposes a comprehensive list of requirements, starting from development of specific qualification standards to the system of certification and licensing of in-company trainers. This chapter answers the final question of the research as to ‗the kind of teacher-education that must be installed to guarantee the implementation of an outcome-based training system in the subsector‘.

Chapter 9 summarizes the research results briefly and presents the main conclusions with respect to the new knowledge derived from this research. It also presents a set of recommendations for implementation and further work in the field. The limitations of the research and issues requiring further study are also addressed.

CHAPTER TWO
RESEARCH METHODOLOGY

2.1. Introduction

Identification of the specific training needs of an organization is a critical activity for the training and development function. Whether one is a human resource generalist or a specialist on a particular type of job, the focus is always to fit organizational jobs with the proper work force. Designing a specific training program for this purpose involves a sequence of steps that can be grouped into five phases: needs assessment, instructional objectives, design, implementation and evaluation (Miller and Osinski 2002 p.2).

To develop and implement an effective and efficient training program for a specific sector, it is important to see the overall situation and organizational context of the existing workforce with respect to the general human resource development framework of the country and its overall organizational goals. Specifically, in order to design adequate personnel development measures and qualification processes it is necessary to access the world of work in the sector in terms of content (Schnitger and Windelband 2008 p.5). In order to meet the objectives of this research, an occupational sciences research design combining subsector analysis (identification of employment structures, overall organizational setup, existing situation of the skilled workforce, qualification structures), work process analysis (work process flow, sequence of operations, relationships, workstations), case studies (survey of work places, company organizations, recruitment strategies), and job analysis (job description, job specification, job context) has been employed.

This chapter presents the detailed outlines of the methodology used to conduct the research. It starts (section 2.2) by briefly explaining how the appropriate research strategy has been selected, based on the target goals of the research. Section 2.3 describes the research sample and sampling strategies used. Section 2.4 outlines the methods of data collection, analysis and presentation used, with the major emphasis on research sample description, methods of quantitative and qualitative data collection and analysis, and a specific case study. Finally section 2.5 focuses on evaluation of the scientific research instruments to check their validity and reliability. This section discusses the process of pretesting the research instruments and its results, as well as the major remedial measures then taken.

2.2. Choice of Research Strategy

The choice of a particular research approach in any type of research depends on the nature of the subject of study and the types of parameter under investigation (Kothari 2004 p.19-21). Moreover, the approach that is chosen will determine where the researcher will look for information, what kinds of data (if any) will be considered and how the data is to be analyzed and presented.

Due to its multidisciplinary nature and diversification of target variables, this research uses a combination of qualitative and quantitative approaches. While the quantitative approach involves the generation of data in a form that can be subjected to rigorous quantitative analysis, the qualitative approach is concerned with the subjective assessment of attitudes, opinions and behaviors. More specifically descriptive methods of the quantitative approach are used to form a database from which to infer characteristics or relationships of population. This usually means survey research, where a sample of a population is studied (questioned or observed) to determine its characteristics, and it is then inferred that the population has the same characteristics. In the qualitative method, the technique of focus group and depth interviews is used. While this research employs a flexible design that provides opportunities for considering many different aspects of the problem, an accurate description of a situation or of an association between variables is also sought, where appropriate, to minimize bias and maximize the reliability of the data as collected and analyzed.

2.3. Research Sample

Leather product manufacturing firms in Addis Ababa, the Ethiopian capital, were selected for investigation, due to the concentration of more than 98% of such enterprises in that city. As a result, it was relatively easy for the author to obtain sufficient information and data for this study. Whilst a survey of the entire universe of leather product manufacturing enterprises in Ethiopia would have provided a more relaxed data-set, practical considerations forced the author to exclude certain sections. Inaccessibility, survey costs, and the nature and importance of the omitted companies were some of the reasons for their exclusion.

2.3.1. Sample Size and Description

Without the excluded enterprises, the survey covers seven (7) footwear manufacturing and nine (9) leather garment and goods manufacturing enterprises. These comprise 76% and 65% respectively of the total number of footwear manufacturing and garment and leather goods manufacturing enterprises established in Ethiopia. In terms of ownership, all but one –

Anbessa Shoe S. Co. – are privately owned. The size of the sixteen (16) selected enterprises ranges from large (more than 600 employees and total production capacity of 750,000 pairs of shoes per year) to small (not more than 10 employees and yearly capacity of less than 2000 garments).

2.4. Methods of Data Collection

2.4.1. Questionnaire Survey

A standard questionnaire was developed to collect empirical information and data from the employees of the enterprises, with questions like ―What are the key qualification requirements of the sector and how can the occupational profiles of relevant training programs be developed?" ―What are the main causes of low labor productivity in the leather sector, looking especially at the required competencies? And ―why does the national training system fail to educate the right qualifications for local industries in general? As stated above, the type of sample and number of firms were determined on the basis of meeting the information requirements for the research, survey costs and accessibility. In this research, all of the investigated firms were from Addis Ababa, which has more than 30 large or medium-sized and over 600 small-scale leather product manufacturing firms. Almost all of these firms are mainly engaged in footwear, leather garment and leather goods manufacturing at different levels. Thus the samples from Addis Ababa were sufficient for the purposes of this research.

Although the selected samples were limited to firms in the capital, Addis Ababa, there is no doubt that the samples represent the overall situation of leather product manufacturing firms in Ethiopia, and that the research results can therefore be generalized for the entire country. However, strictly speaking, this generalization is limited. In this research, only leather product manufacturing firms with a total of more than 10 employees have been (randomly) selected for investigation. This is because the vast majority of the micro and small enterprises of this subsector are family businesses with less than 5 individuals working in a cottage type of business and do not have qualified respondents to fill in questionnaires or even take the questionnaires seriously.

One of the major challenges faced by the author during the questionnaire survey was questionnaire modification. After the questionnaire was designed, two types of modification had to be made. The first modification was a complete change of the language of instruction for the questionnaire from the original English to the language of Ethiopia, Amharic. In this research most of the literature reviewed was in English, thus the questionnaire was first

developed in English. However, it was actually used for collecting information in Ethiopia where most shop-floor workers do not understand English very well. Therefore, the English version had to be translated into Amharic. This translation might have biased the original design of the questionnaire. A number of technical terms, such as competency, could not be precisely translated into Amharic. Various measures were taken in order to minimize these potential problems. The English version was translated into Amharic by the author himself, who provided additional explanations to some English terms so that respondents could understand them better.

After translation, the Amharic version of the questionnaire was given to two sector specialists who were working in two different leather product manufacturing firms. They were asked whether: (1) the items were stated in a shared vocabulary, (2) the items were precise and unambiguous, (3) there were biased wordings, and (4) they could answer these questions. They returned the questionnaires with their comments, and some alterations were made according to their suggestions.

The second modification was during the pretesting of the questionnaire prior to the actual survey. Before the author started the main survey, the Amharic version of the questionnaire was formally pretested on various people (employees, internal and external experts etc.) to check its validity and reliability using standard methods. In addition, the author interviewed these people and asked them to provide feedback on ease of comprehension, clarity of the specific items, suggestions for possible change, and suggestions for additional items, etc. Their suggestions were then carefully evaluated by the author and both the Amharic and English versions of the questionnaire were further modified. The detailed explanation of the pilot testing process is given in section 2.5.

The final version of the questionnaire consisted of nine (9) items to measure employee demographic data and 51 items to measure overall competency levels, gaps and requirements. ***Appendix 1*** shows the English version of the instrument that the author finally readjusted to match the Amharic version.

2.4.2. Structured Interviews

The design of the structured interviews was based mainly on the research objectives and questions, the extensive literature review, the theoretical models, guidance from the author‘s supervisor, input from colleagues, and previous research conducted by others. Before the structured interviews began, their content was pretested with management bodies, practitioners, and academic experts. Minor alterations were made as a result of this pretest.

Generally four target groups of respondents participated in the guided interviews, which were conducted by the author himself. The first target group was individuals at the management level, including general managers, production managers, HR managers, planning and control managers and so on. The second target group mainly focused on production foremen and production line supervisors who work directly on the shop floor. The third target group was training institution officers and teachers in the leather industry sector. The last target group was a mixture of individuals from different angles connected directly or indirectly with the sector. These included stakeholders like the Ethiopian Leather Industries Association (ELIA), the Ministry of Education (MoE), United Nations Industrial Development Organization (UNIDO), Ministry of Industry (MoI), Federal TVET Agency, and trainees in the Leather Industry Development Institute (LIDI). Additional questions were designed and directed according to the individual being interviewed and the level and role of the institution within the sector.

Interview guide questions fall into five broad categories: general information about respondents, employee competency and performance levels, the nature of training programs and how they developed, manpower occupational development strategies, and overall human resource productivity in the companies.

To conduct structured interviews, it was first necessary to decide the sample of interviewees in the enterprises to be interviewed, and the number of enterprises for interview. To help cross-check responses, the author preferred to select interviewees from the same sample organization for the questionnaire. The criteria for selecting interviewees in enterprises were intuitive and based mainly on the enthusiasm of the individual toward the research, and on their level, position and seniority. Where a choice had to made, interviewees with a high level of seniority were more likely to be selected, as the author expected them to possess more information relevant to the research. However, when interviewees were willing to participate in the research, the author was willing to accept them, as the more information he received for the research, the better the results would be.

From the seven (7) shoe manufacturing, three (3) garment and leather goods manufacturing enterprises and other stakeholder organizations a total of 37 individuals were interviewed from March to May 2011. The distribution is shown in the following table.

Table 2. 1 Distribution of interviewees

Category	No. of individuals interviewed	From
Management level	17	Companies
Supervisory level	9	Companies
Educators/trainers	5	LIDI[4]
Trainees	3	LIDI
Other stakeholders	3	Stakeholder organizations
Total	**37**	

In some cases the interview questions were given to the interviewees in advance so that they could prepare for the interview. During the interview, interviewees were encouraged to give whatever information they thought important for the research and they were also told about the confidentiality of the information. Each interview was approximately 1-2 hours long, and in most cases was preceded or followed by factory tours. Relevant archival documents were also provided by these interviewees for the author's reference. ***Appendix 2*** shows the interview guide questions used for the research.

2.4.3. Case Study

A detailed case study was conducted on one of the footwear manufacturing enterprises particularly to answer one of the main research questions –What are the core work-processes in the Ethiopian leather product manufacturing industries?" Several factors were considered in selecting a case. The first parameter was the overall representativeness of the enterprise in terms of workforce composition, resource setup and accessibility of information and data. Secondly, as the majority of the enterprises in this subsector are private, the author preferred to conduct the case study in such an enterprise.

The evidence provided for the case study was mainly from four sources: documents, archival records, informal discussions/interviews, and observations. The different sources offered a more comprehensive insight into the subject matter than a single data source would have done. The case study was conducted in Ramsay Shoe Factory. First, the aim of the case study was presented to the top managers. At the same time, they were asked to provide individuals with deep know-how about the enterprise to help the author conduct the study in that enterprise. Second, the manager of the production department was asked to give a general introduction to the production process, production activities, organizational structure

4 LIDI-Leather Industry Development Institute (Ethiopian)

(structural chart), etc. Third, the author took a detailed factory tour in order to understand the production activities, and work processes. Fourth, relevant information was collected from relevant departments, with the help of the facilitator. This information included the general history of the enterprise, overall business performance over the past several years, and the firm's yearly working reports.

Informal discussions were arranged with different individuals in the production process to provide further evidence to support their viewpoints. After detailed observation and investigation of the situation in the enterprise, the strengths and weaknesses of the company were identified. Finally, based on the results obtained from the enterprise, a final case study report was compiled. This is presented here in Chapter 5.

2.5. Evaluation of the Scientific Instruments

Before starting the main data collection, it was necessary to first evaluate the reliability and validity of the instruments; it is only on the basis of reliable and valid measurement scales that hypothesis testing can be conducted. The main objectives of the pilot testing of this research instruments were the following: (i) to measure the validity of the scientific instruments – or in other words to check whether the questionnaire and interview guide measured what it intended to measure; (ii) to check whether the scientific instruments represented the content of the research project; (iii) to prove that the instruments were appropriate for the sample/population; (iv) to check if the questionnaire was comprehensive enough to collect all the information needed to address the purpose and goals of the study.

2.5.1. Pilot Testing

In this particular research eight (8) sample leather product manufacturing companies were chosen, based on characteristics of their products, production capacity, number of employees and share in the local and international market. For the sake of sampling completeness, some family level enterprises with less than five (5) employees were also included. Prior to the distribution of the questionnaire the researcher was informed that 99% of the production work forces in all the companies use the local language for any communication and are not capable of reading and understanding English at all. To prove this, some technical and non-technical operators in the production process were taken and asked if they could complete the questionnaire in English. Finally it was realized that (except for a very few) they could only respond to a questionnaire in Amharic). As a result the questionnaire was translated directly to the local language without altering either the content or the format. Finally, a total of 51

employees directly involved in the production process were taken randomly from the eight enterprises to complete the questionnaire. In the meantime, the researcher had also interviewed 19 sample department heads, company managers and technical experts in each company to evaluate the interview guide questions. So the total number of sample individuals was 70. *Table 2.2* below shows the sampling distribution of companies and employees involved in the pretesting of the scientific tools.

Table 2. 2 Pilot leather product manufacturing enterprises for pretesting of scientific tools

S. N	Enterprise type		No. of samples taken					Total
			Interview		Questionnaire			
			Managers and dept. heads	Experts	Supervisors	Skilled workers	Non-skilled workers	
1	*Footwear manufacturing*	*4*	11	6	12	14	10	53
2	*Leather Garment and Goods*	*4*	2	0	4	11	0	17
		Total	13	6	16	25	10	**70**

2.5.2. Methods of Pretesting

While there are different methods of pretesting the research tools employed, a choice had to be made, based on the availability of time, associated costs, and the reliability of the different methods. Hence a combination of response rate (i.e. the percentage of questions answered by the respondents without difficulty) and reliability (i.e. the extent to which an experiment, test, or any measuring procedure yields the same results in repeated trials) was used. Reliability based on internal consistency was measured by calculating a statistic known as Crobach‘s coefficient alpha. Moreover, validity tests (expert review and cognitive interviews) were also used.

2.5.3. Results of Pilot Testing

Response Rate (RR): In the pretesting process of the questionnaire all 51 employees (unskilled workers, skilled workers and job supervisors) were given a similar three-part module of questions. The response rate was completely different for different parts of the questionnaire. Based on the close investigation of each response, the questions were categorized as answered without difficulty (AWOD), answered with difficulty (AWD) and

completely unanswered (CUA). Participants were more interested to answer questions with specific answer sets and open-ended questions were frequently left blank.

Nine (9) questions were asked, with a predetermined set of answers ranging from a simple ~~–ye~~s" or ~~–n~~o" type to a Likert[5] scale up to five levels. The majority of these questions were answered without difficulty or with only minor problems, and the response rata for most of them was well above 65%. No question in this category had a response rate below 55%. Therefore, as can be seen from the last column of table 2.3, the questions with a response rate greater than 75% were roughly categorized as acceptable (OK), and those with response rate of 50-75% as moderately acceptable but in need of minor changes to increase the reliability and validity of the instruments. Changes in this category could include format, wording and sentence type, as well as rearrangement of the position of the question. Finally questions with less than 50% response rate needed major or complete alteration, as they were found inappropriate for the purposes of data collection from the sample population.

Table 2. 3 Research questionnaire pretesting analysis

Questionnaire Part One (Personal Information)							
S.N	**Questions**	**N**	**AWOD**	**AWD**	**CUA**	**RR (%)**	**Remark**
1	Employee name	70	48	0	22	**69**	OK (Optional)
2	Company name	70	70	0	0	**100**	OK
3	Employees department /section	70	70	0	0	**100**	OK
4	Sex	70	70	0	0	**100**	OK
5	Age range	70	70	0	0	**100**	OK
6	Position	70	70	0	0	**100**	OK
7	Work experience	70	70	0	0	**100**	OK
8	Educational background	70	70	0	0	**100**	OK
9	Field of study	70	55	9	6	**79**	OK

[5] Kothari (2004) discussed Likert-type scales (or summated scales) as a method developed by utilizing the item analysis approach in which a particular item is evaluated on the basis of how well it discriminates between those persons whose total score is high and those whose score is low. In a Likert scale, the respondent is asked to respond to each of the statements in terms of several degrees, usually five degrees (but at times 3 or 7 may also be used) of agreement or disagreement

Questionnaire Part Two (Job Related Questions, Close Ended Questions)							
S.N	**Questions**	**N**	**AWOD**	**AWD**	**CUA**	**RR (%)**	**Remark**
1	Please describe your specific job responsibilities/duties, listing the most important first. Give a best estimate of average percentage of time each responsibility takes.	51	33	18	0	**65**	Needs minor change
2	Are there any specific licenses, certifications or technical qualifications required for this job?	51	51	0	0	**100**	OK
3	How many years of job related experience are required before entering this job? Please include only years of experiences directly related to this position.	51	45	6	0	**88**	OK
4	What percentage of your course or training modules is directly related to the job position that you are doing now?	51	32	17	2	**63**	Needs minor change
5	In the following table please rate the degree of relationship between the part of training/education you have taken and the specific job you are doing now in your position.	51	51	0	0	**100**	OK
6	Which of the following do you think have more negative impact on your productivity particularly for this job position? (Rating)	51	28	12	11	**55**	Needs minor change
7	How do you rate your occupational competence for the technical work of your position in the company? (Rating)	51	34	11	6	**67**	Needs minor change
8	When does the organization make an upgrade in skilled manpower? (Multiple choice with more than one answer)	51	48	3	0	**94**	OK
9	Do you think your current job position requires more advanced and specific training to make you more productive and to make the end product more specialized and competitive in the international market?	51	51	0	0	**100**	OK
Questionnaire part three (Job Related Open Ended Questions)							
S.N	**Questions**	**N**	**AWOD**	**AWD**	**CUA**	**RR (%)**	**Remark**
1	Was the training or education you had specific to this job? If Yes, please list any critical and/or technical skills regularly used in this job.	51	4	16	31	**8**	Needs complete change

2	Please list the best five relevant skills you obtained through training for this particular position that prepared you for your current job and state how long you were in those training programs.	51	11	17	23	**22**	Needs complete change
3	Please indicate the type of practical skills gaps that you have and are required to be included in the training programs for this job.	51	20	13	18	**39**	Needs complete change
4	What are the basic accountabilities or performance standards that typify your work?	51	2	15	34	**4**	Needs complete change
5	Can you think of any other information that would be important in understanding your job? If so, please give us your comments below.	51	0	7	44	**0**	Needs complete change

The response rate for open-ended questions was disappointing. Only one question out of five in this group was answered without difficulty and the response rate was only 39%. This result showed that respondents in the pilot survey had no interest or capability to provide their own opinion about a certain issue. As a result, major changes including format, wording, sentence type and rearrangement of position were made in this category. On some of the questions in this category complete alteration of the nature of the questions was also made, as they were found inappropriate for collecting the required data from the sample population.

Reliability testing: Internal consistency reliability testing was used to assess the consistency of results across items within the test. As described above, the response rate analysis involved only the number of questions identified as problematic, not the qualitative nature of the problems. Therefore other techniques were used to identify the nature of problems on each item. The data collected from the pilot test was analyzed using SPSS. The value of Cronbach‘s alpha coefficient for some items with standard scale was also seen as appropriate from SPSS analysis. For example in Part II of the research questionnaire most of the questions result in values of Cronbach's alpha well above 0.6, which can be considered acceptable. However, there were still questions with Cronbach's alpha values much below the acceptable level, which showed the need for change in the nature of the question. This of course might have resulted from the numerically small sample population (only 40), and the extreme nature of the questions that led people to choose one from the available alternatives. Of course the diversified nature of the questions in some other cases did not allow using the same technique to check their reliability.

Expert Reviews: Expert reviews are used prior to conducting a field pretest and again after the pilot test has been concluded. They detect potential problems not found by other

techniques and have the added advantage of being relatively inexpensive. In this case, expert panels were formed with a small group of individuals (5 professionals experienced in survey design, data collection, coding, and data analysis), two of whom were not sector specialists, invited to critique the questionnaire from multiple perspectives. In a group session, the panel reviewed the questionnaire question by question. The core final results and recommendations of the review were as follows:

- Some of the questions were too complex and scientific to be readily understood by the employees and should be broken down into separate and simpler forms.
- All the open-ended questions of part III had to be changed to questions expecting a specific set of answers; otherwise the educational level of the respondents would not enable them to write phrases or paragraphs meaningful for the research.
- Some questions should be changed or completely removed, as the terms were much too advanced for shop-floor workers.
- Some rearrangement of the positions of the questions was also necessary, to avoid respondents having to switch from ~~–ye~~s"/~~–n~~o" questions to Likert scale ratings.

Cognitive interviews: This was another way to check for content validity. Cognitive interviews essentially ask respondents questions about the survey questions. Because there is variation between individuals in their degree of use of scripted versus unscripted probing, and in the manner in which results are summarized, the author did not attempt to standardize these aspects of the test, as such differences between individuals were themselves of interest. Two (2) sample interviewees within each of the eight selected companies were asked about their understanding of selected questions of the questionnaire and interview guide. After the eighteen cognitive interviews had been completed, the author summarized the results, to see whether any significant problems had been detected for each tested item. The resulting suggestions for the three questions seen by most of the interviewees as most problematic are as follows:

Question: *Please describe your specific job responsibilities/duties, listing the most important first. Give a best estimate of average percentage of time each responsibility takes.*

Suggestion: *Most respondents tend to respond only about their tasks, but time estimation is not practically possible.*

Question: *Which of the following do you think have a more negative impact on your productivity particularly for this job position?*

Suggestion: *The sentence has many subjects in one box so that it will cause some confusion in choosing the right rating*

Question: *Do you think your current job position requires more advanced and specific training to make you more productive and to make the end product more specialized and competitive in the international market?*

Suggestion: *Responses for this question are highly predictable and every respondent tends to respond YES. Therefore the question may lead to biased responses*

Question: *All open ended questions (Part III)*

Suggestion: *As the majority of the technical workforce in the sector is at the lowest level of education, they tend to leave the open dashes blank. No responses can be expected for these questions unless they are changed to interview questions, or their forms are slightly changed.*

All the required changes, adjustments and suggestions were incorporated before the final version of the questionnaire was made available for the main survey.

With respect to this scientific instrument (interview guide) the pretesting evaluation was more subjective, as most interview questions could be adjusted to meet the level of understanding of the interviewee. The researcher focused on the following key parameters for the pilot interviewing and made adjustments accordingly:

- The timing of interview guide questions
- How these questions could exploit participants‘ knowledge?
- Does the interviewee face difficulty in understanding words or particular sentences?
- Does the wording of some questions need modification?
- Are the questions bias–free, so that the interviewee can answer in a neutral manner?

From the above analysis the author sought to evaluate the reaction of respondents – i.e. to what extent the instructions given were followed, whether respondents used different response categories or choices than those offered, and whether the respondents were willing and able to perform the tasks required, providing accurate and complete answers. The author also checked whether respondents had difficulty understanding words, terms, concepts or sentence structure – i.e. whether they understood the question, the task required, and the answer format. The author also sought to assess the coding and analysis aspect of the questionnaire, as a potential difficulty might arise in constructing code categories for the questions or in coding responses to open-ended questions, given the level of variation in response to each question. It became evident that some of the questions need to be redirected in terms of format or sentence structure, and others in their degree of clarity and/or complexity. In accordance with the findings discussed above, appropriate changes were made to some aspects of the questions, while the majority of them remained unchanged.

2.6. Statistical Data Analysis

Data from the survey questionnaires and structured interviews were critically analyzed, using appropriate statistical tools to characterize each variable in terms of its use for the research. Descriptive statistics, graphs, and relational plots of the data were examined to evaluate the

legitimacy of the data, identify possible outliers and assumption violations, and form preliminary ideas about variable relationships. As different statistical analysis and modeling techniques have different goals and are appropriate for different types of data, a set of statistical techniques was used to determine what sort of statistical tests should be used for which variables and what type of data. Prior to conducting the statistical analysis, sufficient data screening was made for all research variables, to identify miscoded or missing data. Statistical Package for the Social Sciences (SPSS) was used to screen the data. Overall, cleaning raw data by determining whether it follows a normal distribution or not and whether there are any outlier influences, as well as identifying the existence of missing values, helps to take appropriate measures and to select the right method to analyze the data. After variable coding and outlier detections were corrected, and missing data were identified and corrected, the data was made ready for use. One of the special characteristics seen in this research was the nonparametric nature of the data, in which statistical procedures to test hypotheses do not require normal distribution or variance assumptions about the populations from which the samples were drawn. As a result, a combination of descriptive statistic models like the chi-square test, which are more appropriate for categorical (nominal, ordinal) data analysis, was used.

In addition, in this survey, respondents provided ~~"b~~est estimates" rather than accurate numbers for some questions, and there is a potential difference in the actual situation and the view of the respondents. For these reasons, statistical tests of significance were not conducted, and percentage distributions rather than actual numbers were used for interpreting the data. The results were also treated as exploratory, recognizing that this is the first survey of its kind for the Ethiopian leather goods industry. The general pattern of nonparametric procedures is much like that seen with parametric tests, i.e. certain sample data are treated by a statistical model that yields a value or statistic. This value is then interpreted for the likelihood of its chance occurrence according to some type of statistical probability distribution. In this research the two most commonly used nonparametric statistical methods, namely *Spearman's rank-order correlation* and the *Chi Square tests* were used for the non-parametric variables, and an *independent t-test* was used particularly to test clickers' performance against their training base. The overall step by step work packages of the research are as follows (Fig. 2.1).

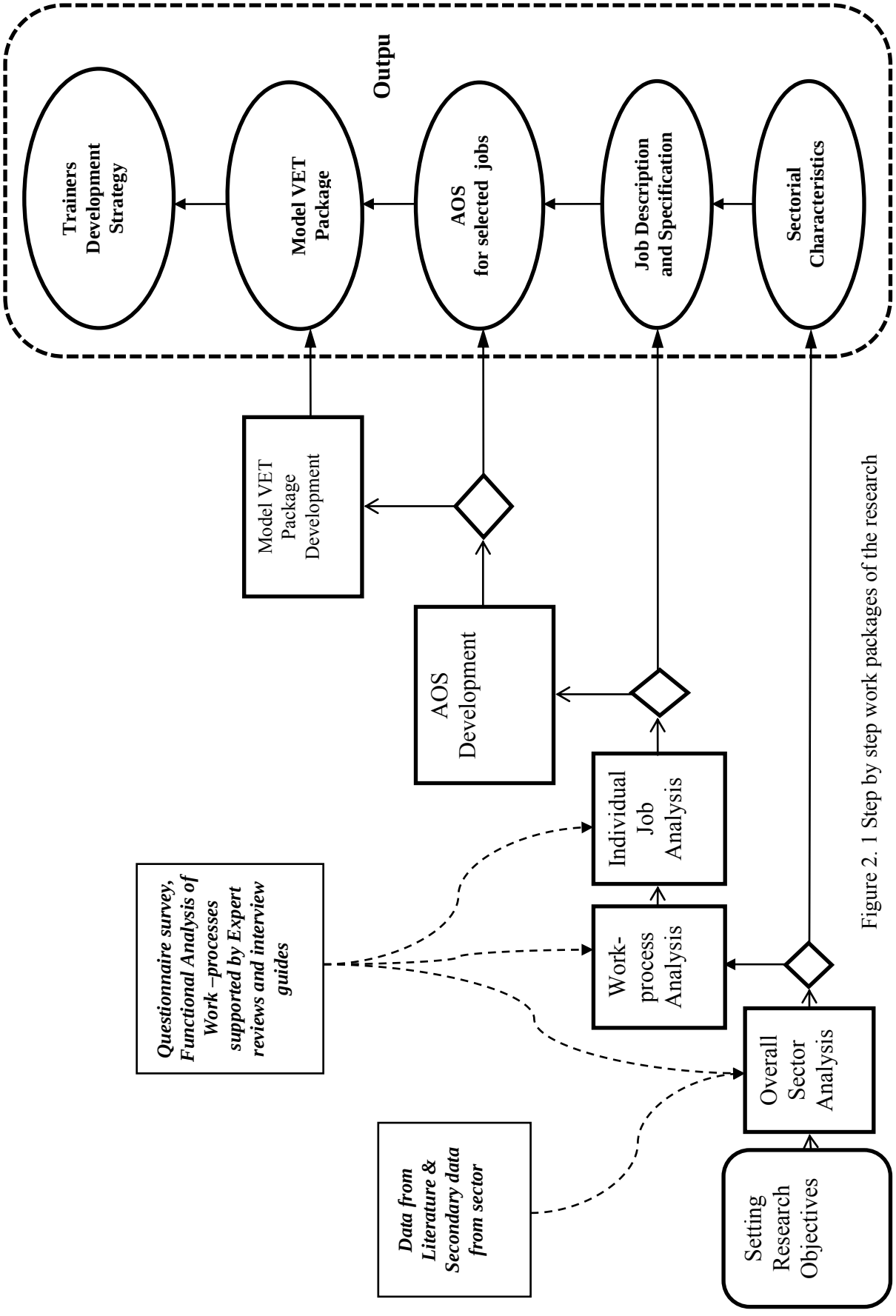


Figure 2. 1 Step by step work packages of the research

CHAPTER THREE
LITERATURE REVIEW

3.1. Introduction

The theoretical framework of this research is grounded on this chapter where the basic concepts of the VET sector are defined and the rationale behind it is explained. The chapter has six sections. In the first section, section 3.2, a brief definition and historical development of VET is presented. Section 3.3 provides a detailed discussion on the rationale of VET in the modern industrial era, with a special focus on industry-based VET. Section 3.4 provides an overview of VET practices in different countries, in order to benchmark recognized and applicable models and to gain an insight into its development in the industrialized world. The Ethiopian TVET sector, along with the national education system, is also presented here. Section 3.5 provides a brief picture of the sector-based approach in VET development. Finally section 3.6 discusses the development of work-process-based VET, and why this approach benefits the Ethiopian leather product subsector in particular.

3.2. Overview of Vocational Education and Training (VET)

3.2.1 Meaning of VET

Vocational Education and Training (VET) as defined by Webster's dictionary (Webster, 1993) as *"training for a specific vocation in industry or agriculture or trade"*. Throughout the course of history, various terms have been used to describe elements of the field that are now conceived as comprising TVET. These include: Apprenticeship Training, Vocational Education, Technical Education, Technical-Vocational Education (TVE), Occupational Education (OE), Vocational Education and Training (VET), Professional and Vocational Education (PVE), Career and Technical Education (CTE), Workforce Education (WE), Workplace Education (WE), etc (UNEVOC-UNESCO 2010). These terms are used in different parts of the world to designate trainings designed to advance individuals' proficiency with respect to certain present or future occupations and concerned with the acquisition of knowledge and skills for the world of work. Usually the terms do not cover *professional* education and training. *Vocational* education or vocational education and training (VET) is therefore, an education that prepares trainees for jobs that are based on manual or practical activities, traditionally non-academic, and totally related to

a specific trade, occupation, or vocation. Keating (1995) explains VET as a term used internationally to describe education and training arrangements designed to prepare people for work or to improve the knowledge and skills of people already working, and further elaborates its features in the following terms:

- Preparation for work can range from gaining basic literacy skills to training for particular tasks such as operating a lathe or achieving an entry level qualification such as a certificate in hospitality.
- VET covers education and training both before and during employment. People may also undertake VET throughout their working lives.
- VET can include craft-based training such as that associated with traditional apprenticeships (cabinet making or boiler making), or industry-wide training such as those associated with office skills. It also includes general employment skills such as communication and occupational health and safety.
- VET is provided in colleges or other training institutions, skill centers found in larger companies and in the workplace. Workplace training can be on-the-job, off-the-job or a combination of these.
- The authority for VET lies with industry, which sets its own competency standards.
- VET has distinctive features such as discrete segments of learning, or modules and assessment based on the demonstration of specified competencies (competency-based assessment). VET is directed towards the needs of industry and the workplace.

3.2.2 Historical Development

The historical development of VET dates back to the ancient Egyptians, Babylonians, and Orientals where skills were learned in the form of an apprenticeship, usually from a father or master craftsman (Goodsell 2005 p.1). The development of vocational education and training (VET) as an organized entity of the global education system varies from region to region and may even be as varied as the histories of different states in the same region. In the 18th and 19th centuries we find the origin of a competitive relationship between two types of competence reproduction: on the one hand the safeguarding of learning through practical experience and the imitation of the master, monitored by the guilds, and the new type organized in schools based on the principle of a written prescription of work capacity (Hanf 2004 p.12).

A distinctive feature of the British approach until the 1960s is the provision of vocational education and training (VET) by employers, conventionally contrasted with the much more formal state-coordinated approach of Germany (Peck 2004 p.72). In the US, vocational education played only a minor role in high schools until the beginning of the 1960s (Matthias 2001 p.28). Similarly, different literature show that vocational education and training (VET) in Australia had its roots in the mid to late nineteenth century, with the establishment of mechanics‘ institutes, schools of mines, and technical and working men‘s colleges to develop the skills of Australia‘s working population. In Africa, before the 1960s and the 1970s, VET was neither recognized nor did it have equivalencies in formal educational levels (World Bank 1991). It was conceived as a completely independent system of training for employment, a compensation for a regular education system. As a result there are still different structural models of vocational training in different parts of the world. There is limited understanding as to why VET has evolved quite differently even in countries with similar economic and social development (Greinert 2004 p.1). Not only its development, but also its forms and the modes of VET delivery, are the result of far-reaching and complex reforms and improvements over decades.

Till modern times, VET concentrated on specific trades like automobile mechanic or welder of metal parts, and was pursued as the activity of the lower social class. However, in modern economies the importance of vocational jobs has increased, and VET programs have become an integral part of the education policies of governments. The present societal and economic development of nations is highly dependent on the strength of VET, as the means to provide access to skills and entry routes into the labor market.

3.2.3 Importance of VET in the Current Global Economy

The changing nature of economic and social challenges for sustainable development requires a work force that can acquire new skills in response to change (Canagarajah et.al. 2002 pp 4). For the increased demand in flexibility and worker productivity in the labor market of the global economy, a skilled work force is the essential ingredient. Vocational Education and Training (VET) is considered to be a direct way of providing workers with skills relevant to the present and evolving needs of employers. In the present era of economic integration, skills acquisition is therefore also an important element for a nation‘s economy to compete and grow. While general vocational education is concerned with directly producing a skilled work force for the labor market, the rationale behind advanced VET is always the demand for technicians and highly

skilled professionals in middle management positions as intermediary occupations between the fully fledged academically trained professionals and manual workers in both the traditional and rapidly growing economic sectors. There are also social reasons for encouraging vocational education in the world. This is because VET is one way of offering opportunities for an increasing number of secondary school-leavers, so that members of society who are unable or unwilling to enter into higher academic education, should have an alternative that offers them an occupational qualification recognized by the labor market within a relatively short time. Vocational Education and Training systems also provide re-training and upgrading of qualifications that may not, for whatever reasons, have been achieved earlier.

In the context of the growing importance accorded to lifelong learning and the current global financial and economic crisis, policymakers increasingly focus on the importance of VET. The Second International Congress on Technical and Vocational Education was held in Seoul, Korea, in April 1999 on the eve of the twenty-first century. Anticipating the new century as one of globalization and a revolution in information and communication technologies, which would have significant impacts on the world of work, the central theme of the Seoul Congress was "Lifelong Learning and Training for All: A Bridge to the Future". A key conclusion of the Seoul Congress was that a new paradigm was needed both for development and for TVET. As the preamble to the recommendations in the final report stated:

> We have considered the emerging challenges of the twenty-first century, a century that will be an era of knowledge, information and communication. Globalization and the revolution in information and communication technology have signaled the need for a new human-centered development paradigm. We have concluded that Technical and Vocational Education (TVE), as an integral component of lifelong learning, has a crucial role to play in this new era as an effective tool to realize the objectives of a culture of peace, environmentally sound sustainable development, social cohesion, and international citizenship.[6]

Similarly, the United Nations Decade of Education for Sustainable Development, launched in 2005, the Millennium Development Goals, and the Education for All movement express similar sentiments about TVET, giving it the status of the 'master key' to social, economic and political development. The continuing development of new skills and knowledge throughout life is

6 UNESCO (1999) Final Report, Second International Congress on Technical and Vocational Education, UNESCO, Paris, p. 61.Cited by UNESCO 2006, Orienting Technical and Vocational Education and Training for Sustainable Development: A Discussion Paper, UNESCO-UNEVOC International Centre for Technical and Vocational Education and Training, Bonn, Germany.

valuable for individuals and essential for the economy. Governments across the world are realizing with growing clarity that it is not sufficient to expand universities. Even highly skilled professionals need work structures that allow them to go on expanding their abilities (Brown 2009 p. 22)

It can be concluded, therefore, as an underlying assumption, that training for the type of skills that match the demand of the labor market will increase the productivity of individual workers and, as a result, contribute to national economic development.

3.3. Different Approaches to VET

Globally, there are large differences between countries with respect to both the content and the organization of VET. In many countries, vocational education and training is understood primarily as post-compulsory education and training, excluding degree and higher level programs delivered by higher education institutions, and providing students with occupational or work-related knowledge and skills. In other countries, however, VET refers to upper secondary education that leads to competence in a skilled craft or to further training as an apprentice (Education International 2008 p.2). However, economic globalization, trade liberalization, new information and communication technologies, labor market deregulation, and the growth in cross-border provision have intensified the commercialization of vocational education at both the national and international levels.

Different countries use different models of VET, depending on their own context and their definition of VET in the labor market. In some nations there are multiple models in terms of content and modes of delivery. Among the issues treated differently by countries are: definitions and status of VET, the balance between academic and practical content of VET programs, where VET is provided – in an institution (if so, what type?) or at work, the type of training delivered or needed, and the flexibility of programs to meet market need (Cave and Blyth 2008 p.2). The institutional structure of VET differs substantially from one country to another. While in some countries specialized institutions devoted to VET are used – for instance *Fachhochschule* in Germany and TAFE[7] colleges in Australia – in others VET is offered within comprehensive institutions – further education colleges in the UK, community colleges in the US (Grubb 2006

7 ‗TAFE‘‘ is an Australian acronym for Technical and Further Education

p.5). But the main goal of VET for governments, employers' associations and trade unions around the world is to improve the quality and relevance of the technical workforce in order to enhance the employability of citizens and the productivity and competitiveness of enterprises. To envisage how the different models work in different countries, a brief discussion of some selected VET models and systems is presented below.

3.3.1. European VET Models

Three different approaches have been highlighted as the main frameworks at European level: the liberal market economy model in the UK, the state-regulated bureaucratic model in France, and the dual corporate model in German-speaking countries (Greinert, 2000; 2005; Hanf, 2002). The combination of these frameworks, socioeconomic conditions and values, norms, attitudes and ideals shape what is generally understood as _work culture'. The liberal market economy model has been associated with a work culture where economic principles are a priority. The qualification model is regulated primarily by market orientation; at operational level, the functional needs (or actual situation) of the company represent the leading didactic principle. In the state-regulated bureaucratic model, work culture reflects politics as a core priority. Its qualification model is regulated primarily by bureaucratic control on a legal basis; at learning level it is based primarily on academic principles. In the dual corporate model, priority is given to society, the qualification model is regulated by dual control as a combination of market and bureaucracy, and didactic orientation is based on vocational principles (see Cedefop 2011 p. 20).

3.3.2. European Qualification Framework

The European Qualification Framework (EQF) is a common European reference system linking different countries' national qualifications systems and frameworks. The system has been recommended for use by member states as a reference tool to compare the qualification levels of the different systems and to promote both lifelong learning and equal opportunities in the knowledge-based society, as well as the further integration of the European labor market, while respecting the rich diversity of national education systems (European Union 2008 p.3). It is also intended for use as a translation device between different qualification systems and their levels. The EQF initiative is closely related to the qualifications framework for the European Higher Education Area (Bologna Process of 1999): the two frameworks are compatible and their implementation is coordinated at national and European levels.

The core of the framework consists of 8 qualifications levels described through learning outcomes (knowledge, skills and competence) (European Commission 2008 p 6). While levels 6, 7 and 8 are designated as three cycles to earn higher education degrees, TVET runs from level 1 through 5. Each of the 8 levels is defined by a set of descriptors indicating the learning outcomes relevant to qualifications at that level in any system of qualifications. The descriptors have been written to cover the full range of learning outcomes, irrespective of the learning or institutional context, from basic education, through school and unskilled worker levels up to doctoral or senior professional levels. They cover both work and study situations, academic as well as vocational settings, and initial as well as continuing education or training – i.e. all forms of learning formal, non-formal and informal. As an instrument for the promotion of lifelong learning, the EQF encompasses general and adult education, and vocational education and training, as well as higher education. The eight levels cover the entire span of qualifications from those achieved at the end of compulsory education to those awarded at the highest level of academic and professional or vocational education and training. Each level should in principle be attainable by way of a variety of education and career paths (European Commission 2008 p.3).

3.3.3. The Australian VET Model

The Australian approach to vocational education and training is now recognized as among the best and most innovative in the world (Australian National Training Authority 2004 p.5). Australia‘s vocational education and training system is, in fact, a composite of eight state and territory systems, so that any description of a national system involves a certain abstraction of general patterns from a varied reality (Department of Employment, Education and Training (DEET) 1998 p. 27). The delivery of VET in Australia follows different structures in different states, as is also the case in other nations across the world. While some states use senior secondary schools to offer VET, others prefer it to be delivered in senior secondary colleges or a mixture of both within an individual state. Since the beginning of the 1990s the Australian VET system has been changing to competency-based training. According to the Department of Employment, Education and Training (DEET) (1998), all pathways in the Australian Vocational Training System (AVTS) involve competency-based education and training for vocational and key competencies.

Pathways- In Australia there are also major differences in pathways and patterns of participation between states and territories. In New South Wales, post-compulsory education is organized into

four –pathways". The four streams are a general university-preparation stream, a vocational school-based stream, a year-12 school certificate program delivered by TAFE, and a work-based pathway which meshes into vocational courses but does not provide a year-12 certificate (see Department of Employment, Education and Training (DEET) 1998 p. 28).

Operation- Competency-based training seeks to involve industry in the design, development and provision of vocational education and training so that it is adaptable and responsive to industry's needs. The heart of this approach is that training should be related to the demonstration of knowledge, skills and applications required for effective performance in the workplace. The system is therefore outcome-oriented, and importance is placed upon what people can do in the workplace rather than the time they spend in training or the amount of knowledge they acquire in formal settings (see Department of Employment, Education and Training (DEET) 1998 p. 51).

Assessment and certification- Vocational-competency standards are developed by competency-standards bodies, many of which are part of the national network of Industry Training Advisory Bodies. However, enterprises may also submit competency standards for endorsement, and some competency-standards bodies develop cross industry occupational or other standards. The standards for a particular industry, group or enterprise are then endorsed by the National Training Board (NTB), which also has government, employer and trade union representation. The board not only endorses the core-skill standards proposed by industry, it also provides advice and assistance to industry in identifying areas where national standards may be required. These standards are the benchmarks for curriculum development, the assessment of competency levels (including the recognition of prior learning), training delivery, course and program accreditation, credit transfer and individual certification.

Role players in the Australian VET system- At present, most vocational education programs in Australia fall within the spectrum of TAFE institutions (Rashtriya 2008 p.372). Haas (2002) cited in Rashtriya (2008) mentions that many TAFE institutions are government funded and operate on a multi-campus basis. In addition, many VET programs delivered through non-government or private institutions attract significant government funding support, on the basis that they deliver programs that come under the Australian qualification framework system. The development of a national VET system has proceeded cooperatively, since constitutional authority for VET rests nominally with the states, but Australian government influence has to a large extent been _bought' as a condition of funding provided by the national government (Cully et. al 2009 p.17).

VET in Australia has been characterized by both community and enacted social partnerships, which are constructed in a way to support vocational learning through a range of diverse initiatives. Social partnerships contribute to broader objectives aimed at strengthening communities by building relationships, working productively with a diversity of partners and enhancing the capacity for local governance.

The table below shows the distinct characteristics of VET in three advanced economies which compare European VET models with the Australian competency-based model.

Table 3. 2 Distinct characteristics of VET in three advanced economies

Country	General Description	Pathways	Operation	Assessment and Certification	Key role players
Germany	The German VET system is known as a ‗dual system' because learning occurs both in the workplace and in vocational schools	Full-time vocational schools Senior technical schools Vocational Grammar schools/specialized grammar schools (Weißhuhn & Buchel 1998)	Strong partnership between companies, chambers of industry, training institutions and trainees	In final examinations, trainees must show that they have acquired the necessary skills, as well as practical and theoretical knowledge (from their companies), and that they have mastered the course material taught in vocational schools that is central to the vocational training in question	Central government, Companies, social partners, States and non-governmental organizations (NGOs) share responsibilities at different levels and in different contexts (Schneider et.al. 2011)
UK	Defined as a course of training usually in a school or a learning institution that is oriented towards a specific job or element of work.	General Certificate of Education (GCE), General National Vocational Qualifications (GNVQs), National Vocational Qualifications (NVQs) (Short 1998)	Vocational schools and colleges. Employer training is on a voluntary basis.	Varies for different pathways: whereas the GCE examinations are administered by independent examining boards, assessment in GNVQs is based primarily on projects and assignments carried out by students, and assessment for NVQs is based on performance criteria.	Industrial training board: a body which is mainly from employers, unions and education authorities (Rashtriya 2008, Peck 2004, Goodsell 2005).
Australia	Recognized as competency-based education and training rooted in industry competency standards	Varies between states: a general university preparation stream, a vocational school-based stream, a year-12 school certificate program delivered by TAFE, and a work-based pathway	Involves industry in the design, development and provision of vocational education and training	Vocational competency standards are the benchmarks for curriculum development, the assessment of competency levels (including the recognition of prior learning), training delivery, course and program accreditation, and individual certification.	Government funded institutions (TAFE[8]), non-government/private institutions, State National Training Boards (NTB), Industry Training Advisory Bodies.

8 TAFE is an Australian acronym for Technical and Further Education

3.4. The Education System in Ethiopia

The relationship between education and national development in Ethiopia continues to be a question of critical concern. Following the introduction of a new Education and Training Policy (ETP) in 1994, several reforms have been made in the education sector. Since then primary and secondary education have become the mandate of regional governments, whereas the expansion and development of higher education is under the federal government. Higher education is provided by universities, university colleges and specialized institutions, which are the responsibility of the Ministry of Education. Junior colleges and colleges offering diploma programs are administered by regional governments and private providers.

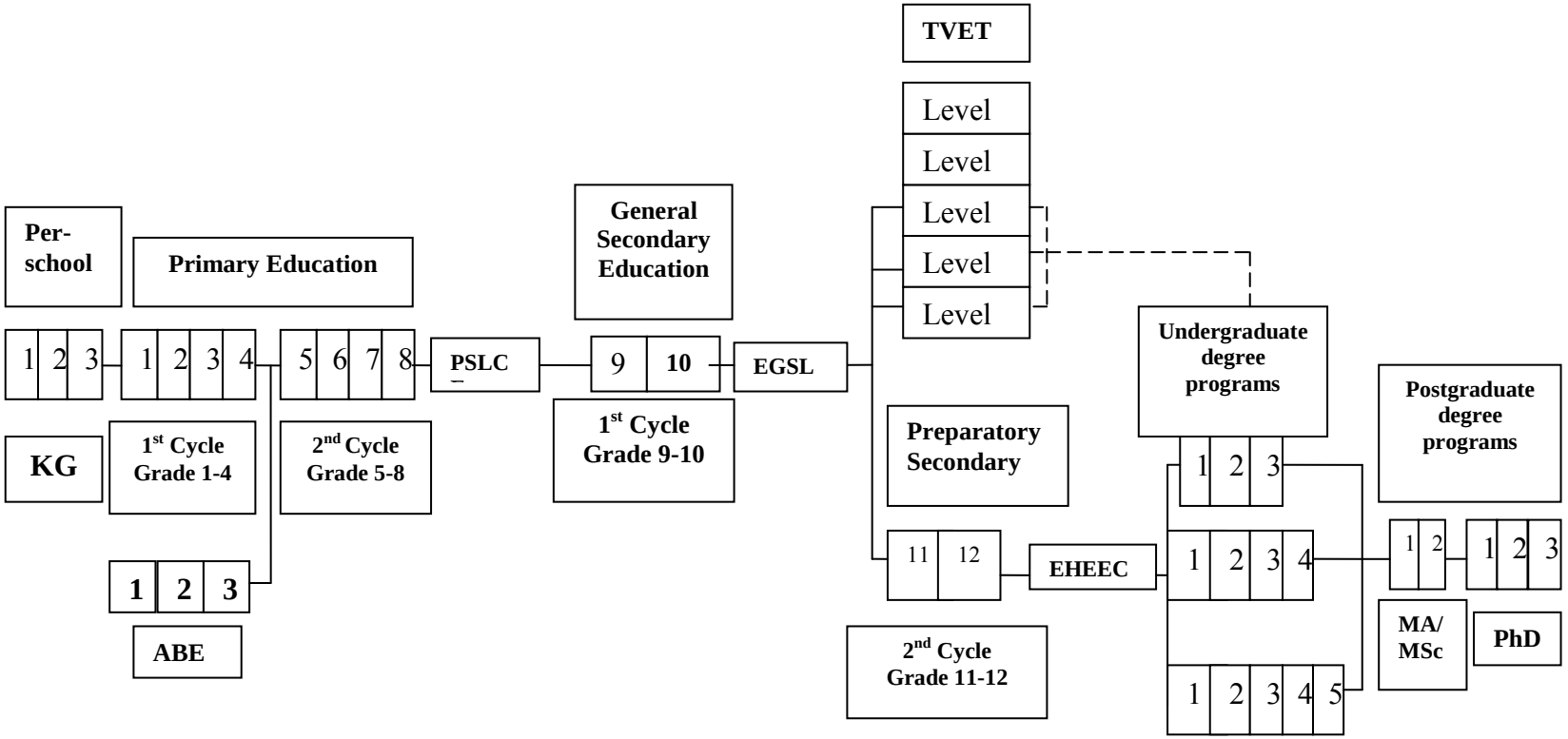
The education system in the country has three major components: (i) general education, consisting of primary and secondary schooling of 12 years and some special and alternative education facilities, (ii) technical and vocational education and training (TVET), and (iii) higher education. The current educational structure consists of eight years of primary education followed by four years of secondary education. Primary education has two cycles, first cycle (grades 1-4) and second cycle (grades 5-8). Secondary education also has two cycles. The first cycle is general secondary education (grades 9-10), which leads to the end of general education for all students. Students who complete grade 10 will sit the National General Secondary Education Certification examination. Grades 11-12 constitute the second cycle of secondary education. Students who pass the national exam with higher academic grades will enter the second cycle of secondary education which, as a pre-university education, envisages future enrollment in a higher education institution. Other students will join the TVET programs which offer from one to four years of technical and vocational training in various fields. Table 3.2 and Figure 3.1 depict the educational structure of Ethiopia in accordance with most recent policy proposal encompassing broad educational goals.

Table 3. 2 Ethiopian education system **(MoE, 2011 p. 4)**

Category	**Grade**	**Age Range**	**School Type**	**Length of program**	**Type of certificate**
KG	KG-1-3	3-6	Kindergarten	3	
Primary	1-8	7-14	Primary School	8	Primary school Leaving Certificate Examination
1st Cycle Secondary	9 and 10	15-16	General Secondary school	2	Ethiopian General School Leaving Certificate Examination (EGSLCE)
2nd cycle Secondary	11 and 12	17-18	Preparatory Secondary School	2	Ethiopian Higher Education Entrance Examination (EHEEE)
Technical and Vocational	Certificate/ Diploma	17-19	Technical and vocational schools and Junior colleges	1-4	National TVET Qualification Certificate Level 1-5
University level first stage	Undergraduate Degree[9]	19-24	Universities and Colleges	3-5	Bachelor's Degree
University level second stage	Postgraduate Degree[10]	25-26	Universities	2	Master's Degree; Specialization
University level third stage	Postgraduate degree	27-30	Universities	3	Doctor of Philosophy

9 In medicine and veterinary medicine, the professional qualification of doctor is conferred after five years‘ study.

10 In medicine and veterinary medicine the specialization degree is obtained after a minimum of three years‘ further study beyond the MD and DVM degrees.



Key

ABE -	Alternative Basic Education
EGSLCE -	Ethiopian General School Leaving Certificate Examination
EHEECE -	Ethiopian Higher Education Entrance Certificate Examination
KG -	Kindergarten
MA/MSc -	Master of Art/ Master of Science
PSLCE -	Preparatory School Leaving Certificate Examination
PhD -	Doctorate Degree

Figure 3. 1 Structure of the Ethiopian education system (MoE, 2011 p. 4)

3.4.1. Technical and Vocational Education and Training (TVET) in Ethiopia

In Ethiopia, the inclusion of technical and vocational training in the formal educational system dates back to the establishment of the first TVET School in 1942 (Ayele 2010 p.10). However, since the introduction of the free market economy, technical and vocational education and training has become an important element in the Ethiopian education system. Currently it is on the way to becoming the predominant form of upper secondary education. For Ethiopia's need to integrate itself in the global economy is accelerating. This requires technical and professional citizens trained both in the ~~"a~~bility to learn" and in specific occupations. Hence, Technical Vocational Education and Training (TVET) is often at the center of education aimed at marketable and entrepreneurial skills. The Ethiopian government has recognized the importance and the need for establishing a large number of TVET institutions in the effort to promote economic and technological development in the country. Thus the national TVET strategy document states that

> global experience has shown that the mere expansion of TVET does not solve the problems of unemployment and low productivity of the economy. TVET has to respond to the competence needs of the labor market and create a competent, motivated and adaptable workforce capable of driving economic growth and development. (Ministry of Education-MoE 2008 p.7)

Efforts have consequently been made in recent years not only to expand the number of TVET institutions but also to implement reforms throughout the system. With different reforms and continuous improvement measures underway, the annual average growth rate of TVET enrollment has been nearly 18% in the four years from 2006/07 to 2010/11 (Ministry of Education-MoE p. 55). The ministry indicated on its Education Statistics Annual Abstract (2011) that the actual enrollment numbers for formal TVET trainees, trainers and institutions are 371,347, 12,890, and 505, with average annual growth rates of 18.1%, 16.4% and 6.8% respectively as can be seen from table 3.3.

Table 3. 3 Recent enrollments in the Ethiopian TVET system

Description	**2006/07**	**2007/08**	**2008/09**	**2009/10**	**2010/11**	**Average Annual Growth Rate**
Enrollment	191,154	229,252	308,501	353,420	371,347	18.1
Percentage of Female students	43.9%	48.0%	46.2%	44.3%	46.2%	1.3
TVET teachers	7,083	9,010	9,052	11,716	12,990	16.4
TVET institutions	388	458	458	448	505	6.8

Source: Ministry of Education, Education Statistics Annual Abstract (MoE 2011 p.55)

Pathways: The Ethiopian TVET system promotes vertical and horizontal mobility and progression between different TVET occupations and different qualification levels, but also between TVET, general and higher education. The current TVET strategy is designed in such a way that TVET responds to the different occupational requirements of the different sectors and accommodates the changing demands of the various sectors. It also creates the possibility of career progression and continuation of lifelong learning. The admission requirements for any formal school-based TVET for the TVET certificate level III and above are regulated by the Federal Ministry of Education and regional TVET agencies, and require the successful completion of 1st cycle general secondary education. It is also possible for 2nd cycle secondary school leavers to join TVET colleges and training centers. For certificates of level I and II the entry requirement varies from sector to sector and from region to region. A student with 1st cycle secondary education or less can join these levels of training. Generally students in Ethiopia can follow multiple pathways towards the common goal of the TVET certificate. However, to proceed further to higher education they have to serve in industry for not less than two years and should pass an additional Certificate of Competence (CoC) in their respective field.

Operation: The current national TVET strategy of Ethiopia is intended to be outcome-based and allows flexible operations within the national context. TVET programs can be delivered at different qualification levels by different actors both in formal and informal training modes. Official strategy (Ministry of Education-MoE 2008) states that in future individual TVET institutions can in principle decide how best to organize TVET for their target groups and according to occupational requirements. However, the operation of informal TVET is still fragmented and has no formal structure across several sectors. Several public and private institutions provide TVET to the informal sector, although the qualifications they offer are not recognized, due to lack of systematic testing and certification systems (OECD 2008 p.10). While the majority of TVET programs are provided within general colleges offering different fields, there are also separate public institutions devoted to specific occupational fields. These institutions work closely with specific industrial sectors and trades in establishing occupational standards and curricula.

Assessment and Certification: For outcome-based TVET, occupational assessment and certification are the main features for verifying individual occupational competencies. The

present TVET system in Ethiopia enables any candidate to compete for a particular occupational standard regardless of how he/she acquired the training. In principle graduates from both formal and informal TVET programs have access to assessment and certification. State accredited Certificate of Competence centers with experts from training institutions conduct the assessment and certification, and a National Occupational Qualification Certificate is issued by the state TVET authorities upon delegation and on behalf of the Federal TVET Agency.

Role players in the Ethiopian VET system: TVET operates principally at the interface of different sectors of society, notably the education sector, the labor market, industry, MSE sectors, agriculture and rural development, and public administration (Ministry of Education of Ethiopia-MoE 2008 p.18). At present the federal TVET agency is taking full responsibility of formulating policies and strategies, whereas the state TVET agencies and bureaus are responsible for the overall implementation of these policies and strategies by regional TVET institutions. However the involvement of the private sector at a strategic level remains at a panel level. Their involvement is mainly limited to provision of training for their own staff, offering internships to trainees and providing apprenticeship training. Financing of TVET institutions mainly rests on the shoulders of the federal and regional governments and external donors.

3.5. Developing Sector-Specific VET

In recent years many countries have developed sector-based approaches to rising employer demands for skills (Ashton 2006 p.1). According to Ashton (2006) a strong and effective sector skills approach enables employers to play the key role in identifying the skill requirements and designing the competencies required. Another importance of sector-specific approaches is that it enhances the involvement of private sectors in the financing and provision of VET. It is, in fact, always a difficult task to represent the specific needs of different sectors in terms of skill demands, and it is very important in this context to make tradeoff balances between general and specific needs, and between the demands of larger and more powerful organizations of the sector and the equitable representation of large and small organizations (Sung et.al. 2006 p. 29). This is because individual sectors of a nation‘s economy may want to develop their own strategies for training programs rather than adhering to the general education and training frameworks of the country or state.

Apart from an extensive literature on vocational education and training (VET) systems, little has been written specifically about sectorial approaches (Sung et.al. 2006 p.11). Although the

importance of the literature in the area of VET is relevant to the understanding of the specific sectorial systems, its focus is mainly on educational and social perspective. However, today more than ever, the traditional holistic approach of vocational education is not suited to meet the multiple demands of economic and social development. Behind this argument lies the view that the development of specific strategies to meet the growing special demands of specific sectors facilitates skill requirements more quickly than reshaping or retraining graduates from the generic model output. On the other hand, the sectorial approach to vocational education enables sector unions, specialists, and professionals to mature the content of off-the-job training. It also helps in the long run to shift from employer-consulted to employer-led or employer-owned training systems, as it facilitates the involvement of employers in a more organized way. A typical sector-specific approach to VET involves government, sector production companies, unions, skills council, and training providers in a more integrated way so that their combination and cooperation will result in a well-represented system.

3.6. The Work-Process Oriented Approach

A number of esteemed scholars worldwide have conducted extensive research in the field of work-process-based education and training, and have shown its importance for a competence-based labor market. Rauner (2005, 2008, 2009), Dreher (2011), Smith (2007), Spöttl (2009), Spöttl and Windelband (2013), Fischer and Boreham (2008), Herrmann, Grollmann and Rauner (2007), Kremer (2009), Greinert (1994), Ashton (2006), Dittrich, (2006, 2010), Schlögl (2007) are among other authors in this well-documented literature.

Enterprises cherish the hope that much of the knowledge and skills required for coping with new work tasks can be acquired on the job (Spöttl 2004 p.187). The term –work process knowledge" refers to a dimension of occupational competence which is often neglected in debates about vocational education and training, but whose importance has been increasingly recognized in recent years (Fischer and Boreham 2008 p. 466). The fact that internationally work-processes now play a leading role in training (Spöttl and Windelband 2013 p.22) derives from the new orientation of VET, in which links to work processes and work-process know-how are the key elements in developing workplace competence. Vocational work assignments require the ability to incorporate various contextual factors (Dreher 2013 p.2). To redesign the subject-oriented structure of curricula at vocational schools, however, needs the reorientation of occupational profiles towards work processes. This has to be done by conducting work process studies on the specialized sectors of the occupation. Work process studies in the

vocational disciplines have to investigate the knowledge that is necessary for the fulfillment of professional tasks and for a participative organizational development within the enterprise (Pahl and Rauner 2008 p.196).

Work-process knowledge means an understanding of the entire work process in which the respective person is involved, in terms of its product-related, technical, work organization, social, and system-related dimensions (Kruse 1986, cited by Fischer and Boreham 2008 p. 467). It is a synthesis of theoretical and experiential knowledge (see Figure 3.2), typically constructed by resolving contradictions between codified knowledge and lived experience when solving problems in the workplace (Rauner 2005 p.10). In this perspective it is vital, in order to be able to work as a skilled worker after concluding an apprenticeship, that in-company training should take place within work-order related training, and that specialist knowledge be imparted, as well as general soft skills, during the process of growth into the community of practice (Herrmann, Grollmann and Rauner 2007 p.75).

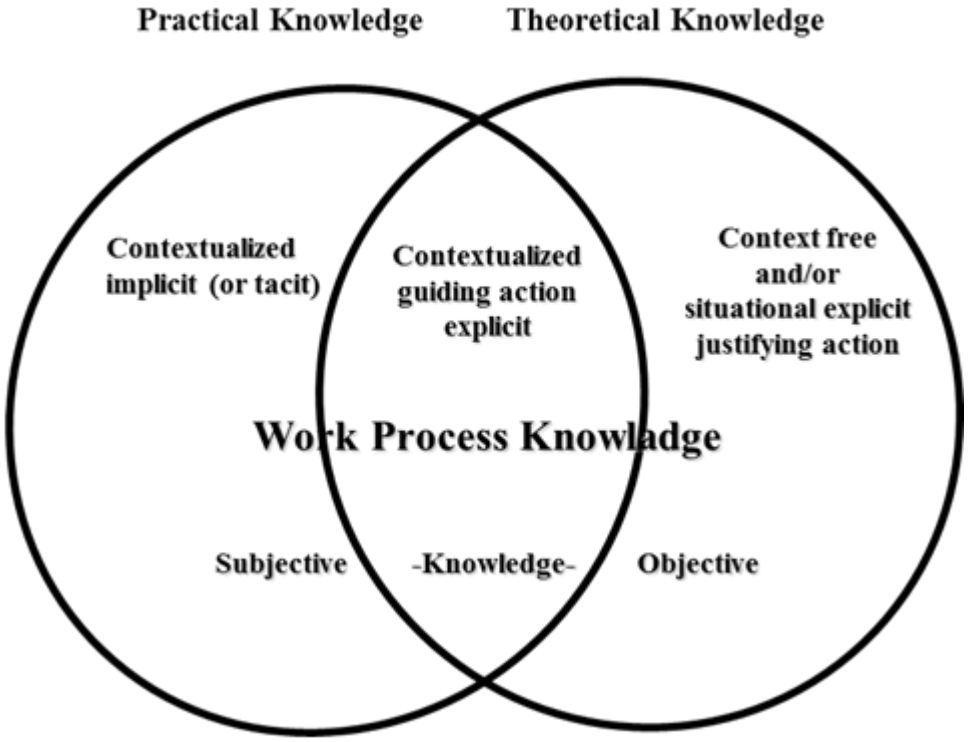


Figure 3. 2 Work process knowledge as a connection of practical and theoretical, as well as subjective and objective knowledge (Rauner 2000b, cited by Rauner 2005 p. 10)

The foundation of a solid TVET is, therefore, a work-process related holistic curriculum based on the idea of enabling students and trainees to participate in the process of shaping their societies, including the world of labor (Rauner 2005 p.18). In this regard the work process approach can emerge as a prime candidate for what the Ethiopian government has in

mind when it refers to TVET reform as enabling industrial employees to undertake a wider range of tasks and to respond more quickly and effectively to new work demands. Scholars in the field of vocational education and training are accordingly redesigning the work-process approach as a means of shaping competencies and developing problem-solving abilities. In this context, the importance of experience and experience-based learning in vocational education and training has been the subject of extensive study to date (see Böhle 2010; Spöttl 2009 47ff, cited by Spöttl and Windelband 2013 p.15). In addition, occupational profiles based on work and business processes make it compelling to incorporate the features of the companies and of the industrial culture of the particular country or region concerned (Spöttl and Windelband 2013 p.22).

Looking at the Ethiopian leather product manufacturing subsector, designing work-process based training and education packages will create a leapfrogging opportunity, providing employees with valuable opportunities to develop their vocational skills, knowledge and attitudes in a real work context that can both improve workplace competence and change trainee approaches to learning.

CHAPTER FOUR
GENERAL OVERVIEW OF THE ETHIOPIAN LEATHER SECTOR (MACRO-ANALYSIS)

4.1 Introduction

Ethiopia has a long tradition in the processing and export of leather and leather products. However, the modern leather goods industry dates back to the time when the modern tanning industry was established in the mid 1920s (Ethiopian Investment Agency-EIA 2008 p.2). It was initially developed in the context of an import substitution program and was highly protected from import competition to produce footwear for the domestic market. Presently, Ethiopia's leather industry is at the forefront of leather sector development in Eastern and Southern Africa (United Nations-UN 2002 p.73). In a recent policy document, the Ethiopian government has shown its clear realization of the opportunities offered by globalization, identifying one of the eight major policy tasks as:

> Rapid export growth through production of high value agricultural products and increased support to export oriented manufacturing sectors, particularly intensified processing of high quality skins/leather and textile garments (Ministry of Finance and Economic Development of Ethiopia- MoFD 2002i).

In addition the Ethiopian government has a new plan: the *Growth and Transformation Plan (GTP)*, which is to succeed the previous *Plan for Accelerated and Sustained Development to End Poverty (PASDEP)*. The new plan is ambitious: it assumes real growth of GDP of a minimum of 11 percent per annum over the period 2010/11 to 2014/15, with a ~~"b~~est case" target of doubling the size of the Ethiopian economy over that period, which would require annual GDP growth of 14.9 percent (Ciuriak and Preville 2010 p.2). The sectorial focus of the plan in terms of manufacturing is on subsectors that are labor-intensive, use agricultural products as inputs, help achieve technology transfer, and are either export-oriented with significant export potential or import-substituting. In this regard the leather and leather products subsector is the first priority shortlisted in the *Growth and Transformation Plan*.

This in itself is sufficient to merit a study of the leather sector in Ethiopia from different perspectives. With its intensive use of relatively low level professionals, the subsector is regarded as significant for the country's process of transformation into an industrial economy. On the whole, the subsector can provide ample employment potential for skilled as well as semi-skilled youth, if appropriate measures are in place with regard to improving productivity.

4.2 The Resource Base

4.2.1 Raw Material

Raw material availability is one of the factors, if not the major factor, that influences the expansion of the leather sector. Ethiopia is one of the countries that have the largest livestock population in Africa. Thus its resource base for the development of the leather and leather goods industry is substantial. According to the statistical survey report of the Central Statistical Agency of Ethiopia (CSA 2010 pp.40-42), the livestock population of the country is estimated at about 50.8 million heads of cattle, 26 million heads of sheep and 22 million heads of goats. However, the extent to which the available resource is exploited depends on the offtake rate, which is in turn a result of the level of economic development of a country. An estimate of the Ethiopian Ministry of Agriculture shows that the skin removal rate is 7% for cattle, 33% for sheep, and 37% for goats. Correspondingly the annual potential supply of hides and skins increases to 3.5 million hides, 8.6 million sheep skins and 8.1 million goat skins. Table 3.1 below shows the country‘s livestock population and the corresponding annual supply of hides and skins between 2007 and 2010.

Table 4. 1 Livestock population and the corresponding annual supply of hides and skins

No	Description	Year											
		2007			2008			2009			2010		
		Cattle	Sheep	Goats	Cattle	Sheep	Goats	Cattle	Sheep	Goat	Cattle	Sheep	Goats
1	**Estimated livestock population (millions)**	43	23	**18**	**47**	**26**	**22**	**49**	**17**	**22**	**51**	**26**	**22**
2	**Estimates yearly supply of hides and skins (million pieces)**	2.9	6.9	**5.8**	**3.8**	**3.5**	**8.1**	*	*	*	**3.5**	**8.6**	**8.1**

Source: Central Statistical Agency (of Ethiopia) CSA, Statistical Abstract 2007, 2010

** Data not available*

4.2.2 Labor

With a population over 82 million, Ethiopia has an abundant, hard-working, inexpensive and easily trainable labor force (EIA 2008 p.2). Labor costs in Ethiopia are very low compared with those of potential competitors in and outside Africa (for example, labor costs in Ethiopia are almost one-third of those in China (World Bank 2004 p.7). The average wage for unskilled labor generally ranges from Birr 25-35 (US$ 1.5-2.0) per day. The salaries of fresh university graduates normally range from Birr 1700-2500 (US$ 100-150) per month.

4.3 National and International Market

4.3.1 International Market

Leather and leather products are among the most widely traded and universally used commodities in the world. Already, the total value of annual trade is estimated at 1.5 times the value of the meat trade; more than five times that of coffee; and more than eight times that of rice (International Trade Center -ITC 2003 p.2). In the international market, 78.3% of the world's hides and skins are produced by developing countries, out of which the share of African countries amountsto only 11% (Wondu 2011 p.52). Moreover, Africa contributes 15.7% of sheep and 22% of goat skins for the world. However Ethiopia's share is limited to 1.6%, which is insignificant when one considers the livestock population of the country.

The export of leather products has a short history compared to the entire sector's participation in the international market. Exporting of leather products – particularly shoe and leather garments – started in 2005. The numbers of enterprises entering the export market was limited. A leather sector export performance evaluation (LIDI 2010) shows that only 11 shoe firms and five garment and leather goods manufacturers were engaged in the export market from 2006/07-2009/10. Table 4.2 shows the export values of the leather sector for the last few years.

Table 4. 2 Share of leather products export from the total leather sector export (in Million USD)

Export item	**2005/06**	**2006/07**	**2007/08**	**2008/09**	**2009/10 (5 month)**
Leather industry sector income	75.33	89.54	101.30	75.62	19.30
Leather products Income	0.30	-	0.03	0.15	0.10
Share of leather products %	0.4	0	0.03	0.2	0.5

Source: Ethiopian Leather Journal, March 2011, 5th ed. p.54

From the above table we can see how the sector is in its infancy in terms of earning foreign currency for the country. This indicates that despite the great potential of the Ethiopian leather sector, it remains largely unexploited, and the country's leather product manufacturing industries have not kept pace with the substantial growth of Ethiopian leather tanning and processing industries. Seizing global and national market opportunities in leather products is the key challenge for the Ethiopian leather product manufacturing subsector. By increasing its exports, the leather product manufacturing sector will bring a range of both economic and social benefits to the country, as it is also a labor-intensive industry and thus an important source of employment.

4.3.2 National Market

Although several factors such as low capacity utilization, which increases the unit cost of production, poor quality of raw material inputs (hides and skins), and poor economic infrastructure have been mentioned as reasons for the poor international business performance, the Ethiopian leather product manufacturing subsector is also facing enormous challenges in the local market. Particularly the footwear manufacturers face high competition from Chinese products. This is partly because over 65% of leather shoe production is from the informal sector (Mekonnen and Gezahegn 2008 p.14), which uses traditional production facilities to produce only small units of a particular product, thus increasing the unit cost of production. On the other hand there is also lack of quality raw material access, due to the relatively high demand for finished leather for the export market. Informal manufacturers are consequently unable to cope with mass produced imported products, given the quality problems of their own products. As a result, apart from the international market, the market share of leather footwear in the local market has not been significant until recently. Table 4.3 shows a comparison between shoe imports and exports that indicates how Ethiopia's domestic market is controlled by imported products.

Table 4. 3 Shoe import and export value of Ethiopia (in 000 USD)

Year	2005	2006	2007	2008	2009	2010	Average
Import	23,067	25,101	25,101	25,101	25,101	25,101	25,101
Export	805	805	805	805	805	805	805
Trade balance (im-ex)	22,263	22,263	22,263	22,263	22,263	22,263	22,263

Source: Ethiopian custom and revenue authority (from UNIDO 2012 p.12)

With regard to leather garments, the focus has been so far on local markets. Almost all of the leather garment and leather goods manufacturing enterprises are entirely dependent on the local market. However, the export market is emerging, and a few manufacturers have already started exporting garments and leather goods.

4.4 Capacity of the Ethiopian Leather Sector

4.4.1 Production Capacities

There are at present 22 tanneries, 14 large and medium size footwear manufacturing facilities and 7 garment and leather goods manufacturing industries in the country. The tanneries have an average tanning capacity of approximately 4,000 hides and 30,000 skins per day. With respect to the degree of tanning, the tanneries are largely limited to semi-processing activities and currently

only 14 percent of the total production is finished leather (EIA 2008 p.76). From the total operating tanneries only 6 (27%) produce largely semi-processed and some finished hides and skins. Their finished leather occupies the biggest local share for shoe uppers. Each of these tanneries produces shoe upper leathers and linings as well as garment leather.

Most of these tanneries are privately owned; four are state owned. For various reasons, most of them use only about 60 percent of their capacity. Shortage of raw hides and skins, poor quality of available raw materials, lack of working capital, and shortage of technology and accessories are among the most prominent reasons of the under-capacity operation of three of these tanneries. This further affects the under-capacity utilization of the leather product manufacturing firms in the country, as the shortage of finished leather is a bottleneck in the production of leather products. It is estimated, for instance, that if the tanneries were using their full capacity, the leather product manufacturing enterprises would also have been able to use their full capacity to increase export earnings and at the same time satisfy the local market.

The enterprise diversification of the Ethiopian leather product manufacturing subsector ranges from big shoe manufacturing companies with more than 600 employees and an average production capacity of more than 3000 pairs of shoes per day, to micro level enterprises that produce leather goods on a family basis. Some of the enterprises are specialized in producing one or two types of leather product, while others produce a range of products in different production lines. On the other hand some enterprises start from the lowest stage of the value added chain and conclude with end-products whereas others are engaged only on the last stage of the chain – i.e. the manufacture of end products. Generally, when we consider the entire product manufacturing sector, it comprises leather footwear, garments, handbags, belts, wallets and industrial gloves. Leather footwear and leather garments are the major products at factory level, while handbags, gloves, wallets and belts are mainly manufactured at small and micro level by informal producers. The annual installed production capacities of the major footwear and garment and leather goods enterprises are given in Table 4.4.

Table 4. 4 Capacity utilization of sample leather footwear and garment enterprises

Leather Footwear			**Leather Garments**		
Company	***Installed Capacity (Pairs per day)***	***Actual output (Pairs per day)***	***Company***	***Installed Capacity Pcs/Day***	***Output Capacity Pcs/Day***
Tikur Abay Shoe S. Co.	*4000*	*3000*	*Modern Zege Leather Garment*	*200*	*150*
Anbessa Shoe S. Co.	*3000*	*1700*	*Eth-Sung Bin Leather Garments Factory*	*120*	*50*
Kangaroo Shoe Factory	*3000*	*1200*	*Genuine Leather Craft*	*100*	*40*
Gelila Shoe Factory	*1200*	*800*	*ELICO-Universal Leather Articles*	*300*	*200*
Peacock Shoe Factory	*3000*	*2000*	*General Leather Works*	*20*	*10*
Ras Dashen Shoe Factory	*1000*	*500*	*Joy Leather Garments*	*60*	*25*
Gamb Shoe Factory	*1000*	*500*	*Abyssinia Leather Industry*	*40*	*20*
OK Jamaica Shoe Factory	*1200*	*1000*	*JONZO leather garment PLC.*	*40*	*10*
Wallia Shoe Factory	*3000*	*1500*	*A.B. Leather Garments*	*10*	*7*
Melese Teka Shoe Factory	*2000*	*1200*	*Awash Leather Products Enterprise*	*40*	*20*
Ramsay Shoe Factory	*2000*	*1500*	*Abayne Beyene Leather Garments Factory*	*50*	*30*
			SALMEDA Leather Products	*20*	-
Total	***24,400 Pairs***	***14,900 pairs***	**Total**	**700**	**309**

Source: United Nations Industrial Development Organization -UNIDO and (Ethiopian) Ministry of Trade and Industry- MoTI, 2005 combined with survey.

Assuming total working days per annum to be 275 (50 working weeks x 5.5 working days per week), the annual installed capacity of these footwear enterprises can be calculated as 6,710,000 pairs of shoes. But the actual yearly production remains only 61% of the installed capacity. An earlier study showed that capacity utilization for shoe firms was, at the time, as low as 48% (Tegegne, 2007 cited by UNIDO 2012 p.12). On a similar basis the annual installed production capacity of the major garment manufacturing firms can be computed as 192,500 pieces. Production is similarly below 50% of capacity utilization.

Such low utilization of capacity could arise from a number of factors such as lack of raw materials, or lack of product demand due to product quality and low level competitiveness in the global market. In order to utilize the idle capacities and increase global competitiveness of the enterprises, productivity and quality constraints must be minimized. One of the potential areas of intervention is therefore, increasing the human productivity by developing appropriate skills and

competence in the workforce. The lack of skilled labor has been cited as major constraint of the sector, in particular in design and cutting, and there are signs of increased labor mobility to other sectors due to low wage levels in the subsector (EEA 2011, UNIDO 2012 p.16).

4.4.2 Employment Capacities

One of the criteria of measuring a sector‘s economic importance to a nation is the job opportunities that it creates for citizens. Given the HR-intensive nature of a leather sector in general, and particularly the low complexity of its technology, which can be easily absorbed by medium level professionals, the Ethiopian leather sector does not employ a large number of workers. In terms of the number of establishments, the Ethiopian leather sector is among the first five major industrial groups in the country, comprising over 50 large and medium-sized establishments, but as far as employment opportunity is concerned it accounts for only some 8.23% of the total employment engaged in the major manufacturing sector. However, in recent years the employment generation power of the sector has been increasing. According to the Central Statistical Agency‘s annual report for the year 2010, the number of employees in the sector has increased by 15%. According to this report the total number of individuals engaged in this sector amounts to over 8500. According to Loop (2003 p.32), there is a general consensus in the leather industry that it is high time for the 70-year-old tannery sector to move up in the value chain by undertaking the manufacture of leather products (garment, bags, shoes, etc.).

It difficult to estimate accurately the employment generated by the Ethiopian leather product manufacturing subsector, as the numbers of self-employed in the area is not clearly known. The footwear subsector alone has more than 600 SMEs producing shoes for the local market. But the employment generation of the large and medium leather product manufacturing firms is far lower that the self-employment in the subsector, especially when the cottage/handcraft shops are considered.

Table 4.4 shows a comparison of the major industrial groups in Ethiopia with respect to the number of establishments, their employment advantages, and the total revenue from sales for the Ethiopian fiscal year (2006/07 – 2008/09)[11]

11 Though it varies from industry to industry, approximately 80-85% of the number of employees engaged is permanent workers, whereas the remaining 15-20 % is temporary or seasonal workers.

Table 4. 5 Characteristics of major industrial groups in Ethiopia (2006/07 - 2008/09)

Major Industrial Groups	No. of Establishments			No. of Employees engaged			Revenue from Sales (in 000' ETB)		
	2006/7	2007/8	2008/9	2006/7	2007/8	2008/9	2006/7	2007/8	2008/9
Manufacture of furniture….	234	234	234	3,674	3,100	3,248	54,960	42,976	94,748
Manufacture of food products.....	169	169	169	18,804	24,485	16,474	719,862	1,113,493	1,026,365
Manufacture of wearing apparel except fur apparel	104	104	104	6,224	5,015	4,242	31,130	13,102	17,351
Manufacture of fabricated metal products except machinery and equipment….	98	98	98	2,945	2,540	2,432	265,134	176,720	102,655
Tanning and dressing of leather, manufacture of footwear, luggage and handbags	69	69	69	7,304	7,336	7,305	360,451	259,868	205,278
Manufacture of other non-metallic products….	59	59	59	9,074	9,936	9,657	733,154	706,407	339,374
Manufacture of rubber products….	40	40	40	3,470	3,434	3,236	172,069	208,218	330,151
Manufacture of chemicals and chemical products…	39	39	39	4,045	4,788	4,534	216,878	304,064	365,448
Manufacture of beverages.....	31	31	31	10,018	10,061	10,611	607,844	825,317	1,216,472
Manufacture of paper and paper products	29	29	29	6,183	6,422	5,884	166,128	182,508	201,219
Manufacture of textiles.....	15	15	15	12,075	11,348	11,961	415,133	375,430	190,983
Manufacture of wood products and cork except furniture	11	11	11	1,684	1,734	1,464	31,833	24,219	627,754
Manufacture of basic iron and steel…	9	9	9	1,261	1,162	1,488	136,975	132,714	146,098
Manufacture of motor vehicles, trailers and semi-trailers…	4	4	4	1,411	1,245	1,211	293,384	97,307	124,969
Manufacture of tobacco products...	1	1	1	774	783	755	103,341	119,040	187,616
Total manufacturing	910	910	910	88,946	93,389	84,502	4,308,275	4,581,383	5,176,481

Source: Central Statistical Agency of Ethiopia- CSA, 2009 p.23-29

4.5 Future Trends

The leather product manufacturing industry is considered an important subsector that leads the whole sector's modernization. Although the export of leather products started only in 2005, export value has been growing steadily since then and is expected to make a big impact on the Ethiopian economy. Not only is the economic impact resulting from the trade important, but also the job opportunities the industry may create could make a significant impact on poverty reduction.

For example, the export value of leather footwear escalated from 0.57 Million USD in 2005 to 7.17 million USD in 2008 (MoTI 2010), which shows the potential increase in trade value of the

subsector. When the Ethiopian Growth and Transformation Plan (GTP) ends at year-end 2014/15, annual leather footwear product exports are expected to have increased by 63.5%, amounting to 21.035 million pairs of shoes, earning USD 315.53 million. Total production capacity of the footwear manufacturing firms is expected to have reached 30.05 million pairs of shoes per year by that time. Table 4.6 shows the planned production capacities and the corresponding foreign currency earnings of the footwear and leather garment sub-subsectors.

Table 4. 6 Target production and export of Ethiopian footwear and garment subsector (2010-2015)

Description (Footwear)	**2009/10**	**2010/11**	**2011/12**	**2012/13**	**2013/14**	**2014/15**
Planned production (millions of pairs of shoes)	4.852	14.643	18.831	21.983	25.960	30.050
Planned footwear export (millions of pairs of shoes)	2.671	9.222	13.182	15.388	17.983	21.035
Planned foreign currency earnings (millions USD)	**60.65**	**119.89**	**177.96**	**215.43**	**260.75**	**315.53**
Description (garments)	**2009/10**	**2010/11**	**2011/12**	**2012/13**	**2013/14**	**2014/15**
Planned garment production (000‘ PCS)	9.485	12.229	73.029	209.143	372.571	649.943
Planned garment export. (000‘ PCS)	6.510	8.560	51.120	146.400	260.800	454.960
Planned foreign currency earnings (millions USD)	**0.52**	**0.69**	**4.12**	**11.8**	**21.02**	**36.6**

Source: (Ethiopian) Leather Industries Development Institute-LIDI 2010

The target production of footwear shows that the subsector still needs more attention to capacity building and HR development aspects. When we see the percentage increase of the planned production of shoes, it shoots from the current production of 3.1 million pairs of shoes per year to 30 million pairs by 2015 – a 10-fold increase in footwear production.

4.6 Interim Summary

In terms of the relative sophistication of Ethiopia‘s exports, more specifically the degree of domestic value-addition, the Ethiopian leather product manufacturing subsector is still an area where a lot more needs to be done. A simple indicator of the very limited value-addition in Ethiopian exports is the still dominant share (roughly 80 percent) of agriculture in total exports. Export trends in leather product commodities show progress, but this is still limited. Within the leather sector, footwear products will be expected to have the lion‘s share in generating foreign

currency. As stated in a policy brief document ―The importance of the leather footwear sector for development in Ethiopia" (Loop 2003 p.3), the leather footwear subsector in Ethiopia has great potential to raise manufacturing and export production, and thereby to increase employment opportunities and reduce poverty. The competitive advantages from the country's livestock population, along with its unique quality of hide and skins, make it one of the potential sources of industrial development for Ethiopia. The participation of Ethiopian manufacturing enterprises in the African Growth and Opportunity Act (AGOA) is also another opportunity to go forward. There is also an indication that economically, the leather sector has been generating substantial foreign exchange earnings in recent years as its products have become Ethiopia's number one manufactured export. From a social viewpoint, the sector can offers substantial employment opportunities and will thus contribute to poverty alleviation. But only a combined approach by the Ethiopian leather sector can address the competitive factors it faces. Research findings suggest that factors like the quality of hides and skins, technological development, productivity and workmanship, facilities for HR development, marketing information and expertise are among the priority areas for intervention.

A remarkable step in this regard is stated in the Industrial Policy Directions of Ethiopia: ―in the private sector, the principal method of attaining industrialization must be internalization of skills and technology embodied in the human capital of domestic citizens" (GRIPS[12] forum 2009 p.5). Therefore, research into the factors that impede this sector from development could have great significance for the country as a whole. This is an area that has received little attention in Ethiopian literature.

12 GRIPS Stands for National Graduate Institute for Policy Studies, a Japanese institution mostly working on policy issues

CHAPTER FIVE

SECTOR ANALYSIS AND PRESENTATION OF RESULTS

5.1 Introduction

In this study, a research questionnaire and interview guide were developed and used to obtain empirical data from Ethiopian leather product manufacturing firms – specifically leather footwear and leather garment factories – in order to justify the proposed research questions ***(see Appendices 1 and 2).*** In analyzing the data, both quantitative and qualitative approaches were used to obtain particular data or information. This chapter presents detailed outlines of the empirical data analysis, presentation, and interpretation of results, with major emphasis on employee competence analysis. To identify key qualification requirements of the sector, which was the major research question, a detailed investigation of the subsector structure was made. In the following sections the analysis of the empirical results will be presented. Section 5.2 presents the leather product manufacturing subsector structure with the major emphasis on overall organizational setup and employee profiles. Section 5.3 describes the results of the manufacturing work process analysis. Section 5.4 is a case study of a core leather footwear manufacturing enterprise, with detailed job analysis, job descriptions and job specifications. Finally section 5.5 summarizes the overall situation and the research findings.

5.2 Subsector Structure

5.2.1 Description of Representative Enterprises

Before going into the detailed analysis of the leather product manufacturing subsector, a short description of some representative enterprises – namely the four largest leather footwear manufacturing and two leather garment manufacturing enterprises – will be given, in order to provide a general overview of the subsector.

5.2.1.1 Anbessa Shoe Share Company[13]

Anbessa Shoe S. Co. is one of the oldest shoe manufacturing businesses in Ethiopia and is recognized to be a pioneer in terms of introducing modern shoe making technology to the country. Its establishment dates back to the 1930s. The factory is engaged in both manufacturing

[13] Reproduced from company official website http://www.anbessashoe.com.et/

(production) and distribution (sales) of various types of leather upper shoes for gents, ladies and children. Its activity ranges from component making up to production of ready-for-use footwear on the manufacturing side, and factory wholesale up to individual retail on the distribution side. Actual current practice in Anbessa Shoe S. Co. indicates that 3000 pairs per 8 hour shift represents the physical capacity of the installed machinery. Attainable capacity under the prevailing company circumstance is 1700 pairs of shoes, while the achieved output level is 1500 pairs of shoes per 8 hours shift. The organizational structure of Anbessa Shoe Share Company has a managing board primarily in charge of policy formulation and close supervision of its implementation, a general manager who is responsible for overall execution of the company objectives, five functional managers, each with 2–3 divisions to undertake specifically assigned tasks, and operational workers handling routine activities. The total workforce amounts to 675, most of whom are employed on a permanent basis. The educational profile of employees ranges from over 67% elementary levels, over 23% advanced high school levels, about 7% vocational education levels, 2% with college diploma and less than 1% with degrees.

5.2.1.2 Kangaroo Shoe Factory[14]

Kangaroo Shoe factory is a private limited company. Its establishment as a public enterprise dates back to 1975. Before achieving its present status the factory underwent several changes. The average installed capacity of the factory was about 3000 pairs of shoe per day, but attainable capacity so far does not exceed 1200 pairs per day. The factory produces mainly men's casual and children‘s shoes, including loafers and boots lace-ups all in leather with soles of PVC or other materials. Kangaroo Shoe Factory currently has opened a work opportunity for more than 500 workers in the factory, and its annual production reaches 312,000 pairs of different types of shoe. It exports 5-10% its products to the international market.

5.2.1.3 Peacock Shoe Factory[15]

Peacock Shoe Factory is a unit of Dire Industries PLC (family business) which was established in 1994. The installed capacity of the factory is about 3000 pairs of shoes per day and currently it is operating at an average production capacity of 2000 pairs per day and is mainly engaged in

[14] Source company official website http://www.kangashoes.com and company documentation.

[15] Produced from company leaflet, and individual interview of company officials

production of quality dress casual men's shoes. Ladies' shoes, men's shoes, children's shoe are also among the major products of Peacock Shoe Factory. Since its establishment, the company has become one of the few leading shoe manufacturers in Ethiopia, with over 350 employees. Even though Peacock has a large share in the internal market, its prime focus is on exporting shoes and it has an aggressive international marketing strategy. It has even achieved 90% export production.

5.2.1.4 Modern Zege Leather Products Industry (MZLPI)[16]

Modern Zege Leather products industry (MZLPI) is a private limited company (PLC) established in 1993 by two Ethiopian shareholders. It has 70 permanent and 40 contract workers. Some of the areas of operation/production of the company are leather garments, which includes overcoats, field jackets, jackets, coats, shirts, trousers, skirts, etc for men, women and children in different models and colors, and leather goods including leather bags, belts, wallets, and gloves. Its functional departments are managed by marketing, production & technical and administration & finance managers, who are accountable to the general manager and committed to accomplish the enterprise's goals. The installed capacity of the company could achieve 2000 leather garments per 8 hour shift.

5.2.1.5 Ethio-Leather Industry (ELICO)[17]

Ethio-Leather Industry (ELICO) was established in 1997 after acquisition of three factories from the Ethiopian Privatization Agency. The company produces finished leather garments for men and women, sports gloving leather from sheepskin, finished goat suede for shoe uppers, finished cowhide for shoe uppers, finished crust lining leather, cowhide crust and other leather goods and articles.

5.2.2 Overall Organizational Setup

The Ethiopian leather product manufacturing subsector is governed under the Ministry of Trade and Industry by a Board of Directors and a Director General for public and private firms respectively. Besides these, a number of both national and international actors are involved

[16] Taken from company website http://mzegeleather.com

[17] http://www.midroc-ethiopia.com.et/md_elico.html

directly or indirectly to support the subsector in different respects, such as research and consultancy, education and training, market research and promotional activities.

In terms of legal ownership all except one company (Anbessa Shoe S. Co.) are privately owned, which makes the decision making process more centralized. Therefore it is common practice that functional authority is confined to advice (at most). Most of the enterprises have a managing director at the top of the organizational chart primarily in charge of policy formulation and close supervision of its implementation, followed by a general manager who is responsible for overall execution of the company objectives, and functional mangers each with 2–3 divisions to undertake specifically assigned tasks and operational workers handling routine activities ***(Appendix 3).***

5.2.3 Employee Profiles

It has been estimated that over 5000 people are engaged permanently only in the medium and large leather product manufacturing enterprises. This figure is relatively insignificant when the numbers of individuals engaged in the informal sector is considered. Although no formal survey has been made of the number of people working in the informal sector (cottage/handcraft leather product makers), the estimate exceeds 10, 000. It is, however, clear that the present contribution of the subsector to national employment figures is significant enough, above all if one takes into account recent developments in the leather product manufacturing subsector.

The distribution of employees in the subsector is characterized by a small proportion of professionals taking the supervision and decision making roles, and the vast majority of nonprofessional workers engaged in direct manufacturing activities. In terms of gender distribution, the sector provides good opportunities for female employees who dominate the subsector (over 60%), which is not the case in the majority of other manufacturing sectors in Ethiopia. The distribution of the workforce across major function is given in the table below:

Table 5. 1 Distribution of employees across various functions enterprises

Function	Percentage of workers involved
Manufacturing/production	85-90%
Designing & Sampling	1-2%
Sales	2-3%
Other supporting functions (Finance, HR etc…)	2-5%
Total	**100**

5.2.3.1 Education and Training

Only a few shoe and leather goods workers learn their skills through formal training programs, which take up to three years to complete. Most workers take short-term on-the-job training (less than 6 months), in which they learn their skills on the job from an experienced worker. Most begin as a helper and do simple tasks such as staining leather, brushing and shining shoes. As they get more experience, they learn how to cut and stitch, and perform lasting operations for shoes and other items.

In this particular subsector there are four major types of training field available in the country, namely leather footwear technology, leather garment technology, leather goods technology and leather processing technology. The latter mainly focuses on the processing of raw to finished leather, not on leather products. Employees in the subsector who are trained in leather product manufacturing fields do not exceed 23.7% of the total (Figure 5.1). When the field of specialization is considered (see Table 5.2), more than 76.3% of the production workforce has had no formal education related to leather product manufacturing. Over 32.3% has had some education in other fields, and nearly 44% has not been educated in any particular field at all.

Table 5.2 Educational profile of shop-floor workers in leather product manufacturing sector[18]

Respondents' field of study/training		Frequency	Percentage	Valid percentage	Cumulative Percentage
Valid	Footwear technology	51	17.5	17.5	17.5
	Garment and leather goods	18	6.2	6.2	23.6
	Other	93	31.8	31.8	55.5
	No specialization	128	43.8	43.8	99.3
	Machine technology	2	.7	.7	100.0
	Total	292	100.0	100.0	
Respondents' level of certification		Frequency	Percentage	Valid Percentage	Cumulative Percentage
Valid	Elementary Level	51	17.5	17.5	17.5
	High school complete	77	26.4	26.4	43.8
	10+1[19] certificate	42	14.4	14.4	58.2
	10+2 certificate	65	22.3	22.3	80.5
	10+3 diploma	56	19.2	19.2	99.7
	College diploma (Not TVET)	1	.3	.3	100.0
	Total	292	100.0	100.0	

As can be seen from table 5.2, from the sample of 292 employees taken randomly from 16 leather product manufacturing enterprises, less than 20% of production workers have education levels above diploma in different fields. The rest, which is more than 80% of the total, either have a higher or lower certificate or a lower qualification.

[18] The descriptive statistics table shows the percentage composition of direct manufacturing manpower. That means the composition comprises only workers in the production function from the preparation of leather for cutting to the end product packaging process. In other words the statistics table does not include workers in managerial functions like functional and higher mangers.

[19] 10^{+1}, 10^{+2} and 10^{+3} are old Ethiopian TVET qualification structures initiated in 2000/01 to provide for those students who had completed 1st cycle secondary (grade 10) education but did not score the required grades to attend preparatory secondary education, yet have the necessary aptitude for TVET in various fields. The plus represents the number of years a student stayed in a TVET school to acquire the corresponding qualification.

5.2.3.2 Qualification Structures

The employment pattern of the Ethiopian leather sector does not have a uniform structure. The resulting qualification of employees is also so fragmented that it has no continuous pattern. Sector training is for the most part a highly centralized activity. Consequently, given the predominantly decentralized structure of the industry, a large percentage of Ethiopian leather product manufacturing employees do not have a defined qualification structure. At present the qualification structure of TVET graduates in the leather sector is still based on the number of years spent in VET schools to complete a predefined curriculum. Its intention has focused mainly on providing education and training opportunities for those students who have completed 1st cycle secondary (grade 10) education, did not score the required grades to attend preparatory secondary education, but have the necessary aptitude for TVET in various fields. The system lacks defined levels in terms of learning outcomes and competencies. The approach was not to build from the bottom up in terms of how outcomes should be expressed in awards. But this has revealed an urgent need to enhance the level of best technical practices within the leather product manufacturing chain at all levels, vocational as well as professional. When the old system of technical and vocational education is translated to the new system the proportion of technically qualified workers in the sector is considerably lower. Figure 5.1 shows the percentage of leather sector qualified employees in the enterprises and the level of qualification in the leather sector.

However, since the leather industry is considered one of the driving forces of the Ethiopian economy, it needs to place strong focus on qualifications that can lead sector industries up the ladder of economic competitiveness. In this respect a new national TVET qualification framework (TQF), which defines the occupational requirements and expected outcomes related to a specific occupation, and is to be used for employee recruitment and selection purposes, is on the way. The new national TVET qualification framework tends to emphasize operational skills and competencies in the broad sense of what one can do with a given qualification.

It is not actually the mandate of the subsector to define and limit qualifications of its employees. On the one hand, there is a tendency in the training institutions to develop more flexible study programs, so that students may combine elements and disciplines in ways that suit them, to improve employment opportunities or for other reasons. This is positive, in that it allows individuals to tailor their studies and thus increase their relevance. On the other hand, there is also a tendency to make training programs much more specific to a certain set of skills. This kind

of training may help in skill development but does not fit any kind of qualification structures, as it is not well defined at the national level.

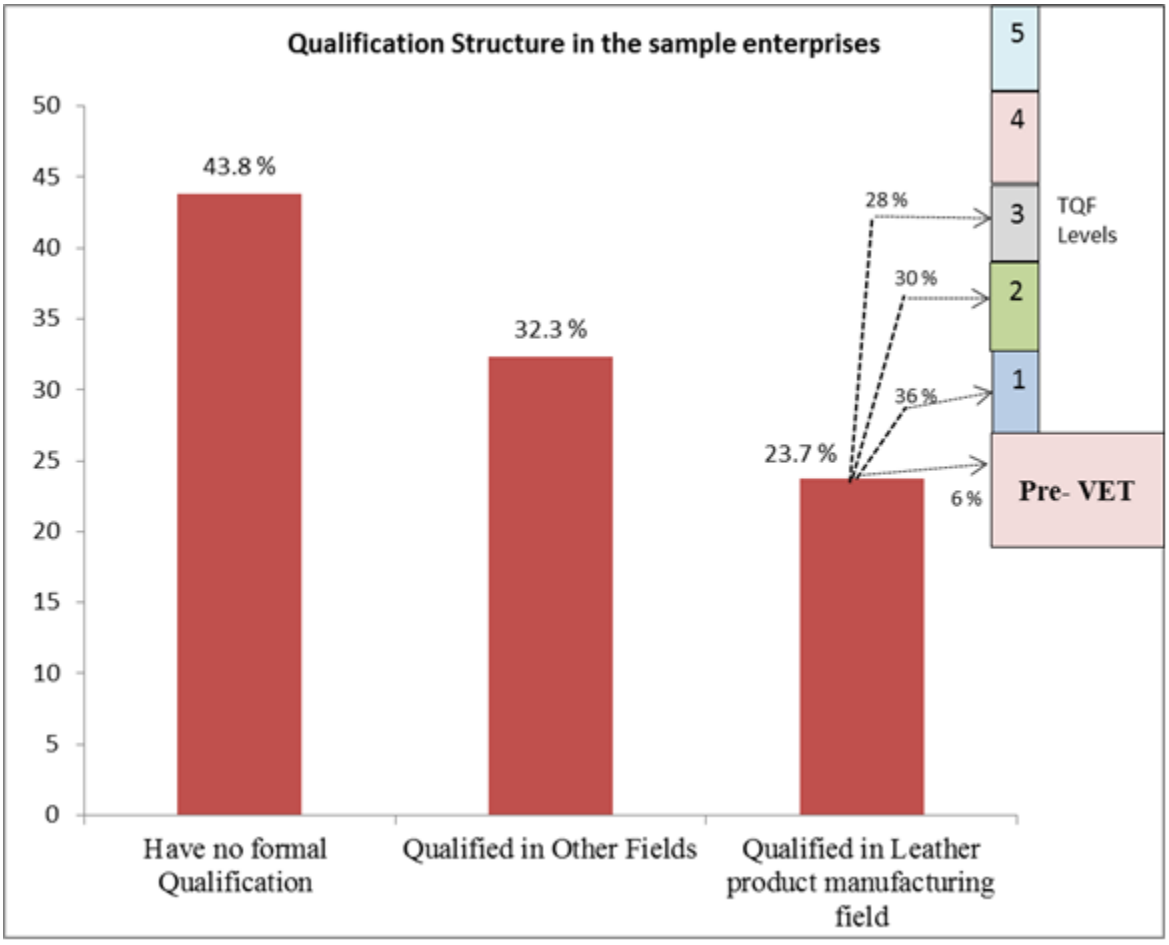


Figure 5. 1 Employee qualification structure of Ethiopian leather product manufacturing

Employers usually need an academic system that is simple, with as few levels as possible, and coherent, so that it will serve as the basis for further development of real competencies through further training and education. In particular, respondents have emphasized the importance of moving toward recognizing qualifications on the basis of learning outcomes and competencies rather than merely the formal characteristics of the study programs leading to the qualification, such as length of study.

5.2.4 Wage and Salary Structures

Wages and salaries of employees in the subsector vary by type of enterprise and the worker's level of skill. In addition, wages are affected by the type of goods that workers produce. Except

for professionally trained workers in the leather product manufacturing subsector, wages range between 1.5 and 2.0 USD per day. In general, shoe and leather product workers earn more from engaging in their own private business instead of being employees in a factory. Self-employed shop owners earn more than 200% of the wages paid in the enterprises. Shoe and leather goods workers who are not self-employed and work full time in the leather product manufacturing firms do not receive any benefit such as sick leave, paid vacation, or health insurance. As a result, formally trained skilled workers often prefer to work for themselves by establishing a leather craft shop in the informal sector. Enterprises must, therefore, rely largely on informally on-the-job trained manpower which is not sustainable and not qualified in state-of-the-art know how.

5.2.5 Working Conditions

In a typical work setting, people in this sector have a medium level of social interaction. They spend time alone working on products and are most of the time responsible for the work done by themselves not by other workers and assistants. Physical work conditions are characterized as always indoor work, sharing work spaces with other workers, all of whom need to repeat the same physical activities over and over while remaining alert and interested in doing a good job. They may work longer hours (more than 8hrs per day) during busy times to meet orders. Most tasks in this subsector involve frequent use of hands to handle, control, or feel objects, tools, or controls, standing at workbenches for part of the day and repeating the same motions. Employment in most enterprises is part-time, although some – especially the public enterprises – prefer to use full-time permanent staff. Respondents reported significant negative impacts of their working conditions like standing at a work bench for the whole shift.

5.2.6 Analysis of Employee Capabilities

Knowledge, Skills and Abilities (KSA[20]s) as defined by Prien et.al (2009), refers to a cluster of competencies required to do a job. The concept entails a list of qualifications and personal

[20] Knowledge: Knowledge is defined as an organized body of information, usually of a factual or procedural nature, that, when applied, makes the successful performance of a job action possible.

Skill: Skill is defined as the proficiency in the manual, verbal, or mental manipulation of people, ideas, or things. The capability to perform a learned task, such as production machine operation and word-processing skills

Ability: Ability is defined as the present capacity to execute a job action, to perform a job function by applying an underlying knowledge base and the necessary skills simultaneously.

attributes that one needs to have for a particular job. It can also be expressed as the specific competencies or groups of competencies (Vathanophas 2007 p.7) considered essential to perform the duties of the job position

It has been indicated in the literature that there are four dimensions of occupational competencies (technical, methodological, social and personal)[21] required to fulfill the responsibilities and expectations of the work environment (Burke 2005, Tippelt and Amorós 2003, Rauner and Maclean 2008). These dimensions of competence are the building blocks of the occupational competence analysis in this particular study, which seeks to determine levels of occupational competence at the workplace and to suggest possible ways of improvement. Technical and methodological competencies tend to be visible and relatively easy measurable characteristics, whereas social and personal competencies are more hidden, deeper and central to the individual personality. For developing training programs, knowledge and skills are used as a reflection of these competencies, as there is no clear and defined way of measuring the competencies themselves. A three stage competence analysis has accordingly been made; first based on employee and employer views – a more or less intuitive approach that cannot be relied on very much – secondly by taking into consideration the actual practice of workers at their work places (task evaluation method), and thirdly based on the results of the job analysis (section 5.4).

The results show that the issue of ‗competence' or ‗competency' has not been defined or discussed elsewhere by employees or by employers; it has never either been assessed or even been a question at any time. Simple descriptive statistics show that employees' competency is better in their practical knowledge and skills as applied in the workplace (technical competency, with 52.1% of respondents agreeing that they have the required competency for the job they are

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[21] Tippelt and Amorós (2003)

Technical competency: The assimilation of the cognitive capabilities and motor skills inherent to an occupation, as regulated by legislation or the demands of the post.

Methodological competency: the ability to self-inform and assimilate fundamental learning and workplace techniques, as well as knowing how to react to workplace situations, applying suitable procedures to the tasks commended.

Social competency: The ability to cooperate and deal with other people through the assimilation of basic cooperation and communication skills.

Personal competency: the ability to reflect on one's own actions with self-knowledge and responsibility, plus development of personal interests and life-plans.

doing) than in other competency areas. Only 21.6% of employees believe that they are methodically competent for the job positions they have. The table below shows the proportion of employees that responded when asked if they were competent for the tasks they were performing.

Table 5. 3 Proportion of respondents' self-assessment of competence

Competence level	**Competency**			
	Technical	Methodical	Social	Personal
Poor	9.2%	30.5%	10.6%	15.8%
Sufficient	14.4%	24.7%	25.3%	22.3%
Good	24.3%	23.3%	21.2%	24.7%
Advanced	52.1%	21.6%	42.8%	37.3

A more reliable source in this regard is to look at the employers‘ perspective. As stated above, 26 enterprise managers at different supervision levels were interviewed about the overall competency levels of employees. The majority of them (73.5%) believed that the level of competence of their employees was below standard. Even if they were capable of producing the right product with the help of experts, they lacked consistent efficiency and effectiveness in the workplace and their problem solving abilities were low. Though frequent changes of product models in the subsector call for workplace competence able to cope with unexpected problems and changes, frequent upgrading of methods and skills to match new changes is one of the challenges they are facing.

Direct observation of workers in the production line also shows that there is lack of proficiency even to explain procedurally what they are actually doing on a piece of leather or a product component. Here, actually meeting individuals in the world of work provided more insights about the level of workforce competence. A sample of five technical workers was taken to test their competence in a particular leather stitching operation based on assumed performance criteria in one of the leather shoe manufacturing enterprises. None of these workers was able to perform according to the criteria, although they were effective in doing the technical work in their own way.

It is believed, in the whole subsector of the leather product manufacturing, that technical competency is not a matter of education; rather it has something to do with personal experience. Although education and training in the formal academic setup provides the know-how and scientific principles which are the basis of any skill, the business sector focuses on the immediate generation of money by using personal experience. A respondent expresses this issue as follows:

> Most of the employees are not educated, but they are experienced, they are capable technically, however they need cooperation among themselves and procedural know-how to

> produce internationally competent products. Logical and scientific way of doing a job is not known to them, but they are producing internationally accepted products with experts being always beside them…

Employers seem unconcerned about the issue of long-term HR development, as they rely on temporary employment strategies with short term on-the-job training of cheap labor whenever there is a market demand for the leather products. On the other hand, they complain about the type of training given in the training institutions by the government and other support institutions. By doing a simple cost benefit analysis they argue that the vocational training that takes from 1 to 3 years in the training institutions is simply a waste of time and resources, as it will take enterprises the same time (2-6 months) to make the employee practically ready for real factory work whether he/she comes with a training certificate of any level or with no training specific to the leather manufacturing subsector at all.

The Chi-Square test for independence was used to find out whether there is significant association between employees' formal training and the different competence categories. Results of the test suggest that there is no statistically significant association between being formally trained and the four competence categories of employees. None of them shows any significant value to prove association with the values Chi-square (1) = 0.572, P = 0.449 for technical competence, Chi-Square (1) = 0.389, P = 0.533 for methodical competence, Chi-Square (1) = 0.149, P = 0.700 for social competence and Chi-square (1) = 0.453, P = 0.501 for personal competence. On the other hand, a Pearson Chi-Square independent test resulted in a significant association between the work experience of employees and their methodical competence, with Chi-square (1) = 4.059, P = 0.044 as shown below in Table 5.4.

Table 5. 4 Chi-Square tests between employee work experience and methodological competence

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	4.059[a]	1	.044		
Continuity Correction[b]	3.539	1	.060		
Likelihood Ratio	4.116	1	.042		
Fisher's Exact Test				.046	.029
Linear-by-Linear Association	4.045	1	.044		
N of Valid Cases	292				

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 34.54.

b. Computed only for a 2x2 table

It was checked if there was a relation between the part of training (i.e. theoretical concepts, workshop practice, apprenticeship, project assignments or team work) and the different types of competence developed. Spearman's correlation coefficient ($\rho = 0.178$) that is statistically significant at ($P = 0.004$) between technical competence and team work was found to be the highest correlation coefficient, revealing a weak relationship among the stated group of variables. Table 5.6 displays Spearman's correlation coefficient, ρ, with the corresponding significant values, *P,* of the respective variables.

Table 5. 5 Correlation between part of training and acquired competence

			Theoretical concepts gained	Workshop and laboratory practice	Apprentice-ship practice	Project assignments	Team work
Spearman's rho, **ρ**	Technical competence	Correlation Coefficient	.122*	-.027	.148*	.073	.178**
		Sig. (2-tailed)	.048	.660	.016	.235	.004
		N	264	264	264	264	264
	Methodical competence	Correlation Coefficient	.083	.002	.056	.008	.108
		Sig. (2-tailed)	.180	.975	.369	.894	.081
		N	264	264	264	264	264
	Social Competence	Correlation Coefficient	.097	-.057	.126*	.054	.112
		Sig. (2-tailed)	.118	.358	.040	.383	.070
		N	264	264	264	264	264
	Personal competence	Correlation Coefficient	.054	.027	.055	.039	.103
		Sig. (2-tailed)	.385	.664	.372	.527	.097
		N	264	264	264	264	264

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

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

5.2.7 Workforce Performance

For this particular case, because of the lack of structured data showing employee performance evaluation results, physical measures of performance were employed. This has limitations, as the measurement is not recorded continuously to generate certain data trends. However, in a sector like this, where the use of scientific methods of performance evaluation is very unusual, physical measures of productivity may provide some indications. For example in the cutting section of the footwear manufacturing process, the average number of cut components per cutter per day is used as a standard measure of performance. As a result, time is used as the major denominator in determining the performance of a technical workforce. Other aspects of performance refer to the

qualitative, rather than quantitative, dimensions of labor input. Table 5.6 shows the methods of performance evaluation used in the leather footwear manufacturing subsector in general.

Table 5. 6 Methods of employee performance evaluation in the subsector

Product Category	**Manufacturing section**	**Method of employee productivity evaluation**	**Unit of measurement**
Footwear	Design and pattern making	No standard /scientific method used	Qualitative measures
	Cutting	Number of cut components per individual per day, or material consumption	Number of cuts/unit time
	Stitching	Only line performance is sometimes measured as the stitching operation is sequential	Daily production output
	Lasting	Only line performance is sometimes measured as individual operations in the lasting section are always dependent on the prior operation.	Daily production output

For leather cutting operations, measuring individual worker performance is easy, as one individual performs all types of operations to finish the end product (cut component). As a result, secondary time data was taken from the cutting department and verified by direct time measurement to check its reliability for drawing conclusions. Leather shoe-upper stitching on the other hand involves multi-operations and passes through many hands until the end product is obtained. Firstly, the number of parts to be assembled together is many and needs different types of skill, tools and equipment; secondly the rate at which different operators perform on a particular item or part varies greatly, depending on factors like personal skill, working situation, and type of operation. Hence, measuring individual performance of such operations on a quantitative base using direct time measurement is very complex and beyond the scope of this research. Therefore, performance data measured on a rating scale was used to make a comparison between key performance indicator variables. The data obtained was based on some key performance indicators in the two selected sections of the leather footwear manufacturing process; namely the clicking or cutting department and the closing or stitching section. While number of strokes per unit time and overall material utilization (or accuracy of cut) are the key performance indicators for a clicker, work-piece delivery rate and stitch quality are used as the key performance indicators for a stitching operator.

The purpose of the employee performance analysis is basically to answer the basic research hypothesis that tests whether there is a link between workplace performance and the process of skill acquisition – i.e. whether there is much difference in actual performance when one gets a formal school-based training or an industry-based training – and how actual work experience on the job raises overall performance in the workplace. Performance data was obtained for 30 clicker operators from Anbessa Shoe S. Co. to analyze operators‘ performance at the shop floor level. An independent t-test or student's t-test (an inferential statistical test that determines whether there is a statistically significant difference between the means in two unrelated groups) was used to test clickers‘ performance against their training base.

Clickers‘ performance data, inspection of Q-Q Plots (Fig. 5.1) revealed that clicker performance was normally distributed for both groups (industry-based and school-based) and that there was homogeneity of variance as assessed by Levene's Test for Equality of Variances. Therefore, an independent t-test was run on the data as well as 95% confidence intervals (CI) for the mean difference. It was found that performance for the industry-based group (66.9 ± 7.7%) was significantly higher than for the school-based group (59.6 ± 4.5%) ($t(28) = 1.538$, $p = 0.0103$).

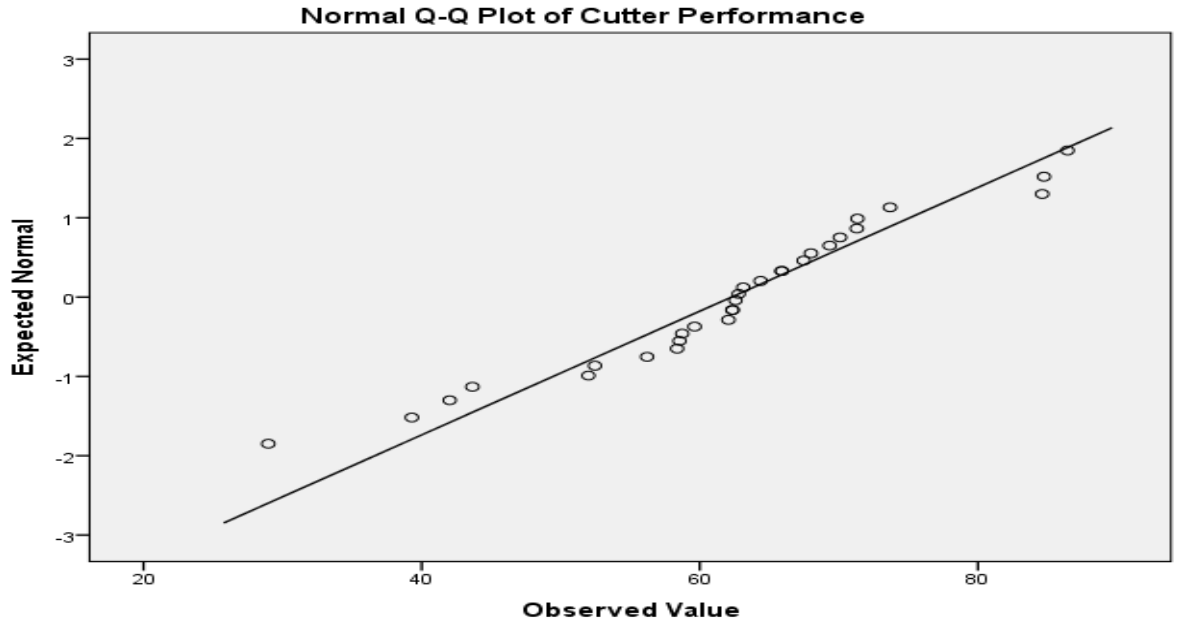


Figure 5. 2 Normal Q-Q plots of Clickers' performance data

On the other hand a Pearson product-moment correlation was run to determine the relationship between clickers‘ work experience and their overall performance on the job (cutting operation). The data showed no violation of normality, linearity or homoscedasticity. There was a moderate,

positive correlation between work experience and overall performance, which was statistically significant (r = .452, n = 30, p =.012 < .05) as can be seen in table 5.8.

Table 5. 7 Pearson's product-moment correlation for clickers' work experience and overall performance

		Clickers‘ performance	Clickers‘ work experience
Clickers‘ performance	Pearson Correlation	1	.452*
	Sig. (2-tailed)		.012
	N	30	30
Clickers‘ work experience	Pearson Correlation	.452*	1
	Sig. (2-tailed)	.012	
	N	30	30
*. Correlation is significant at the 0.05 level (2-tailed).			

5.3 Work Process Analysis

The study of work processes, or work flow, is very important to gain an understanding of how organizations work. The analysis of work systems and their organizational integration usually includes:

- description of most important elements of the work system and its environment (layout, organizational structure and processes, relationship to other parts of the organization, etc.)
- detailed description of the production processes
- identification of main variants and disturbances and their sources
- detailed description of the social system (distribution of labor, work-role assignment, regulation requirements and possibilities, etc.)
- perception of task requirements and their fulfillment by members of the work system.

One of the best ways to analyze a work process is by talking to the people who actually carry out the work. Through facilitated discussions, a work process can be documented using graphical representations or models to formulate a collaborative view. These graphical representations (or models) of work processes allow organizations to learn more about the specific steps within a process. This baseline knowledge allows organizations to understand and potentially measure existing processes and to consider alternative ways of improving or changing them. The step-by-step nature of the work-process analysis model also allows analysts to look at the individual elements and to figure out how to change them in order to solve problems. The model becomes

the focal point of discussion, allowing those involved to walk through the steps necessary to capture the institutional memory or knowledge of the work process.

The methodology used to analyze the leather product manufacturing process is a combination of condensed organizational document reviews, written survey questions, interviews and observations. While written surveys and interviews have limitations of response biases and resource intensiveness respectively, documentation reviews and on the job process observation provides access to implicit knowledge and the natural situation of the manufacturing process. Common process analysis tools like process flow charts, process descriptions and detailed job analysis were also used. While process descriptions are the results of the actual manufacturing process and a reflection of the physical operational sequences, individual job analysis is the product of various methods of collecting data on the characteristics of the work setting, and requires a separate, independent assessment.

The two major groups of leather products which are the focuses of this research are leather footwear and leather garments. However, the development of leather garment manufacturing is not as fast as that of leather shoe manufacturing, and its production facilities are not well organized, except in very few cases. Moreover, analyzing the work processes of footwear manufacturing yields sufficient information for developing a pilot VET package for the subsector. Therefore, the main focus of this section is to analyze the individual work processes of Ethiopian leather footwear manufacturing with a view to determining job requirements and/or qualification profiles at individual work-task and organizational unit/work-system levels.

5.3.1 Production Process Description for Leather Footwear [22]

There are basically four main departments connected with manufacturing within a typical footwear company and the components follow a progressive route through each of these departments to produce the finished shoes. The departments are, clicking (cutting), closing (machining/stitching), lasting (making), and finishing. When a design has been evolved and converted into working patterns (a process still largely dependent on handcraft) and when tooling has been obtained, footwear manufacture starts in the so-called clicking room with the cutting of the uppers and linings from finished leather.

[22] The process description of the different operations are the result of field observations and reproduce standard descriptions taken from the web glossary and exchange website www.teonline.com

5.3.1.1 Clicking /Cutting

This is where the manufacturing process starts to make the top part of the shoe, which is called the upper or vamp. The process of the cutting[23]/clicking[24] can be carried out either for leather material or non-leather synthetic material depending on the requirement. The upper parts of a shoe are cut from a single piece with a die cutting machine. Although there are some situations where hand cutting is also practiced, usually the parts are cut out by operator-controlled hydraulic presses with swing arms using moveable shaped knives. The cutting force required depends on the type of the cutting machine used. Cutting leather by this method is still highly skilled work; the ‗clicker' has to reconcile the need to match the patterning of leather in pairs of boots or shoes and to use the natural stretch of the material to assist shape retention in wear with economy and with the avoidance of blemishes in the skin. The quality characteristics of the various parts of the same piece of leather need very careful attention of the skilled worker to make the maximum utilization of the entire leather. That means, while the clicker/cutter cuts out various shaped pieces that will eventually make up the upper, waste must be kept to a minimum.

Figure 5. 3 Leather clicking/cutting operation: Taken from cutting department of Anbessa Shoe S. Co.

[23] Cutting: Separation of the material with the help of a tool through continuous process with respect to time e.g. water jet, laser, hand cutting etc.

[24] Clicking: Separation of the material with the application of force, where time is constant irrespective of the shape of cutting e.g. swing beam clicking, travel head beam clicking etc.

5.3.1.2 Closing/Stitching

The upper components which are the outputs of the clicking /cutting operation are assembled in the so-called ‗closing' section, which is mainly equipped with sewing machines similar to those used for clothing but specially designed to deal with the diverse shapes, thick material and specialized types of stitching involved. At first the parts are sewn together on the flat machine. However, as their flatness disappears and becomes three-dimensional, cylindrical machines are used. Other supplementary operations are also performed in this section. Marking numbers to indicate sizes and fittings, punching fancy patterns, skiving (i.e. edge tapering) leather components, folding over or taping edges and applying stiffeners in the toe area (toe puffs) are some additional operations to be mentioned. Various edge treatments are also completed to the leather to produce a more attractive look to the finished upper. Also, at this stage the eyelets are inserted to accommodate the laces in the finished shoes.

Figure 5. 4 Leather closing/stitching operation: Taken from stitching department of Anbessa Shoe S. Co.

5.3.1.3 Lasting/Making

The closed upper, the insole and the bottom components are brought together to construct the shoe in the lasting/making department. The completed uppers now need to be molded into a foot shape and for this purpose a last is used. A last is a hinged wooden or plastic block shaped to take account both of critical dimensions of the foot and of the contours of the particular design of the shoe (e.g. pointed or square toes, low or high heels). It is a shape that simulates the foot and which, when removed from the finished shoe, can be used continually to produce more shoes.

The first operation is to attach the insole to the bottom of the last; but this must be only a temporary attachment to allow the last to be removed at the end of the process. The upper is stretched and molded over the last and attached to the insole rib. When this is complete, we now have what is known as a _lasted shoe‘. Next the _lasted uppers‘ (i.e. the combined upper/insole units on the last) are passed through a heat-setting cabinet which successively forces steam into them and dries them out so as to relax the strains caused in lasting and to _set‘ the upper permanently to the shape of the last. A strip of leather or plastic called the welt is sewn onto the shoe through the rib and upper and all the surplus material is trimmed off the seam. For the _stuck-on‘ construction the pre-cemented outsole or complete bottom unit is then attached to the lasted upper in a press which, for a predetermined time, maintains the pressure required to shape the bottom unit and establish a permanent bond.

5.3.1.4 Finishing

At this stage it depends on which materials have been used for the welt and sole to determine how it will be finished, i.e. leather or plastic. In the case of leather, the sole edge and heel are trimmed and buffed to give them a smooth finish. They are then stained, polished and waxed to give them an attractive finish and to ensure the edge is waterproof. The bottom of the sole is often lightly buffed, stained and polished, and various types of patterns are marked on the surface to give it a craft finished look. Again, depending on the materials used for the uppers, they will be cleaned, polished and sprayed, and laces and any tags that may be attached to the shoes (such as shoe care instructions) are included. The shoes will then go on to be boxed and packaged ready for dispatching to the customer. The simplified flow sheet and details of work process and engaged personnel qualification levels is detailed in Figure 5.5 and Table 5.8 respectively.

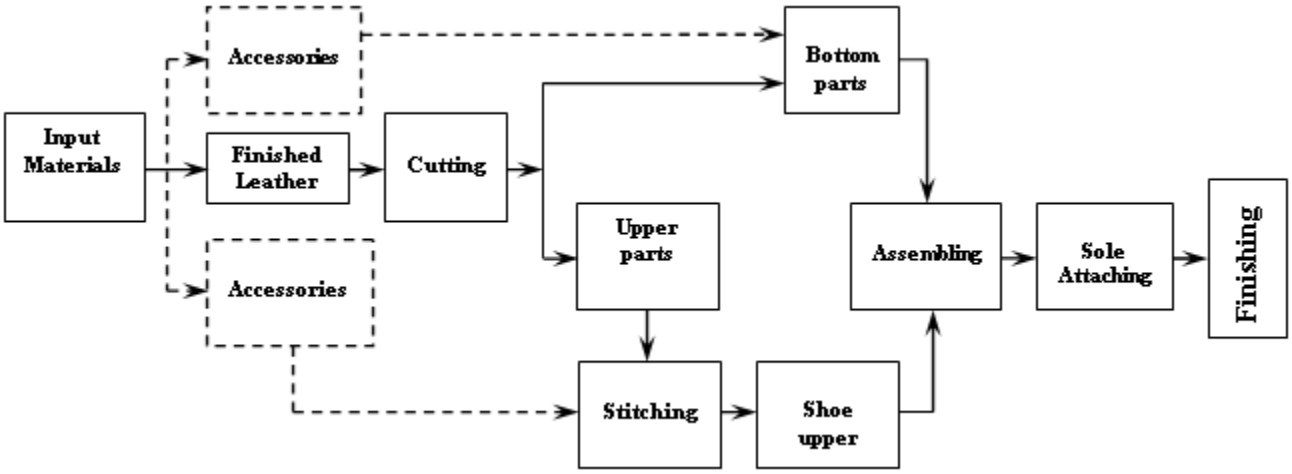


Figure 5.5 Simplified flow chart of leather shoe manufacturing process

Table 5.8 Basic shoe-making process and personnel engaged in it

Work processes	Work process description	Task Variables	Qualification of engaged personnel
Material grading	Identification of the right material (leather and lining material)	Visual examination of physical characteristics, grain lines, texture, color, thickness, stretch, feel and defects	Entry level qualification
Cutting	Cutting leather parts Cutting lining materials Cutting insole materials	Hand cutting Machine cutting	Usually ranges from unqualified but experienced to qualified up to level III depending on the model of the product, the nature of the material to be cut and the cutting machine
Inspection	Inspection for quality of cut components Inspection for number of cut components	Sensory inspection Measuring of edge dimensions, checking of material utilization and waste generation	Ranges from Level I to Level III
Closing/stitching	Sewing cut leather components together to make the upper of a shoe	Hand stitching Stitching using flatbed machines Stitching using cylindrical sewing machines	Usually ranges from unqualified but experienced to qualified up to level III, depending on the model of the product, the nature of the material to be stitched and the stitching machine. More advanced machines and more complicated fixtures need more advanced qualifications or more experienced workers
Assembling	Attaching together insoles, stiffeners and welts with the shoe upper	Stitching the parts together	Level II and III
Inspection	Quality checking of the assembled components	Sensory inspection	Level II and III

Lasting	Stretching the upper over the last Toe and seat lasting Heat setting	Hand lasting Machine lasting	Needs more advanced and technically qualified up to level III depending on the type of lasting
Sole attaching	Attachment of the sole to the upper parts	Sole cementing Reactivation Sole pressing	Usually ranges from unqualified but experienced to qualified up to level III
Finishing	Making the shoe ready for product inventory	De-lasting Cleaning, Repairing Trimming, Wrinkle, Chasing polishing	Entry level workers with no qualifications
Inspection	Finished shoe inspection	Final check for product features, appearance and surface damages	Level II and III

5.4 Job Analysis (Case Study: Ramsay Shoe Factory)

5.4.1 Company Profile

Ramsay Shoe Factory is a Private Limited Company, a subsidiary of *Elfnesh-Zelalem Shoe and Leather Products Manufacturing Share Company.* Ramsay Shoe Factory is one of Ethiopia‘s modern shoe manufacturing businesses, and is recognized as a pioneer in the introduction of modern shoe making technology to the country. It is one of the new companies established in the early 1990s, mainly in response to the increased demand for shoe exports, which the country needed to earn foreign currency from its surplus raw material.

The factory produces a wide range of shoes in a variety of styles and models. However, the major products are men‘s and women‘s casual shoes, sports shoes, and working boots. Most of the products are designed and exported to international markets for European and global shoe companies that outsource their demand to the factory, together with their design and brand name. The company also makes to brand specifications all the components and accessories needed to accompany their orders. Apart from the export market the company also produces shoes for the local market, with more than 10 outlet shopping centers all over the country.

5.4.2 Detailed Job Analysis

The main purpose of performing job analysis in this research is to find job requirements for developing the right training programs and hence the contents and methods of training. As a result, a combination of both worker-oriented position analysis and job-oriented functional analysis methods are used. While position analysis is used to analyze a job by getting the

questionnaires filled by job incumbents and their superiors, functional job analysis collects and records job-related data to a deeper extent. Functional analysis is specifically used to develop task-related statements and to visualize the complexity of duties and responsibilities involved in a specific footwear manufacturing job.

Questions and cross-questions related to the jobs, skill levels, and difficulty levels were asked to gather information on which to base the job analysis. This method of job analysis utilizes the knowledge of the job incumbent without explicating it, since the work process knowledge of the participants goes in to the lists of tasks drawn up by them as action knowledge (Roben 2008 p.754). The second method, which is perhaps the most genuine source of information for the job analysis, is personal observation. In this method the researcher actually observes the worker concerned in a particular activity and makes a list of all the duties performed by him or her, and the qualities required to perform these tasks. The third method was a questionnaire in which employees were invited to answer different types of questions in a rating format.

As to what aspects of a job should be analyzed for the purpose of this study, the focus was on workplace tasks as a structure in which aspects of the sample work processes were placed in the context of modern vocational work. Hence the following sets of job aspects were selected for analyzing the different jobs in the leather product manufacturing work processes.

Position: A position (or post) refers to the level of a job within an organization or enterprise.

*Duties and Responsibilities***:** The basic unit of a job is the performance of specific tasks and duties to fulfill certain responsibilities, which are the major areas of accountability and make up the primary or essential functions of a job.

Relationships: This refers to the supervision given and received as well as the formal reporting relationships with internal or external superiors.

*Tools and Equipment***:** Some duties and tasks are performed using specific machinery, equipment and tools. Equipment may include protective clothing; operational tools like hand tools and machines that are used to carry out an operation. These items need to be specified in a job analysis to envisage the tasks that the job incumbent is performing in that particular organizational setup.

Environment: This may have a significant impact on the physical requirements to be able to perform a job. The work environment or working conditions may include unpleasant conditions such as offensive odors and temperature extremes. There may also be definite risks to the

incumbent such as noxious fumes, radioactive substances, hostile and aggressive people, and dangerous explosives.

Requirements: The knowledge, skills, and abilities (KSAs) required to perform the job. While an incumbent may have higher KSAs than those required for the job, a job analysis typically only states the minimum requirements to perform the job.

Vocational jobs in the leather footwear manufacturing process were selected as representative jobs of the subsector. After determining which groups and set of aspects of the jobs were to be analyzed, a group of 10 to 15 job incumbents from each job position was selected for analysis and interviewed. The following guide questions were used to interview the job holders.

- What is the job being performed?
- What are the major duties and responsibilities of your position? What exactly do you do?
- What are the basic accountabilities or performance standards that typify your work?
- What are the environmental and working conditions involved?
- What are the education, experience, skill, and (where applicable) certification and licensing requirements?
- What are the job‘s physical demands?

A list of answers was obtained at different levels of expression and tallied in to categories to cross-check the results with the job holder‘s immediate supervisors, field observation results and archived documents. Finally lists of items were identified by frequent expert panels comprised of three on-the-job training experts from the enterprise, one senior expert for each job position, and the researcher, to generate task duties and responsibilities and the corresponding requirements of the job. A master consolidated list was then developed that reflected the majority opinion of the group. At this step, job duties and responsibilities from pre-existing job descriptions and other archival documentations and management sources were integrated into the discussion and added to the master list. To develop the final list of duties, responsibilities and the KSAs, the job experts and supervisors provided ratings on the frequency and importance of individual items on the list. The rating was from 1 to 5 where _1‘ indicated that task was not important or very rare for the position, _2‘ corresponded to tasks of relative but less frequent importance, _3‘ to important tasks that were moderately frequent, _4‘ to very important and frequent tasks, and _5‘ indicated that a task was both critical and very frequent. After all the ratings had been collected

and reviewed for accuracy and completeness, the final job analysis for a position was compiled. It was assumed that an average value of 3.0 had to be taken as the minimum rating criterion for deciding on a job's inclusion in the final list of duties and responsibilities for that position. ***Appendix 4*** presents a sample rating by the job experts on the duties and responsibilities of a leather cutter/clicker. Once this had been completed, the job descriptions and job specifications of job positions became apparent and were developed using appropriate formats.

5.4.3 Job Description and Job Specifications

A job description describes the content and context of the job to be analyzed. Whereas the job specification summarizes the personal qualities, traits, skills, and background required for getting the job done. The knowledge, skills, and abilities (KSAs) are the competencies necessary to perform the job. In this research, in order to present individual job positions, a job description and specification template was compiled. This included the position (job title), purpose of the job (job summary), duties and responsibilities, authorities of the incumbent, reporting relationships, machinery and equipment used, working conditions (including wages and work hours), performance standards required in the job, qualification requirements, knowledge, skills and abilities required and additional personal characteristics. The above list of items is generally a combined list of job contents, job contexts and job requirements as depicted below in Figure 5.7.

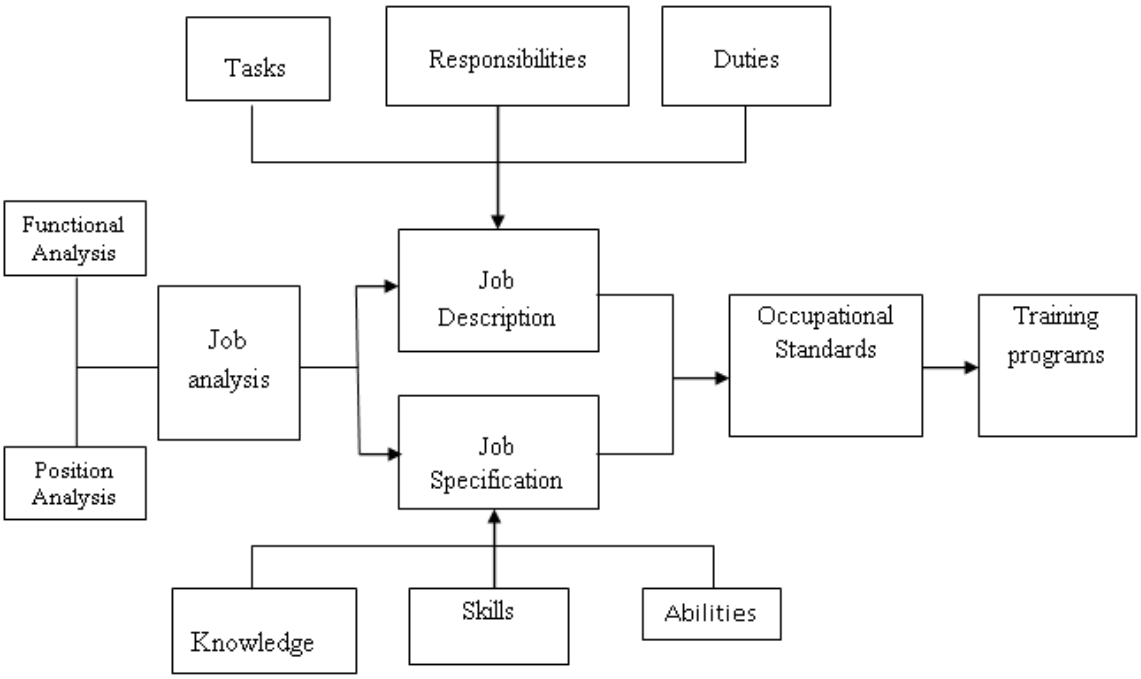


Figure 5.6 Generic job analysis processes for training program development

The end-product of a job analysis is always a job description and a job specification, a written statement that describes the key tasks that need to be performed to successfully hold the job and the requirements necessary to perform these tasks respectively as detailed in ***Appendix 5.***

5.5 Summary of Overall Situation Analysis

5.5.1 Policy Issues

The Ethiopian government has recognized that education and training are of critical importance to the national economy and to the well-being of the nation and its nationalities. It also acknowledges that the previous education and training systems have not been meeting the country's human resource needs. As a result, different initiatives have been taken to transform the training and education system of the country. The different national strategic documents (including the Industrial Development Strategy of 2003, the Industrial Development Policy of Ethiopia of 2010, the Plan for Accelerated and Sustained Development to End Poverty (PASDEP) of 2006, the Ethiopian Growth and Transformation Plan of 2010, the Education Sector Strategy Program (ESDP IV) of 2010, and the National TVET Strategy of 2008) developed in recent years are the results of the national development policy premises.

5.5.2 The Training System in the Ethiopian Leather Sector

As one of the top priority sectors in the Ethiopian development agenda, the leather and leather product sector has enjoyed the substantial attention of both the government and development partners to launch sector-specific technical and vocational training programs. However, determining how much the system has kept up with the rapidly changing demands of the sector industries is still a major question that must be addressed. A closely related challenge is also the identification of training and educational requirements that arise from interactions among changing technologies, changing workforce demographics, changing organizational contexts, and other developments that are likely to have implications for the design of effective educational and training systems for the sector. Employee demographic surveys of the subsector show that less than a quarter of the technical workforce have had formal, certified training, whereas the remaining 75% of production line workers have only hands-on skills obtained from the manufacturing firm itself or elsewhere in the informal TVET.

The formal TVET in this specific subsector is still highly dependent on school-based operations. Additionally, most of the trainees attending are either school dropouts or those who are unable to

aspire to other fields due to their personal incompetency during the transition from lower level secondary school to TVET institutions. From the leather product manufacturer‘s point of view, the current training system in the training institutions is highly theoretical and lacks the practical basis from which students can develop technical skills and the capacity to meet the challenges of a real workplace.

5.5.3 Private Sector Involvement

The ultimate aim of leather sector specific training programs is to support the sector industries by providing the required human skills. Therefore, it is clear that the objectives and outputs of the training system in this particular subsector need to be oriented to industry requirements. So far, however, the initiative of providing formal training for the leather sector in Ethiopia has been government led. But the efforts of the Ethiopian government toward realizing these objectives still lag behind, due to the lack of full-fledged involvement of the private sector on the one hand and capacity limitations on the other. There is no private training provided in this subsector except for the limited amount of in-company or enterprise-based training that takes place in some enterprises, which is often dedicated to the sharpening of specific skills of company employees. In the Ethiopian leather product manufacturing subsector the only strategic alliance between private industries and training institutions is limited to providing apprenticeship places for trainers in the enterprises and hosting special needs training by the training institutes when the enterprises require these for a specific purpose. There is, therefore, a need for labor mapping so that industry requirements are known and trainings tailored to these requirements. Moreover, the integration of existing programs with the rest of the educational system does not enable horizontal and vertical movement for graduates from these programs.

5.5.4 Training Gap Analysis and Intervention Points

Gaps in the training system of the leather goods industries are of varying nature and the strategies to fill those gaps also need diversified inputs from different directions of the sector players within the Ethiopian economy. Identifying and analyzing the areas of intervention will help facilitate the development of best models of training for skills improvement. Table 5.9 below describes the major training gaps and intervention points in the Ethiopian leather product manufacturing subsector.

Table 5.9 Training gaps and intervention points in Ethiopian leather product manufacturing

Major issues	Gaps that require intervention	Intervention points
Policies and strategies	Available only for the general system and do not incorporate the particular requirements of specific sectors	Developing specific strategies for the training development of the leather sector in particular
Occupational standard development	The present occupational standard developed for the leather product manufacturing subsector misses the actual demand of the enterprises, and in some occupations goes beyond the required demand	Reassessing the current occupational standard of the sub sector
Organizational setup of the training institutions	The training institutions are highly fragmented and in some of the institutions training is given less attention than the rest of the institution's functions	Institutional development and capacity building programs are required
Curriculum development	Usually based on occupational standards, but in actual sense depends on how the modules are organized by individual trainers, which in turn depends on the trainers' competence for that particular occupation.	Developing a stable curriculum that lasts at least five to six years. Developing trainers
Infrastructure	Limitations in facilities impact the actual output of the training. On the other hand there is a technological gap between training institutions and production companies	Facilitating up-to-date facilities and equipment and enhancing work-process-based training
Trainers	In the more advanced training institutions these experts do not have even the title of trainer; rather they are called researchers', ranging from junior to senior rank. This leads them to focus more on sectorial assessment research than the actual training of the trainers. Lack of specific training institutions of trainers for the leather sector.	Developing appropriate training for trainers and providing them with professional recognition for the job they are actually doing.
Stakeholder support	Weak coordination of efforts. Particularly in the provision of training for the subsector the involvement of the private sector is limited, compared to other sectors of the economy. It does not go beyond providing short term apprenticeships in manufacturing enterprises.	Enhancing the involvement of the private sector in the training activities of the subsector and creating public private partnerships
Attitude of trainers	A considerable number of graduates of the different training centers lack the mental preparation to continue with the occupation in the leather product manufacturing subsector. The primary cause for disregarding the leather sector is partly the result of perceiving it as an education with limited job opportunities.	Organizing job fairs and career workshops regularly to promote and facilitate adequately the labor market demand and supply information for the sector
Demand	The demand for skilled manpower in this subsector is not stable; it fluctuates and there is sometimes lack of adequate job opportunities for graduates	Creation of more jobs in the subsector by initiating local and foreign investors and encouraging and supporting self-employment
Reforms	Frequent changes to curriculum development make reform of training programs unstable. This has created a feeling of discomfort in both developers and implementers and is seen as wastage of time and other resources.	Creating stable and standardized curricula to provide career development path for trainees

5.6 Interim Summary

Ethiopian leather product manufacturing enterprises currently rely on intensive use of labor to compromise for low labor productivity. Human assets are one of the most important resources available to any organization, and employee competence and commitment largely determine the objectives that an organization can set for itself, and its success in achieving them.

It appears therefore, that the need for work process based VET for the Ethiopian leather product manufacturing subsector is not a question of choice. As people are the most crucial aspect of the leather product manufacturing system, their lack of proper training becomes a major obstacle to personal and enterprise productivity. As stated in the preceding sections, employers usually need an academic system that is simple, with as few levels as possible, and coherent, so that it will serve as the basis for further development of real competence through further training and education. In particular, results indicate the importance of moving toward recognizing qualifications on the basis of learning outcomes and competencies rather than on the formal characteristics of the study programs leading to the qualification, such as length of study.

It is possible now to tangibly witness the low level of workforce competence by comparing the requirements of each job position from the established job descriptions and job specifications with the current employee profile of the subsector. Employees currently carry out major manufacturing activities in the factories without first attaining an appropriate qualification, and yet the subsector wants to ensure growth and high productivity.

CHAPTER SIX
ADVANCED OCCUPATIONAL STANDARDS FOR CORE FOOTWEAR MANUFACTURING JOBS

6.1 Introduction

Occupational standards describe the skills and knowledge required to undertake a particular job to the level determined by the sector for which they are intended (Asset Skills 2004 p.2). In other words, they describe best practice and competence. There are several major methodologies for developing occupational standards, all of which start with analyzing what people in a certain occupation are doing. In spite of this common basis, methods differ considerably and so do the occupational standards that are the result of the analysis (Fretwell et.al. 2001 p.23).

The British Council‘s Methodology for the Development of Occupational Standards (2009) suggests that the development of occupational standards is based on several principles, among them scope, competence-based structure, flexibility and relevance. First the dimension of scope in terms of the expectations of the occupation needs to be incorporated. This can be best explained in terms of the different competence requirements of the occupation. Scope also allows a certain degree of flexibility and readjustment vis à vis job holders to enable them to play a variety of roles in the workplace. Occupational standards should also satisfy the principle of competence-based structure, meaning the sum of all required competencies for a specific occupation. Competence in this sense views the attributes (knowledge, skills, competencies, abilities, attitudes, and responsibilities) required in terms of the extent of their implementation during the performance of work operations and work tasks in the occupation concerned (British Council 2009 p.43). The flexibility principle allows for changes in occupational standards for different situations. Provision for such changes, amendments and revisions should be made while developing occupational standards. Occupational standards also need to show relevance to the different stakeholders affected by the performance of the work tasks.

A typical occupational standard therefore, involves measures of performance that an individual must achieve in order to complete the work assignment; there must be a basis for determining what is expected from the individual in the work process; and the standard must have its own appropriate structure (title and code of the occupation, level of requirements, competencies, description, etc.).

This chapter presents the development of advanced occupational standards for selected core jobs of the leather footwear manufacturing process. It starts by describing the rationale for developing occupational standards and explains the foundations of the standards developed. The basic elements of the standard and their precise definition are also presented. Finally, an occupational standard unit of competence chart for the selected jobs has been prepared. The underlying occupational standards thus developed are based on the job analysis results that reflect the existing situation in Ethiopian leather footwear manufacturing enterprises. The standard has been developed for core pilot occupations at the subsector level for high-priority work-processes of the subsector.

6.2 Rationale for Developing Occupational Standards

Occupational standards can make a major contribution to the design of high quality education and training programs by ensuring they are directly linked to the needs of the workplace and the overall economy, as standards have both economic and social outcomes (Fretwell et.al. 2001 p.3). The main goal of the introduction of standards in education systems is to elaborate the level of competence needed for successful performance in a specific vocation and to develop programs and curricula to provide detailed support of that performance (British Council 2009 p.8).

There is increasingly widespread recognition of the importance of developing occupational standards in the Ethiopian manufacturing sector in terms of their contribution to the overall human resource development agenda. One of the recent initiatives undertaken by the Ethiopian government to enhance the performance of the leather product manufacturing subsector is the development of standards for its different occupational levels. The Ethiopian leather product manufacturing subsector has been a priority sector in the effort to develop more than 250 occupational standards throughout the country.

However, much of the effort seems to concentrate on professional jobs, which does not directly help in presenting a realistic picture of the skills and competence requirements of the actual workforce in the industry. In fact there is a clear demarcation between what the leather product manufacturing firms in Ethiopia need and the occupational profiles of employees as developed. One of the reasons for such a demarcation is the overall educational system and career pathways of low education level individuals. On the one hand ‗pre-vocational' competencies are not recognized as full qualifications and are presently located below the minimum level required for industrial employment (Ministry of Education Ethiopia–MoE 2006 p.11). Hence these

competency levels are not part of the model Ethiopian TVET Qualification Framework (ETQF) developed in 2006. All this document states is that ―solutions for an appropriate packaging of non-formal education and training programs and their alignment to the ETQF need to be developed" (ETQF 2006 p.22). On the other hand the survey results show that nearly 44% of the subsector employees have pre-vocational level competencies (see section 5.3.2). Individuals with low educational levels need opportunities to improve their qualifications if they are to improve wages, move up the economic ladder, and be sustainable assets for employers. Occupational standards can assist by improving the quality of education and training programs and the connection between programs, as well as by providing for recognition of non-formal and on-the-job skill development. Moreover, in the context of outcome-based VET the basic reform agendas should be in close connection with the demands of the labor market.

6.3 The Foundation of the Occupational Standards

The foundation of the upcoming occupational standard for selected leather footwear manufacturing jobs lies on three main pillars: Ethiopian National TVET strategy, the Ethiopian TVET Qualification Framework and the actual results of detailed job analysis. While these building blocks present strategic and national directions, they also constitute constraints, inasmuch as every standard for any Ethiopian occupation should consider the principles set by these national strategic documents.

6.3.1 National Technical and Vocational Education and Training Strategy[25]

The Ethiopian National TVET Strategy (2008) reflects an important paradigm shift of recent years which establishes quality and relevance of TVET as its priority. It acknowledges that TVET has to respond to the competence needs of the labor market and create a competent, motivated and adaptable workforce capable of driving economic growth and development. It defines the major principles of intended TVET development in the coming years. The main thrust of the strategy is that TVET development should rely on an outcome-based system and dedicated and trusting cooperation among stakeholders.

[25] National Technical and Vocational Education and Training Strategy: a national strategic document developed by the engineering capacity building program of Ethiopia and published by the Ministry of Education of Ethiopia in 2008.

The overall objective of the National TVET Strategy is to create a competent, motivated, adaptable and innovative workforce in Ethiopia contributing to poverty reduction and social and economic development by facilitating demand-driven, high quality technical and vocational education and training relevant to all sectors of the economy, at all levels and to all people. Quality and relevance, demand-orientation, flexibility, life-long learning, TVET pathways, equal access and equal opportunity are the guiding principles of the strategy to achieve its objectives.

6.3.2 Ethiopian TVET Qualifications Framework (ETQF)[26]

The Ethiopian Technical and Vocational Education and Training (TVET) Qualifications Framework (ETQF), the key element of the Ethiopian TVET system, is currently being reformed with the aim of increasingly orienting TVET toward the demands of the labor market. The reformed TVET system will be outcome-based, i.e. oriented towards the world of work. The ETQF encompasses all TVET qualifications in the country. Its main task is it to create awareness of the TVET reform and to build zones of mutual trust between stakeholders in order to start a private-public partnership. Most of the ideas introduced in this framework, therefore, are intended to support the development of this mutual trust between the TVET system (supply) and the world of work (demand), and to integrate the world of work into the TVET system in the form of training enterprises.

ETQF reference levels:

i. National TVET Certificate I

Breadth, depth and complexity of knowledge and skills prepare a person to perform a defined range of activities, most of which may be routine and predictable. The general environment context is characterized by a low value of complexity, interconnectedness, in-transparency and dynamics as well as by a high degree of stability.

ii. National TVET Certificate II

Breadth, depth and complexity of knowledge and skills prepare a person to perform in a range of varied activities and knowledge application where there is a clearly defined range of contexts in which the choice of actions required is usually clear and there is limited complexity in the range

[26] Source: Ethiopian TVET Qualifications Framework (ETQF) is a national strategic document developed by the engineering capacity building program of Ethiopia and published by the ministry of Education of Ethiopia in 2008.

of options to be applied. The general environment situation is characterized by an average level of interconnectedness and a low level of dynamics.

iii. National TVET Certificate III

Breadth, depth and complexity of knowledge and competencies cover selecting, adapting and transferring skills and knowledge to new environments and providing technical advice and some leadership in resolution of specific problems. This is applied across a range of roles in a variety of contexts with some complexity in the extent and choice of options available. The general environment situation is characterized by a high level of interconnectedness, in-transparency and dynamics.

iv. National TVET Certificate IV

Breadth, depth and complexity of knowledge and competencies cover a broad range of varied activities or application in a wider variety of contexts, most of which are complex and non-routine. Leadership and guidance are involved when organizing activities of self and others, as well as contributing to technical solutions of a non-routine or contingency nature. The general environment situation is characterized by a considerably high degree of interconnectedness, in-transparency and dynamics.

v. National TVET Certificate V

Breadth, depth and complexity covering planning and initiation of alternative approaches to skills or knowledge applications across a broad range of technical and/or management requirements, evaluation and co-ordination. The self-directed application of knowledge and skills, with substantial depth in some areas where judgment is required in planning and selecting appropriate equipment, services and techniques for self and others. The general environment context is characterized by a very high degree of complexity, interconnectedness, in-transparency and dynamics.

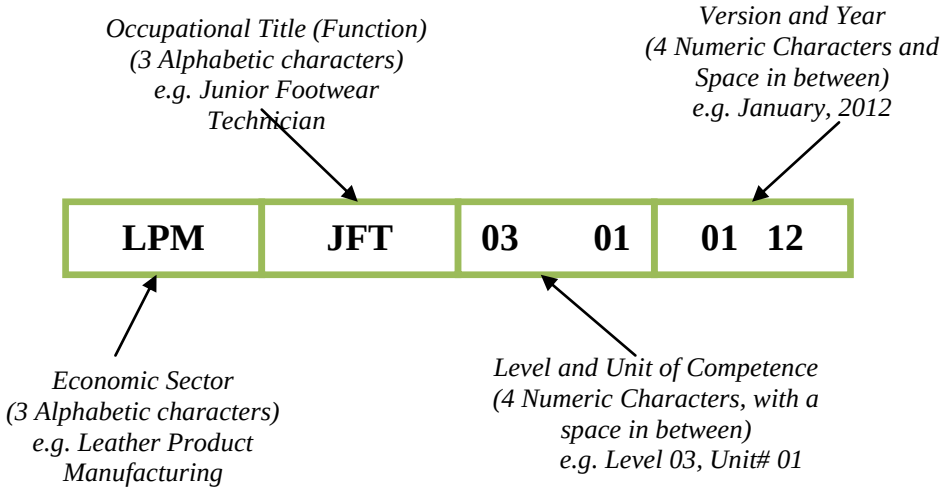
6.3.3 Job Descriptions and Job Specifications

Prior to the development of occupational standards a detailed job analysis was conducted on the selected job positions of leather footwear manufacturing processes. The resulting job descriptions and job specifications are, therefore, the main basis for development of standards of the corresponding occupations.

6.4 The Occupational Standard

Occupational standards are organized into units of competence. Each _unit' describes an area of work, with the activities separated out into _elements' with associated _performance criteria' and _knowledge' listed. The standards also include units that highlight the _values' required to work in the workplace. These standards can be separated into different levels of competence and used to benchmark the skills, knowledge and responsibilities associated with more complex roles within the organizations. They are produced as a suite of units for each occupational area. The unit structure allows for easy identification of the relevant OS for a particular role. A typical occupational standard contains the following elements:

1. ***Name (title) of the occupation:*** The title of the occupation refers to the term specified by the definition and position in the system of occupational titles. The title is a linguistic statement designating each individual occupation in a lexical manner (with a name). The title of the occupation must provide accurate information about the occupation. Thus, the title of the occupation should contain a keyword which specifies the occupation.
2. ***Code of the occupation:*** The occupation code is a numerical code designated for each individual occupation according to a certain system, introduced in order to facilitate the identification of individual occupations. In this particular case the Ethiopian occupational code is used as outlined by the Ethiopian Occupational Standard Development Guide (Ministry of Education of Ethiopia 2007 p.32) with a slight modification. It consists of 10 to 14 characters, normally a mixture of uppercase alphabets and numbers placed in a group of four. As in the example shown below:
    - First three characters in the first group signify the industry/sector
    - Three characters in the second group signify the occupational title expressed as a work function
    - Third group with four numbers (a space between each two of them) signifies the level and the numerical order of the specific unit of competence
    - Fourth group of four characters (a space between them) signifies the month and the year of endorsement.



3. ***Level of requirements:*** The level of requirements is determined on the basis of complexity of work tasks, required knowledge, and level of responsibility of the work, and psycho-physical limitations and physical conditions. The Ethiopian TVET qualification framework determines five reference levels ranging from Level I for narrow and straight forward competences to Level V for broad and complex competences (see section 6.3.2).

4. ***Description of the occupational standard:*** The description of the occupational standard contains a group of work operations, and key functions (key works) along with its performance criteria. In the description of the occupational standard, the group of work operations is further divided into subgroups. These are basically the job descriptions produced in the job analysis with a further breakdown of individual duties and responsibilities. These duties and responsibilities are again broken down into its component parts which are called *units*. Units are subdivided into two or more *elements*. An Element relates to an activity a leather product manufacturing technician is competent to perform. Each Element also includes performance criteria which describe what competent performance requires and the related knowledge and understanding which the leather product technician must possess (required competencies).

5. ***Required competencies:*** The competencies specific to the occupation are taken over from the result of the job analysis process and are written in the form of job specifications. Some competencies are more general and concern several occupations, while others are specific and refer only to a given occupation.

Hence the AOS (Advanced Occupational Standard) is based on the scope of the occupation, skills and knowledge needed to perform competently in the subsector workplace. The methodology starts with competence units, which entails an analysis of the sector starting with

the key purpose statement and subsequently analyzing down to individual element functions and tasks. Each of these competence units can be generated again to form functions that represent the responsibilities and duties of individuals in employment. The unit elements are again analyzed one by one to identify performance requirements. The performance requirements do not specify the individual workplace context and the tools and methods used, which makes the approach more flexible and applicable to the occupation in varying circumstances. In the Ethiopian context, more flexibility is needed, as there is no fixed standard expected across workplaces within an industry. However the context of the major workplaces and technologies used are described separately in the job analysis section of the process. Requirements that apply to the key elements or main functions as a whole are described. The AOS also identifies the assessment and evaluation methods of these competencies, along with the appropriate context of the assessment. The full details of the AOS are presented in ***Appendix 6.***

CHAPTER SEVEN

DEVELOPING MODEL TRAINING PACKAGE FOR ETHIOPIAN FOOTWEAR MANUFACTURING

7.1. Introduction

The training and education system in the Ethiopian Leather Product Manufacturing subsector (ELPMS) is characterized by course content rather than job performance, and there is a high level of fragmentation of academic learning and practical learning. It is predominantly school-based and its alignment with sector enterprises is not well integrated. The role of enterprises is limited to the provision of internship places for trainees in VET schools. At the top level, the regulatory body supports training providers with technical teacher training, produces standard formats, formulates appropriate policies and assessment procedures and facilitates testing and certification, whereas enterprises provide regular apprenticeship places for trainees by facilitating periodic on-the-job training for apprentices. In spite of the fact that the development of sector-specific outcome-based TVET demands the coordination of efforts and the facilitation of inputs by the different actors of the sector, most of the training centers in this sector use centrally developed curricula. The intended model for developing in-company VET for the Ethiopian leather footwear manufacturing subsector requires more coordination and more sense of ownership from all parties concerned: government, private industries, training institutions and trainees. Therefore, this chapter intends to generate an improved model which focuses on improving the relevance of what is learned and facilitates the integration of contents with the actual job by placing more emphasis on job performance. The model is based on the generic model of outcome-based TVET built into the Ethiopian TVET strategy (2008) as shown in Figure 7.1. Although it specifically focuses on the leather footwear manufacturing trade, it can be used for other trades in the subsector with slight modification to respond to specific demands.

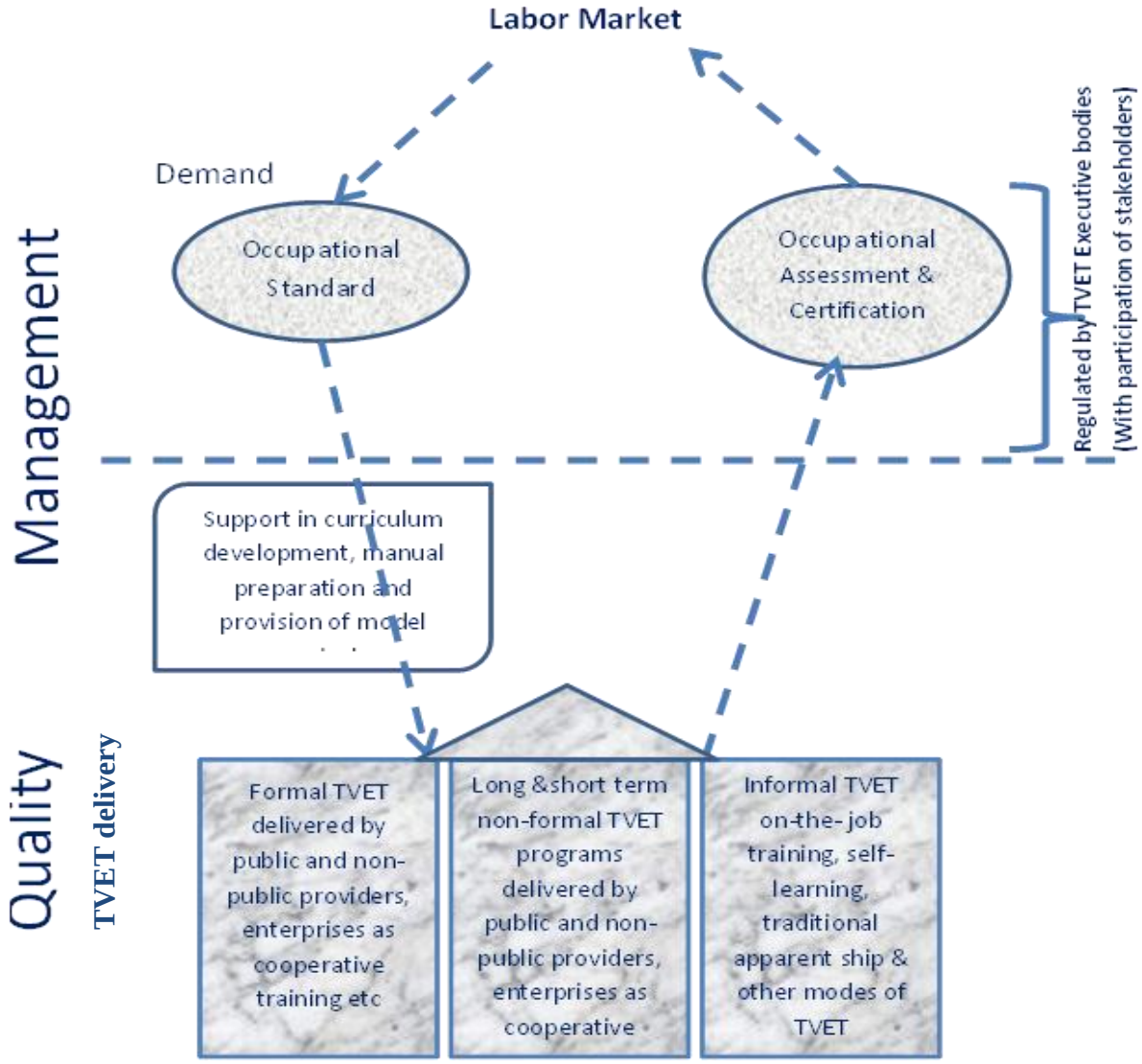


Figure 7. 1 Generic model of outcome based TVET in Ethiopia: (MoE 2008 p.25)

7.2. VET Model Selection

Having dealt in detail with the importance of VET for the Ethiopian footwear industry and its positive impact on workforce productivity, and having performed a detailed work-process analysis on the subsector, it is very important to select an appropriate model of VET specifically for that subsector. It is equally important to look at different alternative models, so that the best fit model can be chosen. Basically the delivery of VET can be in either of the following forms depending on specific requirements.

7.2.1 School-Based Approach

School-based training is one of the oldest and most traditional ways of skill training, where students gain all sorts of knowledge and skills within the school itself. In other words, the school will facilitate all the necessary infrastructures to enable students gain the necessary practical experience without sending them to an industrial setup. Today these schools are integrated ―production schools" with their own production areas. In this case simulated systems or specialized firms are established alongside the training schools. Usually, companies and vocational schools support the build-up of production areas within schools according to the model of ―production school" (Han 2010 p. 13). Here, the approach of vocational education is very similar to the concept of work-based learning but cannot completely replace it. In the school-based model, vocational teachers are responsible for both guiding the learning process and creating an environment that supports trainees' reflection and communication with respect to their working conditions and experiences.

7.2.2 Cooperative Training

Different scholars argue that a combination of learning within the real work situation and school-based learning is the best way to develop the required professional, methodological and social competence. Cooperative education programs consist of some form of work-related experience where students are required to arrange a work placement with an employer, and an agreed period of time is spent at the workplace (Cannan 2010 p.5). This form of training is a newly emerging model in the Ethiopian TVET system, implemented in response to the latent problem of the low quality of work forces entering manufacturing industry. The curricula of these training programs are designed in such a way that theoretical principles are combined with practical experience that will enrich trainees' practical orientation. During their entire study period, students will conduct one or two coop programs depending on the nature and length of the program. Prior to commencing their industrial placement, students are required to complete fundamental modules of their training in the classroom and find a hosting organization engaged in an activity similar to their field of training. The success of such programs has been highly dependent on the degree of partnership that the training institution creates with the coop-hosting organizations.

7.2.3 Work-Based Approach

Work-Based Learning (WBL) is an approach that focuses on the practical utility of learning and is therefore directly relevant to learners and their work environment (Fink et. al. 2007 p.4). It goes beyond the traditional cooperative education model to include a range of activities more aligned to vocational education and learning such as apprenticeships, service learning, job shadowing and internships (Cannan 2010 p.8). Different scholars acknowledge WBL as an approach that can take place in different situations and training settings without restriction to classroom lectures and school-based curricula.

All WBL programs according to (Fink et.al. 2007) utilize a range of tools to aid and enhance learning, including lecture sessions, workshops, tutorials, learning sets, and online guided learning activities. This ‗blended' learning approach enables WBL programs to be tailored to student needs and preferences, whilst still operating within an academic framework. This kind of learning (often referred to as training) has a finite end point, and often results in a qualification or license to undertake specific work activity (Owen 2001 p.599). It involves the gaining of competencies and knowledge in the workplace.

Table 7.1 Comparison of different models of VET delivery

Model	Advantage	Disadvantage
School-Based Training	• Vocational training centers can be implemented without complicated coordination processes • Avoids apprenticeship responsibility of companies • Avoids the potential challenges of students to secure their own internship places in industries • In most cases the physical work/operation is simulated and represented symbolically	• Needs capacitating trainers in the schools to perform the dual responsibility of classroom training and practical work setting training • Separation of practical education from actual work processes and organizational development • Established vocational disciplines and good setup of manufacturing infrastructures are required, in order to fulfill the conditions of handling realistic work offers • Production schools cannot exist as independent institutions in a controlled economy with no free market (Dietrich 1994 p.79) • The complexity and variety of industrial reality is reduced
Cooperative Training	▪ Students gain industrial experience as well as know social environment at the real world of work ▪ The model provides apprentices with workplace skills and competence ▪ It can be used as an opportunity to access cheap semi- skilled labor for the hosting organization	▪ challenge of hosting companies (as a result of low industrialization in Ethiopia) ▪ In Ethiopian TVET system financing the coop is the responsibility of students ▪ commitment of host organization to own the training of students at their workplace is found to be limited ▪ cooperation between vocational schools and training companies is always a prerequisite for the proper functioning of this model ▪ Lack of competent industry supervisors; training supervisors in the companies are inadequately prepared for these tasks ▪ Organization supervisors focus mainly on the performance of work tasks given to students

Work-Based Training	• Implements the concept of learning during the work process itself • Ensures that trainees are involved in the work process as well as in the process of organizational development • Students get a deeper understanding of the problems related to working environments • Represents a set of processes that occur within specific organizational contexts • Trainee work is always practical and real • Enables trainees to assess and understand the expectations of the workplace	• Trainees obtain only limited range of skills which are specific to the hosting company operations • Acquainted with limited line of business • Limited technological infrastructures of a company limits the degree of employability of trainees elsewhere • Needs the availability of highly competent craftsmen/expert in the production lines of the company to guide both production work-processes and performance of trainee • Needs additional facilities to help trainees understand basic principles of the work-processes • Experience the workplace first-hand which may impact their academic knowledge and further education

7.3 The Proposed Work-Process-Based Model

In this study the work-content related structuring of occupational profiles is exclusively done on the Ethiopian leather footwear manufacturing enterprises on a work-process basis. Moreover, the resulting work-process-based learning model uses the concepts of formalized workplace learning combined with the school-based VET model discussed briefly in the preceding sections. Although similar initiatives have been started in the past few years, this new model stays at a strategic level which makes it special in closing a knowledge gap in the area of sector specific VET.

There are also other reasons why choosing the work-process approach overweighs other method choices for the Ethiopian footwear manufacturing subsector. On the one hand, in an ever more uncertain external environment with strong skill-based competition, academics, policy makers and organizations have increasingly come to view workplace learning as a means by which they can achieve not only short term objectives, but also long term strategic goals (Silverman 2003 p.3). On the other hand, workplace/work-based learning can also be viewed as a way to promote workplace communicative processes (Boud and Garrick 1999) beyond the economic and performance-oriented perspectives. That is to say, workplace learning contributes not only to improving individual and organizational performance, but also to enhancing an integrated process involving interaction between people and their environment in the workplace (Doornbos, Bolhuis, & Denessen, 2004 as cited by Park 2011 p.2). However, it has also been stated that the success or failure of any workplace training program may not rest with the program itself, but may be influenced by a range of other contextual elements that mediate learning and action in workplace performance (Owen 2011 p.597).

The model proposed below refers specifically to the achievement of planned learning outcomes derived from the experience of performing a work role or function by performing tasks in the workplace. This includes the development of skills and the acquisition of knowledge of work protocols and best practice. The training program will adopt work-based learning strategies integrated with the formal curriculum at a certificate level to be delivered within the industrial setup, and specifically address the lower level qualifications in leather footwear manufacturing: levels I, II and III. The model is reproduced from the ―learning in a real work process" model of Greinert (1994) and combined with the work-based approach discussed in section 7.2.3. The main focus in this model (Figure 7.2) is blending work-process skills with a small proportion of school-based principles to result in a recognized and certified in-company training[27] program for the subsector.

The model also integrates strategies that allow learners to go beyond the traditional classroom-based training to develop job-performance competencies. Trainees will get the opportunity to consider different career paths in specific trades and sectors, learn basic workplace behavior, develop specific skills within an industry, and occupational competence in the workplace. The emphasis in this model is on what has been and can be learnt at work by carrying out the job, interacting with colleagues and identifying and reflecting on processes and procedures on which the corporate employee memory relies (Roodhouse and Mumford 2010 p.3). Through WBL strategies, trainees learn how to apply what they are learning in the work-processes of footwear manufacturing as they prepare for transition into the world of career opportunities within the sector.

27 In-company training- in this sense is a training program where students/trainees receive practical learning by being integrated in the regular work system of an establishment or production company.

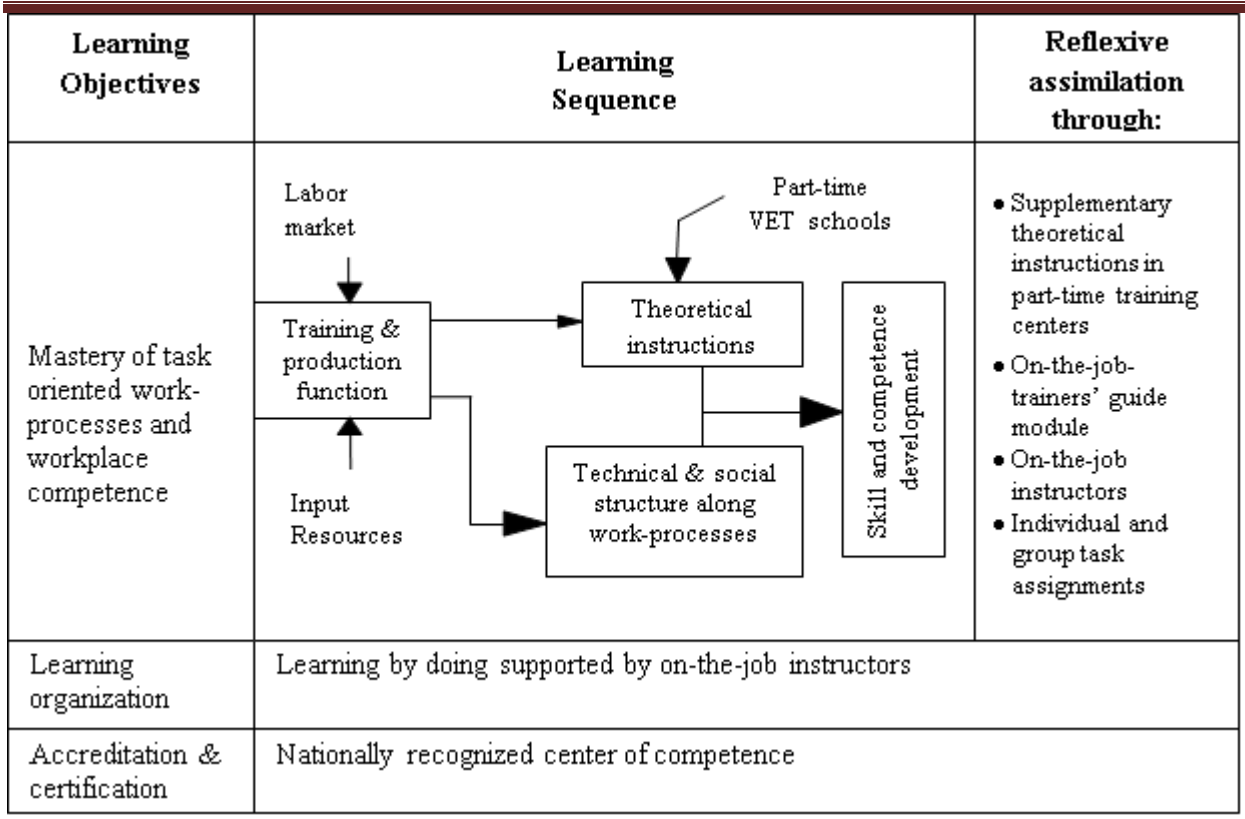


Figure 7.2 Proposed model of VET for Ethiopian footwear manufacturing: (Reproduced from ‗Learning in a real work process', Greinert 1994)

7.3.1 Key Features of the Model

The general features of the work process based model are based on the six typical characteristics of work-based learning described by Boud (2001), as cited by (Fink et.al. 2007 p.4-5). These are:

1. A *partnership* between an external organization and an educational institution is established (contractual arrangements)
2. The learners involved are *employees* (negotiate learning plans)
3. The learning program followed derives from the *needs of the workplace and the learner* and not from a predefined academic curriculum.
4. The learning program will be *individually adapted* to each learner according to their previous educational experience, work experience and training.
5. Learning takes place as an *integrated part of projects/tasks* in the workplace
6. Learning outcomes are assessed by the educational institution.

This model provides leather footwear manufacturing companies the opportunity to train, develop, assess and recognize individuals for the key competencies that they acquire on the job by formalizing the system based on national standards. Moreover, it is designed to enable

training and education to be provided through a variety of options based on individual needs and trainees' career progression. The following are the key features of the model:

i. The model is an occupational and outcome-based system, developed to enhance footwear manufacturing holistic capabilities.
ii. It gives employees the chance of being recognized for the workplace competencies they acquired during their employment and/or on-the-job training (if permanent employment is not secured in the footwear manufacturing firm).
iii. It improves mobility of labor by allowing companies in the footwear subsector to easily recruit workers with the recognized necessary skills whilst improving opportunities for workers to enter these industries (or elsewhere) by using their certification of competence.
iv. Supplementary parts of the training module are outsourced and taken over by external VET training institutions or training centers.
v. It allows multiple entry and exit points, as individual modules or modular units independently guarantee certain sets of employability skills.
vi. Assessment and certification for certain qualifications are based on ability to demonstrate the footwear firms' target capabilities.
vii. It recognizes prior learning and reinforces previous work experience towards the occupational standards for specific qualifications.
viii. Certifications are equivalent to credentials issued by the national TVET training awarding bodies.

7.3.2 Model Description

In the work-process approach the learner is usually an employee. However, the model should be accessible to everyone interested, at a fair training and certification fee. In most developed countries, this model of training is taken as one means of acquiring cheap semi-skilled labor for the manufacturing sector. This is because work-based learning is an effective recruitment tool for the employer; however, there is no legal or moral obligation for the employer to make an offer of permanent employment after completion of the training.

7.3.2.1 Learning objectives

The core learning objective is to create a synergy between knowledge, work and learning, and the application of that knowledge in the practical work situation. The learning objectives for a junior footwear technician for example, as stated in the occupational standard (*Chapter 6*) is to

be able to perform a defined range of activities, most of which may be routine and predictable, according to set organizational goals and on-the-job training guide modules. The knowledge and skills are required in an environment where there is a clearly defined range of contexts, in which the choice of actions required is usually clear, and there is limited complexity in the range of options to be applied. The employer, the student, and the vocational training center will agree upon learning objectives for the individual student to meet within a designated period of time.

7.3.2.2 Place of learning

The model is designed in such a way that the entire vocational training is to be conducted within the company, with supplementary theoretical principles taught in part-time or full-time training centers. However, it is clear that a special place of learning dedicated to the training is required. This is because trainees need a place suitable for understanding and imitating what they observe in the real work-process. This can also be used for on-the-job instructors to provide technical guidance and teach supplementary theoretical instructions as per the on-the-job-trainers‘ guide module. The training is based on the actual operation of the facilities of the training company and does not displace regular employees, but envisages work under their close observation. Even though the training providers derive no immediate advantage from the activities of the trainees or students while they are at school, special attention to and consideration for the parallel system is required.

7.3.2.3 Learning Sequences

The process of learning is guided by the sequence of operations in the manufacturing process of leather footwear. At each stage of the production process an on-the-job instructor (this could be a master craftsperson) provides technical background and addresses potential ambiguities for the trainees. In such training arrangements both the employer and the training center should allow some degree of flexibility with regard to the commitment of the trainee in the respective settings. The student is also expected to notify the employer and the training center in advance, should a change be needed in the work or modular class schedule. More structured agreements must also be reached, as the student will either work part time (e.g. evenings) and attend classes full time during the day, or work full time during the day and attend (e.g. evening) classes part time.

7.3.2.4 Learning organization

For lower level certificate training, where most of the task operations are routine and predictable, pedagogical issues are less significant compared with the actual visualization of task operations on the production process. Breaking down the entire manufacturing process into smaller and

more manageable work-processes and sequencing them from simple to complex operations will enable trainees to assimilate the necessary work skills without using sophisticated teaching aids and pedagogical processes. Provision of guiding modules and task assignments at every stage of the work-process is an essential component of the training process. Collaboration with others, perhaps through membership of a work group or team, may often be required. Furthermore, trainees are required to understand the entire work system including the relationships among their jobs, their work units, and the company as a whole.

7.3.2.5 Reflexive Assimilation

The process of reflection-in-action is essentially artistic, that is, the practitioner makes judgments and exercises skills for which no explicit rationale has been articulated. The key to practitioner success is ―developing one's own continuing theory of practice under real-time conditions" (Argyris and Schon, 1974: 157). This requires ―the practitioner to be able to reflect on his or her own micro-theories of action (that is, contextually specific ideas about what works in the real world) and to relate these micro-theories to institutional norms and to client expectations" (Brookfield, 1986: 245). Trainees are expected to acquire new skills and knowledge, apply them on the job, and share this information with other employees within the production setup.

7.4 Module Design

7.4.1 The Modularization Principle

In a modularization principle each module or combination of modules describes an employable set of competencies that combines both task orientation and competence orientation. Successful completion of each training module will be dependent on assessment and certification in conjunction with the assessment specifications stipulated in the occupational standards. Modularization is also helpful to facilitate multiple entry and exit points for trainees, and the accumulation of different modules in an occupation to help obtain long-term occupational qualifications. In a holistic training and education approach, graduates usually receive full trade recognition after the completion of all the required courses, whereas in a modularized system, the successful participation in each unit is certified separately. The contrast between the two is illustrated in Table 7.2.

Table 7.2 Contrast between modular and holistic training approaches

Modular approach	**Holistic Approach**
Certification is for individual units	Certification is for the whole occupation
Easy to tailor courses to specific needs	Needs occupation-wise changes
Trainer monitors trainee‘s task accomplishments	Directing trainees is the main task of trainer
Allow multiple entry and exit points	Needs completion of specific period
The approach enables provision of specific skills and competencies for the trainee	The approach comprehensively caters for the holism of the trainer
The level of detail of a training can be adjusted depending on accumulated expertise	Needs to accommodate occupational needs, not specific needs
Training is mostly competence-based	Training is mostly occupation-based

The modularized arrangement of vocational tasks for the footwear manufacturing trade starts with separation of modules into different categories. The modules‘ self-sufficient contents are designed to be a one-to-one correspondence of the results of the job analysis and occupational standards developed. The modular units are then organized into three different but interrelated categories (Figure 7.3). The first category of vocational education modules called ―basic routine vocational activities" concerns the canon of further vocational education common to all occupations, where skills of a general character, practical skills (useful in occupational and extra occupational life) should be included. The second category of vocational education modules called ―technical bases of the occupation" refers to the principle of education common to a particular vocational area. The third category of vocational education modules called ―basic and principal works in an occupation ―refers to the kind of education specific (basic) to a particular occupation.

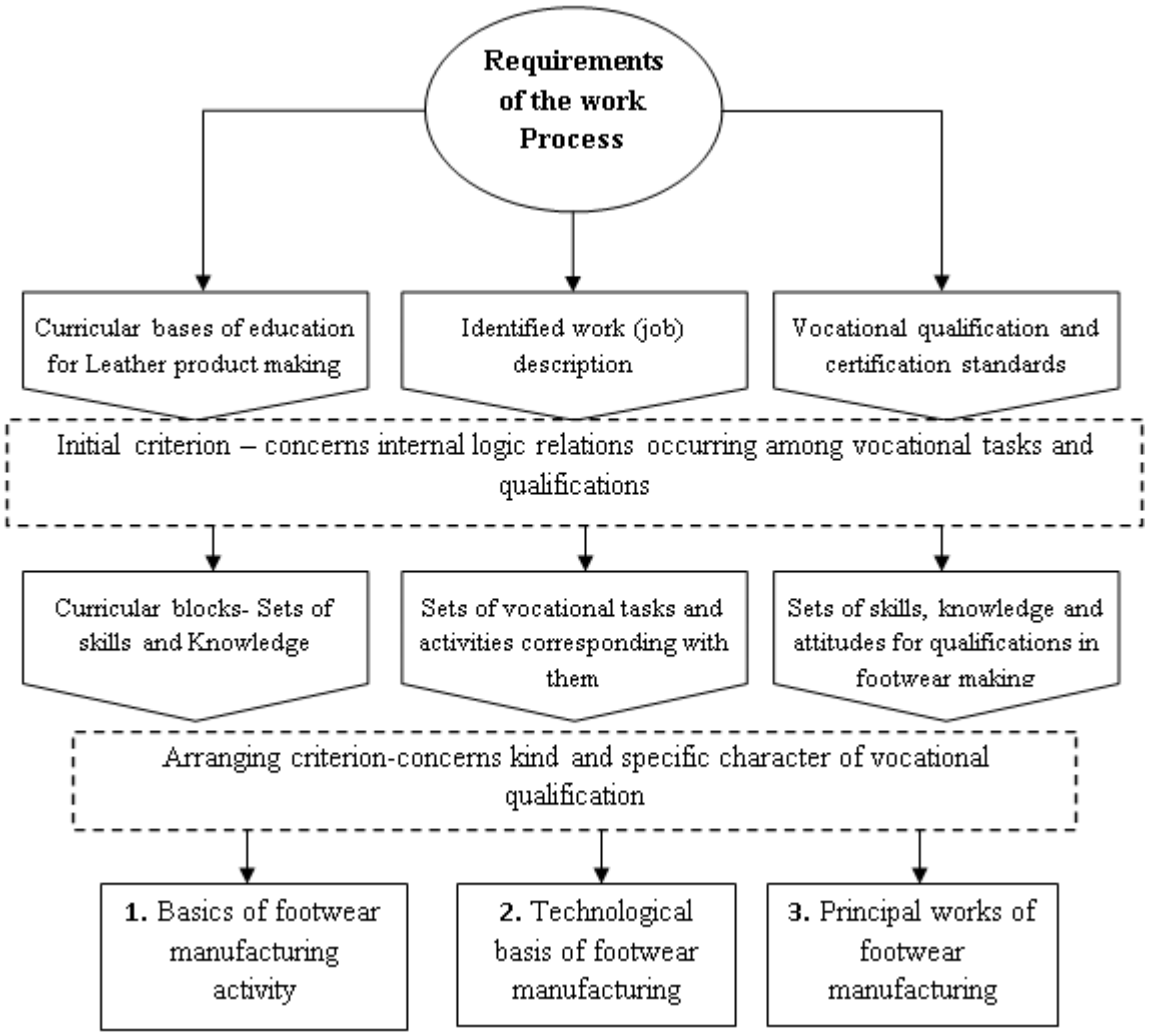


Figure 7.3 Modular categorization (reproduced from Symela et.al. 2005 p. 46)

7.4.2 Organization of Modules and Modular Units

Each module or modular unit is composed of elements that make up the entire set of requirements for the specific level of qualification or certification. A module or modular unit will have a name and a unique identification code to represent it. The learning objectives (sometimes referred to as intended learning outcomes or course-specific goals) are clear statements that describe the competencies that students should possess upon completion of a course. The sequence of modular units is organized so as to maintain precedence relationships and logical flow. Logical links are made between the activities that constitute occupational tasks and qualification levels. Individual unit topics are designed to fit the actual work-process tasks and activities, along with the necessary resource requirements and evaluation systems. Finally, the requirements are listed that have to be fulfilled by the trainee in order to be certified as having

completed a certain modular unit or entire module. However, this certification will not guarantee a certificate of competence, as competence certification will not be the mandate of training companies or training provider institutions. The certificate of competence will be given after a competence assessment test is taken as described in section 7.5.2.

Therefore, three interrelated training packages are developed on different levels. The model training package also allows knowledge and skill accumulation in order to make a transition from one level to the next higher level of qualification. Figure 7.4 represents the general modular structure of the three levels (level I to level III) of qualification for leather footwear technicians.

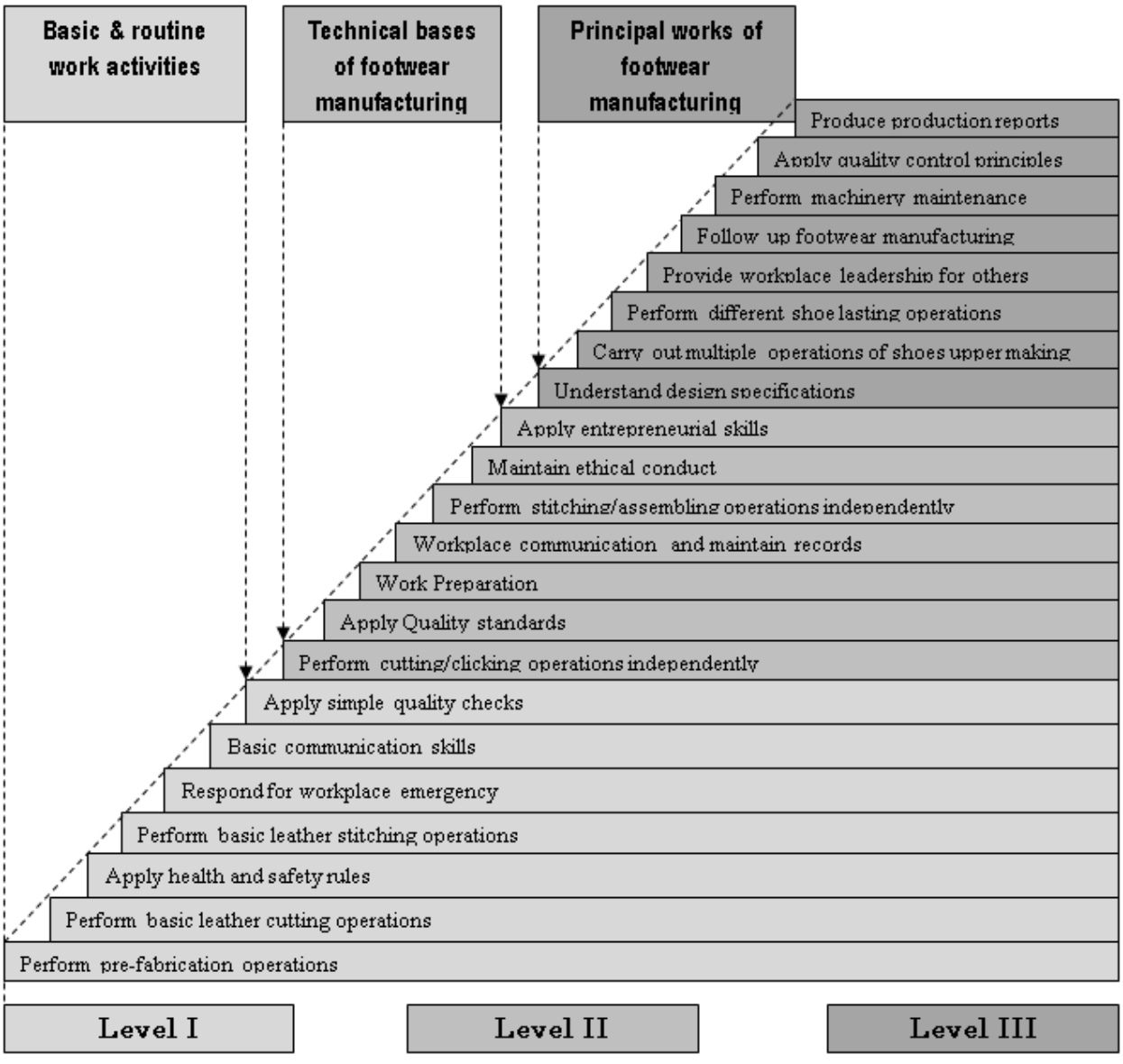


Figure 7.4 Organization of modular units for leather footwear technicians

Levels are designed to promote accumulation of skills and competencies. Completion of the lower level or acquiring of equivalent workplace learning is always a prerequisite to proceed to the next higher level. Trainees completing one category by taking all the sub-modular units of that category will be eligible for the certification of that category (level) of qualification.

7.5 Accreditation and Certification Systems

It is always important to note that wherever skills are developed, there will be an external body responsible for the accreditation of the company‘s in-house training arrangements. Standard procedures are followed to assess the capability of a specific company from different angles. The availability of basic training facilities to support on-the-job training, the competence of on-the-job instructors and other supporting infrastructures will be assessed and evaluated. The accreditation and certification systems are based on a continuously operating quality control cycle comprising the following main steps:

- The first certificate of accreditation could be valid for a maximum number of years; within these years the accredited company or the certified person must fulfill regular accreditation and certification criteria.
- After the given years, the criteria will be checked and if the requirements for extension are fulfilled, the certification will be extended for the next maximum number of years.
- If the requirements are not fulfilled the validity of the accreditation/certification will expire and the company/person cannot use the title.

7.5.1 Accreditation of In-Company Training

In the proposed model, in-company training providers have to apply to a certifying body, which must be established by the close coordination of the Ministry of Education, the Ministry of Trade and Industry, private and public training centers, the national TVET agency and the Ethiopian Leather Industries Association for their accreditation and for the licensing of their courses. This body can then also be used as an occupational competency assessment and certification body for the leather sector. It will promote occupational assessment throughout the subsector, in collaboration with the industry, by preparing assessment tools, training industry assessors, and (if necessary) accrediting the assessment centers that provide occupational competency assessment for candidates who participate in in-company work-based training. A diagrammatic illustration of the accreditation and certification system is depicted in Figure 7.5 and 7.6 respectively.

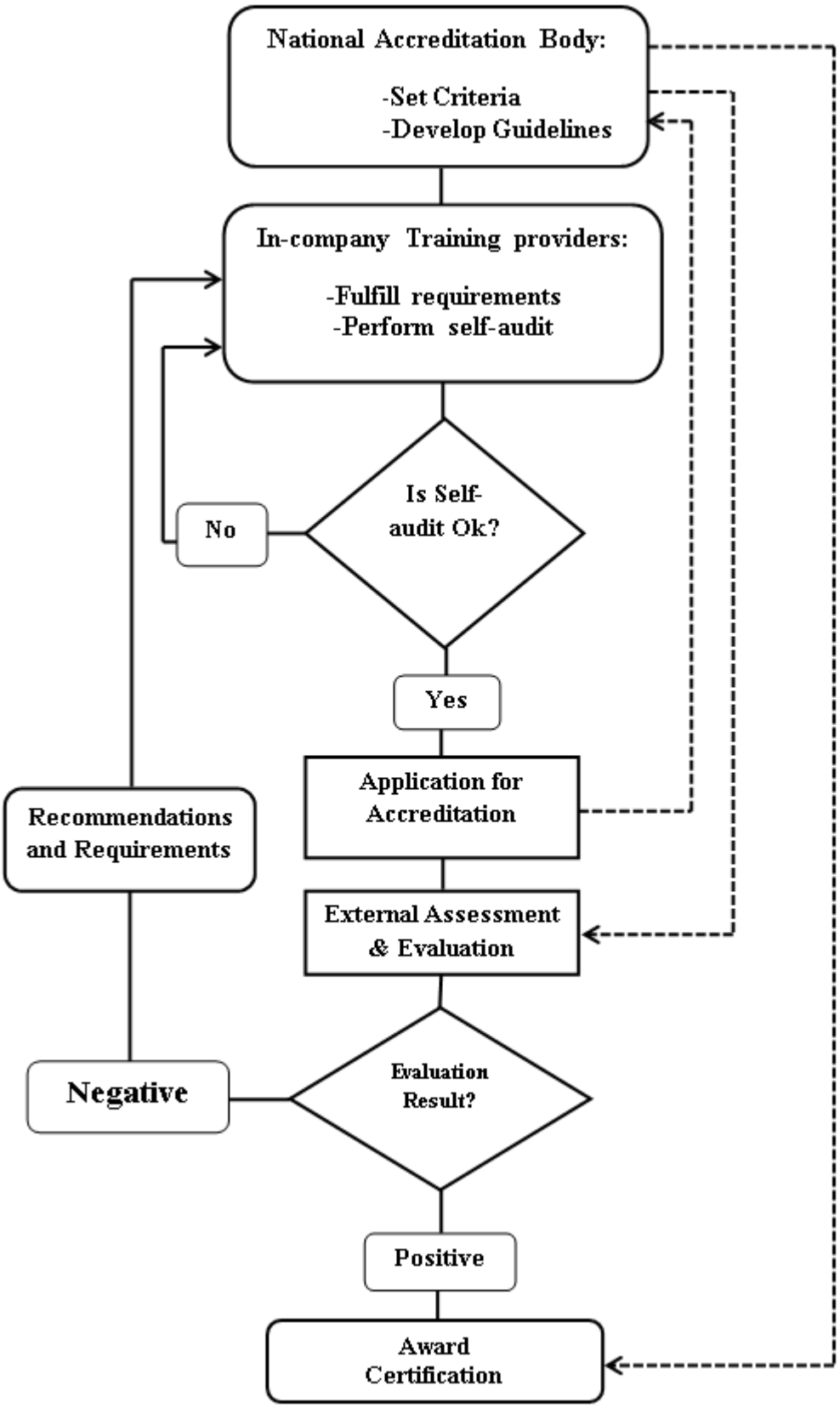


Figure 7.5 Route map of accreditation process

The national accreditation body will, in this training setup, also provide additional functions with regard to system improvement and training and education quality assurance. Some of the major functions of the accreditation body will be:

1. To follow up whether defined rules and criteria are observed in the process of skill development within the leather footwear manufacturing industries involved in training activities, to ensure that skills being developed are not influenced by any commercial, financial or other interest
2. To develop guidelines to help enterprises for the development of their own training programs and help them to access international trends and experiences
3. To develop evaluation methods for program efficiency and effectiveness. This includes descriptions of evaluation issues to be addressed, and how program performance may be measured
4. To make available (through publications, electronic media or other means) on request:
    - the requirements to be met by companies and assessment centers in order to obtain/maintain accreditation
    - information about the procedures followed when evaluating whether companies meet the necessary standard
    - a description of the rights and duties of companies and assessment centers, including requirements, restrictions or limitations on the use of any accreditation certificate.

The training providers on the other hand will carry out a set of responsibilities before an application is submitted to the accreditation body. Among many other duties and responsibilities, they must ensure that:

1. participants in work-process-based training learn best when they are challenged, using a variety of activities that allow opportunity for feedback and interaction with real work-processes
2. the training programs to be offered are designed for their specific target audiences and that the skill level is appropriate for the participants to provide further career paths
3. the training modules designed or adopted satisfy the minimum criteria for the development and delivery of certification training.
4. workplaces in their manufacturing setup are well situated for participants to learn best when they are at the workplace

5. materials, tools and equipment used in the delivery of training are prepared as per the standard set by the accreditation body
6. training aids and activities are appropriate for participants and for meeting the learning objectives.

7.5.2 Certification of Trainees

In work-process-oriented training and education, the units of competence are designed to match particular activities that people carry out at work, like operating a leather clicking machine, stitching together shoe upper parts or assembling shoe parts. The job is made up of these units of competence. Each unit is broken down into smaller parts called elements and performance criteria, and these units of competence are what the accredited assessor will use to judge whether or not a candidate is competent.

In the proposed certification model two sets of requirements are expected from a trainee. The first requirement specifies what one must do first to get a national qualification certificate. This includes:

- A temporary certificate from the training provider (company/institution) assuring that the applicant has gained sufficient skills and workplace competence in a footwear manufacturing occupation
- General school leaving examination certificate that assures the students eligibility to acquire a certain level of national TVET certificate
- Additional certificates that may help the applicant to support his /her application with regard to a specific set of skills.

The second set of requirements contains requirements for renewal, specifying how one renews his/her certificate following updated rules and regulations after the initial certification has expired. In renewal certification candidates are not expected to submit the first category of requirements, rather a set of specific requirements for renewal of their certificate will be given by the assessment and certification body. A simplified model of the certification process is shown in Figure 7.5.

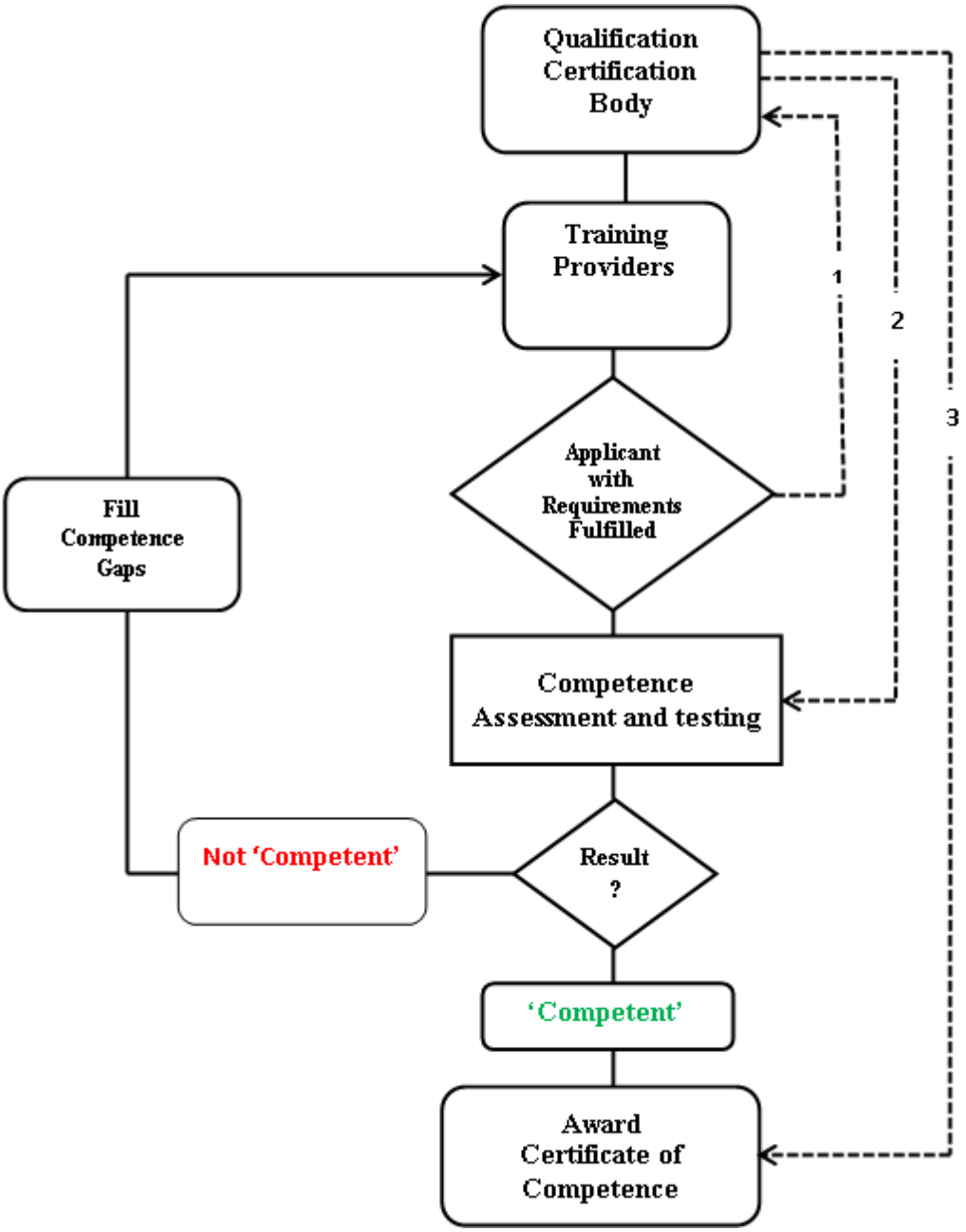


Figure 7.6 Trainee certification process

The process of certification in the proposed model follows the same structure as the accreditation of training programs. A trainee/applicant who completes all program requirements with the minimum performance requirement set by the occupational standard will submit documents to the certifying body showing the fulfillment of necessary pre-qualification requirements. The certifying body will then measure his/her performance based on appropriate assessment and certification tests for the field and level of certification. The nationally recognized qualification

certification body will certify competence on the bases of pre-set standards by verifying that assessments are outcome-based, and will ensure that qualified assessors are used in the process. The role of training providers in this model is limited to issuing temporary certificates for participants upon completion of registered modules or modular units, in the form of –Program Complete" or –Unit Complete", thus assuring desired outcomes have been achieved by participants before they apply for qualification certification. Once the assessment and evaluation is completed by a certified assessing body based on the evidence/information gathered using pre-set assessment tools and procedures, results are issued as either **"COMPETENT"** or **"NOT COMPETENT".** While the assessment and evaluation tools basically test both knowledge and practical skills at the time of application, results of continuous assessment during the entire process of the training must also be taken into consideration.

7.6 Interim Summary

The model training program developed in this chapter is a result of the reflections obtained from the subsector analysis. It was found that the school-based and cooperative training arrangements practiced so far across the subsector have brought no change in the actual skill and competence development that the leather product manufacturers demand. In this approach, vocational tasks are specifically defined in modular units that can be certified for specific jobs. Since each module or combination of modules describes an employable set of competencies, it will allow multiple entry and exit points for trainees to obtain long-term occupational qualification by accumulating credits. The structure of modular units is also designed in a way that allows trainees to specialize in a certain specific level of task without taking additional modules/modular units from a different field.

CHAPTER EIGHT

IN-COMPANY TRAINERS DEVELOPMENT

1.1 Introduction

The achievement of sustainable economic growth for a country‘s continued development is heavily dependent on the ability of the country‘s training institutions to train competent technological knowledge-workers for today‘s workforce (Corbin and John 2011 p.9). Moreover, ongoing globalization and the resulting changes in the education of skilled workers require a unique framework for TVET teacher training, as well as a system of further education for teachers (Bünning et.al. 2011 p.9). The high dependency of VET quality on teachers and their training is not an issue for debate; it is an obvious fact on which everybody can agree. This is because the translation of the curriculum requires new competencies (Anderson and Hansen 2007 p.14) and task-orientation (Dreher 2010 p.341) of VET teachers. Trainers[28] in enterprises and training consultants are at the front line of current initiatives aiming to upgrade the skills of the workforce and promote lifelong learning (Cedefop 2010 p.1). The development of a quality workforce is dependent on the teacher training systems that prepares and provides the trainers. Adequate and proficient trainer development is a necessary condition for delivering effective training. This can only be achieved by developing both task-oriented and competence-oriented modules for TVET teacher education (Dreher 2010 pp.341-342).

Trainers in a work-based training facility generally have more responsibilities than school teachers, as the success of such training programs is dependent on the level of support they provide. Therefore, the integration of in-company trainers with the direct production process and their alignment with the corporate culture is an essential component of the program. The teacher‘s work is mainly to plan, implement and reflect on teaching units tailored to exemplary work tasks (Dreher/Kath 2004, cited by Dreher 2011 p.13). On the one hand, the tasks of these training personnel are influenced rather by company planning, organization and supervision processes than by their own personal operational or tactical ideas. Conversely, however, without the integration of the actual manufacturing processes into the training, the target objectives of in-company training programs cannot be achieved.

28 In this research, trainer refers to an employee in footwear companies or in VET provider organizations who trains workers or other adults, supporting and facilitating their learning process.

In Ethiopia, in-company trainers often take an ill-defined role that entails supervising an apprentice while they are performing their regular duties. The main focus of this chapter is, therefore, to describe an appropriate in-company, on-the-job trainer requirement for the work-process-based model training package developed in the preceding chapter. This will focus on such questions as what and in what way must trainers learn to train the modules, and what other variables must be considered in order to produce in-company trainers that can deliver exactly what the market needs in terms of competent manpower. In this case ―work-based" trainer or ―in-company" trainer is used as a term referring to an employee in a company recruited to take the responsibility of both training and working either on a full time or part time basis.

8.2 TVET Teacher Training in Ethiopia

8.2.1 Pathways

In Ethiopia, there is no special pathway to become a TVET teacher/trainer. With the exception of a few TVET teacher education institutions, the necessary qualification is offered in the universities along with other bachelor's degree programs. Students completing the second cycle of secondary (preparatory) education are assigned to different departments to be trained in technical and vocational study areas to be teachers at TVET schools after graduation (Figure 8.1). Students enrolled in this way in TVET teacher education programs will have had no opportunity to get trained in the technical and vocational schools, as their pathway to university will not have permitted this. Thus the three-year university teacher education program is the only opportunity they will have had to develop competencies as technical and vocational teachers before their employment (Ayele 2010 p.11). The educational path toward TVET teacher education thus blocks the opportunity of obtaining the technical and workplace skills that are the prominent component of TVET. As can be seen from Figure 8.1, the transition from university TVET teacher education to the world of work or vice versa and from TVET schools to university TVET teacher education is closed.

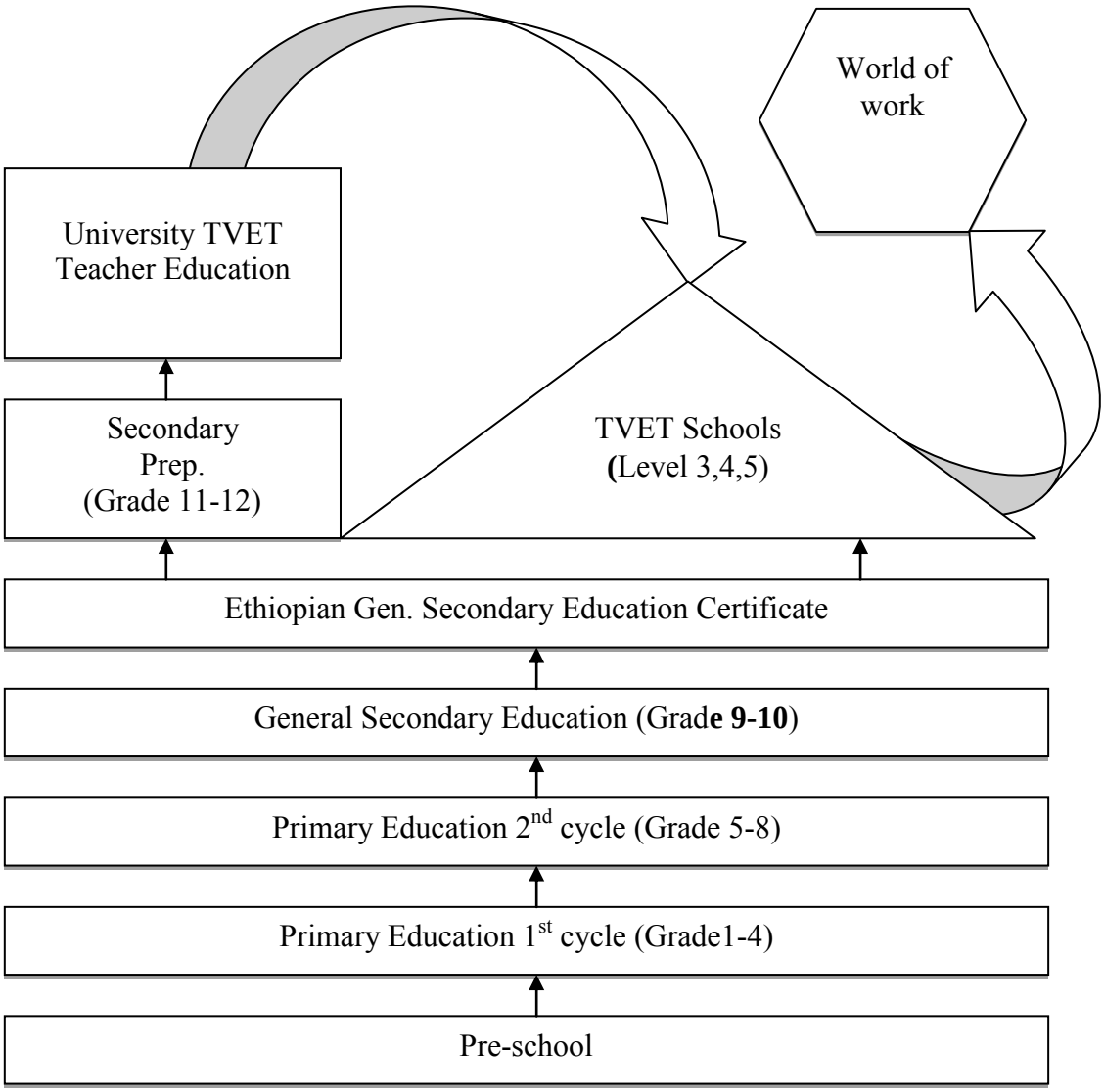


Figure 8. 1 Pathways to TVET teacher education in Ethiopia: (Ayele 2010 p.12)

8.2.2 The Present Development Process

TVET teacher training (TT) at bachelor degree level started with the development of national curricula at the federal level. TVET system graduates with practical work experience either in technical work places or in VET training institutions, skilled practitioners from the world of work and fresh preparatory secondary education graduates are the preferred target groups for TVET teacher training. Moreover, efforts have been made to increase the supply of TVET teachers by providing tailor-made preparatory and bridging courses, (non-degree) further training for different target groups and developing systematic further education and training schemes to continuously upgrade the competencies of existing TVET teachers/instructors, as well as to facilitate life-long learning and qualification. Quality improvement programs are also underway

by implementing capacity building programs for teaching and instructing staff at TVET teacher/instructor training faculties and departments.

Despite all these efforts, however, the Ethiopian system still lags behind when it comes to providing the right quantity, type and quality of TVET teachers/trainers. Several factors contribute to this state of affairs, but the major ones are:

1. Most of the Ethiopian higher education institutions in which the new TVET TT is offered do not have TVET teacher/instructor training faculties or departments specifically designed for this purpose. Hence TVET teacher education is conducted in a similar setup to other engineering and science programs.
2. University instructors in most Ethiopian higher education institutions are not trained as teacher educators, so TVET trainee teachers have the same course content as engineering and science students.
3. The inability of further training to address the entire range of necessary competencies, including practical skills, occupational theory and technology, as well as pedagogical, didactical and methodological competencies, due to fragmented delivery of TVET TT.
4. Internship programs incorporated as part and parcel of TVET TT program curricula do not get much attention, for various reasons both at the strategic, university and hosting company level. At the heart of this problem is the lack of awareness by internship hosting companies about the benefit of such programs and their inability to offer qualified craft personnel to supervise intern students in the company. Besides, in the higher education institutions, there have been tensions between faculties to own the program and to commit resources, as methodological issues and core technical issues are delivered in different faculties/colleges of the universities.
5. Weak coordination between TVET systems, higher education systems, the private sector and federal and state policy makers and other concerned organizations to facilitate necessary preconditions and go beyond formulation of systems and training schemes.

In addition, the current system of TVET teacher education in Ethiopia focuses on training of teachers at bachelor‘s degree level or above in tertiary education institutions, whereas, lower level trainer development takes place in a fragmented manner. Looking especially at the leather sector, there is no a distinct regulation for trainer development strategies and entry requirements to the profession. In most cases professionals from the engineering and science fields are invited to take further sector-specific training abroad, and/or special on-the-job or off-the-job training is given by foreign and local experts, to complement vocational teacher training. It has also been

identified that trainers in the Ethiopian leather sector carry out multiple roles. Their major duties are frequently consultation of local enterprises in the sector and conducting research in the area. Though they work as trainers in training institutions, they are professionally identified as researchers not as trainers.

8.3 In-Company Trainers in the Leather Sector

In the Ethiopian leather sector there is no a special occupation called ―trainer"; anyone from an appropriate field and related profession can be a trainer after taking a short ToT (Training of Trainers) course for a particular purpose. For example, in the leather footwear subsector, training in the company is usually uncertified and lasts no longer than a couple of weeks. Trainers for these categories of training are mostly the production line supervisors, senior craft personnel or expatriate experts. Trainers in this system have no clear definition of their role as a trainer, and no recognized and regulated system of professional development toward a future career as a trainer. As a result the system ends up with the attainment of temporary business goals. While employers seem to be convinced about the process, there remains an emerging danger on both sides. On the employee side getting recognition of their skills in footwear manufacturing occupation is a major issue. The inability of the subsector to provide an opportunity for occupational recognition results in employee dissatisfaction and reduced workplace performance levels. On the employer's side, although the fragmented model of ―hire and train" and ―use and fire" (Figure 8.2) seems to be a temporary exit strategy for the problem of skilled manpower, the long-term effect of their employees not being able to accumulate skills on a permanent basis is a disaster for productivity and competitiveness.

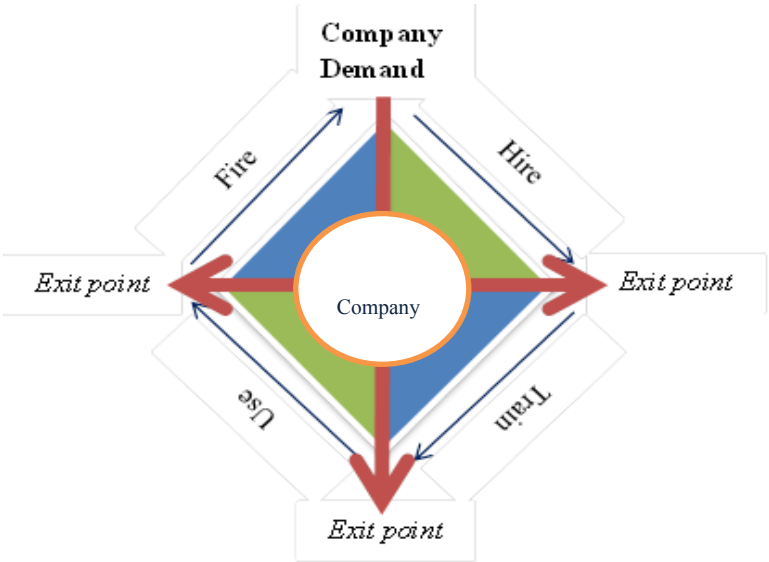


Figure 8. 2 The current in-company training model of Ethiopian footwear manufacturing sector

8.4 Trainer Development for Ethiopian Footwear Manufacturing

The task of in-company trainers is not a simple matter of teaching technical courses with a training manual for a specified purpose. Such short courses do not adequately equip potential trainees with the skills and competencies that are expected and necessary in different work contexts. The current solution is generally a process of leading specially trained and qualified company employees to take permanent responsibility for training as their major duty. Thus the qualification requirements, composition/structure, and recruitment criteria for training personnel, as well as their professional development and the contextual factors affecting their performance, will be among the key strategic objectives of the companies concerned.

In this respect there is a wide range of possibilities – from initial VET teacher training to the retraining of experienced company employees – to up-skill low-skilled and older employees to the position of in-company trainer. Potential trainers, including those who have previous training experience, need to be able to learn and practice both the process of training and the necessary skills in a structured fashion, so that they can always shape their orientation training and education responsibilities within a production company.

With the workplace generally having been rediscovered as a learning environment, developing sector-regulated, certified in-company training programs and trainers is a win-win scenario for employers, employees and the in-company trainers themselves. Nevertheless, there are still basic questions to be addressed as to how to establish such a system in the Ethiopian leather footwear manufacturing subsector.

These questions can be categorized as:

i. Qualification requirements and professional pathways for recognition of in-company trainers at national, regional, sectorial and company levels
ii. Assessment and certification procedures, recognition and validation of prior learning and of competencies acquired by trainers on-the-job.

8.4.1 Establishing Qualification Standards

A learning culture for teacher training aiming at competence development and focusing on implicit learning requires the initiation of evolutionary processes in two ways (Spöttl, Becker and Dreher 2009 p. 140):

1. First: on the didactic level work tasks for teacher training must be identified and arranged in a way that they promote the individual expansion of implicit knowledge.
2. Second: On the level of organization and shaping of teacher training, forms and processes have to be continuously developed in order to safeguard an adequate shaping of the interaction between practice, reflection and theoretical follow-up.

In light of this, a higher level of task orientation, and thus identification of work assignments, is at the core of standards development in the leather footwear manufacturing industry. Hence, work process orientation has to include social, work organization and sector specific aspects, as well as the workplace challenges with all their implications. Qualification standards for in-company trainers should start by analyzing the relevant task fields, in order to identify problem-oriented and work-process-related competence requirements for the trainer.

8.4.2 Qualification Requirements

The core point in determining the qualification requirements of in-company trainers is to answer the question –what are the factors determining the role, actions, and occupational career of in-company trainers within the company?" Even for master craftsmen who have no pedagogical training qualification, attaining such formal qualifications is an opportunity for career progression and professional development. While technical and workplace skills are the prominent factors that count most for their actions at work, social and interpersonal skills have also considerable impact on the transfer of knowledge and skill in work-based training. Competency standardization is the first step on the trainer pathway. Although standardization can be implemented in a variety of ways, its goal is always the same – to ensure that candidate trainers are –on the same page" about how to teach the desired skills (Jhpiego[29] Corporation 2000 p.2). Specialized in-company trainers should be sufficiently prepared about the practice field in which trainees work to promote a high level of relevance in the training, and should possess the ability to help learners apply training content appropriately to their jobs. Particularly company trainers in the footwear manufacturing trade should develop the following competencies in addition to the competence requirements of Advanced Footwear Technician as described in ***Appendix 7.***

A qualified trainer:

29 Jhpiego is a non-profit organization affiliated to the Johns Hopkins University that works in developing countries to train health professionals in modern reproductive health care, especially family planning. It develops strategies to help countries care for themselves by training competent health care workers, strengthening health systems and improving delivery of care.

1. Can develop training plans that will not conflict with the actual manufacturing plans of the footwear company to make use of the best expertise learning possible for the trainees.
2. Understands how to equip learners with new competencies, or strengthen already acquired skills.
3. Is able to coordinate training in collaboration with the main manufacturing line staff.
4. Clearly and accurately communicate the goals and objectives of the training and desired outcomes for each training module/modular unit.
5. Can formulate specific learning and application objectives for each section of each individual module or modular unit, and can demonstrate how these objectives together achieve the specific competence units addressed in the advanced occupational standard.
6. Understands the unique attributes of the work process training curriculum for use in an in-company training system.
7. Recognizes basic principles of human cognition and learning, and can apply these principles to the development of training curricula.
8. Is able to identify and incorporate the most appropriate training methods to achieve the learning objectives of a particular section of the module or modular unit.
9. Is able to organize teams, assign responsibilities to individual team members of the training team and knows how to negotiate and resolve team conflict when it arises.
10. Develops mentoring strategies for trainees, and understands how to select mentoring and coaching strategies that are most appropriate for individual trainees and training teams.
11. Can use appropriate assessment tools and provide timely and constructive feedback for individual task assignments or team project tasks, and can challenge ideas in a manner that stimulates creative thinking and promotes growth, while maintaining trainees‘ self-esteem.

These qualities could be incorporated into a qualification of ―Qualified Skill Trainer" or ―Specialized Skill Trainer" according to the newly proposed national TVET teacher qualification framework. In this regard, the following table (Table 8.1) suggests a framework profile for leather footwear in-company trainers with the qualification ―Qualified Trainer". It identifies the knowledge and skills that are necessary for carrying out the above-mentioned functions.

Table 8. 1 Profile of qualified trainer for leather product manufacturing

Activities	**Knowledge** **A trainer should know:**	**Skills** **A trainer should be able to:**
Training needs identification		
Convert training needs into training modules/modular units	need analysis methodologies and tools	identify and assess training needs in footwear companies
Training design		
Prepare individual training plan	theoretical principles of effective training method	design and realize training in footwear company context
Organization and planning		
Plan, elaborate, organize training activities, materials in footwear company	how to plan modular and individualized training	plan individual contents of modular units and align them with appropriate methodology
Teaching/training		
Execute direct on-the-job teaching/training activities in footwear company; recognize unique attributes of work-based training	learning theory and methods training methods for adult people and work-based learning approach	use training aids, teach/train groups and individuals, use blended learning methods, manage trainee relationships
Support and coach learners		
Develop strategies to facilitate the learning process and/or perform a coaching function	how develop mentoring, how to facilitate/support learners	guide and accompany learning processes, motivate and encourage the participants, guiding to self-directed learning
Training assessment & evaluation		
Learning assessment	continuous assessment principles and techniques, main learning evaluation tools	evaluate learning/training outcomes, monitor trainee progress/development
Learning evaluation	valuation approaches for continuous assessment	identify different levels of training evaluation (context, input, process, output,...) and choose specific tools

8.4.3 Professional Pathways

Different alternative pathways in the TVET system could be established in order to accommodate suitable career pathways for company trainers in the Ethiopian footwear subsector. By integrating vocational/technical subjects with aspects of education and didactics, the approach prepares company trainers for a vocational career. The system proposed here allows VET graduates to complete the transition to the qualification of trainer by taking additional pedagogical skills in their respective fields, as presented in Figure 8.3.

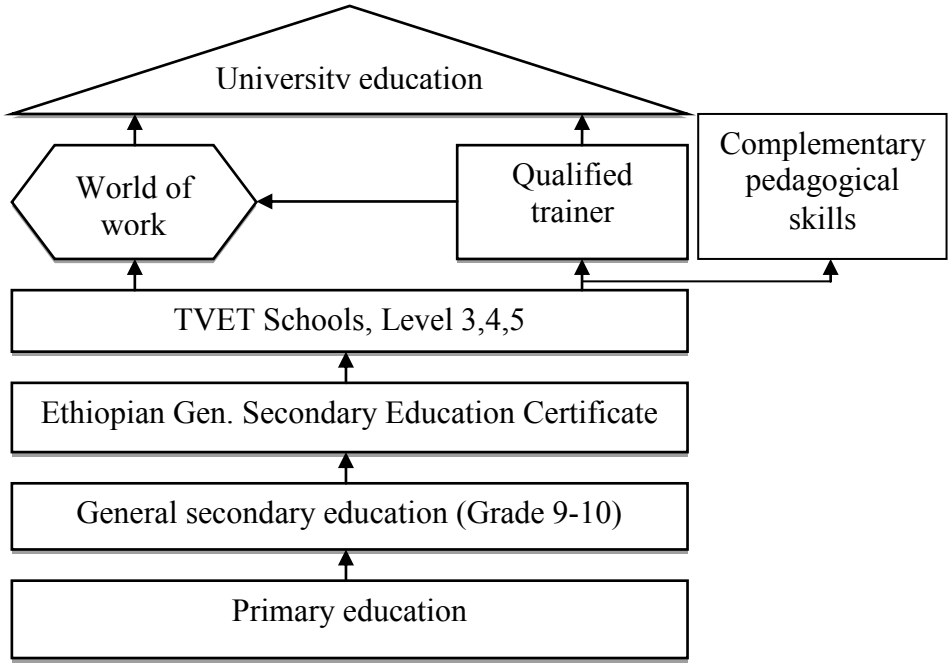


Figure 8.3 Educational and career pathways for company trainers

The flexibility of pathways to further education and skill training promotes career development. The possibility of gaining the ―qualified trainer" qualification on a voluntary basis in TVET TT colleges after completing the level 3 advanced footwear technician qualification provides a sense of professionalization and increases confidence on the job as trainer. Moreover, the further qualification of TVET TT graduates will not decrease their chances of mobility and employability on the labor market, as they are qualified for the world of work too. This further education and training to qualify as a skill trainer has, however, to be initiated by the sectorial association of the leather sector or by the Ministry of Trade and Industry. The further qualification or certification of TVET graduates as in-company trainers can be organized as a program tailored specifically to the needs of on-the-job training, supplemented by school-based training for specific modular units.

8.4.4 Admission Requirements

Selection of trainers to promote them from advanced footwear technician to qualified trainer is not a simple task. Candidates must be sought among advanced footwear technicians who are proficient, motivated to take responsibility and willing to train others in skill courses in a manufacturing setup. While the admission requirement to the qualification of advanced skill trainer rests primarily on the attainment of an advanced footwear technician‘s certificate (Level 3

national TVET Qualification), the system also allows for practitioners in this particular field with equivalent sets of skills that can be verified upon entry to further training. The fundamental principle of this assumption is that people without basic TVET training in the area cannot be fit to train others on-the-job, as the main objective of such a system is to fit trainees to the actual job they will be doing. Additional requirements like communication skills, previous personal achievements, professional ethics and individual behavior are also to be taken into consideration.

8.4.5 Qualified Trainer Development Model

The ‗qualified trainer' qualification is basically composed of two sets of competencies: vocational competence with respect to the technical area of the field (technical area of footwear manufacturing), and pedagogical competence that is mainly concerned with transferring knowledge and skills to others (including training methodology, communication and handling of the training environment). A trainer acquires the former through mastery of his/her vocational training as advanced footwear technician, whereas the latter is gained via further training in TVET TT institutions or specially tailored training and education arrangements (complementary pedagogical training).

The purpose of further training of TVET graduates to qualify for trainer is rooted in the fact that advanced footwear technicians are content experts who have spent up to three years learning in TVET schools and/or refining their skills in a specific occupation and accumulating substantial knowledge of their craft, but lack a developed pedagogy or strategy of instruction. Hence the aim of complementary pedagogical training is to pair their task-oriented skills and competencies with appropriate methods of teaching. It provides preparation for the specialist side of teaching while also facilitating systematic preparation for the practical elements of training. The complementary pedagogical training needs to focus on the particular practices and processes by which knowledge is produced and skills and competence are developed by cultivating the habits of mind. With contents including development of educational environment within the work process, methods of student-centered teaching/training, task and project-based training methods, tutoring of students' learning, and assessment of learning outcomes, the complementary pedagogical training provides a much improved grounding for the in-company trainer to educate others on the job. A simplified representation of the model is presented in Figure 8.4.

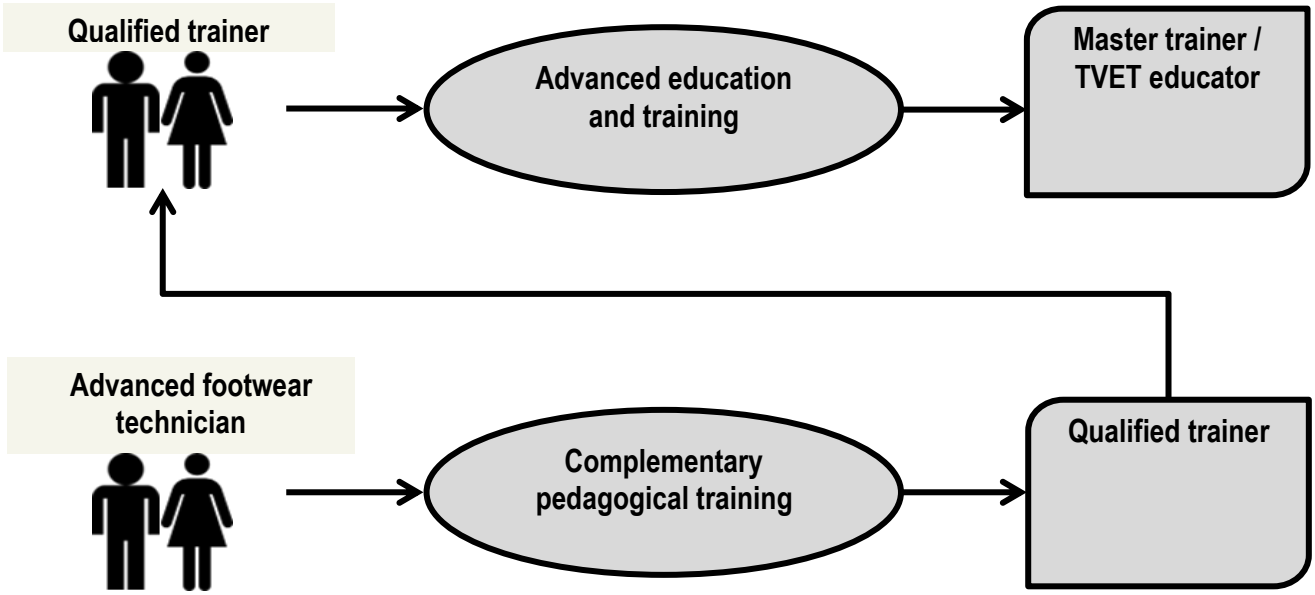


Figure 8.4 Representation of qualified trainer development for Ethiopian footwear sector

8.4.6 Assessment and Certification of Trainers

As one of the effective alternative routes for in-company trainers toward professional recognition and higher esteem (Cedefop 2012), certification is an opportunity for them to:

i. have prior learning and expertise gained on the job assessed and validated;
ii. have qualifications/competencies certified, both through participating in continuing professional development and through the validation of prior learning.

The primary concern of training provider companies is ensuring a consistently high level of performance from their employees. Nevertheless, the outcomes expected are always the result of the competencies of trainers. Hence, in-company trainers must be able to demonstrate relevant vocational competencies to the level of those specified in the qualification standards they teach. The assessment and certification process may follow the national TVET teacher‘s qualification process, with special emphasis on assessing current relevant qualifications and/or industrial experience. For those who do not have formal qualifications, a mapping document is required to demonstrate their competence against the standard set by the sectorial VET body. The process of trainer assessment seeks to determine whether the candidate, who has taken part in complementary pedagogical training after completion of an advanced footwear technicians‘ qualification, can perform to the standards of expectation in the work-process-based training program based on defined qualification standards.

Assessment and certification of competencies of in-company trainers is, therefore, based on concrete competence requirements that are expressed in various documents, such as national occupational standards, qualification standards, competence standards and frameworks, codes of practice of professional associations, company-specific job descriptions and the like. On these lines, a set of minimum qualification standards should be developed by sectorial bodies to serve as a basis for advanced footwear technicians who wish to be trainers. This will be of great benefit not only to the footwear manufacturing industry, but also to technical TVET teacher education institutions. To achieve this balanced competence assessment and certification, an alignment between the national TVET teacher qualification frameworks, TVET teacher qualification standard and specific sector requirements is necessary.

8.5 Interim Summary

The current system of TVET teacher education in Ethiopia focuses on training of teachers at a bachelor‘s degree level or above in tertiary education institutions, whereas lower level trainer development takes place in a fragmented manner. Looking especially at the leather sector, there is no specific regulation of trainer development or entry requirements to the profession. Therefore, the focus of this chapter is mainly on the development of in-company trainers for the leather footwear industry. Attention is specifically given to four core areas of interest: (i) provision of alternative pathways for TVET teacher/trainer qualification, (ii) task and competence orientation of TVET teacher training, (iii) assessment and certification, and (iv) how this special requirement is to be integrated into the national VET system. The chapter emphasizes the need for in-company trainers, due to the special nature of the work-process-based training and education programs, to have specialized pedagogical training in areas that are unique to workplace learning. In addition to the standard pedagogical courses pursued by others preparing to teach, they need specialized training in workshop/laboratory didactics.

CHAPTER NINE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

9.1 Introduction

In this final chapter, the research results are briefly summarized, conclusions drawn from the research results are made, and a set of recommendations is presented. Finally, brief suggestions for future research are proposed.

The chapter starts by summarizing the research results into the current manpower training systems in the Ethiopian leather sector, and goes on (in section 9.2) to propose a model based on a clearly defined set of criteria. It compares the new model with the existing system of training and education on the basis of variables like the process and organization of training development, the accreditation and certification process, and trainers' development. Section 9.3 provides conclusions drawn from the research results. Section 9.4 contains a number of recommendations in the form of lessons the author learnt from conducting the research. Finally in section 9.5 possible areas for future research and study are suggested.

9.2 Brief Summary of Results

This research was built on the one hand on the identification of core work-processes and their technical qualification requirements, and on the other on the development of appropriate strategies of education and training, so that technical workforce productivity might contribute optimally to the competitiveness of the subsector.

To achieve these ends, a base survey of leather product manufacturing enterprises was made, in order to analyze the whole subsector from different perspectives. An overall review of the leather and leather product sector reveals that it is one of the top priority sectors in the Ethiopian development agenda and enjoys the substantial attention of both government and development partners. One of the priority areas of intervention is the establishment of sector-specific technical and vocational training programs.

However, this research shows that the identification of training and educational requirements arising from interactions among changing technologies, changing workforce demographics, changing organizational contexts and allied developments impacting the sector are among the top sectorial challenges.

The research also identifies lack of actual work-process and competence development orientation in sectorial VET, the low-level of the training infrastructure, poor coordination among

stakeholders, and the rapidly changing nature of training and certification frameworks as the major obstacles for local training institutions to run effective training programs that meet the requirements of the manufacturing industries. This has created a negative consequence on the employability of graduates in the formal leather product manufacturing sector. An demographic survey of employees in the subsector shows that less than a quarter of the technical workforce has formal certified training, and the remaining 75% of production line workers have only hands-on skills obtained from the manufacturing firm itself or elsewhere via informal TVET.

Moreover, formal TVET in this specific subsector is still highly dependent on school-based operations, even though there has been an attempt to make a paradigm shift toward an outcome-based system. From the leather product manufacturer‘s point of view, the current training system in the training institutions is highly theoretical and lacks the practical basis from which students might develop the technical skills and competencies they need in the real workplace. On the other hand, in-company training providers are limited to the provision of informal, on-the-job, hands-on skills, which are not accredited and certified by any legal body and have no future relevance for the trainee. The training of skills only for temporary business goals will not provide the necessary manpower competence that is the basic foundation of HR productivity.

Based on these results, the research identifies the core work-processes of the leather product manufacturing subsector, defines qualification requirements, and develops an AOS to three different levels of qualification for leather footwear manufacturing. Using the AOS as a foundation, the research then develops a model in-company training program, along with its accreditation and certification systems. It then turns its attention to the educational development of in-company trainers and suggests possible options for decision makers.

Generally the output of the research can be classified into four main categories. The first category is the process of training and educational development. In this respect, a model training and education package is developed based on the actual work-process analysis and individual job evaluation of the manufacturing process.

The second category is the organization of sector-specific VET. As the job analysis results of this research indicate, only a small percentage of school-based learning actually transfers to the organizational context. This leads to the conclusion that work-process-based learning will have a much more effective outcome for the Ethiopian leather sector than formal in-school TVET programs. This is because the work-process-oriented approach enables trainees to gain contextual knowledge that can only be learnt through participating in live work processes.

The third issue is accreditation and certification. Accreditation and certification of manufacturing companies as training and education providers is a new idea. Its main aim is to encourage manufacturing enterprises to expand their on-the-job training practices in a more formalized way that will lead them to develop workplace competencies that will benefit both the enterprise and the employee.

Finally, the research also pays special attention to the development of in-company trainers. In in-company training and education, the learning outcome largely depends on the supervisory professionals in the workplace, on the work tasks, and on the disposition and motivation of the learners. The proposed trainers' development program differs from traditional training and education approaches in leather product manufacturing enterprises. A relatively substantial emphasis is placed on pedagogical aspects, to integrate academic and vocational learning in contextualized teaching and learning forums. Here the focus is on the fact that vocational education aimed at developing specific job-related skills, in order to prepare students to work in specific occupations, needs specially designed teacher education (i.e. trainer development) strategies.

A condensed summary of the comparison between the existing and the new system of VET for the subsector suggested by this research is given in Table 9.1.

Table 9.1 Summary of system comparison

The Current Leather Sector Training System	**The Proposed Training Model**
1. Training program development	
Dependent on expert knowledge	Work-process-oriented approach
More or less centralized process	Process involves all parties in the sector
Limited involvement of direct workforce in the sector	Workforce characteristics were studied and contribute to the development of AOS
Basically a result of centrally developed OS	Employee performance in the workplace is compared against industry standards
Curriculum development is top-down approach and insists on using same content for different contexts	Curriculum development starts at the shop floor of work process and cascades upward
On-the-job training has no documented directions	Recommends a clearly defined and articulated set of directions to be maintained and documented
Qualification is based on the number of years of the training	Qualification is based on the degree of conformity to competence expectations
2. Organization of Training	
Holistic approach	Modular approach
All trainings are pre-employment and do not guarantees employment, which reduces youth interest to join	Training is post-employment or arranged in such a way that it guarantees youth employment
Training infrastructure lacks state-of-the-art technology	Training in a comfortable, ready-to-learn environment that involves interaction face-to-face with peers and expert instructors using state-

	of-the-art equipment from manufacturing process
Training contents focus on theoretical instruction with unregulated short-term apprenticeship placements in manufacturing firms	Results-oriented module contents with hands-on job practice throughout the training period
Major aim is to train as many middle level leather sector technicians as possible to make them ready for enterprises and self-employment	Major aim is to create a productive workforce in manufacturing enterprises, to achieve business goals, and promote competitiveness
On-the-job training fails to incorporate personal goals of trainee	Learning is coordinated by taking into consideration personal interests in line with organizational goals
On-the-job training largely results in no more than wage employment in the formal sector on a temporary basis.	Trainees are not exploited by continuous layoffs and training is part of the job
Characterized by exclusively long-term training courses that take 1-4 years.	Allows multiple entry and exit points; the level of detail of a training can be adjusted, depending on accumulated expertise
Inadequate training resources in schools to apply and practice theoretical content of teaching	Adequate resources that match trainees' structured training requirements
Lack of constant support for students outside classroom	Support is available to trainees throughout the course of the structured workplace training
Trainees are unemployed fresh high school graduates	Trainees are employees
Involves training schools and manufacturing firms in a fragmented and unstructured manner	Creates opportunities for building industry-school partnerships
Training is in VET schools supported by industry apprenticeship placements	Training is in-company supplemented by part-time theoretical instructions in VET schools
Classroom based teaching/training	Workplace-based teaching/training
Teacher-centered classrooms	Task-centered workplaces
No link between learning and doing	Learning is a result of doing, with supervision that improves understanding of the work environment and employers' expectations
No account taken of workplace and prior learning experience/competencies	Provides opportunity to develop and gain work-related competencies
3. Accreditation and Certification of Training	
No accreditation of training for programs in government VET schools and colleges in general	Demands the accreditation and certification of training programs and resulting outcomes
No certification for accumulated on-the-job training and skills	Enables recognition of on-the-job training
Credit attainment and program completion are the basis of qualification	Certification for a given level of qualification is based on attainment of competence standards
Trainee's certification is for the whole occupation	Certification is for individual units
Employment is always after completion of the entire set of modules	Modular certification enables potential employment
Certification guarantees the completion of a certain level of course accomplishments in a specific time frame	Certification demonstrates trainees' mastery of specific skills and competencies related to the accredited course
Evaluation system for certification lacks appropriate tools and tends to focus on operational skills	Proposes clearly identified and documented learning outcomes for trainees to be achieved within accredited programs
4. Trainers' Development	
No special pathway in the education system of Ethiopia to be TVET teacher	Enables creation of an alternative path toward TVET teacher qualification. Flexibility of

	pathways to further education and skill training promotes career development.
No leather sector training of trainers	Promotes the development of leather-sector-specific VET trainers to make the sector attractive for young people
Leather sector trainings rely on related professionals	Develops sector-specific trainers who induct, train, supervise and/or assess trainees in the company
No defined responsibility for in-company trainers to work as a trainer	Though integrated with the manufacturing process, trainers in a work-based training structure have defined responsibilities aligned with corporate training objectives
In-company trainers lack the ability to transfer skills using standard methodology	Pedagogical skills are gained via further training in TVET TT institutions or specially tailored training schemes (complementary pedagogical training).
No career choices for leather sector trainers placed in the sector	Provides opportunity to switch to other career choices and allows world of work careers within the sector
Teaching staff in training centers often poorly qualified and lacking in practical skills	Develops trainers/teachers from similar world of work and supplements their methodological skill by complementary pedagogical training

9.3 Conclusion

The process of globalization and industrialization is putting increasingly higher demands on the labor market to supply skilled and competent workers. Skill and competence are in turn the result of the education and training arrangements of a particular sector. Hence one of the most important issues facing the further development of the Ethiopian leather and leather product manufacturing industry is the quality of its supply of indigenous trained personnel. Currently, TVET graduates in the Ethiopian leather sector are not meeting the expectations and demands of sector enterprises. The gap between existing skills and desired or required competence is the basic factor pushing the development of different training approaches at all levels of qualification in the leather sector. In this situation, the development of work-process-oriented training and education programs would seem a highly recommendable option for overcoming the manpower competency challenge. Because training through the medium of the actual work-process will allow trainees to develop workplace competencies that equip them to solve unprecedented workplace problems.

The current sectorial training system, characterized by long duration, insufficient practical quality, a mismatch between training and labor market needs, and poor competence orientation, cannot be an option if the sector is to grow and survive in the global market. In order to develop a skilled workforce with the required competence, sector-specific training must be oriented toward real working processes and the development of training and education programs based on

workplace contexts. Such in-company training arrangements will allow industries to identify job functions and occupations relevant to their enterprises. The author believes that in highly human-skill oriented sectors, focusing on job functions or tasks is preferable to focusing on entire occupations, for the latter are subject to rapid change as globalization forces the upgrading of competence requirements for all workers.

Additionally, the work-process-integrated VET concept requires teachers and trainers to instill task-oriented technical skills and workplace competence into trainees. Hence, in-company trainers have to be educated and developed in order to prepare learning contexts conducive for trainees. The special nature of work-process-based training and education programs calls for a specialized pedagogical training – the development of a tailored workshop/laboratory didactics among other instruments – to gain a profound insight into the real world of work.

9.4 Recommendations

Improving VET trainees‘ skills and competence by enhancing their learning is not an option that leather product manufacturing firms can leave to training institutions and government bodies. As shown in the results of the research, various factors influence the unsatisfied demand of manufacturing firms in terms of skilled manpower. Training program development is a complex process that demands a system integrating the various factors that will contribute to its success. Moreover, it is not possible to identify a single model to ensure the effectiveness and promote the resultant efficiency of education and training outcomes. Specific sectorial characteristics, the national educational pathways of trainees and teachers, individual organizational contexts, teacher and/or trainer development, and the process of designing and developing training programs impact the outcomes. TVET as one of the backbones of a developing nation like Ethiopia has to produce the right quantity and quality of mid-level professionals and needs to attract all groups of society. In this regard, the Ethiopian TVET system (at a strategic level) has first to change the attitude of society that makes it the last choice for career development. The fact that TVET has been regarded as an option for college and university dropouts and academically less talented individuals has to be changed in order to produce the outcomes targeted in VET. While it is also an established fact that training and development has an impact on workforce performance, the degree of achievement at the desired level depends on how carefully the system is designed to achieve specified goals. The best skills are the result of properly designed training programs, which in turn are the result of their development process and implementation strategies.

Therefore the following recommendations are put forward to be considered as options by policy-makers in the Ethiopian leather sector in particular; they can also be tailored to meet the specific requirements of other sectors. The recommendations are summarily gathered in four broad groups corresponding to the research questions and anticipated results of the study.

Sector specific training program development

i. With regard to its content, vocational education and training for the leather sector has to be geared to work-processes through task-oriented structures.
ii. Individual work-processes and job positions in leather product manufacturing have to be thoroughly investigated before developing specific occupational standards and resultant training programs.
iii. Not only employer-focused but also employee-focused systems are needed to retain the necessary human capital in the leather goods industry; employers must use skill standards to guide the training of new workers, and compensate workers with pay and certification for the skills they acquire.
iv. Based on the research findings there is a strong demand to move away from top-down training program development; vocational jobs in the subsector must be studied to produce user-friendly, sector-validated standards that define the necessary competencies for key positions.

Organization of in-company VET

The organization of sector-specific VET for the Ethiopian leather product manufacturing subsector must be based on sector industries. The role of government and development partners will then be to provide support in setting competency standards and developing training and teacher training facilities. The research findings show that in-company VET must be the preferred option for developing a skilled workforce, particularly for lower level TVET qualifications. Therefore:

i. In-company VET should be used as a means of achieving practical VET by shifting away from school-based training, which is predominantly theoretical and unable to deliver practical know-how; this has hitherto been one of the major problems of sector training.
ii. Enhancing the involvement of the private sector in the training activities of the subsector and creating public private partnerships has to be promoted through more integrated training models.

iii. Real workplace support needs to be encouraged by identifying performance indicators to enable people to successfully meet the demands of the workplace.

iv. Creating a better public image of in-company VET after employment will attract young school-leavers to join the sector.

v. Given that the primary cause for disregarding the leather sector is partly the result of perceiving it as education with limited job opportunities, improving the mental preparation of employees to continue with the occupation by organizing career fairs could help to maintain stability in the workforce, as this emerging sector of the Ethiopian economy can also guarantee job security instead of being used by most employees as a means of transition to other sectors.

vi. The dual organization of in-company VET needs the cooperation of training institutions, manufacturing companies and government on a consistent legal basis.

Accreditation and Certification of Training

Creating a system of training that will benefit both employers and employees by accrediting training packages as model VET is the core objective of this research. As stated in the previous section, one of the major general problems of training systems in the leather sector is the lack of recognition of workplace competence and prior learning for further employment and career development within the sector. Consequently, employers face frequent turnover of working staff. Therefore, organizations need to be more concerned about promoting recognition of workplace skills and competencies, and they need to pay more attention to the employees‘ side of the problem by implementing in-company VET models and certifying their competencies as a formal qualification.

Trainers’ Development

i. The educational pathways of TVET teachers should provide the opportunity to obtain sufficient technical and workplace skills, as these are the prominent component of VET.

ii. The traditional TVET teacher training system in Ethiopia has to be reassessed from the point of view of practical skill acquisition, which is often neglected in the theoretical courses of the school-based TVET TT system.

iii. Developing appropriate teacher/trainer training programs that combine both sectorial task orientation and workplace competence development, and providing graduates of these programs with professional recognition for the job they are actually doing, ensures further development of the subsector in terms of human capital.

iv. Without holding pedagogical qualifications, workplace skills combined with the appropriate methodological competence results in more comprehensive trainers' development than the traditional TVET teacher training.

9.5 Future Research Directions

One of the limitations of this research was the absence of previous research work in the area, and of structured data to measure the performance of a technical workforce against international standards. Another major challenge was that firms do not have well organized documentation about individual workers; in some cases even though it existed, it was inaccessible. Hence an empirical approach was used, starting all aspects of the process of sectorial assessment from scratch. With respect to time data, a further problem was the frequent change in the production batches of the leather products, which did not allow direct measurement of the operational times of selected activities. Thus, secondary data produced by the enterprises was used to analyze overall performance against various independent variables. Further research in this area could be conducted, taking more job data from more sample enterprises for an improved result. Furthermore, continuous measurements of time data for longer periods might help in any future study of the relation between job performance and training outcomes in the sector. Besides, more has to be done in the area of trainer development (specifically on the pathways of career development and actual work process orientation), as it has been beyond the scope of the present study to further investigate TVET teachers' performance in the sector and the impact of their professional development on the resultant vocational training programs.

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APPENDICES

Appendix 1: Survey Questionnaire

Part I: Personal Information

Please take a moment to complete the following information/data about yourself and your positions related to the job.

i. Personal Information (Employee demographic data)

Question	Answer
Name (Optional)	
Company Name	
Employee's Department/Section	
Sex	☐ Male ☐ Female
Age Range	☐ 18-25 Years ☐ 26-30 Years ☐ 31-40 Years ☐ 41- 50 years ☐ Above 50 Years
Position	☐ Non-Technical worker ☐ Apprentice ☐ Technical Worker ☐ Supervisor ☐ Expert
Work Experience in similar positions	☐ Less than 1 year ☐ 1-3 years ☐ 3-5 years ☐ 5-10 Years ☐ 10-15 years ☐ More than 15Years
Educational Background	☐ Elementary Level ☐ High sch. Complete ☐ 10 +1 Certificate ☐ 10+2 Certificate ☐10+3 (TVET-Diploma) ☐ College Diploma (Non-TVET) ☐ BA/BSc and above
Field of Study	Please specify the field of study and the training institution: _____

Part II. Job Related Questions

(Questions with a specified set of answers)

Please consider any training/education related to your job, that you have taken before and complete questions 1, 2, 3, and 4

1. The duration of the training was

   ☐ Less than 6 months ☐ 6 months to 1 year ☐ 1-2 Years ☐2-3 Years

2. What percentage of your training/education is directly related to the job position that you are doing now?

   ☐ Less than 20% ☐ 20-30 % ☐ 31-40% ☐41-50%☐ 51-60 % ☐ 61-70% ☐More than 70%

3. Please rate the importance of the skills you obtained from the training/education for your particular position. *(1=No importance at all, 2=Little importance, 3= considerable importance, 4 = Highly important*

Possible skill gaps	Rating			
	1	2	3	4
1. Design and pattern making skills	☐	☐	☐	☐
2. Technical Operation skill	☐	☐	☐	☐
3. Machinery maintenance skill	☐	☐	☐	☐
4. Quality inspection skill	☐	☐	☐	☐
5. Communication skill	☐	☐	☐	☐
6. Leadership skill	☐	☐	☐	☐

4. Please rate the degree of relationship between the part of training/education you have taken and the job you are doing now as (*1= No Relation at all, 2= weakly related, 3= moderately related, 4= Strongly Related)*

Type of training	Rating			
	1	2	3	4
1. Theoretical concepts gained	☐	☐	☐	☐
2. Workshop and Laboratory Practice	☐	☐	☐	☐
3. Apparenticship Practice	☐	☐	☐	☐
4. Asssignment projects	☐	☐	☐	☐
5. Team work	☐	☐	☐	☐

5. Are there any specific licenses, certifications or technical qualifications required for your job?
   ☐ Yes ☐ No
   If Yes, please list them:_____
6. How many years of job related experience are required before entering to this job? Please include only years of experiences directly related to this position.

   ☐ Less than 1 year ☐ 1-2 Years ☐2-3 Years
   ☐ 3-4 Years ☐ 4-5years ☐ More than 5 Years

7. The company upgrades the skill of its manpower during…
   Please rate as *(1=strongly disagree, 2= disagree, 3= agree, 4 = strongly agree)*

	Rating			
	1	2	3	4
1. the introduction of new products and materials	☐	☐	☐	☐
2. the implementation of new production technologies	☐	☐	☐	☐
3. the change in work organization and restructuring	☐	☐	☐	☐
4. new political conditions for business activities	☐	☐	☐	☐
5. change in government labor legislation	☐	☐	☐	☐
6. arrival of important/exceptional orders	☐	☐	☐	☐
7. No skill upgrading program	☐	☐	☐	☐

8. Which of the following most describe your responsibilities/duties? (Please indicate more than one if you have multiple responsibilities)

S.N	**Duty/Responsibility**	**Yes**	**No**		**S.N**	**Duty/Responsibility**	**Yes**	**No**
1	Design and pattern making				12	In sole attaching		
2	Production supervision				13	Heat setting		
3	Quality supervision				14	Roughing		
4	Cutting				15	Cementing		
5	Skiving				16	Heating		
6	Marking and Stamping				17	Sole attaching		
7	Stitching				18	Pressing		
8	Lasting				19	Chilling		
9	Side				20	De-lasting		
10	Toe lasting				21	Cleaning		
11	Seat lasting				22	Packaging		

9. How do you rate your occupational competency for the technical work of your position in the company? Please rate as: *(1=Poor, 2= Sufficient, 3= Good, 4 = Advanced)*

Type of Competence	Rating 1	2	3	4
1.Technical Competence – Practical Knowledge and skills to be applied in the work place	☐	☐	☐	☐
2. Methodical Competence - Procedural Knowledge and skills, application of certain working methods and techniques, procedures for problem solving	☐	☐	☐	☐
3. Social Competence - Ability to work in teams, communication skills	☐	☐	☐	☐
4. Personal Competence - Creativity, flexibility, reliability, endurance, problem solving ability	☐	☐	☐	☐

10. I have acquired sufficient level of skills in my work place in *(1=strongly disagree, 2= disagree,*
11. *3= agree, 4 = strongly agree)*

Possible skill gaps	Rating 1	2	3	4
1. Design and pattern making	☐	☐	☐	☐
2. Technical Operation	☐	☐	☐	☐
3. Machinery maintenance	☐	☐	☐	☐
4. Quality inspection	☐	☐	☐	☐
5. Communication	☐	☐	☐	☐
6. Leadership	☐	☐	☐	☐

12. Please rate the degree of **negative impact** that the following variables impose on your productivity particularly for your job position? Please rate as
(1=No impact, 2=Low impact, 3= Considerable impact, 4= high impact)

Variables	Rating 1	2	3	4
Regular exposure to one or more unpleasant and/or uncomfortable work conditions.	☐	☐	☐	☐
Risk of physical damage and/or internal health problems	☐	☐	☐	☐
The technical skill and/or competency gaps	☐	☐	☐	☐
The company Policy	☐	☐	☐	☐
Company management philosophies	☐	☐	☐	☐
Rules and regulations,	☐	☐	☐	☐
Incentive and motivation mechanisms etc...	☐	☐	☐	☐
Lack of proper input resources for the job	☐	☐	☐	☐
Lack of qualified machines and equipment, technological aids etc...	☐	☐	☐	☐

13. Please indicate the degree of your agreement or disagreement about the following statements
(1=Strongly Disagree, 2=Disagree, 3= Agree, 4 = Strongly Agree)

Statements	Rating 1	2	3	4
1. Your current job position requires more advanced and specific training to make you more productive and to make the end product more specialized and competitive in the international market?	☐	☐	☐	☐
2. If your previous educational background were specific to your job your productivity would have been much better than now.	☐	☐	☐	☐
3. There are some practical skills gaps that you need to perform in a better way.	☐	☐	☐	☐

Appendix 2 : Interview Guide Questions

Content: The interview has the following **four (4)** parts**:**

- **Part A**: *Interview Guide Questions for Department heads and Company Managers*
- **Part B***: Interview Guide Questions for Manufacturing Company Work Supervisors*
- **Part C**: *Interview Guide Questions for TVET Teachers, Training Institution Leaders and Involved Stakeholders*

Part A: Interview Guide Questions for Department heads and Company Managers/Supervisors

Question
Roughly, what percentage of your employees have got training specific to the leather product making?
Does the Technical work force competence in the company reach to the level that enables you to produce internationally competent products? If not what steps do you think you should go? If yes, where do you export your products?
Have you ever made an employee performance survey in the company? If yes, what does the result show?
Does your organization ever develop specific Occupational training schemes for a specific job in the manufacturing process line? Or Does it take employees directly from the labor market? Pre Experienced or Fresh graduates?
How is your company involved in the development of training programs by training institutions Eg. ELLPTI, for this specific sector?
Does your company give any vocational Training with certification? If yes what certification?
How frequently does the organization make an upgrade in skilled manpower? Eg. By providing some training packages when a special order is in place etc...

Part B: Interview Guide Questions Specific for Manufacturing Company Work Supervisors

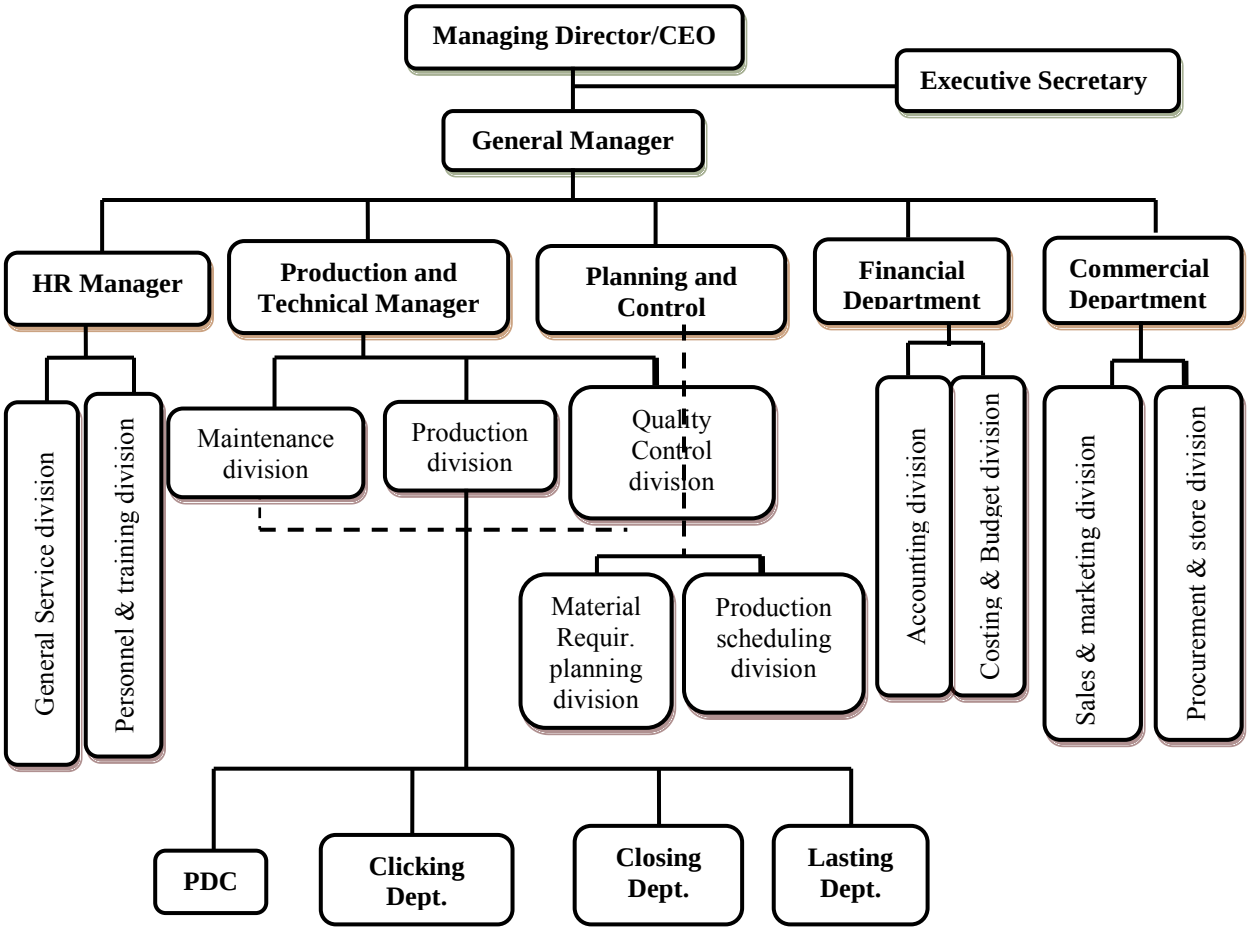
Question
Would you please explain to me the overall purpose of the section/department in which you are work?
How many positions/Persons report directly to you? Are they within the same job Titles or Different?
What is the nature of the direct supervisory responsibility your job has?
What causes operational errors in the work place? Which one is most representative for the root causes of frequent errors your employees made on their job?
Do you have job standards against which you can compare your labor performance?

Part C: Interview Guide Questions for, TVET Teachers, Training Institution Leaders and Involved Stockholders

Question
What are the sources of employment for the TVET Teachers? Are there especially dedicated TVET teacher Training Institutions other than the Universities? How many of them have real company work experience?
Are the Teachers specifically trained for a particular sector and equipped with the necessary knowledge and skills of the sector?
Are there national occupational standards /Academic standards specific for TVET Teachers?
How do you involve specific sectors in the development of TVET Teacher training programs? Is there some empirical need assessments made to develop sector specific training programs?
Is the occupation (TVET Teacher) regulated by law or must the employee meet special Certification/accreditation standards? If yes, What are the licenses, certifications, registration or special accreditation standards that apply?

If No, What kind of system is preferred, Occupation based or academic based? Who will formulate the standard? Who will evaluate the system? What should be the content?

Appendix 3: ***Representative organizational chart for leather footwear enterprise in Ethiopia***



Appendix 4: Expert importance/frequency rating of clickers jobs

Job Title: Clicker/Cutter	**Job importance/frequency Rating 1 (Not important)…to…5(Very important)**							
Tasks, duties and responsibilities	R1	R2	R3	R4	R5	R6	R7	Mean values
Set up and operate cutting machines/benches used for cutting finished leather	5	4	5	5	4	5	5	4.7
Layup, mark and cut leather and lining material	5	4	4	5	5	5	5	4.7
Cutting efficiency with respect to material utilization	5	5	4	4	5	5	5	4.7
Maintain production records, such as quantities, types, and dimensions of materials produced.	4	4	5	5	4	5	5	4.6
Examine, measure, and weigh materials or products to verify conformance to specifications, using measuring devices such as rulers, micrometers, or scales.	5	4	3	4	5	5	5	4.4
Monitor operation of cutting machines to detect malfunctions or to determine whether supplies need replenishment.	2	4	5	4	5	4	5	4.1
Select and install machine components such as cutting blades, rollers, and templates, according to specifications, using hand tools.	4	5	5	5	4	5	0	4.0
Conduct employee training in equipment operations or work and safety procedures	3	3	3	5	5	4	3	3.7
Remove completed materials or products from cutting machines, and stack or store them for additional processing.	2	3	4	2	3	3	3	2.9
Review work orders, blueprints, specifications, or job samples to determine components, settings, and adjustments for cutting machines	1	4	3	3	3	3	2	2.7
Examine, measure, and weigh materials or products to verify conformance to specifications, using measuring devices such as rulers, micrometers, or scales	3	1	4	5	3	2	1	2.7
Scribes line along edge of tanned hide, using ruler, chalk, or pencil	1	3	3	3	4	2	2	2.6
KSAs								
Knowledge of the physical and chemical of finished leather	5	5	5	5	4	5	4	4.7
Knowledge of relevant equipment operational procedures Knowledge of machines and tools, including their designs, uses, repair, and maintenance.	4	5	4	5	5	4	5	4.6
Ability to detect cutting defects	5	4	5	5	5	4	4	4.6
The ability to work quickly and accurately and Knowledge of material costs	5	5	4	5	4	4	3	4.3
Ability to perform basic arithmetic and geometrical computations and their applications	5	4	5	3	5	5	3	4.3
Knowhow of safety and environmental procedures	4	4	5	4	4	5	3	4.1
Ability to enjoy mechanical and manual activities with good hands	5	5	5	5	5	0	3	4.0
Physical and mental strength for the job	2	1	3	4	3	5	4	3.1
Knowledge of waste minimization and scrap handling	4	3	4	3	3	2	1	2.9

Appendix 5: *Job description and Job Specification of selected Leather footwear manufacturing jobs.*

1. Job description of cutting/clicking supervisor

Job Description	
Job title	Cutting Supervisor
Summary of job	The clicking/cutting supervisor is responsible for the monitoring, and supervision of the cutting and related operations of the clicking/cutting department of the factory. The incumbent will work closely with the production and technical manager, and ensures the completion of all required deliverable cut components as per their specifications.
Duties and responsibilities of the job	Assists cutters to achieve optimum material consumption without compromising the quality level, Orient new subordinates concerning policy and procedures, work rules, and performance expectation levels. Establish and maintain specific work goals and objectives or quantitative and qualitative work standards to be achieved by subordinates. Determine significant changes in responsibilities and major duties of subordinates by reviewing their job responsibilities on a regular basis. Facilitates the necessary inputs for the cutters Conduct employee training in equipment operations or work and safety procedures, or assign employee training to experienced workers. Prepares reports on regular basis
Authorities of the job incumbent	Assigns work to each operators including shifting of the personnel to other duty Accept or reject any cut component of shoe/garment Recommends employment of additional personnel for the cutting department Recommend disciplinary actions (if any) against the personnel working with in the clicking department
Reporting relationships	Reports to the production and technical manager
Machinery and equipment used	Hydraulic presses clicking machine with swing arms using moveable shaped knives Dyes, patterns, measuring instruments
Performance indicators	Low rejection levels, low work-in-process(WIP) level, maximum department efficiency, optimum material utilization and enhanced worker productivity
Working conditions, including wages and hours of work	Clicking/cutting supervision requires moving from one cutting station to the other for the whole working hours. Operation is usually in-door with plenty of communications upwards to the production and technical manager, horizontally with the quality assurance and quality control supervisors and down wards with the respective subordinates. There may be discomfort from noise and sometimes there may be obligation of working overtime without any declaration. Wages and salary are negotiable and increase with experience and skill. The normal full-time work week is 40 hours. Employment is full on permanent bases.
Job Specifications	
Knowledge, Skills and Abilities (KSAs) and other personal characteristics	Ability to prepare work instructions of machines for clickers Knowledge of the different physical and chemical characteristics of leather Knowledge of relevant equipment operational procedures Ability to detect cutting defects Knowledge of machines and tools, including their designs, uses, repair, and maintenance. Knowhow of safety and environmental procedures Ability to directly or indirectly lead others ability to tabulate, and summarize information of routine, periodic or special reports and present findings in oral or written form
Minimum Qualification requirements	Advanced footwear/Garment Technician. A minimum of 10+3 TVET Diploma in leather technology with special focus on leather clicking/cutting Up to 3 years of training both in school and in company with intensive practical training More than 2 years of company experience

2. Job description of cutter/clicker

Job Description	
Job title	Clicker/Cutter
Summary of the job	A clicker/cutter under the supervision of the cutting supervisor lays out, marks, and cuts pieces of leather from patterns/designs to form the upper parts of a shoe/garment parts using a clicking press or by hand, marking sections to show where to put stitches, and working around flaws that may spoil the finished appearance.
Duties and responsibilities of the job	Set up and operate cutting machines/benches used for cutting finished leather Layup, mark and cut leather and lining material Maintain production records, such as quantities, types, and dimensions of materials produced. Examine, measure, and weigh materials or products to verify conformance to specifications, using measuring devices such as rulers, meters, or scales. Monitor operation of cutting machines to detect malfunctions or to determine whether supplies need replenishment. Select and install machine components such as cutting blades, rollers, and templates, according to specifications, using hand tools. Conduct employee training in equipment operations or work and safety procedures
Reporting relationships	Reports to the cutting supervisor
Machinery and equipment used	Hydraulic presses cutting machine with swing arms using moveable shaped knives, scissors, dyes, patterns, measuring instruments etc.
Performance indicators	Number of cut components with time-operational speed Material consumption –resource optimization Quality of cut components Accuracy and operational safety
Working conditions, including wages and hours of work	Clicking/cutting operation requires standing the whole working hours and different types of movements to feed the cutting machine or to layup leather on working benches and to remove cut components and scrap leather from the working bench. There may be discomfort from noise and sometimes there may be obligation of working overtime without any declaration. The ability to work quickly in this occupation is paramount since wages are sometimes earned according to the amount of pieces successfully completed for part time employees. Some employers pay piecework, or a combination of piecework and wages, while others pay straight wages. Wages start at minimum and increase with experience and skill. The normal full-time work week is 40 hours. Employment may be full time but more than 75% on contractual bases. Employment is not seasonal, but workers may be subject to occasional layoffs when orders are low.
Job Specifications	
Knowledge, Skills and Abilities (KSAs) and other personal characteristics	Knowledge of the physical and chemical properties of finished leather Knowledge of relevant equipment operational procedures Knowledge of machines and tools, including their designs, uses, repair, and maintenance. Ability to detect cutting defects The ability to work quickly and accurately and knowledge of material costs Ability to perform basic arithmetic and geometrical computations and their applications Knowhow of safety and environmental procedures Desire to enjoy mechanical and manual activities with good hands Physical and mental strength for the job
Qualification requirements	Footwear/Garment Technician. A minimum of 10+2 TVET certificate in leather technology with special focus on leather clicking/cutting Up to 2 years of training including industrial attachments Up to 1 year of company experience

3. Job description of closing/stitching supervisor

Job Description	
Job title	Closing/stitching Supervisor
Summary of the job	The closing/stitching supervisor is responsible for the monitoring, and supervision of the stitching and related prefabrication operations like skiving, folding and marking of the closing department of the factory. The incumbent will work closely with the production and technical manager, and ensures the completion of all required deliverable stitched components as per their specifications.
Duties and responsibilities of the job	Assists stitching/sewing operators and prefabrication workers to achieve optimum material consumption without compromising the quality level Orient new subordinates concerning policy and procedures, work rules, and performance expectation levels and perform line balancing Train, develop, and motivate subordinates to improve current performance and to prepare for higher- level jobs. Determine significant changes in responsibilities and major duties of subordinates by reviewing their job responsibilities on a regular basis. Initiates corrective action based upon daily line productivity Ensure the availability of the right types of tooling at the operation level Provides inputs for the daily production report
Authorities of the job incumbent	Assigns work to each operators including shifting of the personnel to other duty Accept or reject any cut/stitched component of shoe/garment Recommends employment of additional personnel for the closing department Recommend disciplinary actions (if any) against the personnel working with in the closing department
Reporting relationships	Reports to the production and technical manager
Machinery and equipment used	Various machines using different types of needles to stitch the upper parts of shoes or leather garment and decorating tools with stitching or punched equipment. Other tools mostly include scissors, fasteners, stiffeners, templates and measuring devices, skiving (edge tapering) leather components, folding over or taping edges.
Performance indicators	Low rejection levels, low work-in-process level, high department/ line efficiency and increased subordinate productivity
Working conditions, including wages and hours of work	Closing supervisors work indoors. Normally the stitching/sewing supervisors work standing and engaged in multiple motions along the length of the conveyor. It involves making a number of decisions about different operations and communication with the stitching team. There may be discomfort from noise and sometimes there may be obligation of working overtime without any declaration. Wages and salaries are usually negotiable and increase with experience and skill. The normal full-time work week is 40 hours. Employment is full time and on permanent bases.
Job Specifications	
Knowledge, Skills and Abilities (KSAs)	Ability to prepare work instructions of machines for stitching/sewing operators Knowledge of the physical and chemical of finished leather Ability to detect stitching defects Knowledge of machines and tools, including their designs, uses, repair, and maintenance. Knowhow of safety and environmental procedures Ability to directly or indirectly lead others Ability to tabulate, and summarize information of routine, periodic or special reports and present findings in oral or written form
Qualification requirements	Advanced footwear/Garment Technician. A minimum of 10+3 TVET Diploma in leather technology with special focus on leather stitching/sewing Up to 3 years of training both in school and in company with intensive practical training More than 2 years of company experience

4. Job description of stitching/sewing machine operator

Job Description	
Job title	Stitching/Sewing machine operator
Summary of the job	Stitching/sewing operator sews together all the individual pieces and sections of leather to complete the ‗upper' section of a shoe or leather garment, mainly using a semi-automated sewing machine. Operators are also responsible for monitoring machine operation, as well as inspecting the clothing after it has been rendered.
Duties and responsibilities of the job	Operate different types of stitching/sewing machines, to join sections of shoes/garments into finished products Mount sewing machine attachments like needles, threads, pattern plates or cutting blades, and adjust machine guides according to approved specifications Sets up the stitching/sewing machine and its peripherals, and using the tools correctly Select sewing supplies like fasteners and threads in accordance with job requirements Perform minor maintenance and repairs on sewing machine Record and keep production reports
Reporting relationships	Reports to the closing/stitching supervisor
Machinery and equipment used	A footwear and leather garment machinist uses various machines using different types of needles to stitch the upper parts of shoes or leather garment and decorating tools with stitching or punched equipment. Other tools mostly include scissors, fasteners, stiffeners, templates and measuring devices, skiving (edge tapering) leather components, folding over or taping edges.
Performance indicators	Number of parts stitched per working times- speed of work High level of accuracy Low material wastage Quality of stitches
Working conditions, including wages and hours of work	Stitching/sewing machine operators work indoors. The work may be stressful, as there is pressure to meet deadlines or contribute on time to an order. Normally the sewing machine operator is sitting, although some machines may require the operator to stand for long periods of time. The work can be hard on backs, eyes and hands. There may be discomfort from noise and sometimes there may be obligation of working overtime without any declaration. Some employers pay piecework, or a combination of piecework and wages, while others pay straight wages. Wages start at minimum wage and increase with experience and skill. The normal full-time work week is 40 hours. Employment may be full time but more than 75% on contractual bases. Employment is not seasonal, but workers may be subject to occasional layoffs when orders are low.
Job Specifications	
Knowledge, Skills and Abilities (KSAs) and other personal characteristics	Knowledge of stitching machine operational procedures Ability to work quickly and accurately Ability to work in fine detail by hand Awareness of safe operating procedures Knowledge of basic measuring and calculating skills and/or pattern reading skills Ability to concentrate on fine details and repetitious tasks for long periods Ability to work alone as well as in a team Ability to follow instructions Good vision and hand-eye coordination Normal color vision to match stitching, patterns and dyes.
Qualification requirements	Footwear/Garment Technician. A minimum of 10+2 TVET certificate in leather technology with special focus on leather clicking/cutting Up to 2 years of training including industrial attachments Up to 1 year of company experience

5. Job description of lasting/finishing supervisor

Job Description	
Job title	Lasting/finishing Supervisor
Summary of the job	The lasting/finishing supervisor is responsible for the monitoring, and supervision of assembling footwear with predetermined design requirements and maintaining all machineries and equipment in proper manner to reduce break downs and shortages.
Duties and responsibilities of the job	Set working parameters in different machines and perform minor maintainance activities Orient new subordinates concerning policy and procedures, work rules, and performance expectation levels. Determine significant changes in responsibilities and major duties of subordinates by reviewing their job responsibilities on a regular basis. Prepares daily loading for each machine as per weekly plans Resolve bottleneck problems from the critical operations to achieve continuous operations Ensures the proper packaging of finished footwear and their proper handling Initiates corrective action based upon daily machine and human productivity Conduct employee training in equipment operations or work and safety procedures, or assign employee training to experienced workers. Provides inputs for the daily production report
Authorities of the job incumbent	Assigns work to each operators including shifting of the personnel to other duty Accept or reject any lasted/finished shoe Recommends employment of additional personnel for the lasting/finishing department Recommend disciplinary actions (if any) against the personnel working with in the lasting/finishing department
Reporting relationships	Reports to the production and technical manager
Machinery and equipment used	The most common machines which are employed in the lasting and finishing operations include but not limited to insole attaching machine, counter molding machine, toe lasting machine , side lasting machine, seat lasting machine, heat setting machine, drying machine, sole pressing machine and chiller
Performance indicators	Low rejection levels, enhanced machine and human productivity, low work-in-process level, minimum number of breakdowns and repairs, minimum machine idle time, high department/ line efficiency, increased subordinate productivity and acceptable finishing and packaging quality
Working conditions, including wages and hours of work	Movement and keeping an eye on different machine operations and operators is always essential to avoid bottlenecking situations from happening. Operations are usually in-door with frequent movement from machines to machine or from workstation to workstation or standing longer hours helping machine operators are some of the working conditions of the operator. Wages and salaries are negotiable and increase with experience and skill. The normal full-time work week is 40 hours. Employment is full time and permanent bases.
Job Specifications	
Knowledge, Skills and Abilities (KSAs)	Ability to prepare work instructions of machines for operators Deep knowledge of machines and tools, including their designs, uses, repair, and maintenance and ability to detect shoe defects Knowhow of safety and environmental procedures Ability to directly or indirectly lead others Ability to tabulate, and summarize information of routine, periodic or special reports and present findings in oral or written form
Qualification requirements	Advanced footwear/Garment Technician. A minimum of 10+3 TVET Diploma in leather technology with special focus on leather shoe lasting and finishing Up to 3 years of training both in school and in company with intensive practical training More than 2 years of company experience

6. Job description of lasting operator/shoe maker

Job Description	
Job title	Lasting operator/ shoe maker
Summary of the job	Lasting operators mold the uppers into their final shape on a wooden or metal pattern called a 'last', attach the soles with adhesive or by stitching with the uppers. Finishing activities like fitting and trimming heels to shape, and staining the soles, heels and edges before waxing and buffing are also part of the lasting operation.
Duties and responsibilities of the job	Prepare workstation Set up machine Prepare work pieces Perform machine operation Identify poor machine performance Dispatch completed work Controls the automated machines Operates and maintain different machines Inspects lasting, chilling and heating operation parameters
Reporting relationships	Reports to the lasting supervisor and occasionally to the production and technical manager
Machinery and equipment used	The machines used to manufacture footwear vary according to the materials used and to the means employed to attach one part to another, especially the sole to the insole, for instance by sewing or sticking. However the most common machines which are employed in the lasting and finishing operations include but not limited to insole attaching machine, counter molding machine, toe lasting machine , side lasting machine, seat lasting machine, heat setting machine, drying machine, sole pressing machine and chiller
Performance indicators	High machine efficiency Low work–in-process flows Minimum rework/scrape rate Acceptable quality of finished product Improved workstation efficiency
Working conditions, including wages and hours of work	Machine operators in the lasting department of shoe manufacturing are usually face different types of work stations ranging from frequently adjustable working machines to hot working areas where there may not be air conditioning systems. High personal fatigue and frequent movement from machines to machine or from workstation to workstation or standing longer hours operating a single machine are some of the working conditions of the operator. Wages start at minimum wage and increase with experience and skill. The normal full-time work week is 40 hours. Employment may be full time but more than 75% on contractual bases. Employment is not seasonal, but workers may be subject to occasional layoffs when orders are low.
Job Specifications	
Knowledge, Skills and Abilities (KSAs) and other personal characteristics	Practical skills for technical equipment and machinery Knowledge of operational principles and safety procedures of different types of machines used in the lasting and finishing process Ability to use various machines and practical skills to adjust and readjust process parameters Practical skills for using hand tools Ability to withstand hot working conditions Good physical conditions Willingness to change duties frequently
Qualification requirements	Footwear/Garment Technician. A minimum of 10+2 TVET certificate in leather technology with special focus on leather clicking/cutting Up to 2 years of training including industrial attachments Up to 1 year of company experience

7. Job description of entry level job holder

Job Description	
Job title	**'Entry level jobs'**
Summary of the job	Entry level jobs are routine jobs mainly involving supplementary tasks in the leather product manufacturing. The responsibilities of entry level job holders vary depending on the department or section in which they are assigned in a factory. In general, they execute a wide range of activities like manual cutting, stitching with hand tools, packaging, operating smaller machines like skiving, polishing shoes, removing scraps folding, tape attaching , hammering, sole marking, pasting, sole attachment, last removal, socks, stuffing and cleaning and so on. These are the workers that become later technical operators after getting sufficient hands-on experience on a particular operation.
Duties and responsibilities of the job	Scribes line along edge of tanned hide or skin, using ruler, chalk, or pencil. Move stock or scrap to and from machines manually, or by using carts Remove completed materials or products from cutting machines/tables and stack or store them for additional processing. Apply health and safety rules Perform hand cutting, hand stitching, and simple machine operations Perform assembling, marking, skiving, glue painting, polishing, packaging, loading and unloading, de-lasting and related tasks Helps machine operators in various ways Perform minor maintenance activities on finished components or products Respond to emergencies
Reporting relationships	Reports to the operational supervisors of the respective departments
Machinery and equipment used	Face all sorts of machines and equipment throughout the entire manufacturing facility and hand tools to help their manual operation.
Working conditions, including wages and hours of work	Exposed for both indoor and outdoor activities with frequent change of responsibility and change of shifts Usually wages are on daily bases and there is no provision of pay leave in any circumstances Employment is on daily bases and accidental layoffs are usual as per the availability of production orders and availability of market for local products
Job Specifications	
Knowledge, Skills and Abilities (KSAs)	Ability and desire to learn from observing senior personnel at work Ability to work quickly and accurately Ability to work in a team and independently Awareness of health and safety procedures Knowledge of the properties products manufactured in the factory Able to follow and execute instructions Willing to work in different duties
Qualification requirements	High school graduate A maximum of 10+1 TVET certificate in footwear/garment technology 6 months to 1 year training time with basic skills No college majors or company experiences needed Several employers offer on-the-job training and this typically means that post-secondary education is not required for this type of job.

Appendix 6: Advanced occupational standard for selected leather footwear manufacturing occupations

1. Unit of competence chart for junior footwear technician

Job Title	Junior Footwear Technician
Occupational standard	Leather Product Manufacturing
Occupational code	LPM JFT[30]
ETQF Level	I
Unit 1. Perform simple leather cutting *Unit 2. Perform simple leather stitching operations* *Unit 3. Perform pre-fabrication operations*	*Unit 4. Perform simple quality checks* *Unit 5. Apply health and safety rules* *Unit 6. Communicate at workplace* *Unit 7. Respond for emergencies*

Occupational standards for level I leather footwear technician

Occupational Standard:	Leather Product Manufacturing I
Unit Title:	Perform simple leather cutting operations
Unit Code:	LPM JFT 1- 1 /01 12
Unit Descriptor:	This unit covers the essential, general competence expected of all junior leather technicians regardless of product line and their working environment. It covers the skills and knowledge required to effectively perform simple leather cutting operations using appropriate techniques.
Elements	**Performance criteria**
1.1 **Perform simple cutting operations**	• Leather parts are cut as per their required dimension • Material wastage is kept at a minimum • Effectiveness and efficiency of cutting are kept high
1.2 **Operate hand cutting**	• Hand cutting tools and accessories are identified • Material and accessories wastage is kept at a minimum • Effectiveness and efficiency of hand cutting are kept high
1.3 **Operate simple machine cutting**	• Cutting machines and their basic operations are understood • Dyes and cutting accessories are known • Effectiveness and efficiency of hand cutting are kept high
Key competences required	
Knowledge and understanding	• Which tools, equipment and settings are needed for cutting operation • Knowledge of the physical and chemical characteristics of leather • The principal skills required for effective performance of leather cutting tasks • How to work quickly and accurately in a flexible working environment • The specific responsibilities under prescribed codes of conduct and ethical standards
Additional work place skills	• Effective communication with co-workers and supervisors • Accurate record keeping • Following and executing instructions • Completing forms, reports and other documentation
Occupational Standard:	Leather Product Manufacturing I
Unit Title:	Perform simple leather stitching operations
Unit Code:	LPM JFT 1- 2 /01 12
Unit Descriptor:	This unit covers the essential, general competence expected of all junior leather technicians regardless of product line and their working environment. It covers the skills and knowledge required to effectively perform simple leather stitching operations using appropriate techniques.
Elements	**Performance criteria**
2.1 **Understand basic stitching machines and their**	• Stitching machines and accessories are identified

30 LPM JFT: Stands for the occupational standard title Leather Product Manufacturing (LPM) and the entry level Junior Footwear Technician (JFT) which makes learners to be eligible for level I certificate.

accessories	• Operational procedures are understood • Material wastage is kept at a minimum • Effectiveness and efficiency of stitching are kept high
2.2 **Perform simple stitching and assembling operations**	• Leather parts are sewn and assembled together as per the requirement • Material and accessories wastage is kept at a minimum • Effectiveness and efficiency of stitching and assembling are kept high
Key competences required	
Knowledge and understanding	• Which tools, equipment and settings are needed for stitching operation • Knowledge of the physical and chemical characteristics of leather • The principal skills required for effective performance of leather stitching tasks • How to work quickly and accurately in a flexible working environment • The specific responsibilities under prescribed codes of conduct and ethical standards
Additional work place skills	• Effective communication with co-workers and supervisors • Accurate record keeping • Following and executing instructions • Completing forms, reports and other documentation
Occupational Standard:	Leather Product Manufacturing I
Unit Title:	Perform pre-fabrication operations
Unit Code:	LPM JFT 1- 3 /01 12
Unit Descriptor:	This unit covers the essential, general competence expected of all junior leather technicians regardless of product line and their working environment. It covers the skills and knowledge required to effectively perform preparatory operations using appropriate techniques.
Elements	**Performance criteria**
3.1. Perform marking operations	Precision of marking and utilization of marking materials are kept at acceptable standards
3.2 Perform skiving operations	• Skiving quality and dimensions are appropriate • Wastage of material is kept at minimum
3.3 Perform splitting and folding operations	• Dimension and precision of folds and splits • Effectiveness and efficiency of folding and splitting are kept high
Key competences required	
Knowledge and understanding	• Selection and handling of marking tools and materials • Folding edge properties • Selection and handling of skiving and splitting hand tools and machines • Knowledge of physical and chemical properties of leather
Additional work place skills	• Effective communication with co-workers and supervisors • Accurate record keeping • Following and executing instructions • Completing forms, reports and other documentation
Occupational Standard:	Leather Product Manufacturing I
Unit Title:	Perform simple quality checks
Unit Code:	LPM JFT 1- 4 /01 12
Unit Descriptor:	This unit covers the essential, general competence expected of all junior leather technicians regardless of product line and their working environment. It covers the skills and knowledge required to effectively apply quality inspection and quality control principles using appropriate techniques.
Elements	**Performance criteria**
4.1 Perform visual material inspection	• Product and work-in-process quality is maintained as per specifications • Defects are detected at early stages of manufacturing process • Appropriate remedial actions are taken of nonconformance items
4.2 Measure basic quality parameters	• Work piece and product dimensions are kept as per the requirement

Key competences required	
Knowledge and understanding	• Making sure that materials are to the correct quality standard • Fault-finding, including creased, stained or damaged materials or components; or incorrectly made up component parts • The correct action to take when own workflow is disrupted by others • How to measure basic dimensions of leather or cut components
Additional work place skills	• Effective communication with co-workers and supervisors • Accurate record keeping • Following and executing instructions • Completing forms, reports and other documentation
Occupational Standard:	Leather Product Manufacturing I
Unit Title:	Apply health and safety rules
Unit Code:	LPM JFT 1- 5 /01 12
Unit Descriptor:	This unit is covers a range of knowledge and attitudes to be applied for those who take responsibility for their own health, safety and security in the workplace, and monitor the workplace from hazards.
Elements	**Performance criteria**
5.1Maintain workplace safety	• Work place safety is maintained • Accidents are kept at minimum • Appropriate actions are taken according to enterprise regulations for occurring accidents
5.2 Ensure healthy working conditions	Work place health risks are minimized
Required key competences	
Knowledge and understanding	• Awareness of health and safety procedures in the workplace and how to respond when unprecedented accidents occur • Knowing the most likely accidents and emergencies in the workplace and how to deal with them • How to carry out work safely and avoid disrupting the work flow • How to handle wastage materials and scraps and how to dispose them in a safe condition • How to identify malfunctions in machinery and equipment, correcting if possible, and reporting them
Additional work place skills	• Effective communication with co-workers and supervisors • Accurate record keeping • Following and executing instructions • Completing forms, reports and other documentation
Occupational Standard:	Leather Product Manufacturing I
Unit Title:	Respond for emergencies
Unit Code:	LPM JFT 1- 6 /01 12
Unit Descriptor:	This unit covers the essential, general competence expected of all junior leather technicians regardless of product line and their working environment. It covers the skills and knowledge required to effectively respond for emergency work situations whenever appropriate.
Elements	**Performance criteria**
6.1Perform minor maintenance activities	• Appropriate corrective actions are made on inappropriately made components and products • Defects on work-in-process components and products are kept at a minimum possible level • Cuts excess material or thread from finished product, using blade, scissors, or electric knife.
6.2 Handle materials	• Proper materials handling is maintained • Appropriate waste disposal procedures are followed • Required support is given to others whenever appropriate

	• Cost of material handling reduced
6.3 Perform ancillary activities	• Proper placement and handling of product maintained • Instructions are followed as required
Key competences required	
Knowledge and understanding	• How to maintain defects on a work piece or on a finished product • How to handle materials and avoid making them unusable • The common methods of identifying and reporting faults in ancillary operations • How to work in a team and independently and how to get the types of support that may be available from others • How to learn from observing senior personnel at work and develop personal skills
Additional work place skills	• Effective communication with co-workers and supervisors • Accurate record keeping • Following and executing instructions • Completing forms, reports and other documentation
Methods of Assessment	• Direct observation/ Demonstration • Oral questioning/Interview • Written examination
Context of assessment	Practical assessment should be at work place and the tools, timing and environment needs to be valid; the tool/ indicator should be based on/ equivalent workplace contexts (face validity); represent the full range of knowledge and skill specified within the standard (content validity)

2. Unit of competence chart for footwear technician for cutting operation

Job Title	Footwear Technician for Cutting Operation
Occupational standard	Leather Product Manufacturing
Occupational code	LPM FTC
ETQF Level	II (Cutting)
Unit 1. Work Preparation *Unit 2. Perform Leather clicking/cutting operation* *Unit 3. Apply Quality Standards*	*Unit 4. Maintain Records* *Unit 5. Maintain ethical conduct* *Unit 6. Communicate at workplace* *Unit 7. Develop Entrepreneurial skills*

Occupational standards for level II Footwear Technician

Occupational Standard:	Leather Product Manufacturing II
Unit Title:	Work Preparation
Unit Code:	LPMFTC 2- 1 /01 12
Unit Descriptor:	This unit covers the essential and general competence expected of all clickers regardless of product line and their working environment. It covers the skill knowledge and attitude required to effectively perform work and workstation preparation prior to leather clicking/cutting operations.
Elements	**Performance criteria**
1.1 **Read design specifications and instructions**	• Design specifications are understood and individual operations on the material are identified • Requirements such as material and tools are identified for the particular specification
1.2 **Obtain Materials and tools**	• Required materials and tools for the identified operations are requested • Materials and tools are obtained from the store on time and in the appropriate quantity • The necessary materials and tools are inspected and inappropriate ones are identified • Materials and tools are stored on a temporary storage area near the work station and are ready for operation
	• Work stations and working materials are organized for operation

1.3 **Prepare work station**	• Work environment is kept clean and safe • Materials and working tools are arranged in such a way that clicking operation can commence at any time
1.4 **Prepare clicking/cutting machine**	• Clicking/cutting machines are adjusted according to the required setup and are ready for the cutting operation • Clicking/cutting machines are inspected for malfunctioning and the necessary tools like blades are installed • Appropriate safety guards are made available • Machines are cleaned and checked in accordance with work place procedures
Key competences required	
Knowledge and understanding	• Knowledge of which tools, equipment, settings and materials are needed for leather clicking/cutting operation • Ability to perform basic arithmetic and geometrical computations and their applications • Knowledge and understanding how to examine, measure, and weigh materials or products to verify conformance to specifications, using measuring devices such as rulers, meters, or scales. • Knowhow of work place safety and ergonomic principles • How to make suitable adjustments to tools, equipment, settings and materials to maintain safety and quality standards
Additional work place skills	Effective communication with co-workers and supervisors Accurate record keeping Following and executing instructions Completing forms, reports and other documentation
Occupational Standard:	Leather Product Manufacturing II
Unit Title:	*Perform Leather clicking/cutting operation*
Unit Code:	LPMFTC 2- 2 /01 12
Unit Descriptor:	This unit covers the essential and general competence expected of all clickers regardless of product line and their working environment. It covers the skill knowledge and attitude required to effectively perform leather clicking/cutting operations using appropriate techniques.
Elements	**Performance criteria**
2.1 **Cut uppers and bottoms to size**	• Shaped components are produced using tools and equipment to meet the requirements of safety, productivity, quality, and minimizing waste • Self-position is maintained to achieve operator comfort and to minimize fatigue • Leather pieces are positioned on machine as appropriate • Clicking/cutting efficiency and effectiveness is enhanced
2.2 **Monitor operation of clicking /cutting machines**	• The performance of the machine is regularly checked for signs of faulty operations and action taken in accordance with workplace procedures • Machine malfunctions are detected and replacement of parts are authorized
2.3 **Maintain specifications**	• Imperfections are avoided in the material while cutting • Wastage of materials is kept at a minimum level • Company usage tolerances are met for efficient pattern interlocking • Cut leather components are checked against specifications
2.4 **Maintain proper material handling**	• Disposal of wasted materials is accomplished safely and promptly • Proper storage of cut leather components is maintained to assist the next production stage • Risk of cut leather component damage is minimized while temporarily storing • Dispatch of completed work piece to the next operation is maintained according to company procedures

Key competences required	
Knowledge and understanding	• Knowledge of the physical and chemical properties of finished leather • Knowledge and understanding how to examine, measure, and weigh materials or products to verify conformance to specifications, using measuring devices such as rulers, meters, or scales. • Knowledge of clicking/cutting machine operational procedures • Knowledge of cutting equipment and tools, including their, uses, repair, and maintenance. • The ability to work quickly and accurately • Desire to enjoy mechanical and manual activities with good hands • Physical and mental strength for routine cutting operation • Knowhow of work place safety and ergonomic principles • How to make suitable adjustments to tools, equipment, settings and materials to maintain safety and quality standards
Additional work place skills	• Effective communication with co-workers and supervisors • Accurate record keeping • Following and executing instructions • Completing forms, reports and other documentation
Occupational Standard:	Leather Product Manufacturing II
Unit Title:	Apply Quality Standards
Unit Code:	LPMFTC 2- 3 /01 12
Unit Descriptor:	This unit covers the essential and general competence expected of all clickers regardless of product line and their working environment. It covers the skill knowledge and attitude required to effectively apply quality standards for leather clicking/cutting operations.
Elements	**Performance criteria**
3.1 **Ascertains the grades of incoming leather**	• The grades of the incoming raw material leather is inspected according to specifications • Quality of received leather and leather component parts is assessed in accordance with workplace procedures
3.2 **Check the quality of cut leather component**	• An acceptable level and quality of work is maintained for the clicking/cutting operation • Cutting dimensions and cutting edge quality is kept up to the standard given for each cut leather component • Quality of service for adjacent operations is in accordance of work place guidelines
Key competences required	
Knowledge and understanding	• Knowledge of the physical and chemical properties of finished leather • Knowledge of leather product quality parameters and their measurement • Understanding of procedures of material and product quality inspection procedures • Ability to detect cutting defects • Ability to understand quality control and inspection methods • Ability to prepare and maintain inspection and performance records
Additional work place skills	• Effective communication with co-workers and supervisors • Accurate record keeping • Following and executing instructions • Completing forms, reports and other documentation
Occupational Standard:	Leather Product Manufacturing II
Unit Title:	Maintain Records
Unit Code:	LPMLTC 2- 4 /01 12
Unit Descriptor:	This unit covers the essential and general competence expected of all clickers regardless of product line and their working environment. It covers the skill knowledge and attitude required to effectively perform record keeping in work stations.

Elements	**Performance criteria**
4.1 **Record Production Quantities**	Numbers and types of received materials such as leather, working tools, dies and measuring devices are recorded on daily bases Production records, such as quantities, types, and dimensions of materials produced are maintain
4.2 **Record Working Sequences and Production Schedules**	• The production schedules and targets associated with each operation are recorded • The working sequence and the timing of key operations are recorded on regular time intervals
4.3 **Record Encountered Problems**	• Production faults are recorded as required • The key facts that relevant person needs to know when problems are identified, for any possible solutions are kept recorded. • Promptly corrected problems of work that does not conform to company quality standards and damaged of work components are maintained to report to the responsible body • Company reporting procedures about defective tools and machines which affect work and all other records are followed
Key competences required	
Knowledge and understanding	Knowledge of record keeping on regular bases Knowledge of company reporting formats and communication procedures Ability to tabulate, and summarize information of routine, periodic or special reports and present findings in oral or written form
Additional work place skills	Effective communication with co-workers and supervisors Complete company documentation, clearly and accurately Accurate record keeping Following and executing instructions Completing forms, reports and other documentation
Occupational Standard:	Leather Product Manufacturing II
Unit Title:	Maintain ethical conduct
Unit Code:	LPMFTC 2- 5 /01 12
Unit Descriptor:	This unit covers the essential and general competence expected of all clickers regardless of product line and their working environment. It covers the skill knowledge and attitude required to effectively perform work in an ethical manner.
Elements	**Performance criteria**
5.1 Maintain good work practices	• Work is carried in accordance with recognized good practice • Regular performance reviews are made to take lessons from past actions • Company working culture is maintained
5.2 Present a positive personality at work	• Positive attitude is demonstrated at work place • Dealing with people is conducted in a tactful, polite and equitable manner at all times • A positive attitude that involves setting realistic expectations at work are developed and maintained
5.3 Apply work ethics	• Loyalty, honesty and trustworthiness are kept in the workplace • Tardiness or absenteeism are avoided at work place as they can profoundly impact job performance • Company properties used only for the authorized purpose • Work is performed within the limits of once own competence and expertise • Work is performed in accordance with prescribed ethical standards

5.4 Maintain appropriate conduct at work place	• Potential conflicts of interest that arise during work recognized and managed as per work place procedure • Work is performed in accordance with prescribed codes of conduct • Formal complaint procedures are followed to comply at work place • Disputes and differences of opinion are handled and resolved in ways which minimize offence and maintain respect
Key competences required	
Knowledge and understanding	• Understanding of work values/work ethics • Knowledge of the organization's rules, codes, guidelines and standards • Knowledge of work place conducts and how to maintain good work practices • Knowledge of specific responsibilities under prescribed codes of conduct and ethical standards
Additional work place skills	Effective communication with co-workers and supervisors Maintain good working relationship with colleagues Following and executing instructions Completing forms, reports and other documentation
Methods of Assessment	• Direct observation/ Demonstration • Oral questioning/Interview • Written examination • Individual and project task evaluation
Context of assessment	Practical assessment should be at work place and the tools, timing and environment needs to be valid; the tool/ indicator should be based on/ equivalent workplace contexts (face validity); represent the full range of knowledge and skill specified within the standard (content validity)

3. Unit of competence chart for Footwear technician for stitching operation

Job Title	Footwear Technician for Stitching Operation
Occupational standard	Leather Product Manufacturing
Occupational code	LPMFTS
ETQF Level	II (Stitching)
Unit 1. Work Preparation *Unit 2. Perform stitching/sewing and assembling operation* *Unit 3. Apply Quality Standards*	*Unit 4. Maintain Records* *Unit 5. Maintain ethical conduct* *Unit 6. Communicate at workplace* *Unit 7. Develop Entrepreneurial skills*

Table 6.6 Occupational standards for level II leather product technician

Occupational Standard:	Leather Product Manufacturing II
Unit Title:	Work Preparation
Unit Code:	LPMFTS 2- 1 /01 12
Unit Descriptor:	This unit covers the essential and general competence expected of all clickers regardless of product line and their working environment. It covers the skill knowledge and attitude required to effectively perform work and workstation preparation prior to leather stitching/sewing operations.
Elements	**Performance criteria**
1.1 **Read design specifications and instructions**	Design specifications are understood and individual stitching/sewing operations on the cut component are identified Requirements such as material and tools are identified for the particular specification
1.2 **Obtain Materials and tools**	• Stitching/ sewing supplies like fasteners and threads are selected in accordance with job requirements • Required materials and tools for the identified stitching/sewing operations are requested • Materials and tools are obtained from the store on time and in the appropriate quantity

	• The necessary materials and tools are inspected and inappropriate ones are identified • Materials and tools are stored on a temporary storage area near the work station and are ready for operation
1.3 **Prepare work station**	Work stations and working materials are organized for operation Work environment is kept clean and safe Materials and working tools are arranged in such a way that stitching/sewing operation can commence at any time
1.4 **Prepare stitching/sewing machine**	• Stitching/ sewing machine attachments like needles, threads, pattern plates or cutting blades, and adjust machine guides are mounted according to approved specifications • Stitching/sewing machines are adjusted according to the required setup and are ready for the stitching/sewing operation • Stitching/sewing machines are inspected for malfunctioning and the necessary tools like needles and thread are installed • Appropriate safety guards are made available • Machines are cleaned and checked in accordance with work place procedures
Key competences required	
Knowledge and understanding	Knowledge of which tools, equipment, settings and materials are needed for leather stitching/sewing operation Ability to perform basic arithmetic and geometrical computations and their applications Knowledge and understanding of how to examine, measure, and repair stitched/sewed parts or products to verify conformance to specifications, using measuring devices such as rulers, meters, or scales and visual inspection. Knowhow of work place safety and ergonomic principles How to make suitable adjustments to tools, equipment, settings and materials to maintain safety and quality standards
Additional work place skills	Effective communication with co-workers and supervisors Accurate record keeping Following and executing instructions Completing forms, reports and other documentation
Occupational Standard:	Leather Product Manufacturing II
Unit Title:	*Perform stitching/sewing and assembling operation*
Unit Code:	LPMFTS 2- 2 /01 12
Unit Descriptor:	This unit covers the essential and general competence expected of all clickers regardless of product line and their working environment. It covers the skill knowledge and attitude required to effectively perform shoe upper and leather garment stitching/sewing operations using appropriate techniques.
Elements	**Performance criteria**
2.1 **Stitch/sew and assemble components**	• Pieces of shoe uppers and/or garment components are stitched/sewed together as per the specifications • Assembled components are produced using tools and equipment by meeting the requirements of safety, productivity, quality, and minimizing waste • Shoe uppers, garment components and lining parts are stitched together and decorative stitching/sewing is applied • Self-position is maintained to achieve operator comfort and to minimize fatigue • Stitching/sewing operations are carried out in the correct sequence to ensure that line balancing problem is not created along the line of operation • Stitching/sewing efficiency and effectiveness is enhanced
2.2 **Perform minor maintenance on stitching/sewing**	• The performance of the stitching/sewing machine is regularly checked for signs of faulty operations and action taken in accordance with

machines	workplace procedures • Machine malfunctions are detected and replacement of damaged parts are accomplished • Stitching/sewing machines are placed in a safe manner when work is completed • Machine faults which are beyond the capacity of the operator to maintain are reported promptly • Checking that the stitching/sewing area is free from hazards which might cause harm
2.3 **Maintain specifications**	• Imperfections are avoided in the material while stitching/sewing • Wastage of materials is kept at a minimum level • Stitching/sewing patterns are kept as per the marked specifications • Company usage tolerances are met for efficient pattern interlocking • Stitched/sewed components are checked against specifications
2.4 **Maintain proper material handling**	• Disposal of wasted materials is accomplished safely and promptly • Proper storage of stitched/sewed and assembled components is maintained to assist the next production stage • Risk of assembled leather component damage is minimized while temporarily storing • Dispatch of completed work piece to the next operation is maintained according to company procedures
Key competences required	
Knowledge and understanding	• Knowledge of the physical and chemical properties of finished leather • Knowledge and operational procedures of single, double or multi-needle serging, flat bed felling, banding and other stitching/sewing machines, to join sections of shoe uppers, garments or other articles into finished products on a piece-work or production basis • Knowledge of basic measuring and calculating skills and/or pattern reading skills • Knowledge of stitching/sewing equipment and tools, including their, uses, repair, and maintenance. • The ability to work quickly and accurately • Desire to enjoy mechanical and manual activities with good hands • Physical and mental strength for routine stitching/sewing operation • Knowhow of work place safety and ergonomic principles • How to make suitable adjustments to tools, equipment, settings and materials to maintain safety and quality standards
Additional work place skills	• Effective communication with co-workers and supervisors • Accurate record keeping • Team work • Maintain good working relationship with colleagues • Following and executing instructions • Completing forms, reports and other documentation
Occupational Standard:	Leather Product Manufacturing II
Unit Title:	Apply Quality Standards
Unit Code:	LPMFTS 2- 3 /01 12
Unit Descriptor:	This unit covers the essential and general competence expected of all clickers regardless of product line and their working environment. It covers the skill knowledge and attitude required to effectively apply quality standards for shoe upper and leather garment stitching/sewing operations.
Elements	**Performance criteria**

3.1 **Ascertains the quality of cut components**	• The cutting quality of the incoming component leather is inspected according to specifications • Quality of received thread and leather component parts is assessed in accordance with workplace procedures
3.2 **Check the quality of stitched/sewed component**	• An acceptable level and quality of work is maintained for the stitching/sewing operation • Stitching/sewing dimensions and stitch quality is kept up to the standard given for each component • Quality of assembled parts is up to the standard specified by work place guidelines • Quality of service for adjacent operations is in accordance of work place guidelines
Key competences required	
Knowledge and understanding	• Knowledge of the physical and chemical properties of finished leather • Knowledge of leather product quality parameters and their measurement • Understanding of procedures of material and product quality inspection procedures • Ability to detect stitching/sewing defects • Ability to understand quality control and inspection methods • Ability to prepare and maintain inspection and performance records
Additional work place skills	• Effective communication with co-workers and supervisors • Accurate record keeping • Team work • Maintain good working relationship with colleagues • Following and executing instructions • Completing forms, reports and other documentation
Occupational Standard:	Leather Product Manufacturing II
Unit Title:	Maintain Records
Unit Code:	LPMFTS 2- 4 /01 12
Unit Descriptor:	This unit covers the essential and general competence expected of all clickers regardless of product line and their working environment. It covers the skill knowledge and attitude required to effectively perform record keeping in work stations.
Elements	**Performance criteria**
4.1 **Record Production Quantities**	• Numbers and types of received components such as shoe upper parts, lining materials, working tools like needles and measuring devices are recorded on daily bases • Production records, such as quantities, types, and dimensions of components and assembled parts produced are maintain
4.2 **Record Working Sequences and Production Schedules**	• The production schedules and targets associated with each stitching/sewing operation are recorded • The working sequence and the timing of key stitching/sewing operations are recorded on regular time intervals
4.3 **Record Encountered Problems**	• All factors affecting stitching/sewing and related operations are recorded so that remedial measures will be taken for the next operation • Stitching/sewing faults are recorded as required • The key facts that relevant person needs to know when problems are identified, for any possible solutions are kept recorded. • Promptly corrected problems of work that does not conform to company quality standards and damaged of work components are maintained to report to the responsible body • Company reporting procedures about defective tools and machines which affect work and all other records are followed
Key competences required	
Knowledge and understanding	• Knowledge of record keeping on regular bases

	• Knowledge of company reporting formats and communication procedures • Ability to tabulate, and summarize information of routine, periodic or special reports and present findings in oral or written form
Additional work place skills	• Effective communication with co-workers and supervisors • Complete company documentation, clearly and accurately • Accurate record keeping • Following and executing instructions • Completing forms, reports and other documentation
Occupational Standard:	Leather Product Manufacturing II
Unit Title:	Maintain ethical conduct
Unit Code:	LPMFTS 2- 5 /01 12
Unit Descriptor:	This unit covers the essential and general competence expected of all clickers regardless of product line and their working environment. It covers the skill knowledge and attitude required to effectively perform work in an ethical manner.
Elements	**Performance criteria**
5.1 Maintain good work practices	• Work is carried in accordance with recognized good practice • Regular performance reviews are made to take lessons from past actions • Company working culture is maintained
5.2 Present a positive personality at work	• Positive attitude is demonstrated at work place • Dealing with people is conducted in a tactful, polite and equitable manner at all times • A positive attitude that involves setting realistic expectations at work are developed and maintained
5.3 Apply work ethics	• Loyalty, honesty and trustworthiness are kept in the workplace • Tardiness or absenteeism are avoided at work place as they can profoundly impact job performance • Company properties used only for the authorized purpose • Work is performed within the limits of once own competence and expertise • Work is performed in accordance with prescribed ethical standards
5.4 Maintain appropriate conduct at work place	• Potential conflicts of interest that arise during work recognized and managed as per work place procedure • Work is performed in accordance with prescribed codes of conduct • Formal complaint procedures are followed to comply at work place • Disputes and differences of opinion are handled and resolved in ways which minimize offence and maintain respect
Key competences required	
Knowledge and understanding	• Understanding of work values/work ethics • Knowledge of the organization‘s rules, codes, guidelines and standards • Knowledge of work place conducts and how to maintain good work practices • Knowledge of specific responsibilities under prescribed codes of conduct and ethical standards
Additional work place skills	• Effective communication with co-workers and supervisors • Maintain good working relationship with colleagues • Following and executing instructions • Completing forms, reports and other documentation
Methods of Assessment	• Direct observation/ Demonstration • Oral questioning/Interview • Written examination • Individual and project task evaluation
Context of assessment	Practical assessment should be at work place and the tools, timing and

	environment needs to be valid; the tool/ indicator should be based on/ equivalent workplace contexts (face validity); represent the full range of knowledge and skill specified within the standard (content validity)

4. Unit of competence chart for Advanced Footwear Technician

Job Title	Advanced Footwear Technician
Occupational standard	Leather Product Manufacturing
Occupational code	LPMAFT
ETQF Level	III
Unit 1. Understand design specifications *Unit 2. Carry out multiple operations of shoe upper making* *Unit 3. Perform different lasting operations* *Unit 4. Follow up footwear manufacturing activities*	*Unit 5. Perform machinery maintenance* *Unit 6. Apply quality control* *Unit 7. Provide leadership for others* *Unit 8. Maintain ethical conduct*

Occupational standards for level III Advanced Footwear Technician

Occupational Standard:	Leather Product Manufacturing III
Unit Title:	*Understand design specifications*
Unit Code:	LPMAFT 3- 1 /01 12
Unit Descriptor:	This unit covers the essential and general competence expected of all advanced footwear technicians regardless of product line and their working environment. It covers the skill knowledge and attitude required to effectively perform in leather footwear production in understanding design specifications.
Elements	**Performance criteria**
1.1 **Read and understand design specifications**	• All aspects of the footwear design and construction steps are understood properly • Foot outline drawings and footstep prints are interpreted as per specifications • Design specifications are understood and individual operations on the material are identified • Tool and material requirements are identified for the particular design specification
1.2 **Clarify design patterns**	• The main design features of patterns are identified • Design prescription/specification interpreted and clarified for other operators • Leather cutting and stitching patterns are identified and explained
Key competences required	
Knowledge and understanding	• Knowledge of the styles of footwear that are currently being produced • Knowledge and understanding of reading paper prints of shoe designs and patterns and converting them in to workable components • Knowledge of which tools, equipment, settings and materials are needed for different footwear designs • Ability to perform arithmetic and geometrical computations • Knowledge and understanding of how to measure footwear design parameters using different measuring tools
Additional work place skills	• Effective communication with co-workers and production heads • Accurate record keeping • Receiving and providing instructions and follow up their execution • Completing forms, reports and other documentation
Occupational Standard:	Leather Product Manufacturing III
Unit Title:	*Carry out multiple operations of shoe upper making*
Unit Code:	LPMAFT 3- 2 /01 12
Unit Descriptor:	This unit covers the essential and general competence expected of all advanced footwear technicians regardless of product line and their working environment. It covers the skill knowledge and attitude required to

	effectively carry out multiple operations of shoe upper making using appropriate techniques.
Elements	**Performance criteria**
2.1 **Select materials and tools**	Leather and other consumable materials and ancillary tools are selected on the basis of the intended purpose and in accordance with their use and economic efficiency
2.2 **Perform complex clicking operations**	• Complex parts of shoe uppers and base cutting/ clicking is accomplished as per design specifications and customer requirements • Assistance is given to other clicking/cutting operators to achieve optimum material consumption without compromising the quality level • Clicking and associated operations are maintained in the correct sequence for the style being worked
2.3 **Perform complex stitching operations**	• Stitching supplies like fasteners and threads are selected in accordance with job requirements • Operation of different types of stitching/sewing machines, to join sections of shoe upper parts is achieved • Assistance is given to other stitching/sewing operators to achieve optimum material consumption without compromising the quality level
Key competences required	
Knowledge and understanding	• Knowledge of the physical and chemical properties of finished leather • Knowledge of clicking/cutting and stitching using multiple machine types and their operational procedures • Knowledge of clicking and stitching machines, equipment and tools, including their, uses, repair, and maintenance. • Anility of working with a range of materials, machinery, tools and equipment within or across departments in footwear production. • How to make suitable adjustments to tools, equipment, settings and materials to maintain safety and quality standards
Additional work place skills	• Effective communication with co-workers and supervisors • Having the flexibility to move to other operations in production when and where required • Accurate record keeping • Receiving and providing instructions and follow up their execution • Completing forms, reports and other documentation
Occupational Standard:	Leather Product Manufacturing III
Unit Title:	*Perform different lasting operations*
Unit Code:	LPMAFT 3- 3 /01 12
Unit Descriptor:	This unit covers the essential and general competence expected of all advanced footwear technicians regardless of product line and their working environment. It covers the skill knowledge and attitude required to effectively perform different lasting operations in footwear manufacturing.
Elements	**Performance criteria**
3.1 Perform shoe upper molding	• Appropriate sizes and shapes of lasts are selected as per design specification • Insole is attached to the last in accordance with requirements • Shoe upper molding machines are adjusted according to the product specifications • Shoe upper is molded in to the last as per the requirement • Assistance is given to other lasting operators to achieve maximum efficiency without compromising the quality level
3.2 Carry out sole attaching operations	• Insole and outsoles are identified as per the customer requirements • Sole attaching machines are inspected and adjusted for operation • Soles are attached in accordance with specifications • Assistance is given to other lasting operators to achieve maximum efficiency without compromising the quality level

3.3 Perform direct injection	• Sole molds are prepared according to specifications • Molding machines are checked for functionality and precision • Mold injection is accomplished as per the requirements • Assistance is given to other lasting operators to achieve maximum efficiency without compromising the quality level
3.4 Carry out toe, seat and side lasting operations	• Toe, seat and side lasting operations are carried out as per product specifications • Assistance is given to other lasting operators to achieve maximum efficiency without compromising the quality level
Key competences required	
Knowledge and understanding	• Knowledge of the physical and chemical properties of finished leather, sole materials and molds • How to set up, adjust, and position machines and equipment for the last shape being worked on • The common hazards in the work area and the procedures for dealing with them • Which faults commonly appear in components and how to deal with them • What the common characteristics are of the material being used in lasting and making operations • The sequence in which the operation fits in with other operations • How to handle and minimize the risk of damage to lasted uppers during and after lasting and making operations
Additional work place skills	• Effective communication with co-workers and supervisors • Accurate record keeping • Having the flexibility to move to other operations in production when and where required • Receiving and providing instructions and follow up their execution • Completing forms, reports and other documentation
Occupational Standard:	Leather Product Manufacturing III
Unit Title:	*Follow up footwear manufacturing activities*
Unit Code:	LPMAFT 3- 4 /01 12
Unit Descriptor:	This unit covers the essential and general competence expected of all advanced footwear technicians regardless of product line and their working environment. It covers the skill knowledge and attitude required to effectively follow up activities in footwear manufacturing.
Elements	**Performance criteria**
4.1 Develop operational plans and assist production flow	Operational goals are set and monitored in the footwear manufacturing process The production schedules and targets associated with each operation within the footwear production is maintained as planned Appropriateness of the sequence of footwear production operations are checked on regular time intervals. Production schedules are met
4.2 **Carry out production line balancing**	• acceptable level of workflow is maintain for the planned operation and production target • The timing and working sequence of key operations are kept to achieve production targets effectively • Smooth and continuous flow production is maintained
4.3 **Identifying bottlenecks in production flow**	• Production flow holding up points are identified and corrective actions are taken to keep the flow of production operations • Individual work is correctly sorted and placed to assist the next stage of production • Those operations which are in need of extra assistance are identified and additional resourced are assigned. • Key bottlenecking problems are identified and recorded

	• Work flow disruption in production areas is avoided
Key competences required	
Knowledge and understanding	• Knowledge and ability to promptly correct work that does not conform to company quality standards and tell the responsible person about damaged work • Knowledge and understanding of which production sequences and timing are of key importance • Knowledge of production line balancing techniques • How to identify when the workflow is holding up other operations and what is necessary to know before deciding to help out
Additional work place skills	• Effective communication with co-workers and supervisors • Maintain good working relationship with colleagues • Complete company documentation, clearly and accurately • Accurate record keeping • Receiving and providing instructions and follow up their execution • Completing forms, reports and other documentation
Occupational Standard:	Leather Product Manufacturing III
Unit Title:	*Perform machinery maintenance*
Unit Code:	LPMAFT 3- 5 /01 12
Unit Descriptor:	This unit covers the essential and general competence expected of all advanced footwear technicians regardless of product line and their working environment. It covers the skill, knowledge and attitude required to effectively perform footwear production machinery maintenance in footwear manufacturing.
Elements	**Performance criteria**
5.1 **Identify footwear production machine malfunctions**	• Prompt maintenance responses are given for production machinery reports • Production machine (lasting, clicking, stitching) damages are easily identified and actions are taken before production flow clogs • Damages are kept at minimum level by early detecting malfunctions
5.2 **Replace damaged machine parts**	• Footwear production machine parts are identified and made available in inventories • Damaged parts of footwear production machineries are replaced on time • All records of the repair and maintenance works conducted in a facility are maintained
5.3 **Adjust operational parameters of footwear production machines**	• Operational parameters are monitored regularly to avoid deviations from specifications and standards • Footwear production machine faults are detected early and parameters are adjusted as per the production requirements • Appropriate actions are taken on footwear production machines are reported of in appropriate functionality that could cause product quality problems
Key competences required	
Knowledge and understanding	• Knowledge of basic machinery maintenance and installation procedures • Knowledge of relevant equipment operational and maintenance procedures • Ability to detect machine defects • Knowledge of different footwear production machines and tools across production departments, including their designs, uses, repair, and maintenance. • Knowhow of safety and security procedures of footwear production machines • Ability to Work with a range of materials, machinery, tools and

	equipment within or across departments in footwear production.
Additional work place skills	• Ability to effectively manage time and meet all specified deadlines • Effective communication with co-workers and supervisors • Maintain good working relationship with colleagues • Complete company documentation, clearly and accurately • Accurate record keeping • Receiving and providing instructions and follow up their execution • Completing forms, reports and other documentation
Occupational Standard:	Leather Product Manufacturing III
Unit Title:	*Apply quality control*
Unit Code:	LPMAFT 3- 6 /01 12
Unit Descriptor:	This unit covers the essential and general competence expected of all advanced footwear technicians regardless of product line and their working environment. It covers the skill, knowledge and attitude required to effectively apply quality control in footwear manufacturing.
Elements	**Performance criteria**
6.1 **Monitor footwear production quality**	• Quality of incoming leather and other inputs are assessed before the commencement of any production operation • Quality of the work from previous operations are checked to be within the tolerances required of the operation currently being worked on and acceptable for company quality requirements • Quality procedures are defines in conjunction with operational staff • The problems related to leather and other articles which may have negative impact on the quality output products are identified
6.2 Inspection of components and products	• Quality of prepared component in each work station of a particular department is inspected before going to the next operation • Quality defects are detected and their cause are identified
6.3 Respond to production quality problems	• Orientation of new subordinates concerning quality policy and procedures, work rules, and performance expectation levels are accomplished on regular bases • In process material and finished product quality defects are easily traced • Materials and work pieces are free from faults and fit for purpose • When materials do not conform to company quality standards the necessary actions are taken
Key competences required	
Knowledge and understanding	• Ability to understand quality control and inspection methods • Knowledge and understanding of how to identify the nature, characteristics and implications of quality defects • Ability to prepare and maintain inspection and performance records • How to organize and manage quality assurance function in close co-operation with the operational personnel • How to promote quality achievement and performance improvement throughout the factory • Sufficient knowledge of quality management systems
Additional work place skills	• Effective communication with co-workers and supervisors • Maintain good working relationship with colleagues • Complete company documentation, clearly and accurately • Accurate record keeping • Receiving and providing instructions and follow up their execution • Completing forms, reports and other documentation
Occupational Standard:	Leather Product Manufacturing III
Unit Title:	*Provide leadership for others*
Unit Code:	LPMAFT 3- 7 /01 12

Unit Descriptor:	This unit covers the essential and general competence expected of all advanced footwear technicians regardless of product line and their working environment. It covers the skill, knowledge and attitude required to effectively lead other in footwear manufacturing.
Elements	**Performance criteria**
7.1 Allocate resources	• Company resources are allocated based on the purpose and urgency of operations • Changes in responsibilities and major duties of subordinates is made by reviewing their job responsibilities on a regular basis • Necessary materials, equipment and tools are facilitated on time to commence operation
7.2 Lead workplace communication	• Footwear production schedules and targets are communicated down to operators and up to the production mangers as per company procedures • Orientation of new subordinates concerning policy and procedures, work rules, and performance expectation levels are accomplished effectively • Performance targets of production, safety precautions and rules and regulations are disseminated to production workers • Clear and accurate technical/ production information from the production team about what is affecting performance is obtained • Company reporting formats and procedures are followed
7.3 Develop productive working relationships	• Good working team spirit is created in the work place • Work force motivation and productivity is increased • Workplace conflicts are resolved following company rules and regulations • Good working relationship is maintained between subordinates and with colleagues
Key competences required	
Knowledge and understanding	• Knowledge of basic management and leadership • Knowledge of company reporting formats and communication procedures • Ability to tabulate, and summarize information of routine, periodic or special reports and present findings in oral or written form
Additional work place skills	• Leadership skills • Effective communication with co-workers and supervisors • Maintain good working relationship with colleagues • Complete company documentation, clearly and accurately • Accurate record keeping • Receiving and providing instructions and follow up their execution • Completing forms, reports and other documentation
Occupational Standard:	Leather Product Manufacturing III
Unit Title:	Maintain ethical conduct
Unit Code:	LPMAFT3- 8/01 12
Unit Descriptor:	This unit covers the essential and general competence expected of all advanced footwear technicians regardless of product line and their working environment. It covers the knowledge and attitude required to effectively maintain ethical conduct at work place in footwear manufacturing.
Elements	**Performance criteria**
8.1 Maintain good work practices	• Work is carried in accordance with recognized good practice • Regular performance reviews are made to take lessons from past actions • Company working culture is maintained
8.2 Present a positive personality at work	• Positive attitude is demonstrated at work place • Dealing with people is conducted in a tactful, polite and equitable manner at all times • A positive attitude that involves setting realistic expectations at work

	are developed and maintained
8.3 Apply work ethics	• Loyalty, honesty and trustworthiness are kept in the workplace • Tardiness or absenteeism are avoided at work place as they can profoundly impact job performance • Company properties used only for the authorized purpose • Work is performed within the limits of once own competence and expertise • Work is performed in accordance with prescribed ethical standards
8.4 Maintain appropriate conduct at work place	• Potential conflicts of interest that arise during work recognized and managed as per work place procedure • Work is performed in accordance with prescribed codes of conduct • Formal complaint procedures are followed to comply at work place • Disputes and differences of opinion are handled and resolved in ways which minimize offence and maintain respect
Key competences required	
Knowledge and understanding	• Understanding of work values/work ethics • Knowledge of the organization's rules, codes, guidelines and standards • Knowledge of work place conducts and how to maintain good work practices • Knowledge of specific responsibilities under prescribed codes of conduct and ethical standards
Additional work place skills	• Effective communication with co-workers and supervisors • Maintain good working relationship with colleagues • Complete company documentation, clearly and accurately • Accurate record keeping • Receiving and providing instructions and follow up their execution • Completing forms, reports and other documentation
Methods of Assessment	• Written Test • Direct observation/ Demonstration • Oral questioning/Interview • Structured assessment/rating forms • Evidence compiled by candidate • Oral/written presentations • Project task evaluation
Context of assessment	Practical assessment should be at work place and the tools, timing and environment needs to be valid; the tool/ indicator should be based on/ equivalent workplace contexts (face validity); represent the full range of knowledge and skill specified within the standard (content validity)

Appendix 7: Sample Module for Junior Footwear Technician (Level I)

TVET Program Name: Footwear manufacturing

Program Description: The footwear manufacturing training program is designed to develop the necessary knowledge, skills and attitude of the learners to the standard required by the OS. The contents of the program are in line with the occupational standard developed. Learners who successfully completed the entire program will be qualified to work as a Junior footwear Technician with competencies elaborated in the respective OS. Candidates are also allowed to be certified for each unit or combinations of modular units as they are designed to be offering certain employable skills within the footwear manufacturing sector.

Program Learning Outcomes:

LPM JFT1 01: Perform basic leather cutting operations
LPM JFT1 02: Perform basic leather stitching operations
LPM JFT1 03: Perform pre-fabrication operations
LPM JFT1 04: Perform simple quality checks
LPM JFT1 05: Apply health and safety rules
LPM JFT1 06: Perform basic verbal and written communication at workplace
LPM JFT1 07: Respond for emergencies

Maximum Duration: **1 Year**

Entry Requirements: As per there requirements set by the Ministry of Education (in collaboration with sectorial institutions)

Qualification Level: National TVET Certificate I (Level I)

Module Description	
Module Name	Basic Leather Cutting Operations
Module Code	LPM JFT1 01
Maximum Duration	120hrs- Depends on factors like availability of training facilities etc…
Learning Objective	Maximize efficiency and effectiveness of leather cutting Know leather cutting hand tools and machines Identify the accessories required for various styles of shoe upper Identify basic leather cutting procedures Recognize different properties of leather parts Able to read and measure dimensions to cut leather components as per their required dimension
Status	Mandatory
Prerequisite knowledge/skills required	No prerequisite is required
Introductory remedial instruction	To complete the module *"Basic Leather Cutting Operations*" it is mandatory for individual trainees to be present during all theoretical and practical sessions of the module. Depending on the nature of the topic and the progress through the semester, the instructor will either assign task assignments on specific cases or administer unannounced tests on assigned readings during the course. Network building and working with people inside and outside the company are essential components of successful accomplishment of the module. Therefore, trainees are advised to organize working in consultation with the on-the-job instructor to accomplished home take project tasks…
Body of knowledge (Theory + Practice)	Topics Introduction to leather and its properties Various types non leather materials Patterns of shoe upper components Tools and equipment required for shoe upper cutting

	Hand cutting Recognising different types of hand tools Using cutting machines Accessories for shoe upper closing Setting up cutting machines and sharpening hand tools Safe use of hand tools and machines			
Methods of delivery	What trainees achieve and take from this module will be largely a function of what they put into it. Therefore, this module will incorporate a combination of in class discussion, student feedback, guided in-class discussions, in school or training canters and actual demonstration and guided operational practice combined with individual and group task assignments in the company. Active participation in all class and on-the-job training activities is essential to accomplish the learning objectives of the module.			
Method of assessment & Evaluation	**Type**	**Place**	**Responsible**	**Weightage**
	Written examination	Training schools/centers	School Trainers	**20%**
	Practical Examination *Work preparation =10%* *Tools and equipment and selection=15%* *Cutting operation =30%* *Material handling and safety 15%*	On-the –job/ Company	On-the-job Trainers/Experts	**70%**
	Oral examination	On-the –job/ Company	Experts	**10%**
Certification Requirements	***As per the requirement of Center of Competence/National Certifying body for the leather product manufacturing sub-sector***			
Resources Needed	**Item/Category**	**Description/ Specification**	**Required Quantity**	
	Learning materials	*As per the description on individual modular units*		
	Trainees guide module			
	Text books			
	Reference materials			
	Facilities	***Access in training centers/schools***		
	Teaching rooms			
	Teaching aids			
	Demon. facilities			
	Library			
	Tools and Equipment	*As per production requirements*		
	a. Hand tools			
	b. Cutting machines			
	Consumables	*As per production requirements*		