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Muthuveeran Ramasamy

# Demand-Driven Approaches in Vocational Education and Training

A Case Study of Rural  
Population in South India



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A Case Study of Rural  
Population in South India

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Dissertation - Faculty of Management, Economics and Social Sciences, University of  
Cologne, Germany, 2015

ISBN 978-3-658-12509-7                      ISBN 978-3-658-12510-3 (eBook)  
DOI 10.1007/978-3-658-12510-3

Library of Congress Control Number: 2016947748

Springer VS

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Printed on acid-free paper

This Springer VS imprint is published by Springer Nature

The registered company is Springer Fachmedien Wiesbaden GmbH

The registered company address is: Abraham-Lincoln-Str. 46, 65189 Wiesbaden, Germany

## Preface

As a development professional, it was always on my mind to blend my field experience and knowledge that I acquired by planning and implementing various vocational skill development programmes at grass root level with the theoretical and research dimension. During my first short trip to Germany for a period of two weeks in 2009, I never thought I would do my PhD in this country, but it happened with the blessings of many people. Certainly, my starting days as a PhD student in Germany were not easy in terms of language, different culture and life style. Life in Germany taught me not just quality academics and research, but also the effectiveness of a planned and systematic approach. All these life lessons motivated and inspired me to obtain a doctoral degree from a German University. I would never have been able to finish my dissertation without the guidance of my supervisor, committee members and help from family and friends.

Foremost, I would like to express my sincere gratitude to my supervisor Prof. Dr. Matthias Pilz who always encourages young aspiring people by giving them opportunities to exhibit their talents. I appreciate that he believed in my hard work and offered a research scholar position in his department. I am grateful for his continuous support, patience, motivation and providing me with an excellent atmosphere for my work. I would also like to thank my dissertation exam committee members Prof. Dr. Detlef Buschfeld and Prof. Dr. Martina Fuchs for their insightful comments and questions.

I am indebted to Dr. Bala Ramani whom I met for a coffee in mid-2008, one evening during his visit to South India. An inspiring person, my mentor who encouraged me to do research, facilitated an opportunity to visit Germany in 2009. Then he introduced me to Prof. Dr. Matthias Pilz. Dr. Bala has always supported me in every step of my PhD work and completion of my dissertation, not only in my professional career but also in personal life.

My sincere thanks to Dr. G. Viswanathan, Founder-Chancellor and Vice Presidents of VIT University for all the support extended to me to complete my doctorate. I thank my colleagues and friends in the University of Cologne: Lea Zenner, Katrin Rasch, Susanne Berger, Antje Wessels, Junmin Li, Sabrina Edeling, Markus Bohlen, Jun Li, Urs Frey, Sarah Pierenkemper, David Meinhard and Blanka von Zitzewitz for their stimulating academic discussions and timely support.

I am grateful to the German Academic Exchange Service (DAAD) and the Center for Modern Indian Studies at the University of Cologne (CMIS-UC) for funding my fellowship, without their support I would not have had an oppor-

tunity to complete my PhD in Germany. I also thank DAAD for financial support to publish my PhD dissertation.

A special thanks to Prof. Seenivasan, Prof. Palanithurai, Prof. Uma, Prof. Shankar, Prof. Paul and Prof. Sudhagar who supported me in a number of ways in finishing my dissertation. It is a pleasure to thank my friends particularly Muthukumar, Udaya, Sunil and Kishna for their strength and support to me through the good and bad times of this wonderful journey.

Last but not the least, I would like to thank my family: Meenatchi, my beloved mother and also my brothers Natarajan, Kamaraj, Palani and Babu for always being there. They and Ramasamy, my father, who rests in peace, forged my personality and share credit on every goal I achieve.

Dr. Muthuveeran Ramasamy

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## List of Abbreviations

BMZ	Federal Ministry for Economic Cooperation and Development (Germany)
CEDEFOP	European Centre for the Development of Vocational Training
GOI	Government of India
IAMR	Indian Applied Manpower Research (India)
ITI	Industrial Training Institute
ITC	Industrial Training Centre
MHRD	Ministry of Human Resource Management (India)
MOLE	Ministry of Labour and Employment (India)
NCERT	National Council of Educational Research and Training
NGO	Non-Governmental Organization
NPE	National Policy on Education
NVEQF	National Vocational Education Qualifications Framework
PSSCIVE	Pandit Sunderlal Sharma Central Institute of Vocational Education
TVET	Technical Vocational Education and Training

# 1 Introduction

The study on vocational education and training (VET) among rural people is of paramount significance as the present patterns of employment and livelihood are becoming increasingly inadequate to meet the aspirations of the young generation.

As the Human Capital theory emphasizes, investment in VET is essential in developing skilled manpower to meet the market needs for labour in various sectors. In recent decades, VET has gained importance in addressing vital issues in labour market demand and/or demand for enhanced goods and services in a society.

In these days, it is not uncommon to note that industrialized and developing countries as well are making consistent efforts to develop skilled human resources by investing more in human capital. At the global level, it has been recognised by many scholars that VET increases the individuals' / workers' productivity and yields good returns when jobs for learners are ensured and training are closely linked to existing employment demand (Middleton et al. 1993).

However, it is worthwhile to note that VET is also influenced by many socio-economic cultural and attitudinal factors which in turn differ from country to country. After liberalization and globalization of the Indian economy, the country has witnessed a massive change in orientation of Science and Technology (S&T) whose major objectives revolve around the twin issues of reducing poverty and enhancing the quality of life. However, it is ironical to note that there exists a mismatch between in trade and service sectors with the supply of skills through vocational skill training programmes. This trend has often been credited to "top-down" approach of planned programmes (Palmer 2007).

Presently, supply and demand constraints are observed to exist not only in enterprise but also in labour market. In rural areas it has been proved that the formal way of vocational training often ignored the illiterate, the less-educated and the poor. The underlying principle being VET programme need to be demand-driven and should consider the socio-economic development of the particular community or region (see sec.4.4).

Social scientists often emphasize the importance of vocational and entrepreneurial skills in empowering rural community which basically aim at motivating them to start their own business and create further employment opportunities and contribute to infrastructure development and livelihood of the community. Such vocational skill training programmes need to be flexible enough to positively respond to the local needs as defined by the community members where possible (King 1990). The fundamental issue of vocational skill training

deals with for what “**purpose**” and what kind of training for “**whom?**”(Mitra 2002).

Therefore, the significance of the study at grassroots level lies in that, it helps customizing VET programme to respond to the demand of the individuals’ vocational training needs of rural people as target group, taking considerations of their needs into account, beyond the employers’ and labour market.

The author being a rural development professional has been involved in organizing/providing various vocational skill development programmes. The vast experience of the author in organizing such programmes has repeatedly indicated the failure of such programmes in reflecting the trainees/learners’ aspirations and demand (cf. chapter. 2). Thus, the author is motivated to explore the possibilities for demand-driven approach by **keeping the individuals’ and target groups’ demand at the centre of vocational skill development process**. The author has taken a three-fold approach in this study, explained in Fig number 1 diagrammatically.

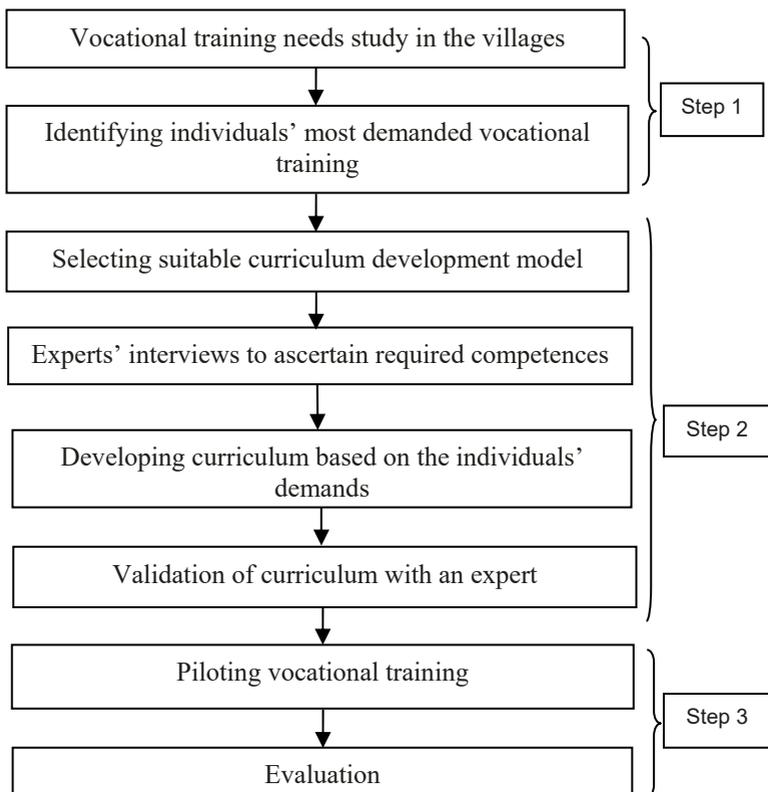


Figure 1 Overview of the research structure (source: own illustration)

While the step 1 refers to the demand side, the step 2 and 3 correspond to the supply side functions of vocational training. Thus, the author has adopted triad model: **curriculum-instruction-assessment**, which are the key aspects of any educational process. The curriculum usually consists of scope of content and sequence of a subject area and learning of the most preferred vocation tailored to the demands of target people. The instruction is referred to the methods of teaching and learning activities to assist trainees in obtaining the learning outcome as specified by developed curriculum and assessment was done to find the extent to which the curriculum met the learners' demand (see Pellegrino 2006; Weber and Funke 2012). The structure of the thesis is as follows.

In Chapter 2, the historical overview of VET in India is described briefly to understand its evolution since the colonial period followed by the growth and development of VET in the post-independent era during which significant policy reforms took place. These reforms helped to diversify the VET system and brought significant changes in the institutional settings. In last part of this chapter, the scenario of VET after economic liberalization is presented, mainly to have an insight into the major changes in the demographic profile, growth and challenges in the labour market of India. The second chapter will mainly deal with formal system of VET and informal context of VET will be discussed briefly in the subsequent chapters.

In Chapter 3, the theoretical construct of demand-driven approach is described wherein the learners' centred/individuals' perspective is discussed against the backdrop of labour market demand trends. The vocational training demands of the individuals are assessed and the results are presented.

In Chapter 4, the research methodology used in this study is described. Further this chapter elucidates the choice of demand-driven approach; its definition in this study context. The development of interview guidelines, vocational training need assessment survey in villages is described. The results and findings of the need assessment survey are analyzed and discussed.

In Chapter 5, the framework for curriculum development is outlined by selecting the appropriate curriculum method, discussing the process of experts' interview including method, giving details about the methods involved and development of questionnaire are explained. The results of interview, and the competencies required for initial-sewing vocational training are also described.

In Chapter 6, the competency-based and demand-driven curriculum for vocational training in sewing is developed. The contents of the curriculum are discussed in depth taking into consideration the four key components of curriculum, structure of units and reasons for clustering them under respective components.

In Chapter 7, the need and benefits of evaluating a programme, and various evaluation models are briefly presented which is followed by a brief description and discussion of the structure and design of questions, process of interview adopted and the results obtained.

In Chapter 8, lessons learnt from the pilot vocational training on sewing in relation with the vocational training demand study (chapter 3) and experts' interview (chapter 4) are explained. The recommendations from the pilot training are also analysed and direction for future research is described.

## 2. Historical Overview of VET in India

### 2.1 Growth and Development of VET in India

Skill and knowledge are the driving forces for the economic growth and social development of any country (IAMR 2010; Chenoy 2013). As Stevens (1994) points out that human capital is one of the important factors that determine a country's growth. Therefore, India as a developing economy, which has the world's largest young population (MoLE 2010), constantly makes significant reforms in education and vocational skill training system to create the largest technical manpower in the world. At the national level, education has been given high priority in India's developmental process at all levels and, the country has long felt that significance of vocational training in developing new skills in individuals by means of raising his/her potential productivity.

### 2.2 Evolution of VET in India during Colonial Period

The eighteenth century was considered as a crucial period in the world's history during which machines came into existence to help man to improve productivity in all sectors involving human activities. This time period witnessed remarkable evolution in technological civilization which ultimately gave birth to "Industrial Revolution" (Sen 1989, p.225). Revolution in the industry sector created more demand for technically trained employees to meet the occupational needs. Yet, such demand was confined to the western countries that paved way for a new economic order and countries were divided into groups as imperialists and their colonists. Consequently, a new system of learning process came into existence to fulfil the growing needs of an industrial society, which is known as "technical education" (ibid. p.225). During the same time, VET in India was designed with the objective to supply trained manpower needed for managing the imperialists' colonial system of Government and to support an industrial society in the UK, and not to develop human resources for the improvement of industrial society in India (ibid. p.227). However, the British colonial Government started technical education centres mainly to train middle level technical personnel required to improve the infrastructure such as construction and maintenance of public buildings, roads, canals, ports and harbours, railways and other services and also to train artisans and craftsmen in the maintenance of instruments and equipment required for the army and the navy (ibid. p.226).

During the colonial period a number of committees were commissioned by the British Government to examine the problems of education in India. These committees greatly emphasised the need and importance of technical and vocational education and training in the country in order to develop country's economy and industry (ibid. p.227). In 1936-37, two British experts namely Messrs Abbot and Wood (cf. Sen 1989, p.229) were invited to offer advice on addressing certain problems of education and especially on issues of vocational and technical education. They recommended the colonial government to start its first nationwide massive training programme in 1940, called "War Technicians Training Scheme," in which the people were to be trained and made readily available to meet the World War II situation in the country. It helped them to meet the urgent requirements of defence forces and to produce armed products in industries (ibid. p.229).

Singh (2001) noted that the colonial government's policy in technical and vocational education failed to transform Indian VET system and bring about any significant change. Thus, VET faced a great set back (Singh 2001; p.210).

### **2.3 VET in India's Post-Independent Scenario (1947-1970)**

After Independence (post 1947), the country realized the need for (high) skilled human resources to improve the economy which increased the demand for skilled manpower at various levels to keep pace with the emergence of several new technologies and competitiveness. The country felt that vocational education and training could make an individual more employable, when general education does not produce enough jobs. Consequently, Government of India took various measures to make the country to be self-reliant by way of massive economic and industrial development through its Five Year plans. One such measure was the formation of the AICTE (All India Council for Technical Education). Established in 1945 to contribute towards technical education in India, it had undertaken various initiatives and expanded technical institutions across the country and supervised the technical education above the high school stage. This body consisted of the Ministries of Education, Labour, Industry and Commerce besides the Central Advisory Board of Education. In the post-independence period, the Government has taken notable decisions to reform VET through expert committees which reflects in the policies. The following section discusses them in detail.

### **2.4 Significant Intervention in VET through Policy Developments**

During Post-independence period, the Government of India commissioned many committees to suggest possible changes in the educational system which are employment oriented with an emphasis on vocational education (Tilak 1988).

As per records of the Ministry of Human Resource Development (1978), the very first commission after independence called, University Education Commission (1948-49) headed by Former President of India Dr. Radhakrishnan, recommended opening many intermediate colleges to provide a platform for 10<sup>th</sup> grade completed students in vocational fields. The committee stressed the need “to meet a variety of needs of our young men and women by giving a vocational bias to their courses, retaining at the same time their value in a system of general education as preparation for University courses” (MHRD 1978, p.81).

Similarly, Mudaliar Commission in 1952 also recommended the diversification of the courses at the secondary stage and stressed upon that at the post-secondary stage, a student should be in a position to take up some vocations, if he/she wished.

Later, the Education Commission in 1964-66 headed by Kothari re-examined the country’s educational system with the aims to improve the quality and standard of education. It also emphasised diversion of at least 50 per cent of the students who successfully complete 10 year schooling to the vocational stream to prepare students for employment and/or self-employment (Debroy 2009). It also suggested two distinctive streams at higher secondary stage: one to prepare students for advance studies at universities and professional colleges and, second, to prepare students for a variety of occupations.

The Education Commission also insisted that, work-experience should be introduced as an integral part of all education (NCERT 2007, p.6). Their recommendations were well taken by the Government which led to policy formulation in 1968 and 1986 on Vocationalisation of school education. The above section makes clear that almost every committee consistently has laid emphasis on the importance of VET in the country.

In India, VET is divided into two levels. (i) School level: There are vocational schools (under the Ministry of Human Resource Development) and (ii) Higher Level: Vocational Training Institutes run through Government supported and private institutions under the purview of Ministry of Labour and Employment. In the following section, vocational education at the school level is explained.

## **2.5 Development of VET (1970-1990)**

Before we discuss the VET developments during the mentioned period, the school system in India is briefly outlined. The school system in India follows a 10 years +2 years +3 years pattern. Elementary education consists of eight years; each of secondary and senior secondary education consists of two years of education. Students pursue their higher education after passing the higher secondary or 12<sup>th</sup> standard. In some states, the +2 stage of education exists in intermediate, junior or degree colleges but it is not regarded as part of the ter-

tiary level of education. The graduation education can take three to five years and post graduate takes two to three years duration depending on the stream.

The Secondary and Higher Secondary educations are important stages in the school education system of general education due to the fact that, only at this point the young people decide his/her pathway on whether to pursue higher education or vocational education (Planning Commission 2009b). Vocational education was initiated in the school level with three main objectives.

- To enhance the employability of individual students.
  - To reduce mismatch between demand and supply of manpower.
  - To provide alternative to those seeking to pursue higher education.
- (cf. Nagarajan and Kaliyamoorthy 2010, p. 80).

There has been an array of consistent efforts in reforming the Indian education system in various vocations in order to minimize the unemployment issues in the country. The initiative started from the school level as Work Education is included in the primary (grades 1–5) and upper primary (grades 6–8) standards to make the students aware of the concept of work. Pre-vocational education is imparted in classes 9 and 10 (secondary level) with a view to providing the students a measure of familiarity with the wide spectrum of world of work (Krisanthan and Pilz 2014).

Vocational education, as a distinct stream, starts in the grades of 11 and 12 (IAMR 2010, p.3). Vocational Education at the Higher Secondary level came into existence in 1976 as a state scheme (Mizoue 1998). Initially, it was started in 8 states namely, West Bengal, Delhi, Karnataka, Gujarat, Maharashtra, Tamil Nadu, Pondicherry and Andhra Pradesh (ibid. p.82). Dr. Kulandaiswamy committee report 1985 specified guidelines for the expansion of the programme and recommendations for Centrally Sponsored Scheme (CSS). As a result, in 1998, the Government of India launched a Centrally Sponsored Scheme (CSS) of Vocationalisation of Higher Secondary Education. This scheme was launched mainly to encourage the State Government's initiative *viz.* Vocationalisation of education at 12<sup>th</sup> grade which achieved only partial success as majority of the students preferred to take general education.

In later 1980s, many international organizations, missionaries, foundations and other donor agencies offered vocational training to prepare young people for work in the informal sector (Fluitman 1989). In this period, wages of workers who had completed Secondary Education increased in spite of the conformity of such workers. But, relative supply of workers with vocational skill came down during this period which had cascading effect on their wages in early 1990. Furthermore, vocational education was provided high priority in the National Policy on Education 1986 which was concerned more with the student's "entry to workforce". Hence, a target was set to bring 10 percent of Higher Secondary students under vocational course by 1990 and 25 percent by 1995. In 1995-96,

an evaluation study was carried out and it was found that about only 4.8 per cent students were diverted to vocational stream. However, the success of the scheme was varied across the states (GOI 2009).

It gave new impetus to the programme and according to Planning Commission (2007a), 150 vocations is covered at school level. It proposed that the major aim of this scheme was to produce adequate number of middle level manpower in the country. It was also one of the reasons to imparting vocational skills in the same school where general education is imparted. This was mainly done to overcome the unhealthy mental barriers of status, means, intellectual abilities etc. among the students who are admitted to academic and vocational streams (MHRD 1978). Consistently, the Government of India encourages boys and girls particularly in the age group 14-18, to follow vocational courses. It provides for diversification of education opportunities for enhancing individual employability and reducing mismatch between supply and demand of skilled manpower (IAMR 2010). However, most vocational and industry related training programmes fail to attract the better graduates of secondary schools (Thakur 1979, p.343).

## **2.6 VET at the Higher Level**

The VET in India is extremely fragmented with over 27 ministries involved in skills training in most cases (Panth 2013). Since Independence, Vocational Training has been concurrent responsibility of both the Union and the States. However, the Central government is responsible for the development of training schemes, laying down training norms, developing policy, examination and certification while implementation is relatively the responsibility of the State governments. In India, Vocational Training programmes are offered through two principal schemes called Craftsmen Training Scheme (CTS) and Apprenticeship Training Scheme (ATS). The CTS and ATS schemes are offered by the Directorate General of Employment and Training (DGET). The following section discusses these two training schemes in detail.

### *2.6.1 Craftsman Training Scheme (CTS)*

Craftsmen Training Scheme (CTS) was started as a post-war rehabilitation measure for demobilized military personnel (Thakur 1979, p.343). It was introduced in 1950 which imparted full time training in various trades within the age group of 14-25 (ILO 2003).

Trainings were offered through Government sponsored ITIs (Industrial Training Institutes) as well as private run ITCs (Industrial Training Centers)<sup>1</sup>. In earlier stage, it was supposed to speed up the process of industrialization in the Country (ILO 2003). Upon the successful completion of the All India Trade Test conducted by the National Council for Vocational Training (NCVT) the graduates were awarded Certificates and classified as semi-skilled craftsman.

But, enrollment wise ITCs are more than ITIs, as the later has only a few trades. Since they are flexible in terms of the number of courses offered, the ITCs have been able to proliferate covering as many as 16,92,836 students against 11,94,466 in ITIs (DGET 2014). As shown in the Figure 2, growth of ITIs and ITCs are increase many folds between 1950 and 2014.

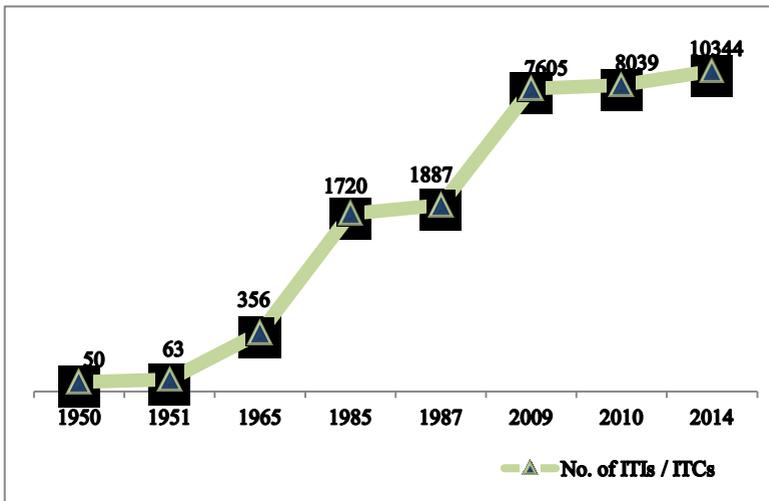


Figure 2 Growth of ITIs and ITCs (Source: DGET 2014)

### 2.6.2 Apprenticeship Training Scheme (ATS)

With the liberalization of the economy in the 1990s, the Government of India (GOI) endeavored to produce required skilled manpower to achieve economic growth by utilizing the facilities available in the industries for training technicians. Thus, the apprenticeship training was envisaged and the Apprenticeship Act 1961 mandated to provide practical training for the ITI students to enhance

<sup>1</sup>Industrial Training institutes(ITI)are training providers established by the government, whereas industrial Training Centres (ITC) are training providers managed by private players on self-financing mode. These ITCs are sanctioned and regulated through the craftsman Training Scheme (CTS) by Directorate General of Employment & Training (DGE&T), Ministry of Labour and Employment, Government of India (IAMR 2010, p.22

their technical competency. The technical education and vocational training system produces labour forces through a three tier system. The system comprises of Engineers and Technologists (Graduate / Post graduate level e.g. ITI, Engineering Colleges), Technicians and Supervisors (Diploma level who are trained in Polytechnics) and semi-skilled and skilled workers (certificate level craft people trained in ITI and formal apprentices).

## **2.7 Growth of VET in 1990s and 2000s**

In 1990s, there was a massive change in science and technology policy which induced the need to improve in the quality of life and to reduce poverty (Singh 2009). After 2000, India as one of emerging economically stronger countries witnessed huge demand for manpower at different levels including unskilled, semi-skilled for the lower, middle and at supervisory levels respectively. The Government's approach was to "enhance individual employability, reduce the mismatch between demand and supply of skilled manpower and provide an alternative for those pursuing higher education without particular interest or purpose" (cf. World Bank 2006, p.12).

Sen (1989) asserts that VET could promote economic and industrial development in a country. The essential requirement is the capacity to develop technical manpower of good quality in adequate numbers. However, a well-organized system of technical education and training is required which could be used as a tool to develop manpower. India's transition to knowledge-based economy require a new generation of educated and skilled people (Singh 2009). In India, DGET (Directorate General of Employment & Training) of Ministry for Labour and Employment (MoLE) supervises the biggest training system accounting for more than 60 percent of beneficiaries while the utilization capacity of the Vocationalisation of secondary education programme being run under the Ministry of Human Resource Development just 40 percent (ILO 2003).

## **2.8 VET Scenario since 2000**

### *2.8.1 Demographic Changes and the Impact on Labour Market*

The Indian labour market is constituted by an undeveloped economic structure differentiated into formal and informal sectors which continues to be dominated by agriculture. Nearly, 57 percent of the workers are employed in agriculture, either as cultivators or as labourers (Srivastava 2008).

According to Ministry of Labour and Employment report (MoLE), there will be approximately 63.5 million new entrants to the working age group of 15-59 years between 2011 and 2016. By 2020, it is expected that the population in the working age group (15-59) years is likely to increase from 58 percent in

2001 to more than 65 percent by 2021. Moreover, bulk of this population will be in the younger age group of 20-35 years which would make India as “country with the maximum young population” in the world which is characterized as “Demographic Dividend” (MoLE 2010; Jayaram 2009).

The current trend of increasing industrialization and declining agriculture are the consequences of the youth migrating from rural to urban areas for profitable employment (cf. sec. 3.1). The education and skill characteristics are not in line with the rapidly industrialising and developing economies. A broad shift in the occupational structure of the Indian economy—from farm to non-farm has resulted in new skill requirements for the emerging workforce (Srivastava 2008, p.769).

The World Bank report of 2006, indicates that skill development enrolment in vocational educations in India is negligible when judged by international comparisons. It also states that successfully reforming countries are moving in the direction of providing youth with good quality general education.

In India, only 5 percent of the Indian labour force in the age group of 20-24 has received vocational training whereas, the percentage in industrialised countries is much higher, varying between 60 percent and 80 percent. Korea has 96 per cent skilled work force (Planning Commission 2007b and IAMR 2010).

Therefore, the Government has enunciated notable policies and adopted various measures of skill development to enhance Vocational skill training system to ensure those who enter the labour force acquire relevant skills (MoLE 2010).

The Government of India initiated a new scheme in 2007, aim to train one million people in short term modular course in five year time period and one million in every subsequent year. The National Council for Vocational Training is awards certificates to the successful trainees upon assessing their competencies by independent assessing bodies (MoLE 2010, p.33).

In 2008, India developed a roadmap for skill development with an institutional structure at the national level which was followed by the National Policy on Skills Development in 2009, with a target of imparting skills training to 500 million by 2022. It also focused on outcome and linkage to jobs and employability of the trained people (GOI 2009). The primary objective of this policy is to empower individuals, especially youth and women, through improved skills, knowledge and qualifications to gain access to employment in an increasingly competitive global market (Planning Commission 2008). It also committed to create a pool of skilled workforce to get decent employment on the one hand and to meet challenges in the global labour market on the other hand.

However, it has been observed that the current growth is being mainly urban centred, which has failed to incorporate the vast majority of the rural population and other backward sections of the society. Relatively, 70 percent of the Indian population is living in rural areas and remains predominantly as an agricultural- based society.

Though the agricultural sector has seen considerable growth in the five decades since Independence in spite of substantial increases in agricultural production, the general livelihood of the rural population still remains low. Only 3 percent of rural youth (15-29) and 6 percent of urban youth were found to have gone through any kind of vocational training (ADBI 2008).

### *2.8.2 Improving Image of VET - NVEQF*

The concept of Vocational Education and Training is shaped by many socio-economic factors and the culture of a country. VET has been viewed negatively, as low status and conceived as only for poor and educationally backward sections, which attributed majority of the people, believe that they were not eligible for higher education (Tilak 2002; Mehrotra and Saxena 2014). Besides this, the social stigma of low prestige attached to vocational education and its inherent inequalities when compared with higher education are common phenomenon in India and in many other South Asian countries (World Bank 2006 and Pillay and Ninan 2014). During the last few decades, VET has come across various weaknesses due to rigid training structure, inadequate infrastructure, and lack of linkages with industry and improper provision of vertical mobility for the vocationally qualified people.

Prof. Yashpal Committee's report (MHRD 2009) noted that, there is no linkage between vocational education sector and higher educational institutions. Hence, students who attend vocational and technical education after their higher secondary education are deprived of any possibility of pursuing higher education upon completing vocational training (cf. IAMR 2012, p.7).

In order to address these issues, the National Policy on Skill Development 2009 identified National Vocational Education Qualification Framework (NVEQF) as the main instrument for linking various education modes and training pathways. It envisaged permitting individuals to accumulate their knowledge and skills and convert them through testing and certification into higher diplomas and degrees (IAMR 2012, p.1). The aim was to increase employability of young people by bridging the gap between demand and supply of skilled workforce. Therefore, the NVEQF is expected to bring necessary changes in the education and training system of the country. The key elements of NVEQF are including multiple entries and exit to Technical Vocational Education and Training (TVET), transfer with and between TVET and general education and progression within and between TVET (ibid. p.4). Further, it also provides possibility for horizontal mobility to the students from the vocational stream if they desire and allows them for University degree thus integrating the academic and vocational education. But, it requires major changes both in curriculum and organization level (IAMR 2008, p.4).

The basic problem in skill development and vocational training system in India is the fact that it is “**non-responsive**” to the labour market demand, due to

demand and supply mismatch including quality, quantity and skills type (Planning Commission 2008 and Rao et al. 2014) resulting in low productivity of firms and is often observed to be the main reason for low levels of development (Eichhorst et al. 2012).

According to ILO (2009) report, the National Sample Survey Organization 61st Round data revealed that about 89 percent of the population in 15-59 year ages have had no vocational training. Among the 11 percent of the people who received vocational training, only 1.3 percent received formal vocational training. The mismatch between demand and supply of skills in the labour market and the perceived shortage and poor quality of trained persons is likely to become an impediment in the path to sustained economic growth in the absence of timely corrective measures (ADB 2008). The obsolescence of trades and technologies due to rapid technological advances and emerging technology fields is leading to mismatches between the skills acquired in vocational training centres and those required by industry or in the labour market. The low skill levels and general lack of education of the workforce is a hurdle in the path of attaining quality production and adapting to advancing technology and emerging fields. In addition, there exists a great mismatch between the skills being taught in the educational institution and those required by industry.

The high level of illiteracy and limited reach of the current VET system also contribute to the skill shortages felt by India. Indian labour market is faced with skill shortages and a corresponding low level of productivity. The skills expected by the employer and workplace demand are totally different from what had been taught through vocational training (World Bank 2006). Against this backdrop, the author intends to explore to what extent the demand-driven vocational training programme is possible for rural population.

Recent years have witnessed considerable increase in demand for skilled workers including semi, medium and highly skilled. Indeed, the skill gaps is one of the key challenges that Indian labour market is facing presently and this issue has been discussed by many scholars (See Chenoy 2011; Eichhorst 2012; Jamal and Mandal 2013; Mehrotra et al. 2013; Sodhi 2014; Palanithurai 2014; Pilz and Pierenkemper 2014). Despite India having many higher education institutions that provides quality education; there is a huge gap particularly in developing, acquiring skill in new technologies emerging in the industry sector and providing the skill to employees through vocational training. The National Knowledge Commission report (NKC 2009) reveals very little capacity for imparting VET in India and also state the comparison between the total capacity available and the capacity utilization is quite poor.

Sasikumar (2008) points out that VET programmes in India are driven more by supply-side considerations and fulfilling certification requirements that are largely academic than by needs of the labour market (this issue is discussed more detail in ch.3). Such a trend often leads to shortage of skill and talents among the large sections of population who cannot afford access to quality higher education.

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Therefore, VET is an important means to meet the twin objectives of creating skills for the future and providing livelihood opportunities for young people, rural population and disadvantaged people. As VET has the potential in supporting human resource development, economic growth and social development process in the country by improving the quality of life, it is imperative to investigate demand-driven approaches of VET.

### 3. Demand-Driven Approaches in VET

This chapter further elaborates the need of demand-driven approach; sheds light on the flaws in supply-driven VET and also explains the need and importance of demand-driven approach and its function in different contexts. The typology that associates with demand is discussed. At the end of this chapter, two important pillars *viz.* labour market demand and demand-driven approach from learners'/societal perspective is discussed to enable better understanding and relevance of the same in this particular investigation.

#### 3.1 Statement of the Problem

As has been seen in the earlier chapter, VET is considered as one of the essential tools in human capital development which promotes local economic development and helps to generate employment opportunities. Investment in human capital will also reflect positively in economic development and social wellbeing of a country, however, many such investments still remain to be in the supply-driven (Murray et al. 2008). This scenario mainly is due to poor strategies, financing/funding allocation, regulations and implementation in the VET programmes which are discussed in the following section. In many countries technological change, structural adjustment policies, new and changing patterns of trade and competition, and globalization have created the need for a much more flexible and responsive training system for the modern sector. In contrast, many developing countries have become inadequate to meet both markets' and societies' skill development needs.

Many of the public training system are largely supply-driven which are unable to meet the market needs (Mehrotra et al. 2013). Ziderman (2003) claims that insufficient adaptation of the training approach to the sector-specific, economic and social conditions and other factors such as institutional environment to be the major reasons for supply-driven approach of public training systems which in turn has alienated their training from the current market needs. Many of the vocational training systems treat/consider market failure as a result of firm's under-training and particularly in transferable skills, the quantum of training provided and its quality (Bennell 1999; Keating 2009; Cavanagh et al. 2013). These issues postulates towards changes in continuing and more substantial changes in meeting the skill demand in the labour market.

Furthermore, the dynamic market demand for skills requires flexible supply response from the training system, which is failing to respond to the emerging external challenges (Ziderman 2003, p. 20; Majumdar 2008). During

the last few decades, many VET projects and interventions both run by the state, NGOs and donors have time and again indicated this lacuna (Krishnan and Shaorshadze 2013).

Nuissl (1999) studied on the outcome of adult education and learning programme in Europe and observed that lack of realizing individuals' demand, lack of time for participation, lack of money, proximity to training center and difference between personal interest and supply to be the major bottlenecks.

Rupasingha et al. (2000) identified that length/duration of training, cost of training, commuting time to the training venue and availability of day care centre were the major obstacles to trainees to participate in vocational skills training. Murray and his associates (2008) evaluated VET projects in Caribbean Regions, and stated that the country's VET system was supply-driven. The authors also observed that various World Bank funded projects implemented between 1980 and 2005 were not successful and unable to meet the intended objectives. The major reasons for the failure were as follows (see Murray et al. 2008).

- No proper planning strategy
- Lack of training for the trainers
- Unrealistic targets
- Inability to attract trainees
- Poor implementation on the site
- Poor curricula design
- Lack of staff and management insufficiencies
- Lack of academic skills among the trainers

In Sub Saharan African (SSA) countries, the VET system was largely supply-driven in which the activities of the regional structures dominated which impeded the development of open, demand-driven and low-cost training markets (VETA 2002; Ziderman 2003; Palmer 2007). The training markets failed to develop due to market imperfections on both demand and supply sides.

Betcherman et al. (2004) evaluated the impact of 69 ALMP (Active Labour Market Training) programmes in both developed and developing countries. Most of these studies have concluded that the level of employability was limited due to supply-driven strategy. In the developing countries, training for youth programmes was almost unsuccessful in improving labor market outcomes.

Stockmann and Silvestrini (2011) evaluated the German Technical Cooperation (GIZ) supported VET programmes in its partner countries. The study identified that factors like relevance, efficiency and sustainability; it could not achieve the intended goals and were assumed as supply-driven. The study concluded that, **systematic needs and stakeholders' analysis was lacking during project planning and implementation**. The authors reported that the lack of innovations into the existing teaching curricula; high staff fluctuation; poor

financing models for maintenance of technical infrastructure and participatory identification of (vocational training) needs were the main reasons for failure of such programmes.

Krishnan and Shaorshadze (2013) studied the effectiveness of VET in Ethiopia and reported that it was supply-driven in nature, inefficient and emphasized the need to increase the efficiency in terms of the value added to skills of the beneficiaries.

- **Current VET Scenario in India**

In India, Government takes the prime responsibility for formal training (Mitra 2005; IAMR 2010), often devising programs which have limited impact due to poor responses of such programmes to the existing demands of the labour market (Majumdar 2008; Chenoy 2013). Most of the public training systems are widely referred to as supply-driven which are unlikely to respond to the changing skill needs of the growing economy (Ziderman 2003).

While India is blessed with the demographic potential and relatively high population growth leading to substantial increase in the number of people entering the labour market, there is also an urgent need to build-up a training supply system to meet specialized training needs of the various sectors and job providers. To reap the maximum benefits from the VET and to address the skill needs of market/economy, society/individuals, the VET system should adopt **“demand-driven”** approach strategy and establish Public, Private Partnership models to shift VET system more market oriented (Planning Commission 2007a; Majumdar 2008; King 2012). Thus, it is believed that the system would work more effective in terms of offering meaning full, quality skill development to avoid irrelevant training and increase competence to counter the limitations of supply-driven training programmes (Murray et al. 2008; Ziderman 2003).

### 3.2 Setting the Stage

As India has witnessed rapid development of science and technology in the recent years, it has also accelerated the need to meet the growing demand of skilled employees with adequate vocational skills and competencies. The demand for skill in the labour market, various emerging sectors and manpower planning has been studied by many scholars and organizations (see IAMR 2010; MoLE 2010; McKinsey Global Institute Report 2012; NSDC 2013; Mehrotra et al. 2014; Agarwal and Indrakumar 2014). However, this particular study is completely different from the previous studies in the fact that the current investigation focuses at the bottom-level of VET, i.e., the learners and target group are given prime importance and considered as centre of VET system. To facilitate such bottom-up study, the author felt the need to understand the concept of “demand-driven” so as to reap the benefits of such an approach, if any in the later stages.

The notion of “demand-driven” has different understanding, interpretation which is widely discussed in the literature of economics, psychology, sociology and extension. Many experts of international community in the field of extension, community development organizations, aid-agencies and human resource development practitioners often use “demand-driven” approach and believe that it enhances social inclusion by providing equal access to disadvantaged groups in a society and facilitates education, training and local livelihood (see Chambers 1983; Mkandawire 2001; Rakodi and Lloyd-Jones 2002; Goovaerts et al. 2005).

Chipeta (2006) adopted demand-driven approach in agriculture to provide user /farmer driven services and to make the service more **“accountable to the intended beneficiaries”**. He offered a five-fold method to provide demand-driven services in agriculture extension as follows.

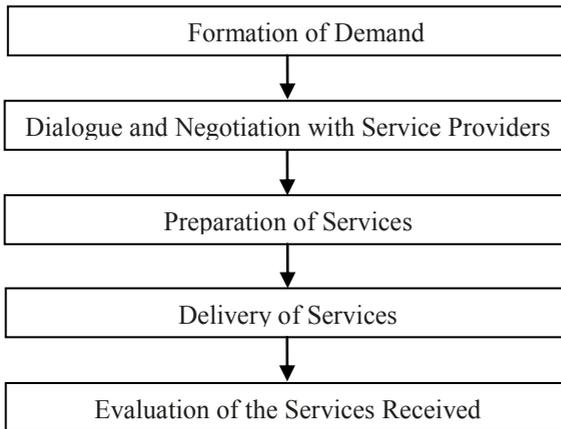


Figure 3 Demand-driven approaches in agriculture service (source: Chipeta 2006)

For any service or programme, demand-led situation exists when there is a functioning market for service provision where farmers/clients voluntarily pay their cost of service they receive to meet their demand (Chipeta 2006; Garforth 2004). When the “demand-driven” approach is taken up in a community development context, it implies that the stakeholders come together and exercise direct control of the project both during designing and implementation stages (Schou 2007). It is mostly linked to key project decisions by its stakeholders in terms of planning, allocation of budget, delivery of services and degree of participation to achieve the desired goals. The dichotomy effect of this approach is **“supply-driven” which characterized as centralized, rigid, top-down to service users or beneficiaries** (cf. *ibid.* p.595).

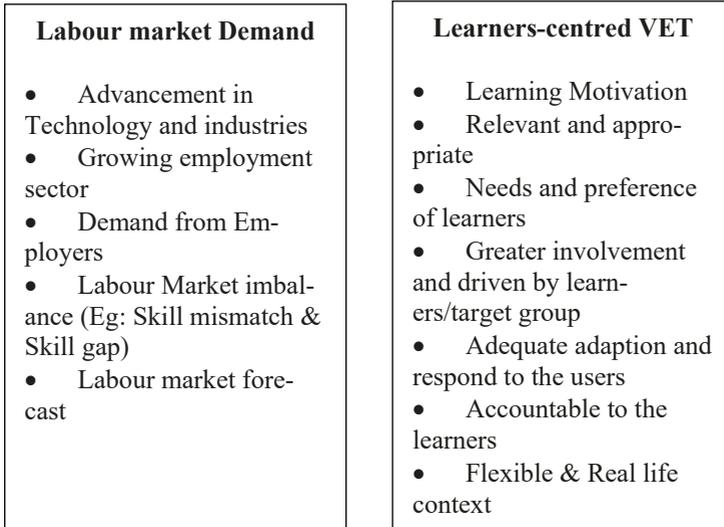
In the pedagogical view point, MacDonald et al. (2001) demonstrated how a “demand-driven” approach could address the needs of learners for of a web-based educational programme. He adopted the “**consumer-demand**” model, considering them as potential learners to achieve desired learning outcome of the programme. It concerns that any service or training could increase organizational effectiveness and improve quality of services when provider meets the specific demands of learners which would help to deliver the intended services and learning activity according to learner or consumer’s demand (Klerkx 2008). Often, the terms such as need, want, and desire are more or less gives similar meaning, still the demand differs according the situation and subject. Here the author attempted to distinguish them through various literatures which are discussed in the section below. Bradshaw (1972) developed the taxonomy of needs such as (i) Normative needs (ii) Felt needs (iii) Expressed needs and (iv) Comparative needs. He describes “**Normative needs**” which are generally determined by experts of profession, bureaucrats and it represents minimum level of adequacy. Therefore, it has been considered it as “**expert approach**” or “**top-down approach**” (cf. Armstrong 1982, p.299).

The “felt-needs” are assumed as “wants” which is based on self-perception and endogenous. It states that these wants are perceived wants of those for whom services are offered and what people really want. However, the major limitation in this concept is that people *do not always know* what they want and this holds good especially to the people from the lower income group who restrict their demand (ibid. p.298). With regard to “expressed needs” it is linked to an articulated demand for services by users or customers. Armstrong (1982) articulates his concern that, service providers never know the existence of “felt-need” unless it’s expressed or demanded. “Comparative needs” refers to the need assessment on comparison of aspects with similar characteristics of the service receiver.

The above discussion yields an understanding that “demand-driven” approach is used at different context, however, the intensity and appropriateness depends on “**whose**” demand is of matter greatly (Karlsson and Sjögren 2008). In the context of VET, “demand-driven” has an interface between the demand in labour market and learners’/individuals’ demand.

On the one hand, this is mainly due to the economic development and changes in the occupational structures that have altered the attitude and mindset towards work and occupation (Arulmani 2009). On the other hand, recent trends in the socio-economic development have created an impact on the occupation of people in a society and employers who require specific skill sets and qualification. In order to make it more clearly, it further divided into two major independent pillars to analyze factors which were more helpful to determine the focus of the study.

- a) Labour market demand
- b) Learner-centered VET



**Figure 4** Different pillars for analyzing demand side of VET (source: own illustration)

### *3.2.1 Demand from the Labour Market Perspective*

The labour market is generally referred as the interaction between the labour demand and labour supply that happens with negotiation between buyer and sellers on their wage, benefits and other compensations. The demand for labour comes from employer's side derived from their need for employing workers to produce goods and services. Therefore, labour (market) demand refers to the firm's demand of labour to produce goods and services. But, often supply is primarily determined by the size of population (Spence 2011, p.3). It can be argued that, the prediction of labour market is very hard as it becoming dynamic due to changing scientific and technological conditions of industry and service based works require a better trained and educated population. When we discuss about labour market demand, skill shortage and gaps ought not to be ignored to get a clear impression.

Shah and Bruke (2003) describes that skill shortage occurs when the worker demand for a specific occupation is greater than the supply of workers who are qualified and willing to work during a given circumstance (Shah and Bruke 2003, p.7). The skill gap and skill shortage is distinguished as, the skill gap is one is related to employees are hiring workers by employers, whom they con-

sider under-skilled to some degree. The obsolescence of trades and technologies due to rapid technological advances and emerging technology led to mismatches between the skills acquired in vocational training centers and those required by industry or labour market (Chenoy 2013; Mehrotra et al. 2013). In this growing economy and changing labour market, employers are more often looking for workers with certain skills rather than specific occupational training or qualifications (Sommers 2002; Srivatsava 2008).

The issue of mismatch between demand and supply of skills in the labour market and the perceived shortage and poor quality of trained persons is likely to become an impediment in the path to sustained economic growth in the absence of timely corrective measures (ADB 2008).

Employers need employees who consistently upgrade their skills and competencies which would improve productivity of the company (Pavlova and Maclean 2013). As Keating (2009) proposes, training systems have to express the *industries' or organizations' needs and standards and the vocational training provider needs to respond quickly to those skill demands* besides matching the new technology and practices. In a market economy, changes in supply and demand for skills in the labour market are normal features and these changes due to adjustment and/or advancement in technology, demographic shifts; changes mostly occurs in consumers' expectation and price fluctuation (Keating 2009, p.11).

The supply and demand balance depends on a number of factors including product and services, cost of labour and productivity. The labour market can be sub-divided into two major categories namely **location** and **occupation**. The low skill levels and general lack of education of the workforce is a hindrance in the path to attaining quality production and adapting to advancing technology and emerging fields. In addition to the problem, often a total mismatch between the skills being taught and those required by industry (cf. section 3.1). Employers consider VET as one of the most appropriate human capital instruments to increase productivity and income. The growing trend of modern business, technology and management system requires demand for training as the labour market needs better trained and skilled people (Au et al. 2011).

The above discussion reveals that VET and skill development remain narrowly focused on the employability and productivity primarily with an economic view of development, McGrath (2012, p.630) calls it as **“productivism”**. The notion is that mostly in the labour market, little or no importance is given to the demand of individual or the educational and societal perspectives of VET. Therefore, the second dimension would be the VET demand of individuals and/or target group.

### 3.2.2 Learner-Centered VET: A “Bottom-Up” Approach

As has been seen in earlier discussion, in a market economy meeting the labour market demand and industry is one of the important objectives of VET. Similarly, the learners and/or target group should also be considered with due importance in the process (Maxwell et al. 2000).

Most of the public sector training provided for the underprivileged has been widely criticized as generally “top-down” process due to little or no involvement of trainees/learners in the identification of needs and designing of training programme (Bennel 1999).

As Fisher (1993) emphasizes, VET need to take into account of “**consumer group**” in addition to industry group in the whole process of training market and importantly to address the social objectives of deprived, less - educated and people living in rural areas apart from the industry priorities (Fisher 1993; p.8). Because, the regional market approach does not consider social cohesion and community development (Billet 2000). VET training system requires mutual objectives among individuals, enterprises, communities and industry rather than a competitive which favours some group or others.

There is an increasing attention on individuals’ demand, because, empowering people in a community depends on to the degree how individuals are equipped with the required occupational and entrepreneurial skills to attain gainful employment and also create many employment opportunities for others as well (UNESCO 2008). Individuals mostly prefer or take-up occupation which gives him/her the most of what he wants (Kaldor and Zytowski 1969).

Rapid changes in the economy and labour market necessitate individuals to have a greater responsibility in choosing their own education, training and career development in their lives (Anderson 2003). Further, it is mostly influenced based on the political, social and personal aspirations. Therefore, individual vocational choice is his/her right and can not ignore in such a globalized competitive VET market (Maxwell et al. 2000). In other words, individuals often appear to possess a “**consumerist approach**” in choosing VET courses (and providers as well). For an individual, VET is important in the competitive labour market where in an individuals’ skills and abilities vary which decides their career choice (Mutso 2007).

Rupashingha et al. (2000) examined the factors associated with an individuals’ willingness to participate in skills training and examined the conceptual model of individual willingness to undergo skills training by measuring the individuals’ career aspirations, expectations, attitude and social factors. Anderson (2003) also postulated a similar view that individuals have the option of choosing the training that best meets their *needs and preferences*, as individuals are “**empowered customers**” in the VET market. It is connected with both with the participants’ choice of course and their personal decision influenced by basic human aspirations which are important to recognize and understand those (Maxwell et al. 2000).

Maxwell et al. (2000) studied the factors influencing the choice of course and revealed that “**employability**” is an important factor influencing the choice of course for the unemployed or underemployed people. In addition to this, it was observed that satisfying personal interests and aspirations of individuals in their field of study were also prominent. When an individual identifies his/her own goal and take decision about vocation and learning, it enhance their determination to achieve their demand. It is closely connected with the vocational training framework which needs to be relevant and based on the real life context and opportunities; however, it may vary by location (Maxwell et al. 2000, p.38).

It is more important that, the vocational training programme needs to be organized based on the individual requirements in consultation with learners, community and other stakeholders. According to Mitra (2002) “the public VET system in India does not have efficiency and flexibility, also far from local culture, social and market realities” (Mitra 2002, p.5) which is critical in demand-driven context. In contrast, demand-driven approach requires more flexibility and openness in VET, therefore, the new educational culture must respond to the disadvantaged learners who will have or had little or limited formal education and training (Adam 2012).

Hence, VET programme must adopt a new approach to provide *flexible* delivery mechanism to meet the demands of these disadvantaged people/target groups. As the author mentioned in Fig.4, the study focuses only on the “**demand-driven**” **from the individuals/learners’ perspectives**. To achieve learner centered VET, the training providers must take into account of the insights and learners’ demands. It helps to identify prioritized areas or felt needs which in turn aids in making that training become meaningful. Therefore, it is best designed with the direct involvement of learners and/or trainees as a collective plan with real life context. Under these circumstances which hold good for India, the author explored to test his own pilot study if proper “demand-driven” approach is possible, which could meet in line with the needs of learners group at the bottom-line.

## 4. Research Methodology

### 4.1 Choice of “Demand-Driven” Approach

As has been seen in the section 3.2.1, labour market demand is often defined in the literatures and empirical studies as “skill requirement in the labour market” which tends to be dynamic due to the changes in technology and economy. Most studies have focused at the macro level of demand-driven approach which relatively responds to the labour market and/or employers demand and often connected with VET structure and (educational) system of delivery. But, only a little attention has been paid on the demand side from the individuals’ and/or target groups’ context (Bennel 1999; Mitra 2002; ILO 2010; ILO 2011; Adam 2012) of vocational career aspirations of individuals, to meet learner or target group’s preferences, considering their capabilities from the pedagogical perspectives at micro level especially in rural areas. As a result, it is difficult to identify and assess the impact (Adam 2012). Similarly, for an effective VET programmes and learning process it is necessary to ascertain the demand of learners’/target group which is duly important to achieve the desired educational goals.

Realizing the individuals’ demand of vocational training, could not be feasible without considering the (potential) learners’ personal vocational career aspirations, socio-cultural, educational background and availability of resources for learning and employment. Individuals’ educational level, geographical condition, access to training location and infrastructure also play a significant role in determining the vocational career choice of people. All the above factors need to be taken into account at different stages while planning any education and training. In this regard, it has a close relevance to the structure of the vocational training programme, curriculum development and learning arrangements at the ground level. Proper understanding of the vocational training needs, interest and aspirations of individuals, framing curriculum according to learner’s ability to meet the demand are some of the essential characteristics for a successful demand-driven education and training programmes.

According to Franken (2013), demand can be used at the individual level which is often considered to express general demand of a whole market, which is the aggregate of all individual demands. Even in the development aid projects (see Stockmann and Silvestrini 2011; Adam 2012) decision of the individual, group or communities are influenced by the demand of the end users. Conse-

quently, the vocational demand of the individuals can not be ignored in the process as a whole.

The rationale of “demand-driven” approach is “bottom-up” method of designing a programme, with active participation of the target group. The bottom-up approach refers to the decentralization of participatory decision making in real life contexts which helps to improve the education and training programme contextually appropriate which mainly focuses on the target people or learners.

### **Action Research**

As mentioned in the introduction chapter, the author is a VET practitioner and shapes the study in terms of framing research question, developing curriculum for the most demanded vocational training and, therefore, the author is part of the system. The action research method is a qualitative in approach, flexible in nature; context depended and based on experiential (See McGrath and O’Toole 2012, P.509). Often, action research is considered as professional development opportunity as it helps educational and training practitioners to test such as a new instruction strategy, curriculum development or assessing existing pedagogy method (James and Mulcahy 2000).

Reason and Bradbury (2001) defined action research as “a participatory, democratic process concerned with developing practical knowledge in the pursuit of worthwhile human purpose”. Further, it enhances the author/practitioner’s own work by means of innovative and developmental activity according to the context and situation (see Chapter 5). Further, the action research is intended to develop knowledge to solve practical problems having a real world effect (McGrath and O’Toole 2012) where the authors’ position as “insider” (cf. *ibid.* P.510), identify and prioritize the (VET) demand along with the end users, stakeholders and evaluate results/outcomes. Such action leads to better understanding of the key problems, felt needs where the author and users coming together to identify possible, appropriate interventions. Indeed, it allows for a more flexible approach in design and delivery of the VET programme.

Since the author was responsible for the change process and the intention was to test a practical intervention to see how effective to give solution to a problem in a specific situation (*ibid.* P.510) and increasing performance quality of the demand-driven VET.

### **4.2 Definition of “Demand-Driven” Approach in this Study**

As mentioned in chapter 3, the meaning and definition of demand-driven varies according to the discipline of the study. Schou (2007) defines demand-driven as one where ‘communities, civil-society organisations and other stakeholders are invited to exercise direct control over key project decisions’ (Schou 2007,

p.156). His definition is closely related to designing a community development project which empowers people through participation in the decision making process.

In the Oxford dictionary demand-driven means “caused or determined by demand from consumers or clients”.

In the agriculture sector, Klerkx et al. (2006) defines it as “to finding a good fit between the knowledge and information desired by farmers and the services delivered by extension service providers” (Klerkx, et al., 2006 p. 198). Klerkx et al. (2006) views it in yet another dimension of **endogenous needs** which is of individuals or community, identified through the “**expressed demand of preferences**” and he refers it as “**demand-driven**”.

Birner and Anderson (2007) define demand as: “... what people ask for, need and value so much that they are willing to invest resources, such as time and money, in order to receive the services”. Furthermore, they emphasize that any service needs to be responsive to the preferences of users in order to provide effective and improved quality of services (ibid.p.198). Hence, the user at the receiving end is seen as “**empowered customer**” whose “**preferences**” and “**priorities**” are the expressed demands for service (Karlsson and Sjögren 2008). The “demand” largely depends and differs according to “whose” demand is greatly relevant. Therefore, according to the definitions and analysis given in the section 3, the demand-driven VET in this study is defined as follows

Demand-driven VET is identifying and meeting the **endogenous needs** of potential target people and/or learners in rural areas through decentralized, active participation by involving them in planning and designing of vocational training programme including curriculum development which is tailored to fit their real-life context and relevance. The vocational training should respond to the **prioritized needs** of its’ intended target group; their interest in terms of flexible, accessible, affordable, social realities and circumstances which is referred as demand.

### 4.3 Selection of Central Research Question

India is being a developing economy and having the potential demographic advantage, it is crucial to make a shift in VET regime by designing demand-driven trainings that fit learners and employees in the dynamic labour market. In Tamil Nadu, vast majority of the population lives in rural areas who are primarily depend on agriculture for their livelihood. Increased unemployment and underemployment over a considerable period of time have resulted in increased level of poverty. While anti-poverty measures adopted by the Government having little impact on their livelihood, migration to the urban areas for employment is on the rise in Tamil Nadu. Though the state has taken a number of initiatives like industry friendly policies, vocational skill development programmes

which aimed to absorb rural surplus labours into non-agriculture sector, unfortunately, all those efforts did not yield the expected results (IAMR 2013; p.1).

Many scholars have debated that the demand-driven VET based on the labour market. To the best of author knowledge, there are hardly limited or no study available on meeting individuals' – (as learners) demand of VET programmes. Vocational training should adapt to the specific and dynamic requirements of the market and respond to the different needs of urban and rural areas. Hence, it is best designed with the direct involvement of the target group.

Knowledge, skills and competencies of all men and women have become the cornerstone of personal growth and employability, enterprise competitiveness, and are directly/indirectly responsible for the society's economic and social sustainability (cf. Bennell 1999, p.3). As Nuisl (1999) argues, adults make their own choice of study, his/her learning and decides where, when and how to learn. He emphasizes that, the training providers and decision makers should focus on nature of the learners' demand. He affirmed that people are not much engage in vocational education unless they see any likely work resulting from them (Nuisl 1999, p.17). Therefore, the author in this study has investigated Individuals' demand in VET in the light of socio-eco context of rural population. The demand-driven approach in this particular study places learners or target group alongside employers and labour market at the centre of vocational education and training (Anderson 2003, p.8).

According to Heffernan and Misturelli (2011, p.109), most developing countries have best understood demand - driven by the suppliers, but, hardly provided any space for the needs of beneficiaries. Thus, the main research question of this study is as follows:

To what extent do we have possibilities to implement the demand-driven approach of vocational training programme with particular reference to the rural population of Tamil Nadu, India?

#### **4.4 Objective of the Study**

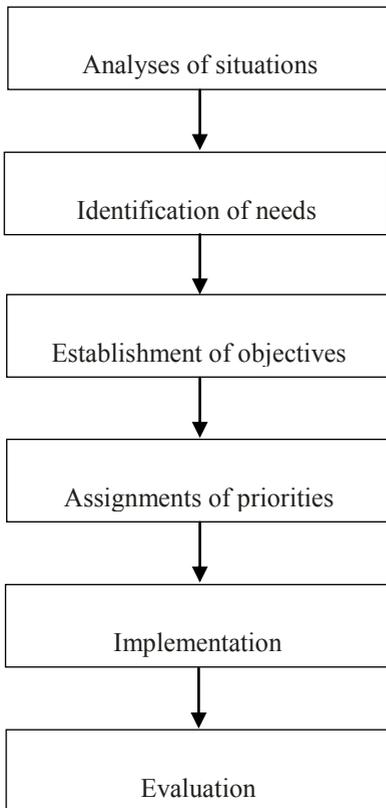
Proponents of human capital theories advocate that in order to maximize learning, the education and training providers should examine factors that enhance learning. The focus needs to be assess outcome of such human capital investment is lies on how the curriculum is designed, implemented and evaluated for an effective demand-driven vocational training programmes. As has been mentioned in chapter 3, the rapid changes in economic, occupation structure and shift from agriculture and industries to service sector requires skilled labour of varies types. On the other hand, the differences in learning depend on not only their capacities to learn, but other societal conditions and structural elements as well (Muller and Jacob 2008). Thus it becomes important for the author to incorporate the elements in examining the way rural people learn/acquire occupational skill. Besides, to plan a suitable demand-driven vocational training pro-

gramme in rural region, it is important to consider the components of the extent of opportunities available, particularly, the infrastructure in rural regions to learn vocational skill.

The theoretical framework of demand-driven approaches emphasizes that programme should be organized according to the requirements of target group and could be assess through relevant stakeholders to accommodate local culture, real life context and market realities. Therefore, the study sought to ascertain the possibility of implementing demand-driven vocational training for the rural people in Tamil Nadu. The objectives of the study are as follows.

- To describe how the rural people acquire their occupational skills
- To ascertain the available infrastructure for VET in rural areas
- To find out what are the preferred vocational training demands
- To identify the factors associate with those vocational demands

To elicit answer to this main research question a six-fold approach was adapted, explained in the Figure 5.



**Figure 5 Curriculum development model adapted from Lumsden (source: Lumsden 1977)**

The study employed qualitative research interview method mixed of Focus-Group and One-to-one interviews as it provides in depth information, pertaining to participants' experiences, perceptions and viewpoints on a specific phenomenon (Turner 2010). Further, it helps to gather multiple perspectives on a particular issue directly from the participants. Nevertheless, the possibility of obtaining a large amount of information is limited in this method, it is expected that the information generated through this approach would be much relevance for the proposed study.

The focus-group interview enabled to provide space for all segments in the rural community including elders, youth, women, village leaders, NGOs and volunteers. The details of demographic information, available education and training infrastructure, NGOs intervention, employment problems, migration of labour to cities were discussed. Each focus-group interviews lasted between forty-five minutes and ninety minutes. Followed by this, the individual inter-

views were conducted. The interviews were audio recorded for preserving and transcribing the information.

Name of the Districts	No. of Villages covered	No. of Focus-Group Interviews	No. of One-to-One Interviews
Vellore	2	2	7
Dindigul	1	1	4
Coimbatore	1	1	4

**Table 1** Need Assessment Survey in Villages

The data presented here were collected from four villages of Tamil Nadu. Of these four villages, three villages (hereafter named as B1, B2, and B3) were chosen from backward district and one village (hereafter named as I-1) is industrialized district. The underlying reason to select the combinations of these two (a) backward and (b) industrialized districts were to find the similarity and differences of emerging needs and how the geo-economic conditions influence needs in the selected villages.

#### 4.5 Examining the Vocational Training Needs of Rural People

In the Chapter 3, two pillars namely the labour market demand and learner's demand based on theoretical approaches at the macro level have been discussed. For designing a demand-driven vocational training, the “**need assessment**” is required at the meso level. In general, “need assessment” can be done at two different levels at the employers' level and learners'/target group level. By and large, studies have focused primarily from the perspective of the employers (see sec.3.2). Employers use this approach to map the labour market imbalance of skill demand and gaps arisen due to technology advancement and growing employment sectors (cf. chapter 3). In this study the author has felt that need assessment with potential learners/target groups was essential to involve most relevant stakeholders who are aware of the local conditions.

The training providers in rural areas are also in a situation where there is a need to reflect and accommodate the circumstances and customs of the local people they serve. Further, it was helpful to respond to the learners' demand and adaption to the learners' who are aware of the local conditions and labour market. In many of the demand-driven approaches, experts (McClelland 1994; Taylor 2003; Rivera and Alex 2004; Hauer and Quill 2011; Iqbal and Khan 2011)

have indicated that “need assessment” as an effective tool to arrive at the prioritized needs of the target people, analyze their perspectives besides studying the grassroots level situations to achieve the intended goals.

Further, “need assessment” also facilitates greater involvement of service users by giving more importance to locally derived priorities of the specific target group. So that curriculum components and curricula goals could be agreed upon. Therefore, to answer the main research question, it is further subdivided based on the theoretical discussion as follows.

1. How do men and women in rural areas acquire their vocational skills?
2. What are the existing available infrastructures for learning vocational skills?
3. What are the preferred vocational training needs of rural population?

As discussed in the theoretical background of section 3.1, semi-structured questions were divided into three thematic blocks. First was about the interviewees’ occupation and skill acquisition. The objective of the second thematic block was to find the available training infrastructure, vocational training providers and accessibility to the facilities. In the third block, need assessment method was used to assess the location-specific, learner-centered vocational training needs in the rural areas.

#### **4.6 Development of the Interview Guideline**

Majority of the Indian population lives in rural areas where agriculture and allied activities are the primary source of livelihood. Of late, emergence and adoption of new agriculture technologies in crop production have ushered in various new economic activities in the villages (IAMR 2013). However, it caters to a limited capacity of the available human resources while the remaining (surplus) labour forces in the rural areas are usually absorbed in the secondary and tertiary sectors (cf. sec 4.2).

Human/individual choice depends on the external factors and therefore skill acquisition process is related to these individual preferences. Further, several interventions of the Government in terms of policy reforms, anti-poverty measures have led to changes in the occupational structure and provision of various choices has created demand for skill formation to encourage non-farm activities in rural areas (IAMR 2010, p.1).

Skill formulation and acquisition is a significant process of making investment which yield returns on investments. However, the geographical location and available resources are also influencing factors on skills acquisitions (Noronha and Endow 2011; p.116). According to Palmar (2007) the informal on-the-job vocational training is mostly related to the traditional apprenticeship training in manufacturing and service sectors. There is a very little mention of informal

training in agriculture as it is often taught by the family (Palmar 2007, p.406). First, a few basic questions were asked in order to make interviewees feel comfortable. For example, interviewees were asked about their village, major occupation in their region how do they acquire vocational skills and the time period to learn them.

What is your occupation?

How did you learn your (specific) occupational skills?

(From the response, it can be classified whether it is formal / informal training) (If it is Formal training)

What was the duration of the training course? (If it is informal training)

How long did it take for you to learn those skills?

What factors motivated you to learn them?

After the training/ acquiring the skills, did you face any difficulty in finding a job?

If yes explain the difficulties that you faced

If no, where did you get the job?

Another important factor is that, vocational training programme in rural areas is regarded as one of the most successful interventions to increase employment opportunities which contributes to the human capital development (Hartl 2009). Proximity to home couple with easy access is a major criterion for active participation in training (Maxwell et al. 2000, p.76).

Choice of vocational training and participation has a strong relationship between the availability of training opportunity and accessibility to it, especially in rural areas where rural people faces lack of training centres, infrastructures and transport facilities to access if any (Hartl 2009; Nussil 1999). Thus, it is emphasized that training needs to be in real life context taking the opportunities into consideration (see section 3.2). It could be noted that there exists a close relation between the trainees' expectation and course offerings. However, the trainees / learners have to be well-informed about the available choices. With this backdrop, to find the available training infrastructure, vocational training providers and accessibility, the following questions assume significance.

Are there any vocational training institutions in your village? If yes, What type (govt./private/ civil society) of institutions are those? What training trade/courses do they impart? Are those training institutions located in close access to your village? If yes, is anyone from your village attending/studying in that institute? If no, what are the reasons? Which are the vocational training institutes close to your village and how far are they from your village? What kind of training courses do they impart? Do you think that vocational training institutes are necessary for your village? If yes, can you describe how would it help your village people in generating income or to get (self-) employment? If no, please explain the reasons

Maxwell et al. (2000) affirms that the participants' training demand is based on personal decisions which are influenced by basic human aspirations and it is absolutely essential to recognize, understand and meet their aspirations. The learners of VET need to know about available choice of courses (ibid. p.8). It is assumed that, the people in villages are well aware of the local demand and resources available to meet their demand. In reality, they need to be well informed about choices about available education, training and employment opportunities. Individuals often make their choice to participate in training in the political, cultural and educational context.

An individuals' most preferred occupation is the one which gives most of what he/she wants. Hence, outcome expectation of the training involves beliefs in the consequence of personality in given behavior (Bandura 2002). The third block is to assess location specific, learner centered vocational training needs in the villages and motivation to enhance their skills.

What are the major livelihood activities in your village?  
What are all the income fetching jobs in your area? Why?  
What vocational skills training would be helpful for you to get (self-) employment or/and income generation?  
What are the training institutions available for building those skills?  
Are these training institutions easily accessible to you?  
Which type of skill sets are wanted in the market?

Mostly, people in rural areas may have limited knowledge of all career opportunities and also they need support in identifying relevant learning opportunities which could provide them with real benefits (Bowman and Callan 2012).

The training provider allows learners to take their own decision so as to enhance the possibility of the learners' determination to achieve their prime demands. VET practitioners need to develop learning programme according to the learners' needs and situation (ibid. p.20) which will help to plan the training programme where flexibility finds a prominent place in its design.

There is an urgent need to make sure that trainees are aware of the training options which has a close relation between training expectations and course offerings. Another advantage of demand-driven approach is the flexibility in the programme delivery according to the learners' demand.

In the demand-driven approach, any education/training programme needs to be tailored to the **“specific expressed demands”** of the users/trainees of the intended target group. It meant that not mere their needs were identified but it also meant responding carefully to the **“specific things they want”**. Hence, in demand-driven training approach, vocational training providers must take into account of the insights and demand of the individuals/learners. Indeed it helps to identify and prioritize the felt needs and ensures that the training meets those needs as far as possible. Learners' motivation is also closely linked with the existence of employment, income opportunities in the (local) labour market.

Is there any scope of attending a programme, if you are given an opportunity to enhance your skill? If yes, what are your preferred vocational skill trainings needs?

What is the motivation to learn this specific vocational skill?

People would not invest in human capital or engage in VET if at all they see any likely work results from them. Moreover, factors like lack of adequate infrastructure, lack of money, time for participation in vocational training also are of great concern (Nuissl 1999).

Do you think this (preferred) training would help you find a job/self-employment?

If yes, please explain (if possible by an example)

Is there any training institution available in your village or close by which provides, training on the specific (preferred) training course?

If yes, please describe about the institution and the course fee

If no, where is it located and how far is it from your place?

What should be the expected duration of the course for the (preferred) training?

Voluntary contribution from the trainees or users is one of the indicators for a VET programme to be “demand-driven”. The economic theory of many types of training recommends that some portion of the cost need to be borne by the trainees (cf.chapter.3).

If someone offers you, your preferred vocational training in your village or nearby, will you be able to pay and learn? If yes, what fee could you afford?

If no, please specify the reasons

What kind of follow-up or support services do you expect from vocational training providers on completion of your preferred vocational training course?

#### 4.7 Findings of the Vocational Training Needs of Rural People

In India and many other African countries, the predominant source of VET is transferred through traditional or informal apprenticeship system (Eichhorst et al. 2012; Middleton et al. 1993) and which exists over a century. Mitra (2005) points out that most of the workforce gets training through informal apprenticeship or learning on-the-job. In the rural areas of India, most of the training and skills acquiring processes have happened through informal ways of learning.

- **Skill Acquisition**

The people in rural areas acquire skill largely through informal apprenticeship or learning on-the-job, which is illustrated by the following quotes:

“I learnt agriculture from my parents, experienced people [...] for example, aspects like when we have to plough the land, sow seeds and at what weather conditions. So, I just followed what they taught me” – Farmer, B1

This kind of traditional apprenticeship in family and transition of skill depends on the type of family skills possessed by his/her parents which limits new try-out and learning technological advances made in the specific occupation. Knowledge transmitted between generations within a family is called as “traditional apprenticeship”. But the informal apprenticeship is open to those who not belonging to a family or clan and the training is entirely work-based (Eichhorst et al. 2012). A young man explained how he will learn on-the-job:

“I just observe when the seniors or other fellow employees are doing the work. When I assist them, they will guide me and teach the work. Then, slowly I will start doing myself and learn by doing.” Young man, B1

Individuals’ personal interest, family situation, family members’ occupation and peer pressure also influence in vocational choice. In the present investigation, a tailor states how he acquired sewing skills,

“When I was young, I had no interest in studies but wanted to learn some vocation. Since my father was a tailor, I observed his work and started practicing myself in my home. He did not teach anything to me. I just learnt through observation and practice”. – Tailor, B1

The main source of skill acquisition happens through traditional or informal apprenticeship system, which is out of the purview of formal education and in this type of process the knowledge is transmitted within family or kin (ILO 2011). It is considered to improve the chance of achieving growth among informal sector such as unskilled to skilled worker, by increasing the chances for earning more.

Further, economic status of an individual plays an essential role in vocational decision making (Anderson 2003). A vast majority of the workforce in India acquired training through it was often family or hereditary informal apprenticeship and learning on-the-job (Mitra 2005).

It resulted that the learning process is confined only to the produce of specific type of outputs. Also the kind of training is generally work-based, following an informal training plan (Eichhorst et al. 2012; ILO 2011). A mason explained,

“There is no any specific training as such, if I know a mason I just go with him (uncle) and learn by doing it practically. After three months, I will learn the work, improve the skills and become a mason” – Mason, B3

Learning by doing is one of the most effective training deliveries which largely happen in a practical or workplace settings (Krishna 2005; Bowman and Callan 2012, p.39).

- **Training Infrastructure**

The availability of vocational training centre is important especially in rural areas, which are plagued by non-availability of training center, inadequate machines and learning equipment even if at all there is a centre. When the interviewees were asked about the need of vocational training institutes in their village, one farmer put it,

“It will be helpful; but, many people may not come or like it. Because, they will prefer to go on to the work place and will learn it (vocational skills)”. – Farmer B3

Even-though the skills are normally acquired through traditional and informal apprenticeship, economic growth will be limited due to the lack of certification of training and work experience. Moreover, there are higher possibilities that these learners lack in general skill and certificate issued by informal training employer is often restricted to that particular local region or community (Eichhorst et al. 2012). But, in contrast to formal VET, the informal apprenticeships have the advantage of being closer to the current needs of employers in the labour market (ibid. p.28). One interviewee mentioned about on-the-job, he said:

“If someone goes for a mason work without knowing anything, even (if) he does not know how to hold the shovel, but, prepare the cement mix could also earn Rs. 200 per day.”- Youth B1

Eichhorst et al. (2012) believes that informal VET facilitates a client transition to work, leading to better pay in the short run when compared to participation in a formal VET programme.

One young man pointed that, he prefers to learn through informal apprenticeship training as he would get an opportunity to earn while learn.

“Though there are many training centres, when I go with my uncle I can earn while I learn. If I go to the formal training institutions, I may lose my income and need to pay some fees to learn the vocation skills. I can not afford to pay because of my family’s poor economic situation.” – Youth, B3

On-the-job training is mostly used by these people especially for specific domain skills to perform his/her job. Further the economic constraints prevent aspiring learners to participate in vocational training and it makes more difficult when such trainings happen outside their village or region. There is a strong relationship between low-educated people and labour market opportunities (Krishnan and Shaorshadze 2013). Many people faces such constrain both money and time which often prevent them from both formal and informal sectors.

According to Mitra (2005, p.5) those who learn skills informally, i.e., on-the-job it would provide the basic skills but do not always familiarize the workers with technologies or managerial skills. Almost all the respondents cited that they have learnt their skills only informally passing farther to son, generation by generation. Often, the poor economic condition has not favoured them to learn in a formal training system. Informal training does not require any entry level criteria and often represents the only opportunity for school dropouts to obtain vocational training (Eichhorst et al. 2012; p.30).

While the formal vocational training and apprenticeship do not cater to the needs of the illiterate and the poor, the informal training often represents the only opportunity for school dropouts in access to VET. As Mitra (2005) argues that, the formal way of vocational training sometimes ignores the illiterate, low educated and the poor. Access to formal training remains confined to the minority among the less educated people. Informal learners are comfortable in this type of learning as they earn while learning.

- **Non-Farm Employment**

As has been seen in section 4.4, the current generation who lived in farming does not want their son/daughter to continue in farming occupation and therefore suggest an alternative or non-farm vocational skills for them. It can be illustrated with the following quote:

“Livestock can be provided for the present generation to generate income and vocational skills such as leather products manufacturing, tailoring can be offered to the young people in the villages” – Farmer, B1

Though India is predominantly an agriculture based country, it cannot provide employment to larger sections in this sector and there is a huge challenge for the growth of rural employment in the country. The rural populations who can not get adequate work in agriculture spillover into non-agricultural activities (IAMR 2013). One woman mentioned learning shoe tailoring would give her an opportunity to generate income.

“The leather shoe tailoring training which even can be work from home by job orders from shoe companies” – Women, B2

The vocational training needs are varied by the geographical location and the labour market situation (cf. Sec.3.4). While B2 village is located where many leather product manufacturing industries are located which indicates more possibilities for (self-) employment and/or home based enterprises. As Wallenborn (2014) states, the (self-) employment opportunity and possibilities for increased income are closely related with location conditions and known by target groups. One respondent who mentioned about initial vocational training, believed that it could increase job opportunities and income,

“At present, those who do not have basic skills or knowledge about leather shoe making joining as helper, can earn Rs. 2000 per month in the companies. If they acquire some basic skills on shoe tailoring and leather cutting, they could join as skilled employee (in a factory) and earn Rs.5000 per month. Many people are expecting such kind of training opportunity and will come for sure if you offer it.” – Wage labour, B1

The helper category is considered as entry level employment in the industries and is largely unskilled. The human capital theory of investment in education and training envisages bringing benefits in the productivity and earning of individuals and society at a large. When they were asked about income fetching jobs in their region, one youth mentioned that many less educated people in villages opted going for mason or helper in the construction field.

“Construction is one of the income fetching jobs here and many low and uneducated people go as mason in the construction field.” – Youth, B3

According to IAMR report (2013) the proportion of agriculture sector has declined and the proportion in the secondary, tertiary sectors has increased. Within the secondary sector there is an increased work force in the manufacturing sectors. It was observed in the survey as a young boy stated as below:

“I want to learn CNC (Computer Numerical Code), because many companies in our region need qualified CNC operators. I will get better salary if I am good in CNC operation.” – Youth, I1

While it is a fact that increasing an individuals’ skill level would enhance employability opportunity and result in increase in the wages, it should also be noted that vocational training demand largely depends upon the local labour market. The above quote makes it very clear, because this region is mostly a leather based industry which provides employment opportunities to many people locally.

- **Skill Mismatch**

The outdated trades and technologies due to rapid advancement in science and technologies led to skill gap between the skills acquired in vocational training institutes and those required by industry or labour market (cf. chapter.3). One ITI graduate mentioned about problem of skill mismatch,

“While studying at ITI, they teach only theory aspects which are in books. But when I go to the company, the scenario was different from what we were taught in the class room.” Youth I1

Many trades in ITI are driven more by supply-side considerations and fulfilling certification requirements that are largely academic than the needs of the labour market. One of the biggest problems that India faces is skill mismatch; many industries are suffering from lack of skilled workers. Given this problem, industries suffer from skilled workers on the demand side, on the supply side there is lack of skilled workers and this skill mismatch leads to further for unemployment (Sanghi and Srijia 2014).

- **Demand for Sewing Vocational Training**

Interestingly many respondents in the villages, especially women in all the four villages interviewed, reported that they wish to learn sewing vocation.

“If you offer training on tailoring, it will, even if we are not stitching for others, we can at least use those skills to make Blouse for our own use and could save Rs.40 per Blouse” – Women, B1

“If my daughter knows tailoring, she can do this tailoring job even if she get married and go to her husband’s place where she could work from home and look after her family as well. Today, the labour charge is Rs. 30 per Blouse, if she stitches minimum four Blouses per day, she can make Rs. 120 in a day. Is it not enough?” - Women, B2

One respondent whose occupation is tailoring mentioned that there is more demand for tailors:

“There is a growing demand for tailors; there are only ten tailoring shops for the entire seven villages. But people need more tailors, because they have to go Gudiyatham (a small town) to stitch their clothes” – Tailor, B1

Most of the respondents, especially women have aspiration to learn sewing vocation and consider it as potential (self-) employment opportunity and as supplementary income. As Noronha and Endow (2011) reported in their study, women in these villages also wish to operate from their homes. It provides flexible working conditions for them to go for work like wage labour elsewhere during the lean period. The empirical evidence (Maitra and Mani 2014, p.4) shows that women who participated, acquired skill in the sewing vocational training reap benefits.

- **Certificate Requirements**

Despite they acquired their skills informally; they see the value and importance of certificate for better remuneration and recognition. But, due to their families’ poor conditions and lack of opportunity to access training, they were not able to learn through formal training. It is illustrated by the quote below.

“Even if I want to join in some formal training institution to learn some vocation and get certificate, it needs money and sufficient income” Youth, B3

A woman believes that a well-structured training programme with adequate infrastructure would help her to get a job.

“If you teach us tailoring by setting-up a centre with necessary machines, equipment, and qualified trainer and organize the training duration ranging from three to six months with a certificate, we could find a suitable job.” – Women, B1

One young man believes that, certificate is an important proof for qualification and could help him for better career mobility with better earning.

“If I studied in some vocational institution which awards a certificate upon completing my training, I could join a company and also get a better salary. It would be very easy to approach a

---

company for a job if I have a certificate. But, since I do not have any certificate, there is no evidence for my skills” – Youth, B3

The young men and women are well aware of the need and benefits of a certificate which enables them move towards formal workforce. In spite of efforts of the Central and State Governments, through various development initiatives, the skills which acquired informally need to be recognized and certification should be done. The individual gets better employment opportunities when their skills are formally accredited through recognition of prior learning (RPL). Another major factor for not participating in the formal vocational skill training was the economic conditions. Majumdar (2008) affirms that proper recognition and certification for those who acquired skills informally would help them to avail loans from banks for self-employment particularly in rural areas (Majumdar 2008, p.47).

Increasingly, literate rural youth do not want to stick to the less-remunerative activity of their parents. A large number of these young people move out of their villages. VET means to train young people, develop skills in a specific occupation that could mitigate migration and enable them to get decent employment for his/her livelihood.

Category of people	Name of the District			
	Vellore		Dindigul	Coimbatore
	B1	B2	B3	I1
<b>Farmer</b>	-Livestock Management		-Nursery Maintenance	-
<b>Youth</b>	-Leather Products and Shoe making <b>-Tailoring</b>	-Two wheeler mechanic -Carpenter -Air Conditioning and Refrigerator Maintenance -Mason -Carpenter	-Centering -Two wheeler and four wheeler mechanic -Computer Training	<b>-Tailoring</b> -CNC
<b>Women</b>	-Leather products and shoe making <b>-Tailoring</b>	-Match box making <b>-Tailoring</b>	-Food Processing and Making of eatables <b>-Tailoring</b>	<b>-Tailoring</b>

**Table 2 Matrix of identified vocational training demand**

\*B- Backward district, \*I – Industrial district

From the Table 4, it is clear that there exists a close relationship between the individuals' learning aspirations, and geo-economic growth. In villages where many leather tannery industries, leather goods manufacturing companies are located, people demand for vocational skill training related to making of leather products (leather - cutting and stitching – middle level) and shoe making training.

Further, all the women irrespective of the district's socio-economic variables, had mentioned that they prefer to learn sewing (also referred as "tailoring" in local context) vocational training. Also they expect this training programme should be in accessible places and not far away from their home. Many women in rural areas wished to work from their homes and earn money rather than going out of their villages.

### • **Entrepreneurial Skill**

Is a mere vocational skill enough to succeed in the labour market? Mitra (2005) emphasized the significance of skills such as marketing, access to finance, societal skills and managerial skills. The rural livelihood promotion depends on the ability to diversify (Wallenborn 2014). The project planning assumed in the socio-cultural context that diversification of rural activities well lead to increased income of the beneficiaries after participating in skills training programmes which integrated as well as entrepreneurial competencies (ibid. p.797).

“An NGO imparted income generation training on wire bags, cane products making and helped to get TADCO (Tamil Nadu Adi Dravidar Development cooperation) loan. Though they facilitated, offered guidance to start micro enterprise, we did not start any activities. Instead, we simply spent that money for our day-to-day family expenses”. - Women B2 village

“If you impart training on some micro enterprises and start making products after the training, where we can sell those products? Selling is a huge problem! The income would be possible only if we are able to market those produce. If some agencies help us to sell our produces, it will encourage us for better earning” - Women, II village

Training for women has been offered in traditionally female dominated economic activities. The training in social and business skills have also been very limited (Mayoux 2005). Selection of vocational course should be “need-based” and “location-specific” to avoid the mismatch between the supply and demand of skilled manpower in agriculture and rural industries (UNEVOC 1997).

VET has long been considered as crucial means of providing competent human resources socio-economic development in rural areas. Education and training are known to increase one’s chance earn a livelihood and join the economically active population, besides assisting one’s self-development (UNESCO 1999).

## **4.8 Discussion on the Results of Vocational Training Needs**

For any occupation skills and competencies are significant to perform the given tasks. Rural development process includes strengthening livelihood bases of the people. In this task, building skill could provide gainful employment opportunity and enable to reduce poverty. To achieve this, developing relevant need-based training programmes are essential for rural livelihood development. The curriculum should focus on technical, entrepreneurial and life skill development and also be competency based and incorporate on-the-job internships or production learning opportunities.

Formal vocational training programme has not been designed to cater to the needs of increasing number of low-educated in the rural areas (Mitra 2002). Most of the respondents emphasized that reducing barriers such as access, cost, entry level (educational) qualifications and flexibility of the time and place

would increase the chances to participate in vocational training (Nuisl 1999, p.17).

Unanimously people interviewed demanded for specific vocation, primarily motivated by future economic benefits and better job opportunities. In every village interviewed, the author observed that, vocational skill training has a huge demand especially among women. Many of the respondents interviewed acquired skills through in-formal, on-the-job training modes. The vocational skill development in the informal economy is referred as on-the-job and enterprise-based or farm based (cf. Palmer 2007, p.405). This form of training provides more opportunities for low-educated, school drop-outs and poor.

It was also found that the ITI students could not meet the employers' demand as they had been given more theatrical education, but, provided less practical training. It indicates that the formal vocational training centres that are located in the industrial region under study lacked in preparation of the young people to meet local labour market needs.

Schmid (2015) draws attention of the ILO Global Employment report, which cautions that youth with diploma suffers unemployment rate. Hence, skill development system must have cooperation with the local industries to mitigate unemployment by preparing workforce according to the labour market needs. Regarding the certificate, there is an increasing awareness on certificate requirements as it legally acknowledges skill which readily becomes marketable (Schmid 2015).

Almost every woman interviewed preferred to learn sewing vocation and wished to work and earn from home. In the backward districts, the respondents' need was to learn tailoring and to make leather goods and shoes. As mentioned in Table 4, almost all women demanded female dominated occupational training.

It was also observed from the survey that no farmers had asked for any agriculture related trainings such as technology (knowledge) transfer, modern techniques except livestock management and nursery maintenance, because, many farmers in the surveyed villages were in different stages of quitting farming and were working as agricultural labourers in others' land. Most of the rural young men preferred to learn automobile mechanic, masonry and technical oriented trainings. But, none of them interested in agriculture related vocational training. The social and community environment was another crucial factor which affected individuals' aspiration and attainment in vocational career (Rupasingha et al. 2000).

The needs emerged in the study are only from individuals'/learners' perspective. On the other hand, it is critical to analyze the market demand as well to make sure that matches with the local employers / labour market (see sec. 5.5 for experts' views on the prioritized vocational training demand as sign of the labour market demand for validation). However, vocational training should enable an individual to get gainful employment or start self-employment.

The training providers especially in rural regions need to consider the local context and economic opportunities to benefit both the target people and employers locally. In the rural areas, majority of the respondents acquired skills through traditional and informal apprenticeship. In the informal mode of skill acquisition, besides “learning by observing and doing” training is largely confined to initial training but continuation and upgrading are rarely available (Ziderman 2003). Hence, the specialized modular skills training could help them for testing and certification of their prior learning and certification that will be nationally recognized by Government, private agencies, industries and trade organization.

## 5. Developing Curriculum for Sewing Vocational Training

As has been seen in the previous chapter, sewing vocation is one of the most preferred vocational trainings in rural areas especially among women. Therefore, this chapter will shed light on the curriculum development theory and methods besides selecting appropriate curriculum development strategy. An expert interview was conducted to determine the required competencies for sewing vocation in line with the rural peoples' demand.

### 5.1 Curriculum Theory and Methods

Any training and education faces the challenges of adjusting training methods, curricula and are primarily based on the needs of target population (Hartl 2009). Curriculum planning and development requires careful attention while developing a suitable curriculum for early school dropouts and marginalized groups of a society.

**Curriculum:** The word curricula was derived from the Latin root, which means “racecourse”, because for many students the school curriculum is a race to be run to overcome a series of challenges and obstacles (Marsh 2009, p.1). Many writers, curriculum theorists and practitioners advocate curriculum as their own. There are more than 120 definitions by different authors and it is widely available in different literatures, which varies depending upon authors' concepts and nature of work (ibid. p.2).

Developing a demand-led curriculum is based on particular social phenomena which accomplishes the needs of target section or community. Thus, appropriate curriculum model or method guides curriculum developers to move into action (Lunenborg 2011) and yield greater efficiency and productivity to address the learners' needs.

**Curriculum development:** It is a process of planning, implementing and evaluating with a focus to achieve some educational or training objectives. Reid (2003) describes curriculum as a technique which explains how to devise materials or programmes that will bring about specific learning to the learners. He states that structure, sequence and completion as some important characteristics of curriculum. It is, however, depends on the relationship between purpose of the intended education or training and targeted learners.

Assessing the felt needs of learners' and matching them with the curricula is essential where the success of curriculum development rests. As discussed earlier in the first and second phase of the previous chapters, issues such as declining agriculture, increased industrialization, diversification of livelihood in rural areas, migration from rural to urban, low literacy of rural people in India, warrants the research community to seek how VET could be used as a powerful tool to address them. Goel (2008) affirms that vocational skills development initiatives support employment generation, economic growth and social development process.

Skill development and/or vocational training programmes in rural areas contribute more to improve productivity and working conditions in the agricultural sector while at the same time enabling rural workers to access emerging employment opportunities beyond the agricultural sector (GOI 2009). On the other hand, many parts of rural India faces insufficient skill development programmes, infrastructure and yet, access to training is the most acute problem/bottleneck in this area (ibid. p. 18).

Taba (1962) describes the seven stages of curriculum development model which is often called as "grassroots model" advocates seven major steps in which a teacher (or curriculum developer) plays a pivotal role. Taba's model of curriculum development is an inductive approach as follows:

- Diagnosis of needs: The teacher or curriculum designer initiates the process by identifying the needs of the students for whom the curriculum is to be planned.
- Objective Formation: Specific objectives should be formulated based on the needs of the target group.
- Selection of Content: The selected objectives should suggest the subject matter (not only subject but also validity, relevance and significance)
- Organization of content: Having selected finalized the content; it needs to be organizing it in some sequential pattern.
- Selection of learner activities: Appropriate instructional methodologies should be employed based on the content and sequence.
- Organizing learning activities
- Evaluation: It helps to determine how much of the objectives have been achieved.

Some similarities can be noted from both the authors Lumsden (1977) and Taba (1962) which reminds that curricula planner should focus on the factors such as analyzing the situation, needs of learners and based on this the curriculum should be developed. Further, this approach is more of participatory and need-based.

As mentioned in the previous section (4.4), individuals' demand for vocational trainings revealed that most of the respondents are relatively less educat-

ed, majority of women demanded vocational training course on sewing. Therefore, in this chapter we will discuss the process of developing demand-driven curriculum for sewing vocation in line with demands of intended target group.

## **5.2 Framework for Demand-Driven VET Curriculum**

Curriculum framework is an assumption of an effective development of defined competencies and structured modular formats. In this curriculum development process, analyzing “socio-geo-economical” factors are critical to incorporate those considerations are essential in this process. Also the local content requirements and tailored curricula would help them to provide employment opportunities in the particular geographical area. In the vocational training demand, it was found that, rural women are likely to learn sewing vocation to gain decent (self-) employment and majority of them prefers to be self-employed by working from their home and to earn money.

Indeed, curriculum framing needs some special support when planning for (rural) women who have more responsibility in domestic work when they participate in such skill development, training and education programmes (Bessette 2011). For marginalized and drop-outs, “lack of education and basic life skills limits their life chances, including access to VET and restrict employment opportunities for earning and living” (ibid. p.67). The modern education and economic trend should not ignore the lower strata people in the community who needs to be imparted required skills and knowledge to participate effectively in the labor market. As Bacchus (1990) claims vocational training is an effective tool to help them to participate in the labor market and also could enhance their living standards in their own community (ibid. p.291).

Individuals in rural areas looking for more flexible VET provisions supported by appropriate infrastructure. It requires well designed curriculum, competent trainers to meet the individuals’ needs. Having said, in contrast, many developing countries often faces issues such as to meet the high costs of equipment, materials, infrastructure and instructor training needed to offer quality demand-driven VET programmes (Murray et al. 2008; Stockmann and Silvestrini 2011).

In the empirical evidences of VET programmes, the curriculum planners and development practitioners, the purpose of education is to provide more educational opportunities for females, unemployed and helping marginalized people in a society. Hence, it is important to reflect target groups’ demand in the curriculum to meet desired educational goals. It is due important to find essential qualifications, competences for a specific occupation will be discussed in the expert interview (see sec. 5.6). Let’s turn to selection of curriculum method which will be more appropriate for target group.

### 5.3 Choice of Competency-Based Curriculum

According to Young (2011, p.3), there are two qualifications that exist and operate at the learner and providers' end. He argues that the traditional or institution model in which the educational providers have considerable influence upon qualification. Secondly the "outcomes" / "competence" model refers to a particular set of (policy) intervention.

The meaning of the term "competence" or "competency" is quite ambiguous in the literature as the number of definitions is still to grow and its viewpoints vary among different researchers (cf. Barman and Konwar 2011).

In the Indian context, the Ministry of Human Resource Development, Government of India has developed a National Vocational Education Qualification Framework (NVEQF) which organizes qualifications according to a series of levels of knowledge and skills. These levels are defined in terms of "learning outcomes" or "competencies" which learners must possess regardless of whether they acquired through formal, non-formal or informal education and training system (IAMR 2012, p.3). Since the Competence Based Education and Training (CBET) provides learners with the required skills, knowledge and understanding to demonstrate competence against standards and performance criteria in an applied context (ibid. p.40).

The Indian NVEQF defines competency as "what a person is required to do (performance) under what condition it is done and how well it is to be done". "A Competency based curriculum describes what learners must "know and be able to do" by the end of a programme or study" (PSSCIVE n.d., p.3). Competency-based curriculum is broken down into coherent parts known as Units. Each unit is further broken down into knowledge and skills on the basis of which evidence is to be provided by the learner and the evaluation is to be done by the teacher or trainer.

Most of pedagogical-didactical characteristics of outcome based approaches are in total contrast to traditional or teacher centric approaches Hellwig (2006a). The mode of approach i.e. **supply-driven primarily focuses on content of a course or a programme** (Winterton 2005) rather than what learners are expected to know and be able to do after completion of an education or training programme (Werquin 2012).

In contrast, competency-based curriculum focuses more on outcome (product) rather than inputs. It gives pathway to design a curriculum where qualifications focus on the requirements of work process; perceived as motivator of learning and put learners and/or target people at the centre of curriculum development (Reuling 2002; Deißinger and Hellwig 2011). It can be developed as work place based and performance based modules which allow different forms of delivery and acquisition of competences and qualifications (Reuling 2002, p.16).

The main principle of outcome or competency based approach lays on individuals with their interests, abilities and needs (CEDEFOP 2010). Winterton

(2005) claims that **competency based approach in VET is considered as the replacement of traditional educational system with demand-driven approach which focuses on out-put of specific objectives**. Young and Allias (2011) put it in other words; “competency-based approach does not focus on how or where learners become qualified, but only condition is whether they acquired needed competences of a specific occupation”.

In an emerging economic scenario, a flexible mode of training curriculum is needed to address individuals' demand in terms of duration, competence and to find self (employment). Deißinger and Hellwig (2011) point out that competency-based approach is being practiced to increase the recognition of VET with social acceptance and take up vocational qualification particularly for school dropouts and less educated. Hellwig (2006a) articulates that competency based training aims at more flexibility in terms of duration, contents of training and teaching method which gives flexibility in designing the learning process which enables the curriculum to be designed according to the specific needs of learners' while elective modules depends on local situation and availability of time.

Blunden (2006) also states that curriculum planning and training delivery in VET sometimes ignore much of personal diversity of the individuals like age, culture, ethnicity, gender, education level and ability. In order to fill those gaps and make the curriculum needs to be more flexible and to address learner's demand without compromising qualification standards of sewing occupation.

Further, competency based curriculum provides VET planners to exactly develop flexible learning strategies which could apply according to the learners' needs, abilities and environment (Deißinger and Hellwig 2011, p. 30)

The above empirical studies and literatures guide the author strongly to adapt a competency- based approach of curriculum for vocational course on sewing, based on the principle of keeping the learners' demand at the centre of the process. Indeed, this approach increasing the chances for flexibility and skilled human resources ultimately aiming to reduce unemployment and social acceptance besides increasing the chances for more employment opportunities to the underprivileged people and women in rural areas. The following section will discuss about interviews with tailoring experts including the purpose, methodology, questionnaire development and realization.

## 5.4 Experts' Interview

### 5.4.1 Experts' Interview for Curriculum Development on Sewing

According to Taylor (2003, p.70), interviews with skilled practitioners in the relevant field is significant and easy to develop a framework of the key tasks and skills as well as the knowledge and attitudes required for the specific occupation.

Curriculum planners often may not be aware of reality of the target audience (rural women in this case) and lack in field (sewing) based experience. To overcome these shortcomings besides the fact that the author of this study also being rather new in tailoring field, it was decided to conduct an experts' interview.

The main purpose of this experts' interview was to determine domain specific competences in tailoring vocation and also find to what extent it was possible to frame a short-term course, essential components to be included in the curriculum, prospects and issues of tailoring vocation (in rural context). Moreover this process would help to develop a “**learner-centered**” curriculum with due importance to the geographical location and context (CEDEFOP 2010).

Defining an Expert in this study context is “a person who has expertise both in subjective and technical aspects of tailoring field”.

#### *5.4.2 Methodology*

The qualitative research interview method was employed to obtain the needed data. This method provides in-depth information, pertaining to the interviewees' experience and viewpoints of specific phenomenon (Turner 2010). Semi-structured interviews and unstructured interviews are widely used in qualitative research. The experts' opinion, attitude, feelings and values are more essential and which will be used as basis in curriculum designing. In the experts' interview, semi-structured interview was employed which consisted a list of open-ended questions based on the topic areas the author intended to study. The open-ended nature of the questions provided an opportunity for both the interviewer and interviewee to discuss certain topics in more detail. It proposed the flexibility when the interviewee had difficulty answering a question or hesitated while the interviewer could probe expert for more details (Mathers et al. 2002).

#### *5.4.3 Interview Arrangement*

Tailoring experts are available in different sectors such as fabric manufacturing, garment industry, fashion designing, training centers (formal/non-formal and NGOs as training providers) and tailoring shops. Selecting an expert forms a critical part as to whom to be interviewed in order to get a more realistic response? At this stage, it has been achieved, based on the objective and what type of information collected through expert interview.

- To determine competency standards to develop (initial-) tailoring vocational training curriculum for rural women.
- To assess the attitude and opinions on the issues and scope of tailoring vocation in rural areas.

#### 5.4.4 Experts Sampling

It will be worth to carry out the interview that is most likely to give the expected data. Therefore, the experts' were chosen according to their expertise in tailoring field and also who had a better understanding of rural context. Sometimes, it is challenging to find the tailoring experts with these combinations of criteria particularly when interviewer is from a different context. "Expert sampling" technique was employed, which helped the research to select such experts who would positively contribute to advance the author's interests besides opening potentially new vistas in the subject under consideration *viz.* sewing (Lisa 2008). Suitable experts were identified using snowball method of sampling in which one expert interview led the author to another. Initially the experts were identified through online sources.

Category	Tailoring Curriculum	Trainer's selection
Vocational Training Institute	2	1
NGO based Training provider	2	2
Garment Industry	1	1
Self-employed (Sewing)	1	-
<b>Total</b>	<b>6</b>	<b>4</b>

**Table 3** Category of sewing experts interviewed

The data presented here were collected from four different categories of expert *viz.* from two vocational training institutes, two from NGO-based tailoring vocational training providers, one garment industry and one self-employed individual. The underlying reasons to select the combinations of tailoring experts from different backgrounds was to assess the competences required for a tailor in general, but also to get information about their attitude, skills and knowledge required for learners, analyze labor market at the local level. Besides, curriculum development, information regarding selection of sewing trainers also could be obtained. Hence, the questionnaire was divided into two parts, one for curriculum development and the other for trainer selection respectively. Face-to-face interviews were conducted and each interview lasted between thirty minutes and

one hour. All the interviews were audio taped for future reference and transcription. The recorded information was not transcribed fully, instead used for partial transcription. Careful attention was paid while carrying out this process and only relevant information to this study context was transcribed.

## 5.5 Development of Guideline for Experts Interview

### Assessment of competencies for sewing vocation

The process of curriculum development for a course or training programme begins with “job analysis” to perform better in the labour market and aid in the economic growth of an individual and society as well. The competences required for any vocation is determined through a process called “functional analysis” (Cheetham and Chivers 1996). In a study of CEDEFOP (2010) in nine European countries, three phases in curriculum development were observed as follows. First is to analyze the work requirements, second is develop curriculum based on the requirements and the final is more importantly the learning programme where the decisions need to be taken that meets/suits the learners’ demand in a specified place and time (CEDEFOP 2010, p. 77).

In the competency based approach, assessment of required job related competences is a crucial part in developing curriculum. The term “competency” is often described here as workplace and learning requirements which includes competencies such as, cognitive ability, technical, behavioral and social competences (Cheetham and Chivers 1996). According to Hellwig (2006a), in a training or course “modules are derived from work processes and therefore represent the workplace requirements including technical skills, underpinning knowledge as well as social and personal attributes” (Hellwig 2006a, p. 62). The competency standards, therefore, needs to be defined on the grounds of work-based requirements where the relevant occupational field experts depict crucial work activities, tasks and functions (Deißinger and Hellwig 2011, p.9). These authors refer to “**target-oriented approach**” in which they emphasize functional competence as the ability to demonstrate to the standard required for employment in a work context. Hence the first two questions were:

Can you explain the main tasks/functions of a tailor?

What key competences a tailor should acquire to perform their tasks to get an employment?

Taylor (2003) offers a technique to choose the content for the training programme mostly relevant to the target people based on the socio-economic, environment and the ability of learners. He states that when there is too much of competence and required content of identified knowledge, skills and attitude, it

can be simplified by grouping as “Must Know”, “Should Know” and “Could Know”. Sometimes, it is impossible to include everything. All knowledge that a learner must have are to be included in the course content. Some of the knowledge that they should know and a limited amount of what they could know can also be included (ibid. p.103).

This leads to the third question:

Can you categorize the listed competences, which a tailoring trainee must know, should know and could know?				
<b>Functions/Tasks (will be drawn from q.1&amp;2)</b>	<b>Competences</b>	<b>Must know</b>	<b>Should know</b>	<b>Could know</b>
Designing				
Drafting				
Pattern making techniques				
Stitching				
Safety precau- tions				
Others				

- **Trouble-Shooting Techniques**

In rural areas, it is often difficult to find sewing machine (repair) technicians. A tailor who learns the basic trouble shooting techniques can manage themselves if some technical issues arise. Indeed, this will help in saving cost and time and also increases self-confidence in their work.

Does the technical skills are important for a tailor?

If Yes, What trouble shooting techniques a trainee should learn?

If No, Please explain why?

What technical issues a tailor generally face? What precautionary methods they must know to avoid such technical problems?

- **Context Specific Content Selection**

Analyzing the local condition will be of great help in developing a more context specific and time bound curriculum, which is more relevant to the end users. Generally, women in rural areas expect some immediate effect in terms of finding a job and normally expect to start earning after short duration.

The factors such as accessibility, socio-economic condition and their role in the family hinder their opportunity in participating in vocational training. This leads to design a curriculum for sewing vocation with more relevance to the local situation and context specificity. Since most of the women respondents interviewed mentioned that they wanted to learn only Blouse and Salwar Khameez stitching and the training should not be of longer duration. Most of the respondents have expressed that training should facilitate for the betterment of their family and aid in fulfilling their social obligations.

“If you teach tailoring by setting-up a centre with necessary machines, equipment, qualified trainer and organize training between three and six months with a certificate, they could find a suitable job.” – Women, B1 (cf. chapter. 2)

As Bennell (2007) asserts, education and training should prepare a person adequately to participate in the labour market. Thus, content of courses cannot be taken without careful regard to the abilities and interest of the target group (Griffin 1983).

(Based on your experience) could you prioritize that which clothes sewing (for example: kids, boy, girl, men, and women) are more in demand to sew in rural areas?

Could you please explain the reason why there is demand to sew this particular (will be drawn from the answer of above question) dress in rural areas?

- **Qualification Requirements to Learn Sewing Vocation**

The modern economic and labor market expects to equip those who are less educated, with adequate skills and knowledge to improve their living standards in their own community itself (Bacchus 1990, p.291). Curriculum theorists (Tyler 1949; Taba 1962; Saylor et al.1981; Kelly 2004; Kelly 2009) also empha-

sized that the curriculum developers should keep the target group in mind when planning the curriculum.

Women's participation in vocational training is generally limited in most of the developing countries especially in Asia and many Sub Sharan African countries (Gray et al. 1993; Bennell 1999). In contrast, poor and vulnerable are generally more interested in skills training that meet their immediate needs (Hartl 2009, p.17). Nevertheless, the VET curriculum planners and development practitioners emphasize that the purpose of education is to provide more educational opportunities for females, unemployed and helping marginalized people in a society.

Does the learner require any prior basic educational qualification for initial vocational training on tailoring?

If yes, what minimum requirements he or she must have?

If no, Why and what are the constraints for less educated people to learning tailoring?

Do you think that less educated learners also could learn tailoring?

- **Entrepreneurial Skills in Sewing Vocation**

In job-oriented, demand-driven training systems, entrepreneurial skills help the poor to become more productive. Such skills are prerequisites for economic development (cf. Overwien 2009; p.2586). Market support to skilled workers in informal economy is vital support for productivity.

“If you impart training on some micro enterprises and start making products after the training, where we can sell those products? Marketing is a huge problem! The income is depends only on our ability to market those produces. It will be a motivation if some agencies help us for marketing our produces.” - Women, I-1 (cf. ch.2).

Could you explain what entrepreneurial skills are required to be successful in tailoring business in rural areas?

What marketing strategies will help them to attract more customers' orders to improve their business?

Bennell (1999) also asserts that curriculum should incorporate social and managerial skills besides the technical competencies. Since the targeted learners are low educated and often lack in business skills need inputs on these aspects.

- **Scope for Sewing Occupation**

The employment opportunities and possibilities for increasing income of individuals who are vocationally trained and its closely related to the local condi-

tions. Skill development should therefore be contextualized to economic opportunities with suitable, local context which are best known by the target groups (Wallenbron 2014) sector experts.

What employment and income generation opportunity available for sewing vocation in rural areas?

- **Course Duration**

Bennel (1999, p.22) argues that *poor and disadvantaged women* are more interested in skills training. He argues that, “it meets their immediate “Practical gender needs” as opposed to longer term “Strategic gender needs” that directly tackles the basic underlying causes of female subordination”. The learning needs as a function of professional response and its prescriptions take the form of strategies to maximize both the flexibility of response and learning needs. As stated earlier from the survey result, the rural people particularly women had the desire to learn tailoring vocation within a short duration of time.

Is it possible to impart tailoring course with these competences in two months? What is your opinion?

What specific/essential competences you would suggest to impart to learners if they be able to participate only two months tailoring course?

- **Choice of Sewing Trainer**

The trainers’ role is very crucial in delivering the curriculum to the end users. The trainer should be committed to the cause of trainees. But there is a huge shortage of vocational trainers in the country (Planning commission 2006; Majumdar 2008); the National Skills Development Corporation’s report (n.d.) estimates that annually India needed 40,000 vocational trainers.

In rural areas, it is generally difficult to find competent, qualified trained teachers (UNEVOC 1997; Hartl 2009). Trainers often lack in technical knowledge, skill related to their vocation. Trainers often had little or no understanding of the specific problems of the rural poor or what it means to operate in the informal sector (Mayoux2005).

What qualification and experiences a tailoring trainer should possess to train rural people on tailoring course?

What competences are most important for a trainer to teach tailoring course for rural people?

- **Teaching Methodology**

In order to find what curriculum, teaching-learning materials they use, the following questions were being asked mainly with training providers.

Do you follow any specific curriculum? What teaching and learning and learning materials you use?

If yes, can you explain?

If no, what is the reason?

- **Gender of the Trainer**

Traditionally, India is a male dominated society (Noval et al. 2011) where generally, women in rural areas hesitate or not sit; speak in front of male due to the socio-cultural system (Singh et al. 2009). Though, this condition has slightly changed to some extent in this contemporary age after rise in awareness level and education.

Does the gender is an important criteria in selecting a trainer to teach tailoring particularly in rural area?

Who will be suitable to train whether male or female? How?

## 5.6 Results of Experts' Interview

In this sub-chapter, the responses from the experts are explained in the ensuing passages, using the holistic model of competencies *viz.* knowledge/ cognitive, functional, behavioral and ethical competences. Further, the employment/income generation opportunities and demand for tailors in the (local) labour market is described.

- **Basic Knowledge of Sewing Machines**

As has been seen in the questionnaire development, competency based approach refers to the competencies that were derived through job or functional analysis. In order to cluster the competences, the author adapted Cheetham and Chivers (1996) holistic model of professional competence. The authors describe four key components of professional competence derived by functional analysis (*ibid.* p.21)

- Knowledge/ Cognitive competence
- Functional competence: The job specific tasks
- Personal or behavioural competence: This is mainly linked to managerial aspects of behavioral characters such as self-confidence, sensitivity, proactive and effective performance
- Ethical competence

The knowledge/cognitive competence defined as "...the possession of appropriate work-related knowledge and the ability to put this to effective use (Cheetham and Chivers 1996, p.24)." It is referred as those occupational standards are associated with knowledge and understanding for effective performance (ibid. p.21). In cognitive analysis, experts define the competencies standards and required skills, knowledge and attitudes.

"First we have to teach them about different types sewing machines, parts in the machines. Because, he or she should be aware of what parts are in the machine, how to fix threading, needles, and bobbin case in the machine and the pedal control." - Manager, Garment Industry

"They (Tailors) must possess good knowledge, understanding of sewing machine with which they (going to) work." -Proprietor, Tailoring Vocational Institute

"A tailor must learn the pedal control, basics about machinery parts. Because a tailor must what the parts are there in the machine, after this how to fix threading, needles, and bobbin case in the machine" - Manager, Garment Industry

Winterton (2005) describes that declarative knowledge (*know-what*) leads to the procedural knowledge (*know-how*) under the cognitive competence like knowledge of knowing about various types of machines, its parts and tools required to each tasks have to be taught to the trainees.

- **Functional Competences**

It's the "ability to perform a range of work based tasks effectively produce specific outcomes" (ibid. p.24). Experts mentioned that acquiring skill such as taking measurement, patterning, cutting and sewing skills are essential in a tailoring vocation.

"A tailor must have competences of measurement, pattern, cutting and sewing. Also he/she should learn pedaling skills first and should know all parts in sewing machine and its functions" -Master Trainer, NGO X

"A tailor must have five important competences such as measurement, pattern making, cutting, stitching and finishing". -Manager, Garment Industry

Further, authors break functional competence to the other sub-elements competencies like occupation-specific (tasks relate to a specific profession), cerebral (which involves primarily mental activity, literacy, numeracy); psychomotor oriented and organizational/process (task of generic nature like planning, delegation) competencies.

- **Personal/Behavioural Competence**

Behavioral competence in this context is refers to the actions of the professional tasks and ability to adopt appropriate behaviors in job related circumstances. One expert said that how a tailor should treat a customer and meet customer requirement forms part of a successful business:

“A tailor should deliver the finished goods on time, treat the customers with respectful and in pleased manner.” -Master Trainer, NGO Y

“First of all tailors must welcome a customer with pleasant smiling, then they should note their body structure and also check the kind of fabric they brought for sewing. Also tailors have to understand what type of design the customers expect from him” – Master Trainer Y

“If they (tailor) want to make more customers, it can be made through fixing the sewing charge less than the other tailors who are nearer to them and maintain the finished product delivery time without any delay.” -Trainer, Vocational Institute

The behaviour or social competences will help them to build customer relationship and retain them to long term sustainability of income generation. Singh (2005, p.5) cites Burckhardt's explanation of social competence as inward and outward in which he explains that self-awareness, ability to learn, motivation, creativity, intellectual ability lie within personal competence and ability communicate with others, cooperation, development mutual trust and flexibility are dealt by the external factors. It attributes to appropriate personal values and ability in making a careful judgment based on the work situations (ibid. p.4).

- **Trouble Shooting Techniques**

Further, most of experts (5) had mentioned that maintenance of sewing machine was crucial to prevent and/or handle technical issues for which they should be familiar with machinery parts and tools of tailoring machine. In addition, they stressed that tailors (learners) should be careful in handling (and using) bobbin-case, cleanliness of machine to minimize technical issues in the sewing machine.

“Regular maintenance of machine, cleaning, checking of bobbin case, oil should be used as quality one. So it would be nice if they are trained on tailoring machine maintenance.” - Master Trainer, NGO Y

“They need to understand the function of each part of the sewing machine and its cleaning and maintenance methods.” - Master Trainer, NGO X

“To avoid technical issues, they can use quality thread, oil for their sewing machine. A Tailor must protect sewing machine from dusts, clean them daily, they should not sewing without oil.” - Manager, Garment Industry

For people in rural areas needs hands-on technical qualifications, basic trouble shooting skill which will help them to be more productive and income generation through self-employment. It is also better to know the basic trouble shooting techniques if some technical issues arise in sewing machine and equipment.

- **Demand for Sewing Women Dresses**

The experts have mentioned that majority of the people in rural areas demands tailors to sew women's clothes such as Blouse and Salwar Kameez. This was illustrated from the following quotes.

“In villages most of the people comes to tailors for sewing Blouses and chudithars (Salwar). Because ladies use Blouses consistently”- Master Trainer, NGO X

“If you look at the demand first is skirt and tops for kids, trousers and shirts for boys and Blouse for ladies. Educated girls in villages may wish to wear Chudithar. (...) Among this sewing the maximum demand in villages” -Manager, Garment Industry

(Majority of people in Tamil Nadu of South India used to call Salwaar Khameez as Chudithar)

“Shirts and pants for gents, for kids trousers and shirts and seventy percent Blouse and thirty percent Salwar Khameez for ladies is of high demand in rural areas” – Self-employed Tailor

As seen from the above quotes, most of the tailoring experts cited that sewing women clothes such as Blouse and Salwar Khameez has huge demand. It could also be noticed that a similar result with the individuals’ demand where majority of women’s demand of vocational trainee need was the same (see section 4.6).

Moreover, the above citations elicited that sewing Blouse, Salwar Khameez and ladies clothes were generally of more demand and remunerative especially in the rural areas. The experts explained the following reasons for high demand in sewing Blouse and Salwar Khameez than other clothes like shirts, pants for kids and men.

An expert pointed out health conditions as one of the factor for Blouse demand:

“In villages sewing Blouse is high demand. Because women’s body structure changes often due to their health issues and sometimes they lose weight during menses periods, on occasions they put more weight when they have period problems. So they have to go for new (Blouse) one!”- Proprietor, Tailoring Vocational Institute

- **Nuts and Bolts**

Despite sewing Blouse and Salwar Khameez had more demand in rural areas, the experts emphasize to include sewing simple clothes like baby clothes, inner wears for the initial vocational training.

“The person, who wants to learn tailoring, should learn from the basics like new born babies cloths such as "jablans", men’s inner wear, paijhama and so on. It gives psychological feel that they are improving their skills by step-by-step learning” – Proprietor, Tailoring Vocational Institute

“They need more practice to sew more garments. When they wish to learn sewing cut Blouses, it is tricky a bit to learn at the very beginning stage. Before a trainee starts learning Blouse sewing, he or she has to be trained in sewing kid’s dresses, inner wear garments. Then only they will be confident in sewing Blouse and other materials.” – Proprietor Tailoring Vocational Institute

As Bowman and Callan (2012).points out that the curriculum needs to adapt to the learner’s ability and their previous educational attainment leading to progress in their learning gradually.

- **Entry Level Requirements for Sewing Course Trainees**

Considering the learners' opportunity of access to training in rural areas, majority of the people who need any income generation or vocational training are less educated or may not have formal education. In most of the occasions time is a major constraint to participate in such skills training offers by Government, non-governmental and private agencies. It is the prevailing case where women have more responsibility to take care of their family and affordability and accessibility is still a question for people's lives in rural areas.

A tailoring expert mentioned even low educated people can also learn sewing vocation.

“A person who wishes to learn tailoring vocation does not need any formal education qualification, but only needs motivation and learning aspiration to learn it.” - Tailoring Master, NGO

A tailor said that,

“Though they are low educated and hail from villages (...) education qualification is not necessary to learn a tailoring vocation, need capacity to understand what the trainer teaches them.” - Self-employed Tailor

The above quotes implied that an individual's personality attributes in terms of learning aspiration and motivation and self-efficacy played a significant role in skill acquisition rather ones' formal educational qualification. So, the choice of demand for vocational training was related to cognitive motivation to learn a vocation (Blunden 2006). Combs et al. (2009) noted that learning motivation recognized important characteristics and influenced on the success of learning and education. In India, literacy level of women (65.46%) is always markedly less when compared to the male (82.14%) literacy (Census 2011).

Transfer of learning within less educated people could takes place in the form of cognitive, skilled and affective outcome. Training and development was more effective when the individuals were motivated to learn specific vocation rewarded them both socially and economically.

- **Income Generation**

It has been affirmed by some empirical studies which insisted that, the content should include skills such as entrepreneurial, problem solving skill to cope with critical issues in learners' field of interest (Bennell 1999).

“If they want to make more customers, it can be made through fixing the sewing charge less than what their competent tailors charge. Also keeping the time and deadlines in delivery of finished products without any delay” - Master Trainer, NGO Y

Noronha and Endow (2011) who conducted a study on vocational training in tailoring recommend self-employment was more remunerative in tailoring vocation than a paid job which led to sustainable economic development. Through including these aspects in curriculum, learners could be able to manage their

work more efficiently and also could make their business successful one. Therefore imparting entrepreneurial skills paved way for sustainable economic development of individuals.

- **Demand for Tailors in the Labour Market**

The experts' interview also had affirmed that the person with sewing vocational skill had huge demand in the labor market and asserted that they (learners) had the possibility for more income generation opportunities.

“Many tailor who works in Subash (interviewees' friend) Company earns Rupees 4,000 per week. You would not believe me that they are coming from very remote villages of Gujarat, Bihar (northern states of India) where people are very poor and even struggling to get three time food” – Manager, Garment Industry.

“When I started this tailoring unit, I had 20 tailors but everyone has left today. I have huge orders but not able to find tailors, so tailors are in good demand these days. Some tailors find new jobs where they get more salary than what I offer them.” – Manager, Garment Industry.

Such poaching issues are mainly faced by medium and/or small firms which lacked in-house training capacity. Consequently, some employers were reluctant to invest due to the fear of “free-rider” (Mehrotra and Gosh 2012) problem which was very prevalent in the Indian labour market as it characterized a less regulated market and experiences high turnover (Pilz and Pierenkemper 2014).

- **Employment Opportunities**

Vocational training demand survey and expert interviews had confirmed that there is a scope and good employment opportunities for sewing available both in local and external labour market.

“(…) anyone who learns tailoring vocation will definitely get job and earn. It is not necessary to stitch only their family and neighbors' clothes. They also can to develop their business by opening a tailoring shop in (or nearby) their villages.” - Master Trainer, NGO X

“After learning tailoring, they may try sewing clothes for their family members and make them satisfy with fittings. Once he/she gained confidence can introduce themselves to their neighbors and inform them that they can approach him/her for sewing cloths.” - Manager, Garment Industry

Further, the trainees could also start boutique once they confident enough themselves. Noronha and Endow (2011) states that, often many of the female tailors in rural areas operated from their home. From the experts' citation, it is clear that many of trainees who learn tailoring (through formal/in-formal and non-formal trainings) primarily sew clothes for family members by which they improve their skills, gain confidence in the chosen profession.

“The labour charge to stitch a chudithar is also expensive, minimum a tailor charge Rs. 200 per chudithar. When they learn tailoring and sewing them for themselves, the cost could be saved.” - Master Trainer, NGO X

It can be understood from the above quote that, women would rely on training providers or facilitators upon course completion. It can be minimized if they learn some managerial and entrepreneurship skills to become successful entrepreneur (Sundar and Srinivasan 2009) and to gain employability.

- **Social Norms**

The socio-cultural reasons that exist in the rural areas as the women are responsible for domestic work. Lack of support and motivation of trainees' family weakens their employment opportunity. An expert said,

“Some people could not go outside their village due to their family responsibilities such as taking care of their kids, child rising and family circumstances and so on” - Master Trainer, NGO X

One expert insisted that family support is needed for women if they want to start small business,

“Even if they have tailoring skills, their family members do not allow starting their own shops. If 40 women completed tailoring course, only two women would be able start their own tailoring shop and the rest of them wish to work from their home itself” - Master Trainer, NGO Y

Hence, participation of women in training and the labour market is depends on support of both moral and economic support is necessary. Noronha and Endow (2011, p.116) study also emphasized that after the training, family support continues to be important for trainees to meet start-up costs for new business. Therefore, when organizing vocational training for disadvantaged people, it is important take into consideration that social norms have hold dynamic and peer pressure to increase the success of such training programmes. So it will be much helpful for women whose mobility was reduced due to traditional gender norms (Hartl 2009).

- **Training Duration**

Education requirements of long duration in the formal vocational skill training system do not cater to the needs of low-educated and not designed to meet those target groups (Planning Commission 2009a). Women in rural areas, often, because of household responsibilities and are not in a position to travel longer distances and hence the duration of training should be adjusted according to their responsibilities. It was observed that in the vocational training needs assessment, most of the women requested for short duration training. However, it was substantiated with expert's viewpoint on the feasibility of providing short duration sewing vocational training. One master trainer believes that, three months are enough for learning (initial-) sewing vocation.

“If the learners have good grasping power, they can learn (tailoring) within three months; sometimes it takes six months if the learner wants to be very perfect in his profession. If they have some knowledge, reading and numerical skills, learning can be rather fast” - Master Trainer, NGO X.

An expert mentioned that, adequate infrastructure was also important for an effective short term sewing vocational training,

“Even if the trainee is very new to this tailoring field and starts from the basics, they can also learn tailoring within three months. But it depends on the infrastructure available at the institute in terms of number of sewing machine, cutting tables, equipment, tools, an enabling learning environment and also a good teacher” - Master Trainer, Vocational Training Institute

While the longer duration course could sometimes increase the possibility of face more dropouts, short term training organized with adequate infrastructure and equipment are significant in achieving the training objectives.

- **Demand for Qualified Tailoring Trainer**

The quality of training is attributed by factors including infrastructure, appropriate equipment and the trainer or teachers. VET in India faces many problems; one among them is qualified trainers (Majumdar 2008; IAMR 2010). One expert explains the difficulty of finding sewing trainers,

“In my experience finding a qualified (tailoring) trainer is very difficult. Because a tailor can earn minimum Rs. 300 to Rs.350 per day where as I pay only Rs.125 per day.” - Proprietor Tailoring Vocational Institute

“Trainer needs to teach them with interest and attitude that they are helping for a society by imparting their skills. At the same time it is difficult to find a good trainer with those traits.” - Master Trainer, NGO X

A skilled, high quality trainer for the education and training system should be competitive enough (Wallenborn 2010). Often, vocational teachers in India are not well paid and receive little further training in their respective vocational subject.

- **Gender of Trainer**

Gender is one of the key factors for participation in vocational training. Similarly, the vocational training needs of women with regard to those of men differ, due to the factors like low literacy rate among women, mobility, social pressure and domestic responsibilities. Hence, women in rural areas require some specific support to overcome socio-personal obstacles.

“It is better to have a female trainer for females and male trainer for males. If you appoint male trainer for female trainees, sometimes they would hesitate to ask the male trainer if they have any doubts. So they will feel more comfortable with female tailors.” - Master Trainer, NGO Y

“When you appoint a male trainer for female trainees, the trainees voluntarily will come and learn. But they would not ask questions and feel comfort in learning as with a female trainer.” Master Trainer, NGO Y

As the tailoring subject deals with some sensitive components like anatomy, trainers’ gender has taken as an important criterion in selecting a trainer. Indeed,

it would be better to have female tailoring trainer to teach female trainees in villages. As Bessette (2011) proposes employing female instructors, flexibility for trainees, minimize distance to training programme flexible training, adopting cultural appropriate teaching methods and adequate sanitation facilities are needed.

- **Competences for Tailoring Trainer**

Despite the well-designed curriculum, teaching and learning materials and physical infrastructure, training would not be worth without competent and motivated trainers (Planning commission 2006).

“A tailoring trainer does not require any educational qualification. He /She must have a quality to teach whatever the skills and knowledge they possess to be passed on to their trainees. – Proprietor, Tailoring Vocational Institute

One Master Trainer in his experience said that educational qualification alone is not sufficient for a good Trainer,

“A good trainer is who makes the learners to understand and it does not depend on the trainers' educational qualification per se. But, it is based on how trainers teach learners in a more innovative and creative way. I am not teaching only what I have learnt in this tailoring profession, but also my experiences which I come across in tailoring job” - Master Trainer, NGO Y

Therefore, a trainer should possess specialized knowledge, to teach rural people with less education.

- **Tailoring Curriculum**

The training providers do not follow any specific curriculum to impart tailoring training. A Tailoring Master said that:

“Though I have some books, I never refer them for teaching tailoring. When the trainees (learners) see book they get confused by its content ...but sometimes I have an impression that the authors/publishers are making it quite complicated”- Master Trainer, Vocational Training institute

“There are some books to teach tailoring, but I don't use them due to fact that mostly they confuse me.” - Master Trainer, NGO Y

Trainers mostly use notes what they have documented when they learnt tailoring as students or they themselves prepare a reference guide which they use for training as course material. Since there is no structured curriculum plan, quality assessment becomes a challenging question. It revealed that developing a structured curriculum for tailoring course at this stage is significant. Further, it is also sensitize the vocational training providers to adopt curriculum to offer quality and systematic education and training programmes.

### 5.7 Summary of Experts' Interview Results

As seen from the above discussions, the competences required for sewing vocation could be divided into four major components following Chivers and Cheetam's (1996) holistic model *viz.* knowledge/ cognitive, functional, behavioral and ethical competences. Cognitive/knowledge competence in sewing vocation requires a tailor to have a fair knowledge about different types of sewing machines, their parts and functions. Procedural knowledge refers to practical knowledge about various common sewing machine faults, troubleshooting techniques as well needs to be embedded in the curricula.

Further, within the functional competencies, psychomotor skills like pedal control, cerebral knowledge of taking measurement patterning, cutting and sewing are more important for a tailor. Delivery of finished goods in time coupled with meeting the customers' requirements in sewing design are categorized as occupation specific competencies falling within the purview of functional competence.

The behavioural or social competences include friendly approach with customers, listening to and meeting the customers' work expectation/demand, satisfying their requirements by design-sew and punctuality. By practicing these, tailors especially those who begin their career can expect to get more customers and increase the chances for more earning on a sustained basis.

It can be elicited from the experts' interview that, tailors had a huge demand to sew women clothes like Blouse and Salwar Khameez. Taking into account of learning time and purpose, this study focuses only on developing curriculum for sewing women's dresses. On the other hand, learners will also be taught to sew simple garments such as sewing of baby dresses/clothes, inner garments which experts emphasized to be more important for beginners /initial sewing vocational trainees. So, these components will also be included in the curriculum accordingly.

One of the positive aspects observed was that learning sewing was not a constraint for less educated and early school-dropouts provided they had the motivation for learning. Apparently, individuals had an opportunity to participate in the labor market, improve his/her productiveness and secure their (sustainable) livelihood.

Experts and empirical experiences insist curriculum planners to incorporate entrepreneurial skills in tailoring (even in other) vocational trainings to be successful in their profession. Concerning the duration of tailoring course, majority of respondents cited that Tailoring course can be imparted in a short duration spanning between two and three months regardless of people's education level. Finding quality and qualified trainer (for sewing course) was a more challenging task particularly in rural regions. Experts state that educational qualification is not an important criterion for (selecting) a tailoring trainer, but he/she should have the ability to adapt/teach innovatively according to the level of target people. Some experts were interviewed for this study which included non-formal

tailoring vocational institute and NGO based training provider. It was noted that these trainers do not follow any structured curriculum. Indeed, the main target people of these institutes were economically weaker sections and rural people. Generally speaking, ensuring quality and mechanism for assessment is lacking in such kind of training especially in the view of pedagogic principle. Therefore, it is more crucial for this study that author developed sewing curriculum and tested it at the field level.

### 5.8 Discussion of Experts' Interview Results

Competency-based approach led to development of skills that reflected the learners' needs in specific geographical location context (Mulcahy 2000, Werquin 2012). As Young and Allias (2011) claims Competency-based training method as a “**ladder of opportunity**” especially for early school leavers and marginalized sections in a society. VET should not be considering only form economical view of development such as employability, productivity and economic development (McGrath 2012). Rather, it should be viewed from the wider spectrum of overall development including individual needs where opportunity is made available for all sections without any discrimination. It needs to be deeply institutionalized in the curriculum, time table and facility provided for learning/ training (ibid. P.26). As Blaak et al. (2013) emphasises that facility and facilitator should be close to the community and the cost to participate must be affordable for the learners. These aspects should also be taken into account.

Competency-based approach of curriculum development enabled curriculum planner to decide what people are supposed to know or should be able to do in their work-place. On the other hand, despite developing curriculum for tailoring (or any) method, it yet depends on how the required competences are selected, sequenced besides use of appropriate teaching-learning aids and proper implementation.

## 6. Competency-Based Sewing Curriculum Development

This chapter explains the reasons why competency-based curriculum approach has been taken in this study to develop sewing curriculum. It also discusses how the competence-based curriculum is sequenced and structured with theoretical components and also how the knowledge was built in domains of learning.

### 6.1 Developing Competency-Based Sewing Curriculum

One of the main approaches in curriculum justification is based on the concept of significant of human needs (Pratt 1991, p.70). Hence, the purpose of competency based curriculum-instruction-assessment methods of sewing vocational course was aligned according to the learners' demand. Further, the entire process of this sewing curriculum development, curriculum planner has taken the learners' ability, need/interest and motivation into consideration. Thus the potential of learning is linked with certain cultural context (Eash 1991, p.68) and also organizing curriculum is associated with the individual learners and society (ibid.p.67).

### 6.2 Choice of Competency-Based Sewing Curriculum

In this demand-driven approach of vocational training, curriculum goal is only focuses on what learners / target group were wished to learn in the current economic and social scenario (Mansfield 2004). Thus, competency-based curriculum on sewing course was developed to reflect the individuals' learning demand. Expert interviews were used as a tool only to guide the author/curriculum planner in deciding "core competences" which required for a sewing occupation. The author ensured that experts interview not to influence the learners' demand in this curriculum development process. In short, the learners'/target group was kept in center of this process.

Further, the curriculum was endeavored to equip learners to sew women dresses of Blouse, Salwar and Khameez. The prime objective of competency-based curricula was focused on outcome and competences required for sewing occupation rather learning process. A competency-based curriculum allows greater flexibility in-terms of duration, selection of content, teaching and learning arrangements.

Curriculum development process for sewing course ensured the structure; sequence and completion in the curriculum plan were in order (Reid 2003). Thus sewing curriculum was organized in seven units as described below. As has been seen in the professional competence model (see sec.6.2), curriculum framework adapted a four major key competencies which were clustered under the four components and explained in Table 4.

- **Sequence of Units**

Mulchay (2000) states that “sequence” is referred as increasing breadth and depth of the learners’ development where learning stages divided based on structure of content. It facilitates the learners to move from novice to expert. Experts also insisted that initial sewing vocational trainees should start with learning the basics. One expert mentioned that,

“First we have to teach them about different sewing machines, parts in the machines. Because, he or she should be aware of what parts are in the machine how to fix threading, needles, and bobbin case in the machine and the pedal control.” - Manager, Garment Industry (cf. sec.5.6)

<b>Units of Competency</b>	<b>Knowledge / Cognitive</b>	<b>Functional</b>	<b>Personal / behavioral</b>	<b>Values / ethical</b>
<b>Basics of Sewing machine, its parts and functions</b>	Types of sewing machine, tools, parts and functions			
<b>Operation of Sewing machine</b>	Sitting position	Arranging sewing machine for job work Perform pedal control Perform stitching in different shapes		

<b>Carry out measurement and calculations</b>	Understanding various structures of human body and types of figures	Obtain measurement from customers Perform calculation and stitching		
<b>Sewing of Simple Dress</b>		Taking measurement Prepare cut parts and sewing – baby garments		
<b>Sewing of Saree Blouse and Salwar and Khameez</b>		Taking measurement Prepare cut parts Sewing Blouse, Salwar and Khameez		
<b>Care and use of sewing machines and basic trouble shooting</b>	Importance of maintaining sewing machine Common machine troubles and	Trouble shooting the technical issues		

	its causes, Precautionary methods to avoid such technical issues			
<b>Entrepreneurial skills</b>	Understand the concept of entrepreneur Need and importance effective communication, Time management and human relations	Book keeping	Listening skills, convincing and negotiating ability, Build customer relationship,	Develop personal value system, Maintaining time line

**Table 4 Clustering of competencies under Units**

The **cognitive/knowledge competence** is referred as the underpinning theory and concepts of specific aspect. The sewing trainees needed to know about various types of machines, tools (know-what), and also have to understand the differences among those (know-why). Diest and Winterton (2005) called this component as “technical theoretical constitutes”. Bloom (1956) affirms that knowledge is primary, sometime more important for any curriculum, also under the cognitive domain/ knowledge is the lowest level of learning outcome. At this stage, the trainees also have advantage as it could also help them to maintain sewing and able to perform troubleshooting if any technical problem arises. It is also connected with other domain of learning.

All the Units in the sewing curriculum organized covered with **functional competence** component which was further divided into four sub-components *viz.* (a) occupation specific, (b) organizational process (c) cerebral and (d) psychomotor (Cheetham and Chivers 1996). Sewing occupation has the functions

like obtaining measurement; perform sewing according to the measurement - respective customers' body shapes are more important.

Preparing cut parts, making pattern were related to planning stage, hence, connected to the **organizational process**. A tailor needs to use his mental ability to calculate the measurement in which trainees have to use their creativity in sewing dress according to customers demand and style they wish.

The tasks like sitting in a proper position for sewing, taking measurement of the customers, cutting of the clothes as per the measurement, control of machine pedaling and sewing and repairing sewing machine (removing and assembling) were correspond **psychomotor skills** which were physical in nature.

According to Cheetham and Chivers (1996), **personal competence** was characterized as the performance of the main body in the professional tasks in which the individuals' belief and behaviors have to cope with particular situation in (sewing) occupation. Fourth and last component - **ethical / value competence** was often meant the relationship with clients and other professionals (cf. *ibid.* 1996, p.23). While in the sewing occupation, tailors have to a build good rapport with customers, deliver finished products according to the customers' demand, in due time and following professional codes (*ibid.* p.24). It enhances personal value system between both.

“A tailor must learn the pedal control, basics about (sewing) machine parts. Because a tailor must know what the parts are there in the machine, after this how to fix threading, needles, and bobbin case in the machine” - Manager, Garment Industry

The second Unit covered with operating of sewing machine, including preparing to sew such as proper sitting position, sewing machine by fixing bobbin case, threading, pedaling control, seam and sew finishes.

Learning outcomes of second Unit were (at the end of the lesson trainee will be able to do)

- a. Prepare Sewing machine for job work
  - b. Perform pedal speed control
  - c. Perform sewing in different shapes
- (cf. Appendix II)

From the competency component, the preparing sewing machine (to sew dresses) falls under the functional competency. However, to execute this task the trainee must have learned knowledge of how the things should put together would be pre-requisite which refers “synthesis” according to Blooms' (1956) educational objective taxonomy. While the learning outcomes to perform pedal speed control and sewing clothes in different shapes were correspond with psychomotor domain. Third Unit provided the trainees on the learning experiences of taking measurement for female customers according to their body figure. Measuring is very essential skill for a tailor to sew any garments in the tailoring

profession to make quality product which could satisfy customers, realizing their specific requirements.

Considering the course time frame, learners' demand, third Unit provided more emphasis on only about to measuring specific women garments *viz.* Blouse and Salwar Khameez. However, the structures of human body and figures which was covered in this Unit as subject knowledge to help the trainees if they go for any further training like sewing dresses for men. As mentioned in the beginning of this section, taking measurement and perform calculation for sewing are largely a functional competence in which skills need to be used consistently to achieve desired outcome. However, cognitive competences were required to perform those tasks as it involve procedural of knowledge of what should be done, how and when to perform specific actions (Cheetham and Chivers 1996, p.24)

#### • Sewing of Simple Garments

Initial vocational training in sewing, the trainees have to start with stitching simple garments like baby frocks, baby underwear and skirts. Also emphasized that sewing simple garments would also better to start with sewing some simple clothes. It can be illustrated by the expert's comments below.

“The person, who wants to learn tailoring, should learn from the basics like stitching clothes for new babies like “jablans” and men’s underwear, pajhama. It give them a psychological feel that they are improving their sewing skills by gradual learning” – Proprietor, Tailoring Vocational Institute (cf.Ch.4)

Hence, the curriculum-instruction-assessment triad was sequenced within this pilot with a gradual move in learning level of each Unit (see Unit 4). For example, a trainee can not prepare cut parts of clothes unless the trainees learn how to take measurement to cut. It means, the trainee taught first how to take measurement (see Appendix II - 4.1) to prepare cut parts based on the measurements taken (see Appendix II - 4.2).

“When they wish to learn sewing cut Blouses, it is tricky a bit to learn at the very beginning stage. Before a trainee start learning Blouse sewing, he or she has to be trained in sewing kid’s dresses, inner wear garments. Then only they will be confident in sewing Blouse and other materials.” – Proprietor Tailoring Vocational Institute (cf. chapter 4).

Fifth Unit covers measurement draft of sew ladies garments - Blouse, Salwar and Khameez. This Unit was corresponded with functional competencies. Furthermore, these Units have been given a little more focus in the curriculum, devoted nearly two-third of the total training course duration as the women in rural areas demanded learning sewing of Blouse, Salwar and Khameez.

Unit six introduced the trainees on care and maintenance aspects of sewing machine and know-how of basic trouble shooting, essential for tailors. It has some interconnection with the first Unit which covers parts of sewing machines and its functions.

If they have some degree of knowledge and understanding about functioning of sewing machine, trainees (tailors) themselves could solve technical issues if any technical issues arises. One expert pointed out that,

“Tailor should know some basics of trouble shooting; of course they will learn these techniques while they faces technical issues during practical in the training period” – Self-employed Tailor

Further, many experts have mentioned that maintenance of sewing machine is crucial to avoid technical issues, therefore, trainees have to be familiar with sewing machine parts and tools. A master trainer of a sewing training center said:

“They need to understand the function of each part of the sewing machine and cleaning and maintenance methods.” - Master Trainer, NGO X

Also the experts emphasized that tailors (learners) need to be careful in handling (and using) bobbin-case, cleanliness of machine to minimize technical issues in the sewing machine. People in developing country lack in maintenance culture (Ayeni 1992, p.228). Hence, it was essential to taught trainees on sewing machine maintenance. Further the above author described three typologies of contents in designing a curriculum such as “Depth”, “Breadth” and “Spread”. He argued that “Depth” makes sure of providing curriculum content produces competence in on one discipline.

Therefore, sixth Unit was mainly covered aspects like of hands-on technical and basic trouble shooting skill which could help them to be more productive which enables them for good earning. Therefore the contents such as minor problems which occur while sewing, its causes, remedies to solve them and maintenance of machine sewing (cf. Appendix III, Unit 6) were included.

Rural people lack mostly in business competences especially in the non-from economic activities (Wallenborn 2014). Hence, vocational training content for rural people needs to include entrepreneurial, problem solving skill to cope with critical issues in learners’ field of interest (Bennell 1999, UNEVOC 1997). Therefore, the trainees must know how to cost, price and fix margin for products and services. Communication properly with customers and garment units/industries and convincing ability are important.

Hence, last and seventh Unit in the curricula was “Entrepreneur skill” which included in the curricula as the respondents mentioned that they needed entrepreneurship competences. Similarly in the expert interviews also reflected that the tailors must have business skills to make more profits, get job orders from clients and/or garment industries and fixing price for the produces upon completing sewing training (see sec 4.5 and 4.6). One expert said,

“If a tailor wishes to develop his/her business, they need to inform readymade garment units. Once they garment factories knows about that availability, then they themselves contact the tailors to give job orders regularly then if they satisfy the garment units’ quality specifications”- Self-employed Tailor

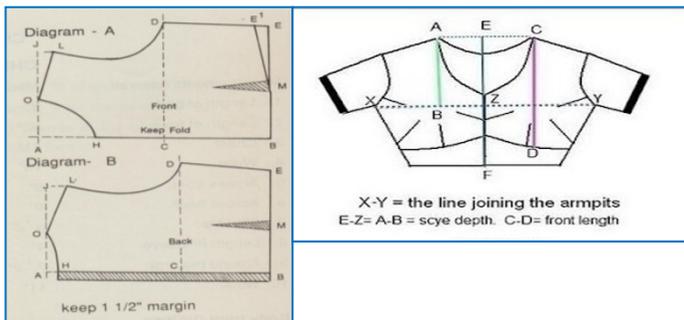
Noronha and Endow (2011) study also highlighted that self-employment is more remunerative in tailoring vocation, than a paid job and provide opportunity for sustainable economic development. Including entrepreneurial aspects in curriculum, learners could be able to manage their work more efficiently and also increase possibilities to make business a successful one. As Cheetham and Chivers (1996) states, the personal competence where individuals' performance by their self-confident and develop better customer relationship are crucial in any job environment.

- **Course Duration**

The curriculum is planned for a short term initial vocational training in sewing and it lasts for 200 hours. Women in rural areas wished to earn money by working from their home rather than going outside their villages. Thus, it was equally important to analyze the real life and socio-cultural factors and incorporate those considerations in the curriculum development process. Vocational needs survey also revealed that, respondents would like to learn sewing for the purpose of (self-) employment or as income generation activity for example, work and earn from their home after completion of training course (see sec. 4.6). Other studies (Noronha and Endow 2011; Maitra and Mani 2014) also witnessed that rural women often look for short-term training course rather long duration.

- **Effective Implementation of Didactic Tools**

Kantansky (2008) proposed that the training content have to be accessible by the target group and it should not make the feel trainees as overburden and beyond their capacity. Hence, curricula-instruction-assessment was aligned with the level of trainees' prior educational attainment and social background. Taking this into for a careful consideration, the content has been developed in a way to understand by the trainees and, therefore, the teaching-learning materials were prepared with more pictorial and diagrams.



**Figure 6** Sample of pictorial learning arrangements for the sewing training (cf. Appendix III)

The intention was not only to enable trainees to access content, but to achieve quality and effectiveness by using these tools. Kantansky (2008) put it, “didactic

means are effective when they create positive socio-didactic effect and when their use takes into account the actual need of these means in the context of specific conditions and training” (Kantansky 2008, p.117). Nevertheless, learner requires further training and they must have interest, creativity to acquire competences to sew variety of clothes and move vertically in their chosen vocation. CEDEFOP (2010) study recommends to analyze work requirements, develop curriculum based on the requirements and the final, more importantly the learning programme where the decisions needs to take that meets learners needs in specified place and time (CEDEFOP 2010, p. 77). Hence, curriculum was structured in a way to respond to the demand of learning individuals and also labour market trends in a society. The adaptability to the local condition, selection on the basis of ability and interest of the targeted learners is also important. The developed sewing curriculum was piloted in four villages in Tamil Nadu and the evaluation results discussed in the following section.

## 7. Evaluation of Competency-Based Sewing Vocational Training

This chapter explains briefly the need of evaluation. Then it describes different evaluation models, discusses to choose appropriate model for the investigation. Secondly, the methods and data sources of the study are provided and the development of interview guidelines for evaluating pilot vocational training are explained; thirdly major findings of the pilot vocational training on sewing is presented and interpreted.

### 7.1 Relevance of Evaluation

Any action/program/objective/training needs to be evaluated for ascertaining its quality and effectiveness to arrive at a decision as to whether it has achieved the intended goals or not, to what extent the objectives have been achieved, usefulness of resources and methods, decision-making and need for further improvements if any. Evaluation may be a difficult process, but it strives to help the stakeholders to improve the standard and effectiveness. Therefore, evaluation plays a significant role in comparing the results with the planned activities and objectives. The objectives of evaluation for VET vary according to the country, context and target groups. The choice of specific evaluation methods used in particular instances depends on the programme objectives and the purpose of evaluation as well (Seyfried 1998).

Fretwell (2003) points out multiple reasons for evaluating vocational education and training to assess if the training has been able to meet the objectives (ibid. p.179). It also helps VET providers to justify the financial input, quality, and worthiness in order to take appropriate decisions and improve the course (Grohmann and Kauffeld 2013, p.137). Findings from a systematic evaluation study can be disseminated for effective practices and contribute to knowledge in the specified domain (Stufflebeam 2000). Seyfried (1998) puts evaluation as “assessment of merits, worth or value of training programme in relation to the pre-established objectives, results and outcomes. Evaluation helps strengthen existing programmes, services, to showcase best practices and/or methods (Stufflebeam 2000)

## 7.2 Definition of Evaluation

There are several definitions and frameworks in the evaluation (see Grohmann and Kauffeld 2013; Wang and Wilcox 2006); however, it varies according to evaluation goal and context. Wang and Wilcox (2006) distinguished short-term and long-term evaluation. According to them, the former intends to measure the learner's reaction and the later refers to behavior changes and organizational results. An Evaluation is a systematic investigation of the merit and/or worth of a programme, project, service, or other object of interest (Wang and Wilcox 2006, p.280). Stufflebeam (2000) states, it should consider the stakeholders who are badly in need and with a little access to influence over services.

**Operational definition:** "Evaluation is the process of delineating, obtaining, reporting, and applying descriptive and judgmental information about some object's merit and worth, in order to guide decision making, support accountability, disseminate effective practices and increase understanding of the involved phenomena" (Stufflebeam 2000, p.280).

The term evaluation in the educational context: it is the systematic process of collecting and using all the required information and the available information, to make the decision if the training is "**suitable for the purpose**".

## 7.3 Evaluation Models

Scriven (1996) states that, evaluation can be divided into two broad categories, *viz.* (i) Formative evaluation and (ii) Summative evaluation. The former one can be used to provide information on improving programme design and development and the latter by contrast, is used to determine whether the intended training goals and outcomes have been achieved (cf. Wang and Wilcox, 2006 p.529). Therefore it is conducted usually after completion of a training programme.

Summative evaluation focuses on the training outcome and identifies the benefits of training to individuals and organizations in terms of learning, employment, social and economic aspects (Wang & Wilcox 2006). Further, they points out that, training evaluation can be classified according to time frames involved such as short-term or long-term impact evaluation. The type of evaluation also helps to conceptualize and understand the context in which the specified training is implemented.

In most situations, organizations need to examine the immediate training outcomes after implementation of training programme. The authors argue that, the short-term evaluation includes participants' perceptions, reactions and learning outcome of the training. It corresponds with the trainees' learning needs. Besides, this short-term evaluation will be helpful to improve and enhance the training programme in terms of curriculum, content, design and delivery in subsequent trainings (ibid. p.533).

### 7.3.1 Four Levels of Evaluation Framework Model

Kirkpatrick's (1998) distinguishes evaluation in four different levels which are as follows.

Level – 1: Reaction	Level – 2: Learning
Level – 3: Behavior	Level – 4: Results

The level 1 is reaction which examines which the participant's emotional reaction to the training; Level 2 is acquisition of knowledge, skill and attitudinal change through the training attended. Wang & Wilcox (2006, p.137) draws attention on Kirkpatrick's framework in which they distinguish them as short and long term evaluation. The learner's reaction and learning outcomes are referred as short term evaluation, and the long term refers to the behavioural changes and organizational results and return on investment.

### 7.3.2 CIPP Model

Stufflebeam (2000) offers a comprehensive model of evaluation called "CIPP (Context-Input-Process-Product)". This model is adaptable and widely applicable wherein he describes these four components as follows.

1. Context: The objective of context evaluation is to describe context for the intended service, identify problems in meeting the needs, and examine appropriate program instructional methods. Finally it is helpful to assess already defined goals and for helping the audience to assess significance of effort that put in meeting beneficiaries' needs (ibid. p.287).
2. Input: It is to help recommend a programme, project on needed intervention to improve services to the intended beneficiaries. It should identify relevant approaches and support decision makers to prepare the chosen approach for execution. He also pointed out that in input evaluation, evaluators' rate promising approaches on relevant criteria, such as responsiveness to beneficiaries' priority needs and potential effectiveness (ibid. p. 292).
3. Process: It is an ongoing check on both plan implementation plus documentation of the process which includes changes in the plan. It also checks if the execution of the programme has been poor. The goal is to provide feedback to the extent which the planned activity, programme are carried out by staff as per schedule and in an efficient manner. It also helps to identify implementation of the problems and to make needed corrections in

the activities or the plan and in turn evaluate how well the staff addressed them (ibid. p.292).

4. **Product:** The main objective of product evaluation is to examine the extent to which the programme met the needs of all the rightful beneficiaries. It should assess the intended and unintended outcomes and as well as the positive and negative outcomes (ibid. p.297). Stufflebeam (2000) states that, “product evaluation should usually view outcomes from several vantage points in the aggregate, for subgroups and sometimes for individuals” (Stufflebeam 2000, p.298). Further, it can also be classified as the programme, project achievement as a success or failure depending on whether the established goal met his/her diagnosed targeted needs.

Product evaluation helps training providers to take decision whether the specific programme/project/service is worth, continuing, repeating, extending to other targeted settings. Besides, it also provides direction on what should be modified to meet the goal effectively, serve the needs of all members of the target group. Stufflebeam (2000) distinguishes the model into different factors that associated with each component.

<b>Context</b>	Assess Needs, Problems, Opportunities, Judging significance of outcome
<b>Input</b>	Planning program and allocation resources- alternative approaches to meeting needs
<b>Process</b>	Assess implementation plans to guide activities and explain outcomes
<b>Product</b>	Identify intended/unintended outcomes and interrelated determine effectiveness.

**Figure 7 CIPP model of evaluation (Source: Stufflebeam 2000)**

#### **7.4 Selection of Evaluation Model**

Evaluation depends on the objective of specific programme and indicators also selected to find out the factors (Fretwell 2003; Maitra and Mani 2014). The evaluation method and approach varies depending on the purpose and intended activity or programme. It also requires flexibility in assessing the learnt competencies. It is essential to evaluate the training programme both internal and external factors with an objective of improving its quality and enhancing the effectiveness. In the context of this particular study, the author will not evaluate or measure the learnt “competence” of trainees, but, he will examine that to what

degree the two month training has met the demand specific target group. It may be noted that, most of the trainees who participated in the sewing vocational training were less educated and the training was only a two month “pilot” training.

Therefore, it was hard to measure all variables, as the evaluation was done immediately after the training. Moreover, for assessment of competencies, one need to consider the capacity of the learner or target group; therefore, evaluation method requires some flexibility in certain circumstances. Competency based (vocational) training is not only based on knowledge and understanding, but on performing too. In short, it is a method rather than theoretical but practical/able to perform the work by trainees/learners that occupation needs (ILO 2012 and BMZ 2013).

Bowman and Callan (2012) claim that “disadvantaged learners are more comfortable with knowledge, skill and attitude that include practical assessment compared to written assessment or in “class room” (Bowman and Callan 2012, p.30). The above authors above also affirm that the trainees’ performance can be accessed through observation; on-the-job rather than more formal methods. The evaluation method used and the justification for choice is described under the sub-heading of “Development of the Interview Guidelines” (see section 7.5.3)

The central questions to be studied at this stage were as follows and the major method of data collection was through interview mode both with the trainees and the trainers.

**“To what degree the implemented (two-month) competency-based ‘sewing’ vocational training has met the demand of targeted beneficiaries (rural women)?”**

In order to elicit answer to this question, the sewing vocational training programme was investigated for quality and effectiveness. According to Katansky (2008) effectiveness is a pre-condition which determines the quality of training. However, quality can be ensured through the effectiveness of the training and he describes quality as the characteristics of a given product/service which determines its ability to meet customers’ needs and satisfaction. He emphasizes that in the education field, quality is defined as “the level of correspondence between training as a whole, its separate components such as curriculum, teaching, didactic tools, needs and expectations of its targeted people (Katansky 2008, p.109)”. Katansky (2008) recommends four key indicators for quality and effectiveness of training which are: (i) Training Outcome (ii) State of the Process (iii) Training organization and (iv) Innovation of Training. He further classifies them into sub-indicators as shown in the table 7.

<b>Training out-comes</b>	<b>State of the process</b>	<b>Training organ-ization</b>	<b>Innovation of training</b>
Satisfaction of the training needs	Training adaptability	Flexibility of training forms	Improving the organization of training
Durability and operability of knowledge and skills	Rhythmic of training	Interactivity of training methods	Intensifying the training process
Sustainable and strong motivation for learning and working	Creative nature of teaching	Effective im-plementation of didactic means (tools)	General (psycho-somatic) state of teachers (trainers)
Level of profes-sional activity of trainees (perfor-mance of labor tasks)	Successfully learning		
General (psycho-somatic) state of trainees	Transition of training into self- training		

**Table 5 Indicators for quality and effectiveness of training. (adopted from Kantansky 2008)**

### **7.5 Data and Methods of Pilot Training Evaluation**

This study employed a mix of qualitative research interview of both individual one-to-one and focus-group as these methods can provide in-depth information pertaining to participants' experience and viewpoints on specific phenomenon.

#### *7.5.1 Triangulation Method of Inquiry*

Triangulation method was used, with in combinations with interview; observation and document analysis is much helpful in field- research which ultimately increases the chances for more accuracy (Patton 2002). Research to a large de-

gree was comprehensive and accurate in its collection of data. Secondly, triangular technique was employed intending to map out the training outcome from various standpoints. Patton (2002) describes the benefits of triangulation are as follows: (1) comparing observation with interviews (2) checking for the consistency of what people say about the same thing overtime (3) comparing perspective of people from different points of view for instance-trainees, trainer and (4) check data against program documents and other written evidences. In essence, it helps to check the findings against other sources (Patton 2002, p.563). Patton (2002) states “combination of interview, observation and document analysis are expected in much of evaluation framework (ibid, p.556).

A semi-structured interview questionnaire was used to gather required data through interviews and each interview lasted for about forty minutes to an hour. All the interviews were audio taped safely and partial transcription was done to analyze the results. Turner (2010) affirms that, interview enables participants to fully express their perspectives and experiences as they desire. It also has a few disadvantages as it will be quite difficult to extract themes and codes.

### *7.5.2 Choice of Focus-Group Interview*

Focus-group interview helps to obtain information from a group of individuals which gives in-depth details, feedback and also provides multiple perspectives. Another purpose for selecting focus-group, is as seen in the previous chapters, the trainees (interviewees) from the rural background being less-educated are not out spoken, shy in nature by the environment and culture. Hence, to avoid such uneasiness and enable them to share more on their views, feedback on the training through focus-group interview was expected to be helpful as they will be motivated while in a group. As Qu and Dumay (2011) pointed out focus-group emphasizes interaction between participants rather than between interviewer and interviewees.

Totally three focus-group interviews were conducted; one in Vellore and two in Dindigul respectively. In Vellore, trainees from both the villages gathered together in a common place as per their wish and convenience while the other two focus-group interviews were conducted in Dindigul in the respective two villages separately. The primary reason for conducting focus-group interviews in two different settings was to assess commonalities, similarities and differences of results.

Semi-structured interview was employed in the Focus-Group Interviews. Semi-structured interview method is one of the most common method in all qualitative research (Alvesson and Deetz, 2000; p.194). This semi-structured interview was developed and guided by the identified themes in a systematic manner, designed to assess more elaborate responses. It enjoys flexibility; therefore, often it is the most convenient form of gathering information (cf. Qu. and Dumay 2011, p.17).

### 7.5.3 Development of Interview Guidelines

From the above theoretical framework, the more relevant indicators adapted to frame questionnaire guidelines. As mentioned in the above section, short-term evaluation was carried out after the training program. As Wang & Wilcox (2006) emphasizes, it measures participants' perception and reaction of the training (Wang and Wilcox 2006, p.532). As seen in the Kirkpatrick's (1998) evaluation framework the Level – 1 "*Reaction*", is assumed as trainees satisfaction with training in relation to their learning needs and perceived training utility (Grohmann and Kauffeld 2013, p.139).

Wang and Wilcox (2006) states that the more realistic way to measure trainees reaction will be obtain their feedback on the interest, attention and motivation to learn the specific subject (Wang and Wilcox 2006, p.532). Evaluation of learner's reaction in short-term training outcome will be in the form of questions such as learning motivation, objective, content, design, learning environment and interactions (ibid. p.532).

Marsiglio (2004) encourages that interview should begin with simple factual information about the topic or a general question about the interviewee (personal should be avoided) to make them feel comfortable. It will establish an environment conducive to find open expression. Also the researcher should attempt to find a private, quiet location with minimal interruptions (Mathers et al. 2002; Marsiglio 2004).

Therefore, the first questions were answered the trainees

What was the motivation to join this two-month sewing (vocational) training?

What is your opinion about the two-months sewing vocational training?  
Was this training helpful to you?

If yes, explain how

If no, can you tell the reasons?

Was the curriculum useful to learn sewing Blouse, Salwar-Khameez?

Did the syllabus meet your expectations?

Was the structure, content, sequence of units help you to learn the desired competencies?

Do you think any specific subject should be modified in the training?

Does the course offer you enough time to learn theory and practical?

If yes, please explain

The following questions were asked with Trainers:

Can you describe your teaching experience in this two months training programme?

What was the range of your class size?

Was there any dropout from your class?

If yes, do you know why they have dropped out?

Has it any influence on the training program or learning environment?

In your opinion, what was the level of trainee's abilities in relation to the planned level of the course?

Were the curriculum and the course structure appropriate for the targeted audience (women in villages, less educated)?

Did you find any obstacles in implementing the curriculum?

If yes, please describe them?

Were the contents appropriate for targeted audience?

If no, specify the reasons

The Level – 2 of Kirkpatrick's framework is "Learning" which refers to knowledge and skills acquired in a training (Grohmann and Kauffeld 2013; Wang and Wilcox 2006). Wang and Wilcox (2006) further argues that measuring learning outcome should not be only by post-test assessment as the ultimate goal of learning is improving the performance in an organizational setting. There are **many ways to assess learning other than knowledge tests, such as demonstration, hand-on projects and interviews with trainees and trainers** (see Pellegrino 2006; see Appendix IV).

In your opinion, did you learn to sew Blouse, Salwar and Khameez? If no, can you explain why?

Would you be able to sew Blouse, Salwar and Kameez by yourself? Did you gain confidence? If no, please explain the reasons.

In your opinion, do you think the learnt competency would help you for your income generation?

Deitmer and Heinemann (2009) recommend that VET evaluators should ensure that they involve the most relevant stakeholders including trainer/teacher and learners/trainees sufficiently (cf. Kingombe 2012, p.18).

Kingombe (2012) asserts that for some aspects, self-evaluation also can be used to evaluate VET programme. He points out “the real experts for the learning process are the participants themselves” (Kingombe 2012, p.21). It is assumed that self-evaluation is different from the outside perspective and/or evaluation. The trainer is considered as one of the immediate and potential assessor of trainees’ competence, therefore, the next question to be asked with trainer is:

Did the trainees acquire enough competencies to sew Blouse, Salwar and Khameez?

If no, explain the reasons.

The quality and effectiveness training can also be judged by the internal inputs. But, often evaluators tend to focus on the output measures with the assumption that output meets the established objectives; if so, and then the inputs should be appropriate (Fretwell 2003, p.180). On the other hand, he emphasizes to evaluate both the inputs and outputs as there may be problems with the quality and quantity of inputs. Hence, it is significant to examine how well inputs are delivered and whether it is used efficiently in relation to needs of the targeted people.

As stated by Fretwell (2003) the variables such as training personnel, facilities and equipment, contents and its design and learning environment should be studied. Therefore, the next question to be answered in the trainee’s interview is as follows:

Do you think this two months training would be sufficient to perform sewing Blouse, Salwar-Khameez?

If no, please describe why?

(Trainer’s performance)

In your opinion did the trainer handle the class well?

Was it easy to understand by you all?

If no, what were the difficulties?

Was it comfortable attending classes, and to ask questions having a women trainer for your course?

- **Infrastructure and Training Environment**

Trainees require a conducive learning environment with adequate learning tools and equipment. The expert interview also affirmed that infrastructure is one of the main indicators in representing the quality and effectiveness of any training. Lack of technical infrastructure may lead to poor training performance.

It also corresponds with the individual's/trainee's choice of vocational course and providers.

**Trainee**

Was the training hall sufficient for all the trainees?

Were the sewing machines and other equipments sufficient in your course?

If no, what were the problems? How has it affected your learning?

**Trainer**

Does your class have sufficient sewing machines and other required equipment for learning?

What is your opinion on this training which was conducted in the trainee's village itself? How it had influenced and motivated the trainees?

It also increases chances of participating in the vocational training which has been lacking in rural regions. Similarly, in vocational training needs assessment, the respondents were asked adequate machinery and infrastructure to learn sewing.

Weak training environment affects the effectiveness of training in the absence of adequate tools, equipment, materials and qualified trainers. Expert interviews also affirmed that, environment is one of the crucial indicators in quality and effectiveness of training. Lack of technical infrastructure would impede learning process and it is connected with the individual's choice of vocational course and provider as well. The respondents also demanded that the training centre must have adequate infrastructure.

**Trainee**

Was the training venue/hall sufficient (space) for you all?

What is your opinion on this training program which was held in your own village?

Was it helpful for you?

If yes, explain in what ways?

If no, what are the reasons?

Did you face any obstacles in accessing the training?

If yes, can you please describe them?

**Trainer**

Did you face any obstacles in implementing this curriculum?

If yes, can you please describe?

- **Socio-Economic Outcome**

As has been mentioned in the introduction chapter, investment on human capital will contribute positive results in terms of better goods and services, improved productivity, increase earning of individuals' and his/her social status. Sometimes these results benefit the individuals either directly or indirectly. Evaluating the social and economic outcomes is more difficult at this stage of short-term training evaluation they depend on the objectives and indicators selected. However, such education and training should have some degree of impact that contributes significantly not only to the professional but also the social and personal development of trainees as well. Hence, the next question to be asked trainees:

Do you think that, the learnt sewing competency would help in generating income for you? If yes, please describe the reasons? If no, what are the reasons?

Do you think your social status has been increased after attending this training?

## 7.6 Findings of Pilot Sewing Vocational Training Evaluation

In this section, the findings of a two-month sewing vocational training pilot tested in the villages are discussed. The results of the interviews were analyzed in the backdrop of indicators adapted from Katansky (2008) evaluation model. The main reason for selecting this model was answer the central question of “to

what degree the piloted training has met trainees' training demands". On the other hand, it also focused more on the short-term outcome of the training. Therefore, taking account of the time limit, only selected (sub-) indicators that were more relevant in the context were taken into consideration.

According to Katansky (2008), whether the given training satisfied the needs of trainees is one of the main indicators of training outcome. He further classifies the needs as namely "general needs" and "individual needs". The general needs are those skills knowledge and other components that the target group wishes to acquire vocational competence whereas the latter is needs of each single trainee to be addressed in the training (ibid. p.111). The general need of trainees in this study was to learn competences of sewing Blouse, Salwar and Khameez and hence, the individual needs are not given greater importance. The degree of trainees' satisfaction can justified through the following themes.

- **Motivation**

The trainee's motivation certainly plays an important role in assessing quality and effectiveness of a training programme. The level of personal involvement in learning a vocation will increase chances for individual to be successful in both personal and professional arena (Katansky 2008; Tharenou 2001). One trainee explained that, how the sewing training was motivated to participate:

"Before starting the (sewing) training, I used to wake-up at six or seven in the morning. But during this two months training, I gets-up at 4 or 5 o' clock in the morning to complete all our domestic work and send kids to school to come for training. So we were very active at that (training) time". – Trainee, Vellore

One trainee said that, she has given up her daily-wage to learn a vocation which will help them in the long term,

"I was going for 100 days (MGNREGA – Federal govt. scheme) work in my village, but I gave up it to learn this sewing and it is important for us"- Trainee, Vellore

The trainees' personal involvement and attitude makes them active in achieving their learning goal (ibid. p.112) and therefore individuals put all his/her efforts anticipating results to meet the desired goals. One trainee mentioned that,

"(...) since I have machines at home, I cut (after taking measurement) the (sample) clothes, the sew at home" – Trainee, Dindigul

While there were limited sewing machines in the training center, the trainees were encouraged to practice at home, implies vocational training enables trainees towards self-learning. Katansky (2008) emphasize that trainees should develop attitude, abilities for further improvement (Katansky 2008, p.115). The underlying assumption is that, trainee believes that sewing training would yield the outcome as they desired. In the skill acquisition process, motivation is one of the crucial influencing factors in learning specific vocational skills. As dis-

cussed in the theoretical background (section 3.1) motivation to learn is one of the convincing methods of measuring the reaction.

- **Duration of training**

Several trainees interviewed have a concern that, the duration of the training programme was not sufficient. The inadequate sewing machines for practical also caused difficulties.

“Two months was not sufficient, so if we have three or four months it would be better and the number of machines should be increased and one machine for two trainees would be very effective”- Trainee, Dindigul

The trainees have more concern about time for practical, one trainee said,

“Theory is very important, but it would be more helpful if you provide more time for practical”- Trainee, Dindigul

Another trainee expressed that; due to insufficient machines they did not get opportunity to learn practical.

“We had one hour time to do practical; only six machines for sixteen trainees were there. Therefore, the two months’ time was not enough”- Trainee, Vellore

It was also reflected in the Trainer’s interviews views; it is illustrated below:

“They (trainees) did not have enough time to practice. There are different models of Blouses; we taught only sewing normal type of Blouses. It’s not that difficult to learn, we have to teach only some lining” - Trainer, Vellore

“They (trainees) have learnt to some extent, but it would have been better if they had one more month”- Trainer, Vellore

The trainers also expressed that same concern of short duration of training. If the trainees should learn completely then it should be four months.

“They (trainees) can learn completely with clarity only if they attend four months training. They said that three months is also enough. But they cannot learn completely (...) if four months training is given, then, they can sew for consumers as well”- Trainer, Vellore

Both trainees and trainers felt that two months duration of training was not sufficient to learn sewing and therefore, most of them were reported that training period could be three months. Insufficient sewing machines were also one of the main reasons which caused limited practical training for trainees. As has been mentioned by the experts (see sec.5.6), adequate number of sewing machines, equipment are essential for short duration courses. As discussed in the research methodology (chapter 4), the author of this study has attempted to seek, take effective and useful action in consequences. In an action research, the primary focus was to pursue only to identify the scope and means for improvement (Bhattacharya 2000)

- **Training Infrastructure**

The trainees need to have a conducive learning environment and the training institution should have the basic infrastructure with adequate tools and equipment. It will enable learners to access the same and helps to for learning better. Therefore, the training infrastructure is considered as one of the main indicators in determining the quality and effective of the training.

Many of the trainees pointed out that there were inadequate machines in the class room which impeded their learning.

“There was no adequate machines (for trainees), it would have been sufficient if they had one machine for two people. But, here one machine was shared by three or four persons (trainees). So time was not enough to learn”-Trainee, Vellore

One trainer expressed that, though the class had right trainees strength, a few trainees were taking longer time for practical. Thus some people were deprived of their due time share in the training.

“The class (group) size was fine, but only the number of machine has to be increased. We were allotted one machine just for an hour per trainee, but some people take longer time due to their interest. Therefore, we need one machine for two trainees” – Trainer, Vellore

A few trainees have made suggestions to increase the number of sewing machines that should be available in the training place by fifty per cent:

“There were no adequate machines (for trainees); it would have been sufficient if they (trainees) had one machine for two people. But, one machine was shared by three or persons (trainees). So time was not enough to learn” – Trainee, Vellore

One trainee emphasized that toilet facility should be available in training premises. Indeed, it is very important for women trainees especially in rural areas and it’s also correspond with psycho-social issues trainees

“There was no toilet facility in the training center, but training center must be having toilets for women. Toilet facility is a must for women wherever the training programs are organized” – Trainee, Dindigul

It attributes that training infrastructure not only with adequate machine and tools for learning. The basic amenities also need to be taken into consideration by vocational training providers in rural areas. It can be argued that the result/findings that may initially only be relevant to the particular situation and target group or phenomenon studied by action research method.

- **Training Adaptability**

Many factors affect training adaptability in trainees’ participation in vocational training. In other words, adaptability is linked to meet the requirements of (a) subject of the training and (b) link with specific demand of the target group in terms of location, proximity to access training place and time of training organi-

zation (Anderson 2003, p.113). As discussed in the chapter 3, the rural women have many social obligations such as labor and family. Therefore, the access and flexibility are significant aids towards participation in the training.

The training relating to access, educational qualifications, finance, time and place to improve their participation. In other words, it should adopt maximum flexibility according to the ability of trainees. Katansky (2008) suggest that training programme should not affect daily works and not create any hindrance. In this perspective, location of training center has a crucial influence in enhancing participation in this training. Majority of the trainees interviewed mentioned that, they participated in this sewing training as it was organized in their village itself or closer (in accessible) to their houses. One trainee mentioned she were able to participate in the sewing training programme only to fact it was organized in an accessible location.

“Access to the (training) center was very easy as it was located closer to my house. I would have not been permitted (by family members) if the training program was organized somewhere outside of the village”- Trainee, Vellore

“There is no proper and frequent bus/auto, therefore it is much easier that training being organized in our village”- Trainee, Vellore

Another trainee expressed how the sewing training organized in their village helped to save their cost and time.

“We saved time and bus (transport) cost. If we go outside for training, we have to be on time and also some financial problems (for transport fee) will be there. We wonder if we would have been able to attend the training if it was organized outside of our village. Since this training had been organized nearby (in an accessible place), we had an opportunity to learn”- Trainee, Vellore

Some trainees even mentioned that, organizing training in their village was much helpful to fulfill their domestic work and take care of their kids and family. Maxwell et al. (2000) have found that, for disadvantaged people the choice of vocational training centers are persuaded by proximity to home, flexible course time table and more opportunities for practical experiences. The author finding is also similarly demonstrated that easy accessibility to training centre have more flexible timings enabled women trainees to participate in sewing vocational training, managing their family and social obligations.

“We would have not gone if the training was organized even in our next village. Because we need to take care of our kids, prepare them for schools (...) so they (husband) will ask how you will manage domestic work if we go to the training”- Trainee, Vellore

The vocational training providers in rural areas have to recognize the primary requirements of learners including their interest and need to make the programme more clients oriented (Maxwell et al. 2000) which is significant character of demand driven. This can facilitate better service delivery when vocational

training programme adapts increased flexibility (ibid. P.78). One trainer explained,

“The school (kinder garden) for kids ends in the afternoon by 13.00 hours, so when they (kids) come back home from schools we can go (home) to give them (kids) food. It’s more convenient as the training center is located in our village itself” – Trainee, Dindigul

The role of women in social life is complex as she plays different roles in her daily life with many obligations such as family, social and personal (Katansky 2008, p.114). These attributes determines women’s participation in an occupation and heavily depend on socio-cultural characteristics. On the other hand, it is one of crucial indicator which increases the choice of participation in training. In this context, training has demonstrated that it has met target group demand. Breif et al. (1979) studied the factors affect vocational decision making among women. He found that women makes decision depends more on marital status, number of children and economical needs as primary reasons (Breif et al. 1979, p.522).

In respect to the content, the author had taken careful attention in preparing, organizing content (cf. sec. 6.3) in accordance to the learners’ ability and experts’ suggestions. Because there is an increasing attention in education and training need this mainly to the varied learning capacity and styles of trainees. As a result, it’s structured in such a way to teach simpler aspects which enable learners to follow. One trainer said,

“First the training started from sewing of baby clothes, then Blouse, Salwar. The trainees might have been scared if taught some difficult subjects at the beginning, so they started with easy and gradually they moved on to difficult subjects”- Trainer, Vellore

### • **Rhythmic of Training**

It is considered to be an important indicator to measure the quality and effectiveness of training, correspond with temporal structure and time distribution within the curriculum and also content sequence (ibid. p.114). As mentioned in the theoretical base of curriculum development the learner should be able to access to the content. One trainee said,

“We lost more time in the beginning in sewing skirt, petty coat. So we did not get sufficient time to learn Chudithar (Salwar Khameez).” You need to allocate one month only to sew jacket (Blouse) as it has many techniques (different models)” – Trainee, Dindigul

On trainer mentioned that time allocated for teaching Blouse have to be extended:

“We had taken more time for Blouse, almost more than two weeks. But even then they (trainees) were not clear. So after teaching of Chudithar again I was teaching (sewing) Blouse”- Trainer, Dindigul

Sewing of Salwar Khameez and Blouse was one the essential learning objective outcome in this training, but the finding draws that the provided training has not met to the extent. It reveals the time distribution needs to be extended for sewing Blouse in the curriculum.

When the trainers were asked to respond on the sequence of the content and time distribution, one trainer said that,

“It has too much detailed explanation of contents in some units. They cannot write everything”-  
Trainer, Vellore

One trainer explicitly said the trainees are much interested in Blouse than Salwar Khameez, and therefore, they taken more time to learn sewing Blouse. Ayeni (1992) describe it as “**learnability**”, which means the curriculum should be learnable by intended target group as the way it’s presented.

- **Economic Benefits**

When they learn and start sewing it will benefit them economically in many ways. The increasing demand for Blouse, trainees has an opportunity to earn more. Some trainees said that she can save tailor labour charge if she sews her Blouse herself.

“We paid Rs.25/- to sew a Blouse, the sewing cost is increased to Rs.40/- and Rs.80/- for ordinary Blouse and lining respectively”- Trainee, Dindigul

“Tailor is asking Rs.40/- to sew a Blouse, but if we learn sewing ourselves we can save this money. Normally they (Tailors) charge Rs.100/- to sew one Blouse. I will be able to sew myself, Rs.100/- is saving for me”- Trainee, Dindigul

The evaluation revealed that the economic benefit on completing the training was one of the primary objectives of the trainees. In short, earning and or/income generation are underlying reason in the demand for vocational training in rural areas. It was more prevalent especially among unemployed and underemployed people in demanding and/or choosing vocational training. The vocational training outcome variables such as employment, earning has causal relationship with expectation mechanism in performing in given behavior (Lent et al. 1994).

- **Quality of Trainer**

Most of the trainees mentioned the trainers’ performance was good and that they taught trainees according to their learning capacity level and it was easy to understand from them.

“The trainer taught us well, even if we asked the same questions ten times they explained without any hesitation, she (trainer) never showed angry on us for this (asking many question repeatedly)”- Trainee, Vellore

“Our batch has both literate and illiterate people. So when they (trainer) teach us by demonstrating it is understandable for all. So the (trainee’s) teaching method can be understood by everyone”- Trainee, Vellore

The above statements re-affirm and could be linked with training organization sub-indicator of “interactivity of training methods” adopted by trainers with an objective of enabling a learning environment between trainers and trainees. It exists where trainers develop interactions between both the trainer and trainee, ensures the quality and effective of training (cf: Katanky 2008, p.116). Vocational teachers in India are poorly paid, have been at the lower end of the teacher salary spectrum. In many of the rural institutions, the vocational training teachers had not trained well (Pillay and Ninam 2014).

### • Demand for the Sewing Vocational Training

Most of the trainees interviewed mentioned that, they wanted to extend the training for two more months and very eager to learn more. Even, they are ready to pay the training cost and only a few more machines to be arranged. For example when they asked whether they will be able to pay for further training, a trainee said:

“If you arrange a few more machines in the training center for two more months, we are ready to pay (fees) and learn. We (trainees) are ready to pay salary to the teacher to continue this training to learn more” – Trainee, Vellore

“You give only the machines; we shall pay the salary to teacher and learn it (sewing)”- Trainee, Vellore

It is an important indicator of an effective demand for the training market (Ziderman 2003). Most of the trainees are working as daily wage labours in villages. They are very much interested in learning sewing vocational skill than any other as it gives more income generation opportunities. It can be explained through the following examples, a trainee said:

“Truly speaking, we have given up “100 days’ work”<sup>2</sup> to attend this two months sewing training. Now they (a vocational training provider) have included our name for (making) paper cup training. But we agreed upon with one condition that they should also give training on sewing, which encouraged many of us to enroll in that (Paper cup making) training”- Trainee, Dindigul

The increased responsibility of government for improving the conditions of rural people in skill acquisition is an important tool for achieving the goal. Hence, government has responded by providing the subsidized but often it’s designed poorly or not adequate need assessment in market was done.

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<sup>2</sup>MGNREGA: Mahatma Gandhi National rural employment guarantee act is designed to provide job guarantee for at least 100 days in rural parts. Through this scheme, all the adult members (at least 18 years of age) of the any family in rural part of the country are given non-skilled work.

Some trainees said that, they are not interested in learning other training which they feel not useful to them even if there any incentives to attend, one trainee mentioned:

“We all came here to learn sewing free of cost, but whereas today even they (govt. training provider) promised to give us Rs.25/- per day to attend (paper cup making) training, but we are not interested at all. We are interested to learn that (sewing) which will be useful for us” – Trainee, Dindigul

It became quite clear that lack of consideration of learners’ demand in the district administration organized training, therefore it failed to attract trainees even they offered incentive of Rs.25/- per day. It is a perfect example how “from-above” approach is contrast to the sewing demand “bottom-up” approach of sewing vocational training. Some feel sewing vocation gives them benefits immediately and earn money where as for other vocational activity or product making they have to depend on other factors such as getting job order, they said in the interview,

“If we learn sewing the „the job order will come to us automatically whereas in this (paper cup making) training we have to go to get orders to sell them” – Trainee, Dindigul

- **Curriculum and Supplementary Notes**

All most every trainer mentioned that, provided sewing curricula was helpful to them to some extent. They have followed the teaching methodology, time duration for each Unit. A new sewing trainer had mentioned like this,

“Only first one week I was scared a bit, I have no idea how to handle (the classes). Then I asked Usha (Trainer of another village), and I used the book (curriculum) in which you have given how to teach (methodology). I also referred to my teacher training notes”- Trainer, Vellore

Another trainer said, she only referred the topics in the curricula,

“I had seen only the heading (in the given curriculum), then I taught according to our notes (given in their teacher training)”- Trainer, Dindigul

A trainer pointed out that; they were able to complete the course within specified time period by following course curricula,

“It was very helpful to complete the lesson on time (specified number of hours) Otherwise, we would have gone (to class) without any plan. Due to this (curriculum) we were able to complete lessons as per plan”- Trainer, Vellore

“If we train them without plan, it takes longer time whereas we have to complete planned topics as per (teaching) plan” – Trainer, Dindigul

In the training system process, the quality and effectiveness is overall condition by the satisfaction of the trainers from their work, self-esteem, motivation and attitude are significant criteria. Encouraging trainers to implementation of curriculum could create a room for a more effective training process.

## 8. Analysis of Overall Results

In this final chapter, the overarching goal of demand-driven approaches in vocational training in rural areas, experiences and lessons learnt from pilot (sewing) vocational training were analyzed and discussed. Further, the limitations of this study and areas for future studies are identified and recommended.

According to this study it was able to prove that the demand-driven approach of VET in rural areas is possible when it adapts and adequately meets the “felt or endogenous” needs of the intended target group/learners. At the micro level, its components such as **analysis of situation, factors associated with vocational training demand, responding to the expressed demand** of target people with adequate degree of relevance and effectiveness were considered the essential guiding principles in this demand-driven approach.

### 8.1 Analysis of Situation

Women in rural areas with low-education have a very little opportunity of obtaining employment in the formal sector which necessitates them to look for other potential income generation opportunities to support their family. Majority of the respondents acquired their occupational skills largely through informal learning which often by traditional apprenticeship, mostly by master crafts persons or experienced/senior employees of the particular occupation (NCEUS 2009).

The learning outcome occurred mainly through learning by doing or on-the-job mode. In the traditional apprenticeship, knowledge transfer had taken place within family and traditional apprenticeship modes whereas the informal apprenticeships happened even outside the family. The study has also noted that observations in the workplace and learning by doing played a significant role in skill acquisition in the informal learning mode. There was no specific time duration to acquire skill, and they varied by type of trade, largely lie on the ability, motivation and interest of the learner/apprentice. It was found that most respondents mentioned that, people (men) prefer to get hands-on or on-the-job experiences rather than learning from formal training even if there are vocational training centers in their villages. This is so because they are concerned about losing of earning when they participate in a formal vocational training center. On the other hand, informal and/or on-the-job learning has an advantage of the informal learner being close to the current needs of employers in the labour market. This concurs with the findings of another study (see Eichhorst et al. 2012, p.28).

Even if they have acquired new skills, there was a further challenge. They lack in managerial and business skills as pointed out by Mirta (2005). The vocational skill which was acquired in the traditional informal apprenticeship perceived limited value due to the lack of certification of training and of work experience. Even in cases where the learner obtains proof of learning in writing after the informal learning, it was not of much valued as their acceptance had been confined only to the local community.

The economic factors, low level of educational, long duration and socio-cultural norms (especially for women) were some of the major obstacles in access to formal vocational training in rural areas (Maitra and Mani 2014). Most of the formal vocational training programmes are not designed to cater to the needs of low-educated people. As Bhattacharya (2000) states that, in an action research the author of the study is an active agent in the process that is being studied, where author explores own practice or intervention. Further, he claims that especially in education practice, the traditional research was not favored in improving and, therefore the only way of promoting change through involving the practitioners in the research to increase educational practice.

## **8.2 Factors Associated with Vocational Training Demand**

To minimize the negative effects in demand-driven approach, attention needs to be paid on the factors associated with vocational training demand as advocated by Stockmann and Silvestrini (2011). Thus, in this particular study, the vocational training demands were attributed by many factors including geographical location, cost, future economic benefits, (flexible) time and access to the training center.

### *8.2.1 Geographical Location*

Vocational training demand varied according to potential/growing labour market demand and economic opportunity, depending on the region. The (vocational training) need assessment survey revealed that people of B1 and B2 villages wanted to acquire skills related to the leather process and manufacturing products. Because, these two villages are located in areas where leather based industries are highly concentrated and even considerable labour workforce is engaged in this occupation.

Similarly, I-1 village is covered by ancillary industry units and medium and small scale industries which had influenced young people aspire to learn skills related to such occupations as automobile mechanic, carpentry, air-condition and refrigerator maintenance and masonry. None of the respondents had asked for agriculture related vocational skills for skill up-gradation but asked for other non-farm related trades (see Table 2). This clearly indicates that

rural areas are in transition where labour market moves away from agriculture and allied activities towards manufacturing and service sector. Such a situation has triggered the demand in non-farm vocational training and people look for alternative economic and employment opportunities. Hence, changes in labour market and economy also significantly influenced the demand for VET. Formal employment sector accounts for a relatively small part of total employment and displays limited and growth potential. Majority of the workforce remains attached to the informal sector including micro, small and medium enterprises. In order to absorb them into productive employment, vocational training needs to be the focused on the target group.

### *8.2.2 Economic Factors of VET Participation*

This study has found that individuals' choice of vocational training was highly influenced by future outcomes such as (self-) employment and earnings. More particularly, women were chosen vocational trade assessing expected outcomes of generating income. As described in the beginning of this chapter, rural people do not participate in formal vocational training, not because of their poor educational status but, mainly due to their poor economic condition.

Indeed, certificate of qualification plays an important role in mobility in the labour market as semi and/or skilled people which increases opportunity for better employment and earnings. Vocational career aspirations and training demand also corresponds with economic benefits and employability which motivates (rural) people in participating vocational training. The level of personal involvement and activeness in learning manifests in achieving desired goal.

### *8.2.3 Socio-Cultural Aspects*

Individuals vary in their vocational decision making, skill acquisition and capacity which are determined by family environment and economic condition. As seen in the section 4.6, the vocational training needs of women were attributed greatly by external factors such as social, belief and preferences. While making a vocation choice, women have to balance both being a home maker and a member of the labour force. Despite future economic benefits, women in rural areas not simply demand vocational training, exploring various (realistic) possibilities and choose that option which best meets their demands. Hence, in this study, the most demanded vocational training was sewing, meeting their training demand in terms of training center in an accessible place, suitable time of the day and short duration course were also been considered. It allows more flexibility to attend the vocational training and also fulfill domestic responsibilities.

### *8.2.4 Demand-Driven Approach*

The demand-driven approach in this pilot sewing vocational training is analyzed through the lens of relevance, effectiveness and adaptability of course curriculum in the real life context. Relevance refers to the extent in which the objective of the programme aligned with the needs of intended beneficiaries or target groups as it focus only at the micro level - planning and implementation. The two months pilot training was designed based on the “endogenous needs” of target people and tailored to the needs of “expressed demands” of those people (cf. ch.2). As the rural women preferred to learn sewing only Blouse and Salwar Khameez to earn income from their home, the pilot was structured to provide initial vocational training in sewing to enable trainees for employability. The competency-based curriculum was designed to be flexible and responsive to the local labour market needs.

### *8.2.5 Effectiveness*

The effectiveness of pilot training programme depends on the level of adaptability of training implementation, curricula and content. The pilot sewing vocational training was planned based on the demands of the potential trainees by vocational training need assessment (**participatory identification of needs**), involved trainees in the designing process was the key success factor of demand-driven approach. The content and teaching methods were also planned considering the target groups’ background and experiences.

The pilot which organized in the trainees’ village or in accessible venue had significant impact on their participation, motivation and maintained their interest throughout the course. Though the factors concerned low-educational level, mobility, socio-cultural norms and domestic responsibilities, the pilot provided adequate socio-personal support to overcome those obstacles. Secondly, the evaluation of training also revealed that increased motivation among trainees and self-efficacy resulted active learning, acquires knowledge and skills. Therefore, VET must be effective in terms of offering meaningful, quality skill development, avoid time serving and inadequate adaptation.

The effectiveness also depends on the local demand for labour in the specific occupation, surrounding market, livelihood and training needs of the target groups are taken into account (Eichhorst et al. 2012). At the end of the pilot the trainees’ willingness to pay fees to continue the programme indicated that programme has met their demand of the target people. As described in the (sec. 3.1), the programme is assumed to be “demand-driven” when the participants, receivers were actually ready to contribute or pay for the product or services, in other words when such organized programmes met target groups’ demand to some extent, enhances opportunity for better job prospects and increase in earnings.

### *8.2.6 Flexibility and Institutional Arrangements*

As the trainees demanded to organize sewing training in the village itself to minimize proximity of training place and flexible course time helped trainees to participate in the pilot, also they were able to fulfill their domestic obligations. Though, the trainees of this pilot have number of responsibilities including their household work, kids' care they managed to participate and complete this two months training programme. Therefore, this pilot was flexible enough, trainees themselves pointed out that they would attend such training programme if it's organized elsewhere. The competency based curriculum attributed towards tailored to the "expressed demands" of the learners or target people; it was also customized to the learner and occupational requirements.

It was noted that, to participate in vocational training for these women (trainees) in rural areas, the marital status, family responsibility, having children and proximity to the training center are also crucial influencing factors. Hence, to organize vocational training in villages, it needs to have certain degree of flexibility.

## **8.3 Lessons Learnt -Pilot Demand-Driven Sewing Vocational Training**

According to the evaluation of the pilot (sewing) vocational training, the following lessons can be learned. This pilot has demonstrated that sewing vocation has huge demand among women in rural region and has potential to be able to play an active role in rural economy and society as well.

Vocational training for rural people needs to be more flexible and responsive to the target groups' endogenous demands which could enable and enhances access. The socio-cultural norms also were important elements which taken into account and particularly women in rural areas were motivated to demand vocational training that provides them immediate benefits rather than long term.

In the pilot evaluation it was found that some trainees were much confident in sewing well as they had learnt better. Even some trainees learn faster than other trainees due to their prior knowledge acquired through various experience, also it varies based on their individual self-efficacy.

The author felt that it was difficult in finding sewing vocational trainers in rural areas; hence, developing a pool of quality trainers for VET is important. Further, it is equally important to have adequate numbers of female trainers in rural regions for female dominated vocational trades. Some of the trainers did not follow the teaching / learning materials. The training providers must ensure this through constant monitoring and are required to make sure the trainees are implementing curriculum in the ground level.

Duration of two months to learn sewing was not sufficient and it should be of minimum of three months to six months for initial training. When such short-term vocational training is being organized; the training providers must make

sure if there is sufficient learning equipment, machines, tools and adequate space available for effective learning.

Concerning the institutional arrangement, decentralization of VET in terms of planning and implementation at different level is significant. This is to facilitate in terms of identification local needs and to meet them in the real life context. Indeed developing **locally-appropriate, demand-driven training system could be aimed to ensure flexible, response to market needs, low-cost but high demand**. As Bennllel (1999) asserted the vocational training should be directly linked to the actual skill needs of rural people and need to be current trend of production. The demand-driven approach has the potential in improving in designing the education and training appropriately with focus on target people.

#### 8.4 Limitations of this Study

While the study has reached its aims by bringing in valuable insights, it is important to note that there were some unavoidable limitations, given the nature of the issues and the scope of the study. First, as previously discussed this is a qualitative study using case study approach, therefore, it may be pointed out that there were a lot of **intra-regional variations** in terms of demands for vocational skill training. Thus the findings of the study could not be automatically made applicable to the whole of India.

Secondly, the response accuracy which means culturally persons in rural areas are conditioned to be less outspoken, especially with persons outside their milieu. This was an issue during the initial stages of the study, until the author established adequate rapport with the people. Respondents to Focus Group Discussions and interviews had to be probed repeatedly to get responses as many of the respondents could not articulate their opinions in clear statements.

Thirdly, as the human capital theory have been recognized, education and training can play a central role in raising the earnings, job prospects and life changes of individuals (Fretwell 2003). Thus, cost-benefit analysis was beyond the scope of this study, as it was of time limitation and this particular sewing vocational training was meant to be a pilot study.

Fourthly, the present study did not examine the institutional linkages. While expansion of vocational training facilities are essential, adequate linkages between Government agencies, Non-governmental organizations and private players in terms of essential support services such as credit, market, post training services in other words “institutional linkages” are not explored fully and it must be provided especially for rural people.

The fifth limitation in this study is social and economic benefits. As Maitra and Mani (2014) argued, the impact of vocational training may vary between short-term, medium-term and long-term which has effect in measuring outcome at different points of time. As a result, studying the long-term impacts of the

training in terms of income generated, employment opportunities created including self-employment was beyond the scope of this study. Hence, this action research method is worthwhile to the extent, the particular methods and findings of the study may not be generalizable, however, it may be taken as contributory evidence to those who involved similar kind of research. Although there are many limitations, there are some potential areas for research which are described in the ensuing passage.

### **8.5 Directions for Future Research**

There are several areas for further development and applications for the work undertaken in this study would be beneficial. In particular, there is a lack of critical analysis of vocational skill supply and demand in rural areas and specifically for disadvantaged people is required. Further research could be examined the steps beyond need identification and design of training, by including credit, hand-holding support, transition into labor market, economic benefits resulted from vocational and the like linkages (see Noronha and Endow 2011). The demand-driven approach is characterized as decentralizing, participatory in real life context. Therefore, there is a need to sensitize and enable the vocational training providers to customize their skill-building efforts to suit the rural people. Further a study could be carried out to assess gaps in the training design and delivery in accordance to demands and learners' capacity to acquire specific vocational skills.

Indeed, a study would be helpful to gather and collate information on providers of training in vocational skills for rural people which may be further investigated to achieve collective action. The study may be replicated in a less urbanized state facing severe shortages of skills and opportunities of employment. Further, based on the present study results the competency-based sewing curriculum may be reshaped with required modifications in distribution of hours for each unit, adequate number of (sewing) machines and may be explored. The underlying reason is that, the study findings which are specific to one particular region, context and situation, encourages further such study by VET practitioners/curriculum developers with other trades, villages and target people. As noted in this study, home based enterprises, income generation activities have been helpful for women whose mobility is limited in rural areas due to traditional social norms which has limited growth/scope and would be best supported assisting rural communities. Therefore, a study to explore the feasibility of vocations beyond the confined areas and to include/improve further diversity in their activities is worth studying. The present study has demonstrated that there is huge demand for sewing vocation especially among women in rural areas. However, the demand-driven approaches could be tried and tested in other emerging sectors such as automobile, retailing, and financial services.

## 8.6 Perspectives

The preceding sections highlighted some key areas for further investigation from the research perspectives, now there are some aspects that remain in the policy level. As seen in the introductory chapter, the ensuing changes to more substantial change in the skill demand in the labour market. While the more changeable the market for skill demand and/or gaps, the more flexible should be response from the supply side of training systems. Further, a majority of the people lives in rural areas and with low-education largely depend on the Medium Small and Micro (MSME) enterprises. Hence, the vocational training system should address the needs of these disadvantaged people and potential target group which create social equity in access and need to make it sustainable. According to the National Skill Development Policy document, India has the opportunity to reap the benefits of the demographic dividend only next twenty five years. Thus, it is crucial that skill development should be a shared responsibility of the key stakeholders' viz. government, corporate sectors and civil society organizations which would pave ways for improved and inclusive growth in the country and skilled workforce. Hence, is an urgent attention is required that these stakeholders need to focus on the demand-driven approaches of VET in a comprehensive way to achieve the twin objectives of quality vocational skill training on one hand for increased employability and better livelihood for individuals and on the other hand transform into improved productivity and economic growth in the country.

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# Appendix I - Vocational Training Needs of Rural People

## Interview Guideline

Date:

Name of the Village:

### **Block: 1 Employment status and skill acquisition**

1. What is your occupation?
2. How did you learn your (specific) occupational skills?  
(From the response, it can be classified whether it is formal / informal training)  
(If it is Formal training) what was the duration of the training course?  
(If it is informal training) How long did it take for you to learn those skills?
3. What factors motivated you to learn them?
4. After the training/ acquiring the skills, did you face any difficulty in finding a job?  
If yes explain the difficulties that you faced  
If no, where did you get the job?

### **Block: 2 Vocational Training Providers and Accessibility of Training**

*(To find the available training infrastructure, vocational training providers and accessibility)*

1. Are there any vocational training institutions in your village?  
If yes, what type (govt./private/ civil society) of institutions are those?
2. What training trade/courses do they impart?
3. Are those training institutions located in close access to your village?  
If yes, is anyone from your village attending/studying in that institute?  
If no, what are the reasons?
4. Which are the vocational training institutes close to your village and how far are they from your village?
5. What kind of training courses do they impart?

6. Do you think that vocational training institutes are necessary for your village?  
     If yes, can you describe how would it help your village people in generating income or to get (self-) employment?  
     If no, please explain the reasons

### **Block: 3 Vocational Training Needs**

*(To assess location specific, learner centered vocational training needs in the villages and motivation to enhance their skills.)*

1. What are the major livelihood activities in your village?
2. What are all the income fetching jobs in your area? Why?
3. What vocational skills training would be helpful for you to get (self-) employment or/and income generation?
4. What are the training institutions available for building those skills?
5. Are these training institutions easily accessible to you?
6. Which type of skill sets are wanted in the market?
7. Is there any scope of attending training if you are given an opportunity to enhance your skill?  
     If yes, what are your *preferred vocational skill trainings needs*?
8. What is the motivation to learn this specific vocational skill?
9. Do you think this (preferred) training would help you to find a job/self-employment?  
     If yes, please explain (if possible by an example)
10. Are there any training institutions available in your village or closet to it which provides training on the specific (preferred) training course?  
     If yes, please describe about the institution and the course fee  
     If no, where is it located and how far is it from your place?
11. What should be the expected duration of the course for the (preferred) training?
12. If someone offers you, your preferred vocational training in your village or nearby, will you be able to pay and learn?  
     If yes, what fee could you afford?  
     If no, please specify the reasons
13. What kind of follow-up or support services do you expect from vocational training providers on completion of your preferred vocational training course?

Thank you for your time!

## Appendix II - Overview of Sewing Curriculum Units

### Appendix II - Overview of Sewing Curriculum Units

Unit of Competency	Learning outcome (at the end of the lesson the trainee will be able to )	Content	Hours/ duration	Methodology	Assessment Approach
<b>Basics of Sewing machine, its parts and functions</b>	Explain the various types of sewing machines Identify the parts of sewing machines Describe their function	Types of Sewing machines Treadle Power Double needle Over lock Flat machines Sewing machine parts and its functions of sewing machine	25 hrs	Lecture Interaction Pictorial aids	Oral exam
<b>Operation of Sewing machine</b>	Arrange sewing machine for job work Perform pedal	Sitting position Fixing bobbin case Pedaling Stitching - Classification	20 hrs	Discussion Questioning	Oral exam

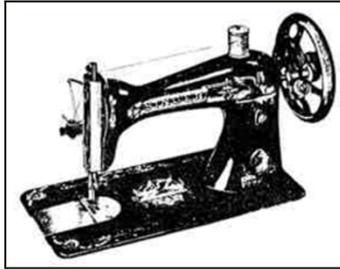
	<p>speed control</p> <p>2.3 Perform stitching in different shapes</p>	<p>and Types Seams and Seam Finishes</p>		
<p><b>Carry out measurement and calculations</b></p>	<p>Explain various structures of human body and types of figures</p> <p>Assess the methods of taking measurement</p> <p>Obtain measurements of the customer</p> <p>Perform calculation for stitching</p>	<p>Eight head theory</p> <p>Human figure - Normal and abnormal</p> <p>Method of taking body measurements for male and female</p> <p>Different system of measurements</p> <p>Basics of calculation (Addition, Subtraction, Multiplication, Division</p>	<p>25hrs</p>	<p>Lecture</p> <p>Demonstration</p> <p>Interaction</p> <p>Demonstration</p> <p>Observation of performance</p>
<p><b>Sewing Baby frocks</b></p>	<p>Take measurement, draft</p> <p>Prepare cut parts</p>	<p>Measurement for baby frock and yoke frock</p> <p>Drafting front and back</p>	<p>25 hrs</p>	<p>Lecture</p> <p>Displaying pictorial aids</p> <p>Oral exam</p> <p>Simulation</p>

	based on the measurements Sew baby frock and yoke frock	part of the frocks Drafting sleeves	Demonstration	
<b>Sewing of Saree Blouse and Salwar and Khameez</b>	Take measurement, draft Prepare cut parts based on the measurements Sew saree Blouse, Salwar and Khameez	Measurement for Blouse Drafting front and back part of the Blouse Drafting sleeve	Lecture Simulation	45 hrs  Observation through simulation
<b>Care and use of sewing machines and basic trouble shooting</b>	Perform maintenance work for proper functioning of machine Explain the machine troubles arise while perform	Minor Problems occur while sewing, Causes, and Remedies Maintenance of machine sewing	Lecture Simulation	40 hrs  Oral exam Demonstration

	<p>stitching and remedy 6.3 Describe precautionary methods to avoid them</p>	<p>Need and Importance of communication, Verbal &amp; nonverbal communication, Listening skills, convincing ability and negotiating ability Time management Importance of human relations, Financial literacy, Book-keeping</p>	<p>30 hrs</p>	<p>Lecture Role play</p>	<p>Observation through simulation</p>
<p><b>Entrepreneurial skills</b></p>	<p>Communicate clearly with customers Build customer relationship Develop personal value system Apply managerial skills</p>				

## Appendix III – Sewing Curriculum and Supplementary Notes

### Sewing Ladies Garments



## Introduction

The human capital investment in people's education and training economically benefits both individuals and society. It also increases the performance of individuals; improve the productivity, and an economic growth of a country. The India's skill development policy 2009, envisages a shift from supply to demand-driven, enhancing individuals' employability (wage and self-employment) of people, productivity and living standards of people. Therefore the course is designed to train rural women based on their felt-needs to acquire knowledge, skills and competencies in tailoring vocation. This covers the basic and core competencies of sewing ladies garments of Blouse and Salwar Khameez.

## Areas of employment

The women in rural areas often shows less interest to move away from their village for work, following are the potential areas of where they find employment opportunities.

- Tailor at a Boutique shop
- Entrepreneur – Boutique shop
- Garment manufacturing unit
- Wage Employment
- Production supervisors in garment industry.
- Assistant pattern makers
- Floor supervisors
- Finishing supervisors
- Assistant designers
- Sewing co-ordinator
- Instructors for community polytechnic scheme
- Instruments
- Self-employment
- It has scope for self-employment.
- Setting-up a garment unit (needs further training)
- Setting-up a Boutique
- Undertake job contracts from export garment industries

**Silent Features of Curriculum**

The competency-based vocational training is designed to equip the learners to sew women's dress (culture of Tamil Nadu women in rural areas). It is designed according to the people's requirements based on the learner's socio-cultural background. Taking into account of learners' ability and their educational level the course material is contextualized. Also some special inputs such as entrepreneurial skills, basic trouble shooting techniques are included in the curriculum.

*Dimension:* The curriculum is framed with guidance from "Tailoring experts" and designed to the competences required for Tailoring vocation and emphasis given more on learners' needs.

Major focus of this curriculum is to develop require competencies to sew ladies garments-Blouse and Salwar Khameez by which the learners would be able to gain decent (wage or self) employment. The entrepreneurial skills would help them to gain self-confidence to become successful employee(r).

*Duration:* The time length is described in hours in the curriculum.

*Total number of hours:* 200

*Trainee entry requirements:* The course is mainly for women in rural areas and there is no any educational requirement to participate in this training programme. The minimum age limit is 14 years.

## **Unit of Competency 1 - Basics of Sewing Machine, Its Parts and Functions**

Duration: 20 hrs.

Description: This unit covers knowledge and understanding of various sewing machine types, parts and its functions.

Learning outcome: (at the end of the lesson the trainee will be able to)

- Explain the various types of sewing machines
- Identify the parts of sewing machines
- Describe their function

Contents: Types of sewing machines

- Treadle
- Power
- Double needle
- Over lock
- Flat machines

Sewing machine parts and its functions of sewing machine

Teaching Methodology: Lecture – Interaction - Pictorial aids

### **Introduction**

Sewing is a creative and interesting skill. It is an art which transmitted centuries to centuries and never lose its charm. Therefore many individuals still want to learn or wish to improve their skills in this vocation. Often the training facilities are remains lack due to affordability of training cost, accessibility or designed only for particular segment of the people or the programme may not address the need of target population. The knowledge of sewing gives a confident feeling when it is applied to the construction of garments. The earlier method of sewing by hand is not applicable for all stages of garment making. Therefore, considerable emphasis is given to machine sewing.

There are several machines in the market today, each with its own desirable features and advantages. Sewing machines range from most basic having only simple lock stitch to the electronic machines that use advanced computer technology having various functions for example piping, binding, ruffling, pleating, darning, hemming and even making buttonholes and attaching fasteners. A good sewing machine is required to obtain quality products. One has to be familiar with the characteristics of different types of machines for selecting appropriate machine, depending upon the ability and requirements of the person.

**Types of Sewing Machines:**

Sewing machines are now available in various models such as domestic model, tailor model, industrial model, portable and cabinet models. They may be operated by hand, treadle or electric motor.

**a. Hand – Operated Sewing Machine:**

This is the simplest form of sewing machine which is operated by hand. A detachable handle provided to the flywheel is used to operate the machine. This machine is generally suitable for domestic purpose because it does not help in speeding up the work.

**b. Treadle Sewing Machine:**

This machine is exactly like the hand sewing machine but it is operated by foot using an additional stand. In this type the balance wheel is operated by a belt with the help of lower stand, which is driven by feet. This machine operates faster than that of the hand-operated machine. This machine is suitable where there is no power supply. When handling this machine both the hands are free to handle the fabric, speeding up the work. Even some of the heavy-duty machines are operated by this method.

**c. Electric Sewing Machine:**

This is the fastest sewing machine. One needs practice to handle it. In an electric machine the balance wheel comes to motion by a belt, which is attached to an electric motor.

**Commercial Sewing Machines**

Single needle lock stitch: Electronic machine with single needle consist of single needle.

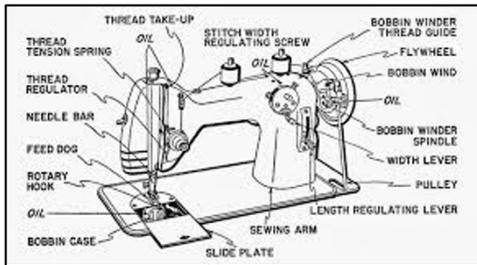
Double needle over-lock stitch: Electronic machine stitching is done with double needle.

Over lock machine: This machine is used to finish the edges of the seam. It is also used for normal sewing of the knitted material.

Button sewing machine: Used for sewing buttons for shirts, where the width of the stitch is adjusted with holes of the button.

Button Hole Machine: Button hole is stitched with machines stitches, after finishing the hole is done with short knife adjusted to the length required.

Fusing Machines are basically used for pressing fusing two or more materials with heat and pressure-fusing cotton, facing in garment, and so on. The parts of a sewing are listed below and seen in Fig.1



**Fig. 1** Parts of a Sewing Machine

### **Sewing Machine Parts and its Functions:**

The basic structure of sewing machine is the same whether it is hand-operated sewing, treadle sewing machine or electric sewing machine. The basic parts of a sewing are listed below and seen in Fig.1

1. Spool pin: It is fitted on top of the arm to hold the reel.
2. Thread guide: It holds the thread in position from the spool to the needle.
3. Tension disc: The two concave discs put together with the convex sides facing each other. The thread passes between the two. The tension of the thread is adjusted by a spring and nut which increases or decreases pressure
4. Take up lever: It is a lever fitted to the body of the arm. It's up and down motion feeds the thread to the needle and tightens the loop formed by the shuttle.
5. Needle bar: This is a steel rod to hold the needle at one end with the help of a clamp. Its main function is to give motion to the needle.
6. Bobbin case: This moves into position to catch the top thread and form the stitch as the needle is lowered into the bobbin chamber.
7. Presser foot: It is fixed to the presser bar to hold the cloth firmly in position when lowered.
8. Presser foot lifter: A lever attached to the presser bar for raising and lowering the presser foot.
9. Stitch regulator: This controls the length of the stitch.
10. Bobbin winder: A simple mechanism used for winding thread on the bobbin.
11. Fly Wheel: When this is made to revolve, it works the mechanism of the motion
12. Clutch or Thumb Screw: This is in the center of the fly wheel and it engages and disengages the stitching mechanism.
13. Slide Plate: A rectangular plate, which facilitates the removal of the bobbin case without lifting the machine.
14. Needle Plate or Throat Plate: A semi-circular disc with a hole to allow the needle to pass through it.
15. Feed dog: This consists of a set of teeth fitted below the needle plate. It helps to move the cloth forward while sewing.

16. Face plate: A cover which on removal gives access to the oiling points on the needle bar, presser bar and take-up lever.

17. Spool pin for bobbin winding: Spool of thread is placed on this at the time of bobbin winding.

### Sewing Tools<sup>3</sup>

#### 1. Inch Tape



Inch tape is an important tool for a sewer. Recent inch tapes have centimeter counts on other side which is easier to measure. Inch tape of length 60 on one side and centimeter of length 162 on the other side are marked.

Fig. 2

#### 2. Scale



12 inches marked in 1 foot scale or 30 centimetres marked in 1 foot scale should be noticed. It is used to draw lines and measure.

- 1 inch = 2.5 cm
- 12 inch = 1 foot
- 30 cm = 1 foot
- 100 cm = 1 meter

Fig 3

#### 3. Tailors scale

Tailors scale is used to draw lines of small distance with accurate measurement. It is helpful in cutting crosspiece which is used for neck part.

- 1 inch = 4 inch
- 1 inch = 6 inch
- 1 inch = 8 inch

#### 4. Marking Calk



Marking chalk is used to draw lines on cloth. The measurements on cloth are marked using marking chalk.

Fig. 4

#### 5. Tailors' square



Tailor's square is used to draw straight lines on stitching pattern and cloth. It is also used to draw corner lines.

Fig. 5

<sup>3</sup><http://www.learnstitching.com/search/label/SEWING%20TOOLS>

### 6. French Stencil



French stencils of different shapes are used to draw shapes on cloth. It is made up of plastic or wood.

**Fig. 6**

### 7. Pencil and Rubber

Pencil is used to draw patterns and rubber is used to erase if any mistake is made.

### 8. Scissor



**Fig. 7**

Scissors are used to cut cloth and it is also known as master scissor. Always have a separate scissor for cloth and paper. Tooth scissor is used to cut the cloth corners so that it looks decorated and the threads don't come out. Small scissor is used to cut the extra threads that hang out during sewing. It can be kept closer to the machine during necessities.

### 9. Pin Cushion



**Fig. 8**

While cutting cloth, pins are poked into the cloth from moving. These pins have to keep safely in pin cushion.

### 10. Brush

Brush is used to rub the markings on cloth made by marking chalk. Beginners need brush for practicing.

### 11. Finger guard

Finger guards are used to guard the fingers of people who work with needles.

### 12. Ironing Machine

Ironing machine is used to iron cloths after the dress is stitched.

### 13. Needles

There are various types of needles. Hand needles are used to put stitches using hand and machine needles are used to put stitches using machine. There are also various sizes of needles.

## 14. Circle Blade

Circle blade can be used to cut different shapes. Shapes are drawn on paper and placed on the cloth. Then the circle blade is used to cut along the shapes.

### Unit of Competence 2: Operation of Sewing Machine

Duration: 25 hrs.

Description: This unit covers how to prepare for sewing, threading the machine, fixing and removing of bobbin case, pedaling, seams and seam finishes.

Learning outcome: (at the end of the lesson the trainee will be able to)

- Arrange sewing machine for job work
- Perform pedal speed control
- Perform stitching in different shapes

Contents:

- Sitting position
- Fixing bobbin case
- Pedaling
- Stitching - Classification and Types
- Seams and Seam Finishes

Methodology of Teaching: Lecture – Demonstration- Interaction

### Sitting at a Sewing Machine<sup>4</sup>

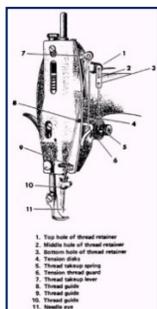


Fig. 9

You should do the following in order to sit correctly at a sewing machine.

1. Your chair should have back support, which is adjustable in height and mobility. The chair should support the small of your back in particular.
2. You should adjust the seat height to fit your body; too low can cause cramp and backache and too high can cause strain on your legs.
3. Your seat should be as close to the bench as possible, allowing you to be upright and comfortable and your arms should be within easy reach of the machine.
4. When seated, your legs should be at right angles (90 degrees) with the floor.
5. Your angle of vision with your head fixed should be 60 degrees.

<sup>4</sup>[http://tle.tafevc.com.au/toolbox/file/c079d94a-6fdc-88f5-e9b3-e551e4384d20/1/515\\_manual-ohs.zip/pages/ohs/sewing/ergo.htm](http://tle.tafevc.com.au/toolbox/file/c079d94a-6fdc-88f5-e9b3-e551e4384d20/1/515_manual-ohs.zip/pages/ohs/sewing/ergo.htm)

6. When seated, your nose should be in line with the take up lever and the needle, with your head tilted no more than 30 degrees either way.
7. Your back should be straight.
8. Put both feet on the treadle and check that the angle of the treadle and the knee press are adjusted to suit you so it feels comfortable and you can operate it efficiently.
9. Position your feet so that your right foot is slightly forward so you can use it to increase the speed of the machine. Place your left foot slightly backward of the right foot to act as a brake. The position of your feet may be reversed if that's your preference.

### **Preparation for stitching<sup>5</sup>:**

Before starting actual machining, you should check that the needle of the machine is of correct size, is sharp and correctly set. The bobbin should be evenly set. Briefly, the various steps of pre-preparation are:

- Winding the bobbin
- Upper Threading
- Drawing the bobbin thread
- Tension adjustments
- Pressure and feed adjustments
- Selection of thread and needle

### **Threading the Machine<sup>6</sup>**

Threading a machine is a very simple job. The procedure may vary slightly with different models; but after working with the various machines in the loft, the task becomes automatic.

The component parts used in threading the 31-15 sewing machine are shown in figure 9-11. Use this figure in studying the procedures that follow. Pass the thread from the thread stand to the thread post on top of the machine, right to left through the bottom hole, and then right to left through the top hole. Pass the thread from right to left through the top hole in the thread retainer (1).

Pass the thread from left to right through the middle hole in the thread retainer (2). Pass the thread from right to left through the bottom hole in the thread retainer (3). The thread is then passed down and under from right to left between the tensions disks (4). Draw the thread up into the thread take-up spring (5), drawing the thread up and beyond the spring end so that it comes out in the center of the spring. The thread is then placed under the tension thread guard (6). Pass the thread up and from right to left through the hole in the thread take-up lever (7). The thread is now drawn down through three thread guides (8), (9),

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<sup>5</sup>Rajitha, I., Geetha, P.M., (2005), Garment making For the course of Fashion and Garment Making, State Institute of Vocational Education, Govt of Andhra Pradesh, Hyderabad

<sup>6</sup><http://www.tpub.com/1ase2/75.htm>

and (10). Pass the thread from left to right through the eye of the needle (1 1). Draw about 2 inches of thread through the eye of the needle to begin sewing.

### *Removing the Bobbin Case*

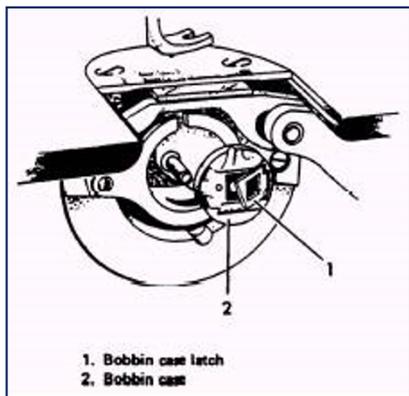


Fig.10.Removing bobbin case 1

Before attempting to remove the bobbin case, turn the balance wheel toward you until the needle moves upward to its highest position.

Remove the slide in the bed of the machine so you can see what you are doing. Reach under the table with your left hand, and, using your thumb and forefinger, open the bobbin case latch (fig. 9-12) and lift out the bobbin case.

While the latch is held open, the bobbin is retained in the bobbin case. Release the latch, turn the open end of the bobbin case down and the bobbin will drop out.

### *Winding the Bobbin*

The bobbin winder is fastened to the table with its driving pulley in front of the sewing machine belt. The bobbin winder is so positioned to allow the pulley to drop away from the belt when sufficient thread has been wound on the bobbin.

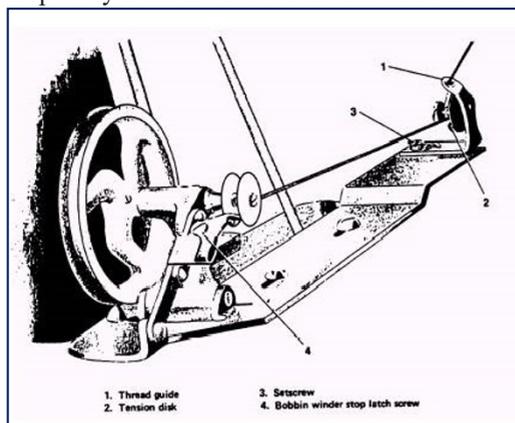


Fig. 11 Winding the bobbin

The procedure is as follows: Place the bobbin on the bobbin winder and push it on the shaft as far as it will go. Pass the thread from the spool down through the thread guide. Loop the thread around back and through the tension disks.

The thread is then wound around the bobbin a few times and the pulley pushed up against the machine belt. The bobbin can be wound while the machine is being used for sewing. If there is no material under the presser foot, make certain that the presser foot is raised and not riding on the feed dog while winding the bobbin. When sufficient thread has been wound on the bobbin, the pulley on the bobbin winder drops back from the machine belt automatically. If the thread does not wind evenly on the bobbin, loosen the setscrew in the tension bracket and move the bracket to the right or left as required; then tighten the bobbin winder stop latch screw. The amount of thread wound on the bobbin is regulated by the bobbin winder stop latch. To wind more thread on the bobbin, turn the screw to the right; to wind less thread on the bobbin, turn this screw to the left.

*Threading the bobbin case<sup>7</sup>:*

So here's the next installment of the series on how to use a vintage treadle. The bobbin thread spool can be found by removing the lid by the needle. Carefully take the spool out



Fig. 12



Fig. 13

We now need to take the bobbin out and place it on this part at the back of the machine and click it into place



Fig. 14



Fig. 15

<sup>7</sup><http://tidytipsy.wordpress.com/2010/06/05/how-to-sew-on-a-vintage-treadle-%E2%80%93-part-2-the-bobbin-thread>



The bobbin should be empty but I only have 3 and there was enough blue thread on this one that I wanted to save, so that's why there's already some thread on it. We now need to put the spool of thread in place at the top and find out how to guide it down to the bobbin. General rule: any hooks that are there are probably meant to be used.

Fig. 16



Fig. 17



Fig. 18

Wrap some thread onto the bobbin.



Now we need to undo the screw on the crank, so the needle won't turn when we wind the bobbin. Now we can wind the thread onto the bobbin using the treadle pedal. Do this in one swing, don't stop in between. Especially if you're new to treadling you may get it to turn the wrong way when you stop and start again and then you'll have to start all over because the thread on the bobbin gets tangled. When the bobbin is full, we can cut the thread and click it back in place. Remember to also retighten the screw!

Fig.19



Fig. 20

The loaded bobbin goes back into the bobbin case and just like with modern machines, the thread needs to be guided so it hooks into the bobbin case correctly.

Done! We can now carefully put the bobbin case back (carefully because with my machine the bobbin falls out of the case easily and it can be a pain to rummage for it in the container in the table).



Fig.21



Fig. 22



Fig. 23

### **Pedaling<sup>8</sup>**

Make sure that the machine is in good working order. Run down all belts to make sure they are not broken or frayed. These belts are necessary to help "power" the machine. Refer to a manual, if you are lucky enough to have one. Make sure that the machine is threaded properly and is equipped with a good, straight needle. If all appears to be in working order, you are ready to give it a whirl.

Place a piece of scrap or test material under the feeder foot, just like on an electric machine. (All principles of operation are basically the same between the two types of machine.) The platform near the floor looks like a footrest. This is the pedal that powers the machine. Rest your feet on this platform. Your right foot (or perhaps the left, if you are left handed) should be at the end of the platform furthest away from you, while your left foot is closest. Whichever staggered position is most comfortable for you is what works best. It will take some practice to figure out the rhythm of pushing down with the right toes, then pushing down with the left heel, to get the machine to sew smoothly. But soon you will have the machine sewing just as quickly and smoothly as its electric counterpart, and you'll be saving money, getting exercise and doing something you enjoy, all at the same time!

Insert the practical sheets.

### **Seam and Seam Finishes<sup>9</sup>**

They are basic techniques used in the sewing process.

<sup>8</sup>[http://www.ehow.com/how\\_2307057\\_use-pedal-sewing-machine.html#ixzz271a9tzJL](http://www.ehow.com/how_2307057_use-pedal-sewing-machine.html#ixzz271a9tzJL)

<sup>9</sup><http://www.ca.uky.edu/agc/pubs/fcs2/fcs2304/fcs2304.pdf>

Seam - the basic structural element of a garment or household textile item. It is the means by which two pieces of fabric are joined together. Typical examples: plain, French, flat-fell.

Seam finish—applied to/used on the unfinished seam edge to prevent raveling, curling, or rolling. Typical examples: turned and stitched, double-stitched, bound, serger. Consider these factors when selecting a seam and seam finish:

Fabric—Is it tightly or loosely woven? Is it a single knit or double knit? Does the fabric ravel, curl, or roll? What is the weight of the fabric: light, medium, or heavy? Is it sheer?

Use of garment—is it sportswear or evening wear? How often will it be worn?

Care of garment—will it be machine-washed, hand-washed, or dry-cleaned?

Location of seam/seam finish—Is it curved or straight? Will it be exposed, as in an unlined skirt?

Will it be enclosed, as in a collar seam?

•Sewing ability and skill—are you a novice or an experienced sewer?

•Equipment—Do you have only a straight-line stitching sewing machine? Do you have a serger?

Standards

A well-constructed seam should be:

•Smooth and even in appearance on the inside and outside. (Properly adjust machine tension, stitch length, and presser foot pressure to suit the fabric and thread. Make sure fabric does not pucker.)

•Even in width throughout.

•Pressed open or closed according to the type of seam and how it is used in the construction process.

•If stitched with thread, the thread should be appropriate to the fabric type and fiber content. (Thread color should match or be slightly darker.)

A well-constructed seam finish should:

• Be neat and smooth in appearance, without added bulk.

• Protect the area and prevent the edge from raveling, stretching, rolling, or curling.

• Not be visible from the right side of the garment.

### *Seams*

Seams may be created with thread by hand or machine (sewing machine and serger) or with fusion through chemical bonding. When a serger/overlock machine is used to construct a seam, the fabric edges are finished all in one process.

The basic seams are plain, French, and flat-fell. Unless otherwise stated, a seam is stitched 5/8-inch from the cut edge. The fabric from the stitching line to the cut edge is called a seam allowance.

### *Plain*

A plain seam is the simplest seam to make and is the basis for many other seams. It is a good choice for the novice sewer. This seam can be used on woven and knit fabrics and on straight or curved areas. It can be constructed by hand or machine.

A seam finish is needed on most woven fabrics, especially when the seam is exposed and when knit fabric curls or rolls.

Steps:

- Place the right sides of the fabric together, matching the stitching lines. Pin and/or hand baste.
- Stitch along the 5/8-inch seam line. (Stitching may begin and end with backstitching—stitch forward a few stitches, then backward, and then forward to the end.) A narrow, open zigzag stitch can be used on knit or stretch fabrics. Press.
- Plain seams can be straight-stitched or zigzagged.

### *French*

The French seam is basically a seam within a seam. It is strong and durable but should be used only on straight edges. This seam is used on lightweight woven, sheer, and other delicate fabrics. It is an excellent choice for see-through fabrics. French seams can be constructed by hand or sewing machine. No seam finish is needed.

Steps:

- Place the wrong sides of the fabric together, matching the stitching lines.
- Stitch 3/8-inch from the cut edge of the fabric. Press.
- Trim to within 1/8- to 1/4-inch of the stitching. Press seam to one side.
- Turn remaining fabric over the seam, enclosing it. Crease and press on stitching line.
- Stitch on seam line, approximately 1/4-inch from the turned edge, to enclose the raw edges.
- Press to one side. French seam

### *Flat-Fell (also called flat-felled)*

This seam is designed for woven fabrics and straight edges. It is used when constructing sportswear, men's and children's wear, reversible items, and heavy-duty items requiring strong, durable seams. It is generally made with a sewing machine and can be difficult to construct on heavy fabric. No seam finish is necessary.

Steps:

1. Place the wrong sides of the seam allowances together. Stitch along the 5/8-inch seam line to make a plain seam. Press seam allowance to one side.
2. Trim lower seam allowance (inside seam allowance) to 1/8-inch.
3. Turn the top seam allowance edge under 1/4-inch. Press.

#### 4. Repeat on the other side of the seam allowance. Flat-Fell *Serger*

To construct serger seams, you must have a serger/overlock machine. Use a serger machine:

- For loose-fitting garments when it is not important for seams to lie flat.
- When seams will not stay pressed open because of their location, as with sleeves, under-the-arm seams, side seams that are stitched all at one time, and kimono sleeves.
- On most knits when narrow seams are best and the fabric needs to stretch.
- On some lightweight fabrics when the seam should be inconspicuous.
- Trim close to the stitching, leaving approximately 1/8-inch seam allowance. Press seam to one side.
- Turn right side out. Press.
- Hairline seams eliminate visible seam allowance.

#### *Lapped*

The lapped seam resembles a top-stitched plain seam from the right side. This seam may be referred to as a “tucked” or “decorative lapped” seam. There are two ways to construct a lapped seam. One method is used when stitching a seam is difficult or impossible, as in a V-pointed yoke area. The second method is used to eliminate bulk; for example, when joining interfacing pieces or nonwoven fabrics, such as suede, felt, and Ultrasuede. The lapped seam is usually done on a sewing machine.

Method I (Seam allowance may need a seam finish unless it is covered by a lining or facing.)

Steps:

- Mark seam allowances on both fabric pieces. On the fabric piece that will be positioned on top (outside), turn and press seam allowance under, along the seam line.
- Position folded seam allowance on top of the remaining seam allowance, matching folded edge to seam allowance. Pin in place.
- Edge stitch close to folded edge. Press.

#### *Method II*

Steps:

- Mark seam allowances on both pieces of the fabric. (If working with suede or synthetic suede, you might want to measure and remove a portion—3/8- to 1/2- inches—of the seam allowances before layout and cutting to save fabric.)
- On the piece that will be on top, trim away the entire seam allowance (unless you have eliminated it prior to cutting).

- Position trimmed seam allowance piece on top of untrimmed seam allowance, matching trimmed edge with marked seam allowance. Pin, tape, or glue in place.
- Edge stitch through all layers of fabric close to the cut edge. (A second row of stitching gives the appearance of a flat-fell seam.)

### *Mock French*

This seam works on the same fabrics as the French seam. It looks like a plain seam from the right side and a small enclosed double-stitched seam on the underneath side. It can be constructed by hand but is usually done on a sewing machine. This seam is used when a French seam cannot be handled well, such as on a curved seam line. This is an excellent seam to use in the sleeve/armhole area of a sheer, special occasion garment, such as a wedding or prom dress, or a sheer blouse/jacket. No seam finish is required.

Steps:

- Place right sides of the seam allowances together.
- Stitch along the regular seam line.
- Press seam open, then flat.
- Turn in both edges of the seam allowance approximately 1/4-inch. Press, then press together.
- Stitch the folded edges together close to the edge.
- Mock Flat-Fell (also called double-stitched or welt seam)

The mock flat-fell seam provides the same tailored appearance as the flat-fell but is easier to construct. It is best used on fabrics that do not ravel or on items that will be lined or will not have exposed seams or edges. Otherwise, an additional seam finish may be needed.

Steps:

- With right sides of the fabric together, stitch a plain seam. It is best to have at least a 5/8-inch seam allowance. Press seam allowances together to one side, then press open.

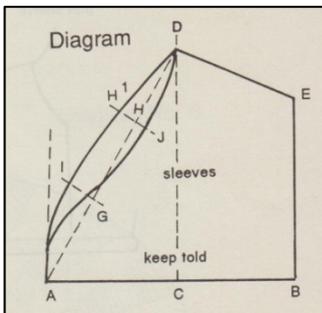


Fig. 24

- Determine which direction your final seam will lay. Trim the seam allowance that will be uppermost to the outside of the item to 1/4-inch. Press wider seam allowance over the trimmed seam allowance.
- On the right side of the fabric, edge stitch close to the seam line through all layers of fabric. Stitch again, approximately 3/8-inch away, through fabric and remaining seam allowance on the underneath side.
- Mock Flat-Fell

## Seam Finishes

Seam finishes may also be referred to as “edge” finishes, as they may be used in locations other than seam allowances. These locations include hem edges and facings. The method of construction is almost always the same, and the goal is to prevent a raw edge from raveling (woven fabric) or curling (knit fabric).

### *Edge Stitched*

As a seam finish, this technique is reserved primarily for knit fabrics. It is used to prevent the edges of the fabric from rolling or curling. The finish requires a sewing machine, but it is easy to construct. Edge stitching is suitable for straight or curved seams and edges.

Steps:

- With right sides of the seam allowances together prepare a plain seam. Press it open.
- Take one side of the seam allowance (single thickness) and stitch a line of regulation machine stitching (approximately 12 to 14 stitches per inch) about 1/4-inch from the cut edge.
- Repeat on the other seam allowance. (Stitching along the edge of the seam allowance prevents rolling or curling.)

### *Double-Stitched*

The double-stitched finish also begins with a plain seam. It is used for knit fabrics and on seam allowances that are pressed together to one side and treated as one. When used on lightweight knit fabrics, it is to prevent seam allowances from rolling or curling. The technique is ideal for the beginning sewer and may be done several ways. It requires a sewing machine. Some methods require a sewing machine with zigzag or decorative stitch capability.

Steps:

- With right sides of the seam allowances together, prepare a plain seam. Press seam together.
- Stitch a second row of stitching into the seam allowance area, approximately 1/8-inch away from first line of stitching. The second row of stitching can be a straight conventional stitch, a medium-width zigzag, or a machine over-edge/overcast stitch.

Note: The machine over-edge stitch is recommended for raveling woven fabrics, not knits.

1. Press seam to one side.
2. Double-Stitched

### *Machine Zigzag*

A large seam allowance (up to 1 inch) may be allowed when cutting out the garment, since finished seam allowance will be 1/8- to 1/4 inch smaller.

This finish is used on a plain seam on woven fabric. It requires a sewing machine that has a zigzag stitch capability. The finish is used on medium- to heavy-weight fabrics, including corduroy. The zigzag stitch length (coverage) must

be adjusted to accommodate and prevent fabric raveling. The more the fabric ravel, the closer together the stitches need to be (tighten or shorten stitch length).

Steps:

- With right sides of the seam allowances together, prepare a plain seam. Press it open.
- Adjust machine to the appropriate zigzag stitch and length.
- On one seam allowance (single thickness), stitch close to, but not on, fabric edge (approximately 1/8-inch from raw edge).
- Trim excess fabric close to the line of stitching. Press. Machine Zigzag Machine Over-Edge (overcast)

Some sewing machines have a special over-edge presser foot and/or machine setting to overcast (sew over) the edges of the fabric without causing the fabric or thread to jam the machine. If your machine has this capability, use this stitch instead of the machine zigzag technique previously described. The overcast technique does not have to be trimmed, nor do you have to allow for larger seam allowances when cutting out the garment.

Steps:

- With right sides of the seam allowance together, prepare a plain seam. Press open.
- Adjust sewing machine for over-edge or overcast setting. (Change presser foot and adjust tension and/or stitch length if necessary.)
- On one seam allowance (single thickness) edge, align machine needle to stitch approximately 1/8- to 1/4- inches from the edge, allowing it to wrap a thread around the edge as it moves right to left.
- Repeat on the other side of the seam allowance.

### Hand-Overcast

This is one of the original methods of finishing seams and edges, dating prior to the invention of the sewing machine. There are occasions when this edge finish is the most appropriate technique. Hand-overcast is used on woven fabrics with straight and curved areas. It is also good—and necessary—in areas not suited to other finishing techniques, such as L-shaped areas (created at a kick pleat) and V shaped areas (created when bulk is removed from a princess-line seam). This stitch is done by hand rather than by machine. Use a hand needle and single thread to match the fabric color. It is not difficult but may take some skill to get stitches to appear uniform.

Steps:

- With right sides of the seam allowances together, prepare a plain seam. Press it open. (This finish can be used with other seams that might require a finish other than the plain seam, such as the mock flat-fell or the lapped.)

- Beginning at the end of one seam allowance edge through single fabric thickness, secure thread on the underneath side of the seam allowance, approximately 1/4-inch from the edge.
- Bring needle through from bottom to top side. Position needle underneath fabric edge, approximately 3/8-inch away from the first stitch.
- Bring needle and thread through to the right side again. Repeat until the edge is periodically wrapped in thread. Stitches should be secure to the fabric edge but not tight. Fabric edge should remain flat and not drawn. The more the fabric tends to ravel, the closer together your hand stitches may need to be.

#### Clean-Finished (turned under and stitched)

This finish is used not only for seams but also throughout the garment when the fabric is lightweight.

It is not appropriate for heavyweight or knit fabrics because it produces bulk.

Steps:

- With right sides of the seam allowances together, prepare a plain seam. Press the seam open.
- Turn the edge of the seam allowance under approximately 1/8- to 1/4-inch. Press

Stitch close to the edge through the folded fabric. Press.

Note: Cutting at least a 1-inch seam allowance will permit a finished 5/8-inch seam allowance. Clean-Finished

#### Bound

There are several forms of bound seam finishes. They are all appropriate for medium, medium-heavy, and heavyweight woven fabrics. A bound finish is used frequently on unlined coats and jackets. It can also be used on dresses and other items that have a tendency to ravel. It is often used on hem edges and facings. The substance used for binding should be appropriate for the fabric in terms of care and maintenance. The binding should never add unnecessary bulk. This finish can be constructed by hand or on a sewing machine. It might be difficult and time-consuming for the novice.

Bound with Binding—Use double-fold bias tape for casual wear and utilitarian items, and tricot binding, such as Seam Great™ and Seam Saver™, for dressy or lightweight items.

Steps:

- With right sides of the seam allowances together, prepare a plain seam. Press it open.
- Encase each seam edge in tape/binding. If using bias tape, the longer edge should go on the underneath side. If using tricot binding, pull gently to get binding to fold slightly around the edge to be bound.
- Stitch in place using a regulation straight stitch or a long zigzag stitch. Press.

**Self-Bound**—This finish is designed for lightweight fabrics. It is well suited to sheer or see-through items, especially when other finishes do not give them an attractive appearance, as in a sleeve cap/armseye.

At least a 5/8-inch seam allowance is required.

Steps:

- Begin with a plain seam. Trim one seam allowance to 1/8-inch.
- Turn remaining seam allowance under 1/8-inch and press.
- Turn the folded seam allowance edge again over the 1/8-inch seam allowance so that it is enclosed/ encased. Stitch close to the folded edge and the first line of stitching. This last stitching can be done by hand or machine.

**Hong Kong**

The Hong Kong finish is closely related to the bound finish but may not be as bulky as a bound finish using bias tape. It is used for coats, jackets, and other items with exposed seams. It can add a decorative touch if a contrasting or coordinating print fabric is used as the binding substance. Select a lightweight, firmly woven fabric, such as lining fabric or batiste, to use as binding. Binding fabric should require the same care techniques as the fabric.

Steps:

- With right sides of the seam allowances together, prepare a plain seam. Press open.
- Cut several 11/4- to 11/2-inches-wide bias strips from lining, lightweight broadcloth/print cloth, or other lightweight woven fabric. Strips can match or coordinate with the fabric color. Sew bias strips together lengthwise, making a long continuous strip.
- With right sides together, match edge of bias strip to single edge of seam allowance. Stitch 1/4- to 3/8- inches from edge (Figure A). Repeat on other seam allowance.
- Fold bias strip over the edge, encasing raw seam allowance. Press.
- Stitch in place, through all layers, in the crevice of the first stitching (stitch in the ditch). Trim excess bias strip fabric to the line of stitching on the underneath side

**Serger**

The serger /over lock machine can be used to finish seam allowances and as an edge finishing method.

Since knits do not ravel, the serger seam/edge finish is used on woven fabrics only. The serger edge finish may be necessary however, if a knit fabric edge tends to curl or roll.

A 2-thread over-edge stitch is used for lightweight fabrics. It creates the least amount of bulk. Some 3- and 4-thread machines convert to a 2-thread machine.

A 3-thread stitch is great for other fabric weights or when a 2-thread over-edge is not available.

Steps:

- With right sides of the seam allowances together, prepare a plain seam. Press.
- Set serger for appropriate 2- or 3-thread stitch. Stitch, cutting away approximately 1/8-inch edge of seam allowance. Depending on the construction area and circumstances, edges may be finished separately if they are to be pressed open.

Other Finishes

There are other seam/edge finishes, but they should be used cautiously as they are often selected and used inappropriately.

Pinking - this finish should be used only on firmly woven fabrics or on items that will receive little wear, as in a garment lining. Pinking is sometimes used as a decorative edge, but it does not prevent or retard raveling. Its use in garment construction is limited.

Liquid seam retardant- This is a commercial product marketed under several brand names. It is great to use around buttonholes, on the corners of a collar, etc. Do not use in garment areas that might touch and rub the body as it can make some fabrics stiff and scratchy. It is fast, relatively inexpensive, and easy to use for household textile items.

### **Unit of Competence 3: Carry Out Measurement and Calculations**

Description: This unit covers anatomy, importance of body measurement, take measurements for sewing blouse, Salwar and Khameez

Duration: 25 hrs.

Learning outcome: (at the end of the lesson the trainee will be able to)

- Explain various structures of human body and types of figures
- Know basics of taking measurement
- Obtain measurements of the customer
- Perform calculation for stitching

Contents:

- Eight head theory
- Human figure - Normal and abnormal
- Method of taking body measurements for male and female
- Different system of measurements

Methodology of teaching: Lecture – Demonstration- Interaction

### **Importance of Body Measurement**

In order to construct garments that fit well, body measurements must be taken with precision. You can draft original patterns based on these measurements which can be used as the basis of a variety of styles. You may buy commercial patterns, but to select the pattern of correct size and later to make pattern adjustments to fit your figure you have to know your own measurements.

### Preparation for Measuring

For taking the measurements, use a good quality measuring tape which is sturdy and will not stretch. The metal end of the tape should be used for vertical measurements and the other end for horizontal and circumference measurements. The measurements should be taken over a smooth fitting foundation garment and never over bulky garments. Before taking measurements, tie a cord or string around the waist. Next, take ¼” wide tape and cast it around your armhole. This will make it easier to measure width of shoulders, arm scye depth etc. Stand erect with the arms hanging straight at the sides while measurements are being made by someone else. Take snug measurements rather than tight or loose ones. Hold the 3 tape parallel to the floor for horizontal measurements, and perpendicular to the floor for vertical measurements. As the measurements are taken, record them in a note book.

### Measurement of Ladies

The various positions on the body where measurements are to be taken are shown.

#### Bodice measurements

**Bust:** Measure around the fullest part of the bust raising the measuring tape slightly to a level just below the shoulder blades at the back.

**Waist:** Measure snugly around the waist (where you tied the cord) keeping the tape parallel to the floor.

**Neck:** Measure around the neck, passing the tape just above the collar bone in front and along the base of the neck at the back.

**Shoulder:** Measure from the neck joint to the arm joint along the middle of the shoulder (A to B in Fig.1.1a).

**Front waist length:** Measure down from neck at highest point of shoulder to waist line through the fullest part of the bust (A to C in Fig.1.1a).

**Shoulder to bust:** Measure down from highest point of shoulder to tip of bust (A to D in Fig.1.1a).

**Distance between bust points:** Measure in the horizontal direction, the distance between the two bust points (D to E in Fig.1.1a).

**Back width or across back measurement:** Measure across the back from armhole to armhole about 3 inches below base of neck (P to Q in Fig.1.1b).

**Back waist length:** Measure from the base of neck at the centre back to waist line (R to S in Fig.1.1b).

**Armscye depth:** Measure from base of neck at centre back to a point directly below it in level with the bottom of the arm where it joints the body (R to T in Fig.1.1b).

### Take Measurement for Sleeve

**Upper arm circumference:** Measure around the fullest part of the arm.

**Lower arm:** Measure around the arm at desired level corresponding to lower edge of sleeve.

**Elbow circumference:** Measure around the arm elbow.

Wrist: Measure around the wrist.

Sleeve length: For short sleeve length, measure down from tip of shoulder at top of arm to desired length of sleeve (B to F in Fig.18a). For elbow length sleeve measure from top of arm to elbow point (B to G in Fig.18a). For full length, bend the elbow slightly and measure down from top of arm to back of wrist passing the tape over the elbow point (B to H in Fig.18a).

### Basics in Sewing-Taking Body Measurements

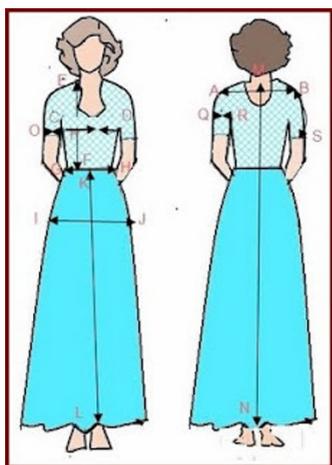


Fig. 25

Shoulder =A-B = Measured from the prominent bone at the end of one shoulder to the prominent bone at the end of the other shoulder.

Chest = Measured around the fullest part of the chest= C-D

Waist line. =Measured around the natural waist line= G-H

Hip = Measured around the fullest part of the hip=I-J .Usually 7” to8” down from the waist line.

Upper arm = biceps =.Measured around Q-R

Sleeve width=Measured around the edge of the sleeve =O-P.

Sleeve length= Measured from B, on shoulder line, to the edge of the sleeve S

Full length for the bodice = E-F Measured from the shoulder line to waist.

Full for skirts, Salwar etc... = Measured from waist line to the bottom edge of the garment

Neck width= $\frac{1}{12}$ th chest +  $\frac{1}{4}$ " or to taste.

Front neck depth= $\frac{1}{12}$  th chest +  $\frac{1}{2}$  " or to taste.

Back neck depth $1\frac{1}{2}$ " or to taste.

Full length of long skirts= M-N .Measured from nape of the neck to the bottom edge of the skirt.

### **Eight Headed Theory**

Artists have divided a grown up human body into eight equal parts, which are equal in height to that of the head. So each part is known as the 'head'. All these eight divisions or heads are as follows:

1st head = from hair to chin or nape of neck.

2nd head = from nape of neck to nipple or bottom of scye.

3rd head = from bottom of scye to naval or hollow of waist.

4th head = from naval to fork or pubic organs.

5th head = from fork to mid thigh or end of fingers, with arm at side.

6th head = from mid-thigh to small, below knee.

7th head = from small to lower leg, just above the ankle.

8th head = from lower leg to ball of foot, standing tip-toe.

Note: Actually the total human height is computed at 7 1/2 heads, but for easy calculations, the height is taken from hair to the foot, standing tip-toe, thus making eight equal parts. The human body's head is considered as the fundamental to divide the human body into eight heads or the eight head policy is developed from the shape of the human body.

Let's now see the eight head policy, they are as follows:

1. Head

2. Breast

3. Stomach

4. Hip

5. Thigh

6. Knee

7. Calf

8. Leg bottom

Thus the head plays a major role in the women's body to create the eight Head policy. The measurement from the forehead to the back neck (where the spinal cord starts) has to be taken.

Based on this measurement the whole body is divided into eight parts.

Leg structure is of three types.

Normal leg structure

Close leg structure

Open leg structure

The women's leg can be divided based on their leg structure

Normal leg structure

Close leg structure

Open leg structure

Close leg:

The women thighs are based on the hip measurement. Women who have fleshy thighs will have different size, the body shape will vary. According to the body shape women with fleshy thighs are called close legs.

Open leg:

Women who don't have equal measurements in their waist and hip parts are discussed here. Women's hip part according to the equal measurement of human body should have ten inch difference with the waist measurement. If the women's hip part is more than ten inch difference with the waist part then there's lot of flesh in the hip part.

Hip part is of three parts.

Normal hip measure: there should be ten inch variation for the waist and hip measurement

Flat hip measure: the waist and hip part have six to eight inch variation

Stooping hip measure: The hip and waist have 11 to 13 inch variation.

### **Understanding Basic Proportion of the Human Figure<sup>10</sup>**

It is crucial to grasp the basic proportion, bone structure as well and body muscles to be able to draw consistent and realistic human figure. You need to have an understanding of bone structures and body muscles and how they work so that you know how to draw the figure properly before you even begin. When you draw a human figure, draw according to what and how you want it to be and make sure the figure as a whole is heading in the right direction.

In this chapter, the method that helps learners hone figure drawing skills, how to draw specific body parts. Then also tackle action sequences as well as poses and the best angles to use when drawing them.

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<sup>10</sup><http://www.creativecomicart.com/measuring-human-proportion.html>

### **The 8 Head Count**

The eight head count is a method in which the size or length of the head is used to measure the height and width of a figure. The most common usage of head count method is eight heads for height and three heads for width. This method is great for beginners and for those who have problem drawing proper figure proportion. The head count method is more suited for studying the basic human figure proportion or create profile of characters you want to include in you comic.

Drawing the human figure proportion requires you to be consistent, realistic and also artistic. Therefore, having an understanding of basic proportion and bone structure is essential. Here we cover the head count method which is best used for training on basic human proportion and also the difference between male and female proportion as well as children and infant proportion.

In the following section we will discover the use of height and width of the front view of the model's head to figure out how the height and width of the figure. We will also explain how to use head count for different ages. People at various ages have different height and with that different head counts:

Using head count

Average Male/Female 7.1/2 - 8 Heads

Teens 6 - 7 Heads

Children 5.1/2 - 6 Heads

Toddler 4 - 5.1/2 Heads

Infant 3 - 4 Heads

First head count always starts from the top - Example: Drawing an average male starts from the top of 8-heads, while drawing children starts from the top of the 5-6-head.

The male proportion is actually used as the basis of many humanoid forms. Fantasy creatures and aliens that has similar physical figure can use this proportion with a little tweak. For example; a normal male figure measures around eight head tall and three head wide. You can create a different form by merely changing the height and width measurement of the figure. Add other distinctive characteristics to show some difference when compared to.

## Female Proportion

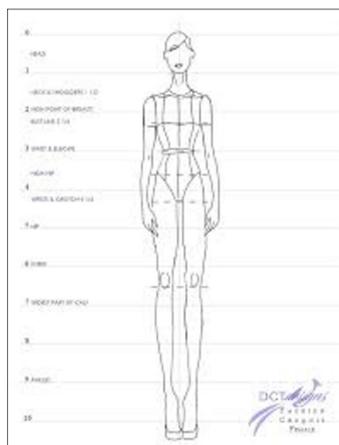


Fig. 26

The female proportion can be used in the same manner as the male proportion but there are some features that need you need to include in order to make the figure more feminine.

- Neck should be narrower and longer.
- Shoulders are narrower.
- 2nd head count can either end at the armpit or at the nipple line (depends on the breast size)
- Slightly narrow arms, rounder and more slender hands/fingers.
- Rib cage is narrower.
- Wider and rounder hips.
- Legs are rounder and wider at the top (upper legs).

## Unit of Competence 4: Sewing Simple Dress (E.g. sewing baby frocks)

Description: This unit covers competencies to measure, draft and sew baby frock and yoke frock.

Duration: 20 hrs.

Learning outcome: (at the end of the lesson the trainee will be able to)

- Take measurement, draft
- Prepare cut parts based on the measurements
- Sew baby frock and yoke frock

Contents:

- Measurement for baby frock and yoke frock
- Drafting front and back part of the frocks
- Drafting sleeves

**Methodology of teaching:** Lecture-Simulation

### Sewing Child Frock<sup>11</sup>

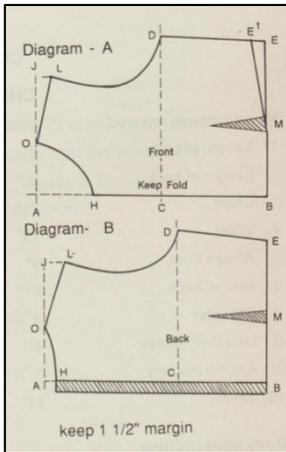


Fig. 27

Measurement required:

Length of body	- 9"
Length of frock	- 22"
Chest	- 21"
Waist	- 19"
Across front	- 9"
Across back	- 9"
Shoulder	- 9 1/2"
Length of sleeve	- 4"
Around the arm	- 7 1/2"
Neck	- 11"

Body front drafting

Draw a line & mark A B = length of body.

A - C = 1/4 of the chest measurement minus 1/2"

Draw lines across from A, B & C

C-D = 1/4 of the chest measurement plus 1"

B - E = 1/4 of the waist measurement plus 1"

Join D - E

E to E1 = 1/2" upwards

B - M = half the distance B - E.

Join M - E1.

J - L = 1/2" to 1" according to the size.

A - O = 1/6<sup>th</sup> of the neck measurement

A - H = A - O plus 1/2"

Join H - O as shown in the diagram. Join O - L.

A - I = half the distance A - C plus 1/2".

Draw the line across from I - K

I - K = half across front.

Join L - D through K as shown in the diagram.

Draw a line upwards from M-Q.

M-Q = 1 1/2" away from

C - D line

Mark 1/4 on either side from

M and join Q.

When cutting on the material, keep for sewing 1/3" from

1/3" O, L & L - D, 1" from D - E & B - E1

For Front open keep 1 1/2" to 2" for lap

Keep fold on the line A to B for back open dress

Body back drafting:

<sup>11</sup> Kemkar, K.R., ( 1993). Step by Step to Sewing and Cutting Techniques of Cholis and Children garments, Novena Offset Printing co., Chennai, India.

Draw a line and mark A B = length of body minus  $\frac{1}{2}$ "

A – C =  $\frac{1}{4}$  of the chest measurement minus  $\frac{1}{2}$ "

Draw lines across from A, B, C

C-D =  $\frac{1}{4}$  of the chest measurement plus 1"

B-E =  $\frac{1}{4}$  of the waist measurement plus 1"

Join D – E.

A – J = half of the shoulder measurement

J – L =  $\frac{1}{2}$ " to 1" according to sizes

A – O =  $\frac{1}{6}$ <sup>th</sup> of the neck measurement plus 1.4"

A – H =  $\frac{1}{2}$ " downwards

A – I = half the distance of A C plus  $\frac{1}{2}$ "

I – K = half across back

Join H – O & O – L & L – D through K as shown in diagram.

B – M = 3"

Draw the line upwards from M.

M – Q = 1  $\frac{1}{2}$ " away from C D line

Mark  $\frac{1}{4}$ " on either side from M & join Q

Sleeve drafting:

Draw a line & mark A B = length of sleeve

A C –  $\frac{a}{8}$  of the chest

Draw lines across from A, B, C

C – D =  $\frac{1}{6}$ <sup>th</sup> of the chest plus 1"

B – E = half around the arm. Join D E

Join A – D through a dotted line & divide in 3 equal parts & mark G H as shown in the diagram.

G-I =  $\frac{1}{2}$ " upwards

H to J =  $\frac{1}{4}$ " downwards

H to H1 =  $\frac{1}{3}$ " upwards

Join A to D through G & J for front and A to D through I H1 for back part of the hole

When cutting on the material keep fold on the line A to B

Keep  $\frac{1}{3}$ " for sewing from the line A to D back & front part of the arm hole.

Allow 1  $\frac{1}{2}$ " for hemming from the line B to E keep  $\frac{1}{2}$ " from D to D

Cut likewise 2 sleeves for a frock.

### **Sewing Baby Yoke Frock<sup>12</sup>**

Drafting (front part)

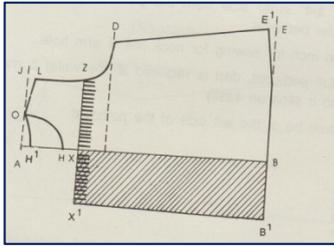
A to B = length of the frock

A to C =  $\frac{1}{4}$ <sup>th</sup> of the chest measurement.

A to J – half of the shoulder measurement

C to D =  $\frac{1}{4}$ <sup>th</sup> of the chest plus 1" Join I to D as shown in diagram.

<sup>12</sup> (ibid., P.76-77)



**Fig. 28**

B to E – C to D plus 1”.

A to O =  $\frac{1}{6}$ th of the neck measurement

A to H = A to O distance plus  $\frac{1}{2}$ ”

Join H to O as shown in diagram.

A to x = length of the yoke. Usually it will be 1” higher than the A to C point.

Draw the line across from X & mark Z on the line L to d.

E to E1 =  $\frac{1}{2}$ ” inch upwards

Join B to E1 as shown in diagram.

Back part drafting

A to H =  $\frac{1}{2}$ ” downwards

Join H1 to O for back part of the neck.

Follow same method as mentioned for the front part

While cutting on the material, extend 4” to 6” for gathers from the point X to X1 and B to B1 for back and front part and keep the fold on the line X1 to B1.

Keep  $\frac{1}{2}$ ” for sewing from X1 to Z for body part and  $\frac{1}{2}$ ” for sewing from X1 to Z for the yoke part.

Allow for sewing  $\frac{1}{3}$ rd of an inch for the neck and armhole &  $\frac{1}{2}$ ” inch for shoulder & sides from D to E1

Allow 1  $\frac{1}{2}$ ” margin for hemming

The yoke can be made round or “V” or any other shape according to the pattern.

Skirts can also be made such as pleated, panel, flare etc.

### **Unit of Competence 5: Sewing of Saree Blouse and Salwar khameez**

Description: This unit covers competencies to measure, draft sew ladies garments of Blouse, Salwar and khameez

Duration: 45 hrs.

Learning outcome: (at the end of the lesson the trainee will be able to)

- Take measurement, draft for saree blouse and salwar khameez
- Prepare cut parts based on the measurements
- Sew saree blouse, salwar and khameez

Contents:

- Measurement for blouse
- Drafting front and back part of the blouse
- Drafting sleeve

Methodology of teaching: Lecture-Simulation

## Stitching ladies blouse

### Method of stitching sari blouse



Fig. 29

Sari blouse is a small garment worn by most of the Indian women. It should have a very good fit as glove fitting and it's more important that blouse should fit to the proper size of the person. There are many styles of blouses such as “V” neck, square neck, sweet-heart neck, Basque cut blouse, kotori cut and close neck. They may have long or short sleeves or sleeveless and the blouse length can vary from very short to waist length with varieties of neck lines and back patterns<sup>13</sup>.

Measurement required<sup>14</sup>:

Length of figure from shoulder to the figure point or  $\frac{1}{4}$  of the bust measurement.

Length of blouse from shoulder to the required length

Bust measurement on the fullest part of the body

Measurement around the waist at the required length of the blouse

Width of the shoulder (from shoulder blade edge to the breadth of the neck).

Length of the sleeve from the shoulder blade edge to the required length of the sleeve. Around the arm (fitting measurement of the arm at the length of the sleeve). Depth of the front neck (From the breadth of the neck to the centre of the required of the neck).

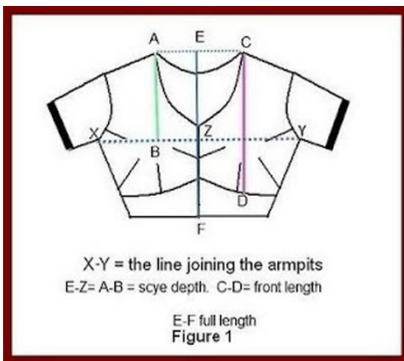


Fig. 30

Drafting front part

Draw a line and mark A B = length of the blouse

A-F = length of figure point (from shoulder to the figure point)

<sup>13</sup><http://artvani-vani.blogspot.de/2010/03/method-of-stitching-sari-blouse.html>

<sup>14</sup> Op.cit., P.21

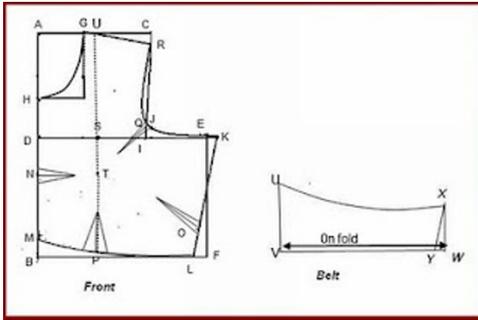


Fig. 31

A-C =  $\frac{1}{6}$ <sup>th</sup> of the bust measurement minus  $\frac{1}{2}$ ".

Draw lines across from A B C and F in right angle C-D = 1.4" of the bust measurement plus  $\frac{1}{2}$ " B-E =  $\frac{1}{4}$ " of the waist measurement plus 1  $\frac{1}{2}$ " for waist dart.

Join D-E taking a little curve on the inner side above the waist as shown in the diagram.

F-Q = 3  $\frac{1}{2}$ " normally for adult size

F – Q distance will be 3 to 3  $\frac{1}{4}$ " for smaller sizes.

Mark X on the line D E crossing from the point F.

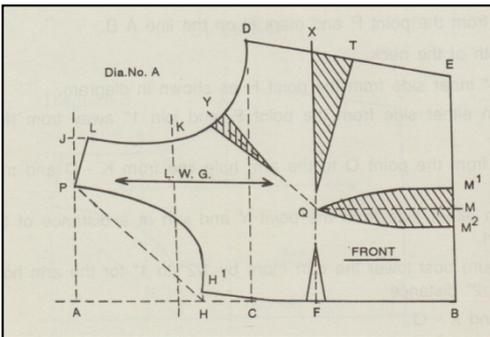


Fig. 32

Forty inches and above for bust measurement F – Q point can be 4".

Draw line downwards from Q in the right angle, and mark M on the line BE.

Mark  $\frac{3}{4}$ " on either side from M and join  $\frac{1}{2}$ " away from Q as shown in diagram.

For the waist dart

A-J = A C distance.

J – L =  $\frac{1}{4}$ " downwards in the right angle.

Draw the line from the point L

– P on the line A J as shown in diagram.

L-P = required breadth of the shoulder.

A – I = half the distance of the shoulder.

A – I = half the distance A C plus  $\frac{1}{2}$ "

Draw the line across from I in the right angle and mark K.

I – K = A – J distance minus  $\frac{1}{4}$ "

Join L-D through K as shown in the diagram

Draw a line from the point P and mark H on the line A B.

P-H = depth of the neck.

Mark H1  $\frac{1}{4}$ " inner side from the point H as shown in diagram.

Mark  $\frac{1}{3}$ " on either side from the point F. and join 1" away from the point Q.

Draw a line from the point Q to the arm hole line from K-D and mark the point Y.

Mark  $\frac{1}{3}$ " on either side from the point F. and join 1" away from the point Q.



from I – K on the right angle.

$I-K = A - J$  plus  $\frac{1}{2}$ ".

$L-P$  = breadth of the shoulder.

Draw a dotted line from P and mark H on the line A B.

$P - H$  = depth of the back part of the neck.

Join  $P - H$  for round neck as shown in the diagram.

Join  $L - D$  as shown in the diagram.

When cutting on the material, allow a sewing margin as mentioned for the front body and keep fold on the line A B. Cut the body in lengthwise grain as arrow shows in the diagram.

### *Sleeve drafting*

Draw a line and mark  $A B$  = length of the sleeve.

Draw lines across from A and B on the right angle.

$B - E$  = fitting measurement half of the round of the arm at the length of the sleeve

$C - D$  distance =  $B-E$  distance plus 1"

For longer sleeves up to Elbow length

$C - D$  distance =  $B-E$  plus  $1 \frac{1}{2}$ "

$A - C$  = half the distance  $C - D$ .

For example, If the fitting measurement of the arm is 10", the  $B-E = 5$ ".

$C - D = 5$ " plus 1" = 6"

$A - C =$  half  $C D$  (ie) 3"

Join  $D - E$  as shown in diagram.

Join  $A D$  on dotted line and divide into 3 equal parts and mark  $G$  &  $H$  as shown in the diagram.

Draw  $G-I \frac{1}{2}$ " upwards and  $H - H1 - \frac{1}{3}$ " upwards.

Draw  $H-J = \frac{1}{2}$ " downwards.

Join  $A-D$  through  $G$  &  $J$  as shown in diagram to form front

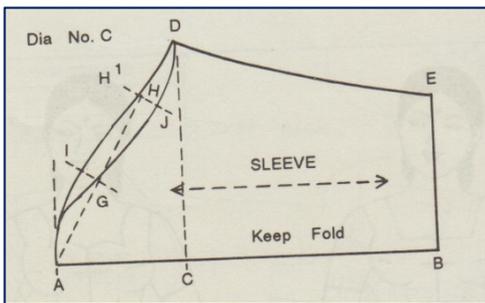


Fig.34

part of sleeve arm hole.

Join  $A - D$  through  $I$  &  $H1$  as shown in diagram to form back part of the sleeve arm hole as shown in the diagram

Keep fold on the line A B

When cutting on the material, allow 1.2" for sewing from the line  $A - D$  from the points  $G$  &  $J$  for front &  $I$  to  $H1$  for back part of the arm hole.

Keep  $\frac{1}{2}$ " from the line  $D E$  and  $1 \frac{1}{2}$ " for sewing from the line  $B E$  for hemming at the bottom of the sleeves.

Cut likewise two pieces for two sleeves for a blouse.

When attaching the sleeve to the body arm hole put the gathers on the top side of the sleeve so as to correspond with the sleeve arm hole and join to the body arm hole.

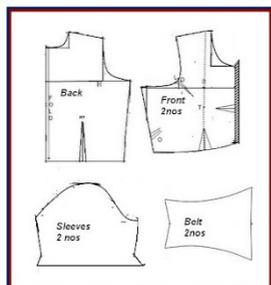


Fig. 35

Place the parts of the draft on the fabric and cut the parts.

Stitching:

Step 1 Stay stitch neck, arm skies and sleeve top.

Step 2 Stitch darts.

Step 3 Attach the belt to the body.

Step 4 Stitch button stands. Right side should overlap the left side. Extension is stitched to the left side and right side is finished with a facing.

Step 5 Join shoulders.

Step 6 Finish neck line with Piping or flat facing

Step 7 Hem the lower edge of the sleeves and back.

Step 8 Attach sleeves to the body, matching center line of the sleeves to the shoulder line and easing wherever necessary.

Step 9 Stitch sides of the sleeves and body.

Step 10 Sew hook on the underside of right button stand and work eyes on the right side of left front facing

### Sewing Shalwar Kameez<sup>15</sup>

To take Measurements for a Shalwar Kameez

Take measurements for a Shalwar Kameez, sometimes called a Salwar Kameez or Punjabi suit, to get a customized fit for the finished garment. Shalwar Kameez are custom-made pant and shirt suit sets in which the fabric is pre-dyed and decorated to match. Shalwar Kameez suits are traditionally worn by Indian and Pakistani women all over the world. Write down each measurement taken in inches or centimeters.

The following are the process for making Salwar Kameez

- Measuring
- Cutting
- Designing component making
- Stitching
- Hamming
- Interlocking
- Ironing

<sup>15</sup><http://www.salwarkameezsale.com/how-to-make-salwar-kameez.php>

The first step to make Salwar Kameez is body measurements

### *Kameez*

- Chest
- Breast
- Waist
- Hips
- Arm hole
- Neck diameter
- Shoulder (breadth)
- Sleeve length
- Elbow circumference
- Wrist circumference
- Front neck depth

### *Salwar*

- Waist
- Hips
- Length
- Inseam
- Bottom

## **Instructions**

### *Basic Measurements*

1 Stretch the tape across back from the outside of one shoulder to the outside of the other. The outside of the shoulder is where arm starts. Place the arm straight down by the customer side and follow the line that appears between their arm and your body to the top of customers' shoulder.

2 Wrap the measuring tape all the way around your body at the fullest part of your breast, placing the tape underneath your arms. Ensure the tape is even all the way around and is not sagging or lower at certain points of your body.

3 Wrap the measuring tape around your body just under the bust line. This is the same place where the bra is situated underneath your breasts. Ensure that the tape is not sagging for an accurate measurement.

4 Measure the largest part of customer's upper arm. For most women, this area is around the highest point of the bicep, just below your arm pit.

5 Loosely wrap the tape all the way around waist with the tape just above belly button. Allow the width of one finger between the tape and your body to obtain a firm but not tight measurement.

6 Wrap the tape around the fullest part of hips for the next measurement. This area is typically where hips bend.

8 Measure the lower waist. This is the point where the waistband of the pants will rest, usually just below the belly button.

9 Take the measurement from the lower waist to ankle by placing the tape down the side of leg.

### *Optional Measurements*

10 Place the end tape at the joint where the shoulder meets neck. Take measurements to where the tape meets bust, waist and hip. Finally determine the length desired for the Kameez, or top, and make a note of the length. Shirts can be as short as your lower waist or as long as lower calf. Since the suits are custom-made, the length is entirely up to you.

11 Drape the tape from the top of your outside shoulder to just above your elbow for 3/4 length sleeves and to your wrist for full-length sleeves.

12 Place the end of the tape where you would like the neck opening to begin and drape it towards your cleavage or neck to determine the neck line. This is the front neck drop measurement. The same measurement can be taken in the back by lowering the tape to the depth you would like the back neck opening to drop. This is the back neck drop measurement.

13 Take the measurement from the bottom of the previously measured Kameez length up to the point on your side where the split to end. The split can be higher or lower than your waist.

( <http://www.salwarkameezsale.com/how-to-make-salwar-kameez.php>)

Making a Salwar Kameez is a profession like any other profession. No one is perfect so there are no formulas or standard pattern or standard measurement procedures. Making a perfect Salwar Kameez is a result of practice or a result of invested time with dedication in this art.

As the experience grows the perfection comes in making the Salwar Kameez and maker becomes a master. And masters make formulas as per their experience for cutting the cloth (for stitching).

Cutting is an important process while making Salwar Kameez. There are no hard and fast rules for cutting but normally the tailors make their formulas on their own for their satisfaction. And cutting margins and seam allowances depends upon the fitting desired by the client.

In case of designer's Salwar Kameez make, there may be different component with some work on it like embroidery, thread, net etc. Parallel process is to prepare these components. Stitching is based on the cutting done by marking the stitching line. Stitching man will stitch as per the marking. After completing the machine stitching the hand hamming process is to be done with the help of needle and thread. Interlocking is last machine process to give an additional strength to the Salwar Kameez so it is interlocked with good quality thread with zigzag style. Finally the ironing process is to be done on Salwar Kameez to look

proper and graceful. Accurate measurements<sup>16</sup>, some practice will help to stitch anything well.

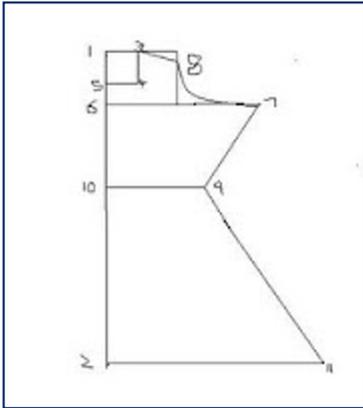


Fig. 36

The above is the stitching pattern for the churidar, readymade measurement have been given for the above.

Readymade measurement

- \* full length = 105 cm
- \* Narrow waist = 39 cm
- \* Bust level = 25.5 cm
- \* Shoulder = 38 cm
- \* Chest = 92 cm
- \* Waist = 72 cm
- \* Hip = 100 cm
- \* Sleeve length = 25 cm

Measurements according to the diagram

- \* 1-2 = full length + 3 cm = 108 cm
- \* 1-6 = arm hole =  $(\text{chest}/4) - 2.5 = (92/4) - 2.5 = 20.5$  cm

- \* 6-7 = chest loose =  $(\text{chest}/4) + 2.5 = 25.5$  cm
- \* 1-10 = narrow waist = 39 cm
- \* 2-11 = bottom =  $(\text{chest}/4) + 10 = 33$  cm
- \* 1-3 = neck breadth =  $\text{chest}/12 = 7.6$  cm
- \* 1-5 = front neck =  $\text{chest}/8 = 11.5$  cm
- \* u can keep the same length for back neck else back neck =  $\text{chest}/12 = 7.6$  cm
- \* 3-8 = shoulder =  $\text{shoulder}/2 = 38/2 = 19$  cm

Using the stitching pattern it has been drawn the pattern on a chart. If some want to stitch in their measurement, take the churidar and measure it with an inch tape and draw the stitching pattern.

First take the cloth, fold it breadth wise first, next fold it lengthwise. After that it can be placed the stitching pattern and mark the edges using marking chalk. The material used has a lining material too so first cut the lining material then the outer material. Beginners never cut both materials together.

<sup>16</sup> <http://www.learnstitching.com/2008/10/stitch-chudithar-top.html>



Fig. 37

After cutting the lining material, next cut the outer material. Be careful that you don't disturb the cloth. Then cut the outer material.



Fig. 38

Next join the front pieces and back pieces by stitching them throughout the edges. Next there will be separate front and back piece. Next stitch the neck part using crosspiece or lining using extra cloth. Next stitch the shoulders of both pieces together.



Fig. 39

Next cut the sleeve part, used 3/4th sleeve and have taken only the outer part so that it will be transparent. Stitch the sleeves to the armhole. Next join the left and right sides of churidar. Fold and stitch the openings below hip.

**Fig. 40**

After the sleeves are attached the final outcome, the churidar is ready (Fig.41).

**Fig. 41**

### 5.7 Stitching Salwar<sup>17</sup>

**Fig. 42**

Now let us see the stitching pattern for a chudithar pant (salwar). Here the readymade measurement will be taken. The trainees have to try with their won measurements using a sample pant and an inch tape.

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<sup>17</sup>[http://www.ehow.com/how\\_8444009\\_measurements-shalwar-kameez.html#ixzz26jrdlZgA](http://www.ehow.com/how_8444009_measurements-shalwar-kameez.html#ixzz26jrdlZgA)

*Measurement*

- full length = 100 cm
- hip = 100 cm
- bottom = 38 cm
- a-b = full length = full length - bottom piece =  $100 - 4 = 96$  cm
- a -c =  $(\text{hip}/4)-5 = 20$  cm
- b-g =  $\text{hip}/6 = 100/6 = 16.6$  cm
- e-h =  $(\text{width of cloth}/2)-2 = (90/2)-2 = 43$  cm
- h-i =  $(\text{hip}/3)+5 = 20$  cm
- a-f & c-d =  $(\text{hip}/4)-8 = (100/4)-8 = 33$  cm

Fig. 43

Using the above measurement draw the stitching pattern. Next take the cloth to be stitched. First fold the cloth breadthwise next lengthwise as shown below.



Fig. 44

First you have to cut the c-b part, verify the stitching pattern diagram above. Next keep the stitching pattern and mark the edges of the stitching pattern using marking chalk. Then carefully cut the cloth without disturbing it.

Next fold and stitch the bottom part and then you can join the edges along the side till the end. Do this to both the leg pieces as shown in the figure. Stitch and join the two legs. Keep some gatherings along the waist as shown in the figure. Keep some gatherings so that the c-h part is equal to c-d part; verify the stitching pattern diagram above.



Fig. 45

Next cut the a-c part. In the a-c part stitch a small loop for the thread to pass inside the pant, which is useful to tie the pant. Now attach the c-b part to the a-c part, verify the stitching pattern above. Stitch them properly so that both diameters become equal.

After you stitch them, the complete salwar is ready.



**Fig.46**

### **Unit of Competence 6: Care and Use of Sewing Machines and Basic Trouble Shooting Techniques**

Description: This unit introduces trainee to maintain/care of sewing machines and how to prevent from technical troubles and perform basic trouble shooting.

Duration: 20 hrs.

Learning outcome: (at the end of the lesson the trainee will be able to)

- Perform maintenance work for proper functioning of machine
- Explain the machine troubles arise while perform stitching and remedy
- Describe precautionary methods to avoid them

Contents:

- Minor Problems occur while sewing,
- Causes and Remedies
- Maintenance of sewing machine

Methodology of Teaching: Discussion – Questioning

Care and Maintenance of sewing machines

A sewing machine needs care for its smooth running. It should be cleaned and oiled regularly to ensure satisfactory sewing and long life. When not in use, your machine should be covered to prevent dust accumulation on it. Use a small dry brush or old toothbrush and soft cloth to remove dust and lint. You should always remove lint deposits, dust and thread bits before oiling any part of the machine. Use a pointed instrument like a needle to pick out the bits of thread and lint that cannot be brushed out.

It is necessary to oil and lubricate the machine periodically. If the machine is used every day, oil it once a week. After oiling, wipe off the surplus oil and place a piece of folded fabric under the presser foot to absorb any excess oil. To oil thoroughly, remove the upper thread, needle plate, slide plate, face plate,

bobbin case, and needle and presser foot. Oil the holes on the underside first, after cleaning and then proceed to the upper side. Use only few drops of oil in each hole. Never use coconut oil. Machine oil of different brands may be used for different models of sewing machine, but should be used as recommended in the instruction book.

If the machine becomes gummed with oil, put a drop of kerosene or petrol in each oil hole and joints and run it rapidly for several minutes. Wipe off and re-oil it with machine oil. The motor of electric sewing machine should be greased periodically.

### *Common machine troubles*

The sewing like any other machine, gives troubles of stitching like thread breaking, uneven stitching, puckering, bending and breaking of needle, looping of threads, kipping of stitches, etc. Little problems with the sewing machine can be very irritating and time consuming. They can happen to even the most experienced seamstress. A person operating the machine should be able to rectify these and solve the problems. Some of the common machine problems are listed below:

1. Breaking needles
2. Looping of stitches
3. Skipping stitches
4. Variation in stitch length
5. Puckered seams
6. Upper thread breaking
7. Lower thread breaking
8. Machine not feeding properly
9. Machine working heavily
10. Layers feed unevenly
11. Fabric does not feed in straight line
12. Cause damage to fabric
13. Puckering on both layers of fabric
14. Puckering on under layer only
15. Shows feed marks on the under side
16. Fabric is damaged or holes around the stitches

### *Irregular Stitches*

1. Incorrect size needle.
2. Improper threading. Rethread machine.
3. The needle thread tension is too loose. Use setting in mid-range 4-6 for most work, if this still presents an issue, ensure Tension Unit is lint free - use a scrap of fabric to gently "floss" between tension discs.
4. Pulling fabric while sewing. Do not pull fabric; guide it gently.

5. Loose presser foot.
6. Unevenly wound bobbin. Rewind bobbin.
7. Nicks or burrs at hole of needle plate caused by needle strikes. Polish burrs or Replace needle plate.

#### *The Needle Thread breaks*

1. The needle thread is not threaded properly.
2. The needle thread tension is too tight.
3. The needle is bent or blunt.
4. The needle is incorrectly inserted.
5. The fabric is not being drawn to the back when sewing is finished.
6. The thread is either too heavy or too fine for the needle.
7. Burr on needle plate or hook is catching and breaking thread
8. Old perished thread. Use quality new thread for best results.

#### *The Bobbin Thread breaks*

1. The bobbin thread is not threaded properly in the bobbin case.
2. Lint has collected in the bobbin case &/or hook race.
3. The bobbin or bobbin case is damaged / corroded and doesn't turn smoothly.
4. Bobbin Winding tension not consistent or is too loose.
5. Old perished thread. Use quality thread for best results.

#### *The Needle Breaks*

1. The needle is incorrectly inserted. Flat back of needle is always inserted on the side away from you.
2. The needle is bent or blunt.
3. The needle clamp screw is loose.
4. The tension of the needle thread is too tight.
5. The fabric is not drawn to the back when sewing is finished.
6. The needle is too fine for the fabric being sewn. (Larger needle number is heavier duty)
7. The pattern selector dial had been turned while the needle was in the material.
8. Pulling fabric while sewing. Do not pull fabric; guide it gently.

#### *The Stitches are skipping*

1. The needle is incorrectly inserted.
2. The needle is bent or blunt.
3. The needle and/or threads are not suitable for the work being sewn.
4. Use JANOME BLUE TIPPED #11 needles for sewing stretch, very fine fabrics and synthetics.
5. The needle thread is not threaded properly.
6. Upper thread tension is too tight.

### *The Seam is Puckering*

1. The needle thread tension is too tight. Reset thread tension try between 4 and 6 for general work.
2. The machine is not threaded correctly.
3. Blunt needle. Replace needle.
3. The needle is too heavy for the fabric being sewn.
4. The stitches are too coarse for the fabric being sewn. Fabric too sheer or too soft. When sewing extremely light weight materials, place a sheet of paper underneath the fabric.
5. Using two different sizes or kinds of thread.
6. The needle is bent or blunt.
7. Loose presser foot.
8. Upper thread and bobbin thread should be same size and kind.

### *The Upper Thread is Breaking*

1. Starting to stitch too fast. Start to stitch at a medium speed
2. Improper threading. Check and Re-thread machine.
3. Upper thread tension is too tight.
4. Incorrect size needle.
5. Sharp eye in needle is cutting thread, replace needle.
6. Nicks or burrs at hole of needle plate. Polish burrs or Replace needle plate.
7. Choose correct size needle for thread and fabric. Insert new needle.

### *The Thread is Bunching*

1. Upper and lower threads not drawn back under presser foot before starting seam. When starting a seam is sure to draw both threads under and back of presser foot about 4" (100mm) and hold until a few stitches are formed.
2. *The Stitches form Loose Loops below the work*
3. The needle thread tension is too loose. Use setting in mid range 4-6 for most work.
4. The needle is either too heavy or too fine for the thread.

### **Antique Sewing Machine Repair<sup>18</sup>**

Antique Sewing Machine Repair has two basic parts. First, Antique Sewing Machine Repair involves maintenance. The mechanical parts of the sewing machine must work properly. Second, Antique Sewing Machine involves refurbishing. The cosmetic looks of the antique sewing machine are very important. Antique Sewing Machine Repair is repair of mechanical sewing machines. These machines predate the modern computerized sewing machines. They predate the electronic control systems. They predate pulse motors. They predate circuit boards. They predate integrated circuits. These antique sewing machines use wheels, levers, and gears to sew.

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<sup>18</sup>[https://www.bargainbox.com.au/product\\_info.php?products\\_id=1346](https://www.bargainbox.com.au/product_info.php?products_id=1346)

The drive mechanism may be a hand crank. It may be a treadle system. It may be an early electrified AC motor drive. The antique sewing machines often use foot or hand power. The drive system turns an upper shaft. The shaft runs from the hand wheel to the needle bar. The hand wheel is on the far right of the sewing machine. The shaft turns the needle bar. The needle bar assembly is on the far left of the sewing machine. This upper shaft moves the needle bar up and down.

The upper shaft also uses a lever or belt system. It transfers the power down to the lower sewing machine shaft. The lever or belt turns the lower shaft. This movement must be timed. It must work perfectly with the upper shaft. The lower shaft turns. This causes the hook and feed dogs to turn in time with the needle bar. Antique Sewing Machine Repair requires maintenance. The same basic services are used as other mechanical sewing machine. Antique Sewing Machine Repair maintains good mechanical operations. Antique Sewing Machine Repair requires overcoming the ravages of age. Avoid exposure to weather. Avoid exposure to rust. Avoid exposure to decay. Lubricate and maintain the antique sewing machine.

The sewing machine must be clean. Clear away the lint. Clear away the debris. Clear away old oils. Clear away crystallized grease. Properly lubricate antique sewing machines. Dissolve Rust deposits on the inside and out. Brush away rust. Maintain a smooth operating machine. Properly set Tensions. Properly set Hook needle timing. Properly set Feed dog timing. The way the antique sewing machine looks is vital. Every effort must be made to preserve the looks of the antique sewing machine. This is a major part of Antique Sewing Machine Repair. Antique Sewing Machine Repair requires specialized knowledge. Antique Sewing Machine Repair requires special techniques.

Many of today's techniques cannot be used in For example; the sewing machine technician cleans the outside of most sewing machines. He uses household cleaners like 401 and Windex. In Antique Sewing Machine Repair these cleaners interact with the enamel paint. They destroy the antique finish. Many of the antiques have gold or silver leaf decoration on the machine. The combination of the enameled paint and decorative leaf are vulnerable to the modern chemical cleaners. An amateur sewing machine mechanic may unknowingly ruin the finish. It only takes seconds to apply destructive chemicals. It only takes seconds to destroy antique surfaces. The Antique Sewing Machine Repair person understands. He knows how to clean the antique sewing machine without destroying the surfaces. Some technicians may even apply new decorative leaf. There is some debate of this practice. Some want the greatest beauty possible.

Others believe antiques retain their highest value when unaltered. Adding decorative leaf or repainting the surface some say degrades the value of the antique. Usually, the goal of the Antique Sewing Machine Repair Technician is to refresh the machine without altering its original character. Among the best cleansers is pure clean sewing machine oil. Use the oil to clean the enamel painted

cast iron. Oil cleanses and refreshes the sewing machine. This is the same oil used to lubricate sewing machines.

Antique Sewing Machine Repair often means dealing with rust or pitting. The decay must be stopped. This may involve using other special chemicals. The experienced Antique Sewing Machine Repair man will know what to use. This may involve smoothing with steel wool or brush. This may involve special enamel paints to compliment the original finish of the machine.

### **Unit of Competence 7: Entrepreneurial Skills for Tailors (in Rural Context)**

Duration: 20 hrs.

Description: This unit covers the entrepreneurship skills, communication skills, building customer relationship.

Learning outcome: (at the end of the lesson the trainee will be able to)

- Understand the concept of entrepreneurship
- Discuss importance of effective communication
- Communicate clearly with customers
- Understand the Importance of human relations
- Build customer relationship
- Able to determine selling price for the product
- Apply managerial skills

Contents:

- Entrepreneur Competencies
- Soft Skills for Entrepreneurs
- Need and Importance of communication,
- Verbal & nonverbal communication,
- Listening, convincing and negotiating skills
- Time management

Importance of Human Relations

- Develop mutual respect (with customers)
- Planning a small-scale unit: whom to approach for what
- Business plan preparation
- Book-keeping and accounting and financial statements
- Costing and pricing of products and profit making

Methodology of teaching: Lecture-Role play-Discussion - Questioning

Entrepreneur Competencies<sup>19</sup>

Who is an Entrepreneur?

Without entrepreneurship and growing number of entrepreneurs, an economy is certain to become sluggish in growth. Entrepreneurial dynamism forms the

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<sup>19</sup><http://www.ediindia.org> (Entrepreneurship Development Institute of India)

cornerstone of a progressive society as it is a purposeful activity that attempts to create value through recognition of business opportunity, management of risk appropriate to opportunity and through communicative and management skills to mobilize human, financial and material resources necessary to bring a project to fruition.

This gives a definite upsurge to the economic growth of a nation. Economic growth is an upward change whereby the per capita income increases over a long period of time. If economic growth is the effect, entrepreneur is the cause. Entrepreneurs are the ones who explore opportunities, scan the environment, mobilize resources, convert ideas into viable business proposition and provide new products and services to the society by bringing together and combining various factors of production. An entrepreneurial individual has a distinct concept, vision and a dream, which he/she is able to convert into products. Such individuals are driven by task, challenge and opportunity with very high achievement orientation. If you wish to start and succeed in your enterprise, you need to play different roles at different stages. Some essential qualities of entrepreneurs are:

1. A strong desire to win. (NEED FOR ACHIEVEMENT)

Most people dream of success, but seldom do anything to implement it. In contrast, entrepreneurs have a strong desire to continuously hit new goals and do not rest till they win.

2. An approach of never-say-die. (PERSEVERANCE)

Once committed to a goal and a course of action, entrepreneurs never retract. Difficulties do not deter them and they work hard till the entire project is successfully accomplished.

3. Entrepreneurs prefer a middle-of-the-road strategy while handling tricky situations. (MODERATE RISK BEARING)

They don't take high risks; they are not gamblers. They prefer a moderate risk to a wild gamble, high enough to be exciting and containing a reasonable winning chance.

4. Alert to opportunities and seizing them to their advantage. (ABILITY TO FIND AND EXPLORE OPPORTUNITY)

Entrepreneurs are innovative and can convert crises into opportunities. But they are realistic enough to ensure that the opportunity suitably dovetails into realising their goals.

5. They have a dispassionate approach to problems. (ANALYTICAL ABILITY)

Entrepreneurs will not let personal likes or dislikes come in the way of their taking a business decision. They seek out experts for assistance rather than friends and relatives. Their decisions are objective and not emotional or impulsive.

6. It is important for them to know how they are faring when they work on their goals. (USING FEEDBACK)

Entrepreneurs take immediate feedback on performance and prefer prompt and accurate data, irrespective of whether these are favourable or not. Unfavourable news spurs them into making amends to attain their goals.

7. Entrepreneurs do not get deterred by unfamiliar situations. (Facing Uncertainty)

Achievement-driven people are optimistic even in unfamiliar situations. Even if they find the odds daunting, they see no reason why they can't succeed with their treasure of abilities. They march undeterred, making the best of fine opportunities that come their way, even without guidelines. They quickly come to grips with the new environment and present a picture of boldness and prudence.

They apply their special insight and skill to quickly understand the environment and adapt to it.

8. They dislike working for others. (INDEPENDENCE)

Entrepreneurs do not like to work for others and therefore start off on their own. They wish to be their own masters and be responsible for their own decisions.

9. They are flexible. (FLEXIBILITY)

Successful entrepreneurs have an open mind and do not hesitate to change their decisions.

10. Entrepreneurs think ahead of others and plan for the future. (PLANNING)

Most successful people set goals for themselves and plan to realize them in a time frame.

11. Entrepreneurs can deal with people at all levels. (INTERPERSONAL SKILLS)

An entrepreneur comes across all kinds of people. He has to make them work for him and with him to help realise his objectives. He likes working with people and has skills to deal with them.

12. They can influence others. (MOTIVATION)

Successful entrepreneurs can influence others and motivate them to think and act in their way.

13. They can work for long hours and simultaneously tackle different problems. (WITHSTANDING STRESS)

As a key figure in his enterprise, the entrepreneur has to cope with several situations simultaneously and take the right decisions, even if it involves physical and emotional stress. This is only possible if one has the capacity to work long hours and still keep cool.

14. They know themselves. (POSITIVE SELF-CONCEPT)

An achiever channelizes his fantasies into worthwhile, achievable goals and sets standards for excellence. He can do this for he knows his strengths and weaknesses, and so adopts a positive approach. He is seldom negative.

15. Entrepreneurs think ahead. (ORIENTATION FOR FUTURE)

They have the ability to look into the future. They won't allow the past to bother them and think only of the present and the future. "Bygones are bygones, what of now?" This is their usual response.

An individual may not have all these qualities, but most will have many. The first step for a person aspiring to become an entrepreneur is to make an inventory of his traits. This self-awareness and analysis will help him define his strengths and overcome weaknesses.

#### Soft Skills for Entrepreneurs

- Communication skills
- Creativity and problem solving
- Listening, convincing and negotiating skills
- Time management
- Importance of human relations
- Communication skills

Communication skill is the process of exchanging ideas, facts or opinions by two or more persons. For communicating, we use different modes, like oral, written or non-verbal. The process is explained by using this diagram

Major vehicles for communication: Speech - Face to face (oral)

Writing Formal - long (reports, documents, etc) Non-verbal - Facial expression, body language)

In life, we use several methods to communicate effectively (i.e. gestures/ watch for response/ words/ pictures).

Successful communication depends on correct receipt of the message and receiving is an active element. Communication Vehicles will be effective only if both parties are involved in the process. Good communicators listen and observe. They are alert receivers of response signals while they are also communicating. This helps them tailor their communication style to make it easier for the receiver to absorb or accept the message. There are certain rules for communication:

i. Fitness of purpose:

Will it achieve the objective? What, why, when, where, how?

Select the most effective way to achieve the objective.

ii. Quality of the message:

Always maintain clarity, accuracy and simplicity.

Don't leave the important part of the message merely implied.

We all transmit personal, non-verbal signals continuously, mostly reflecting our attitudes and responses to communication systems. By observing and responding to signals appropriately, we can build on the positives and weed out the negatives. To some extent, most people respond to non-verbal com-

munication, but often only to the obvious, well-known signals. The table below gives examples of such signals and their implications:

Sl. No.	Behaviour	Reason	Circumstces	Responses
01	Leaning Forward	Concentration	Important meeting	Make points clearly
		Increased emphasis	Negotiation	State your own case
02	Leaning Back	Taking time to think	After a proposition/explanation	Allow silence thought
		Inviting expansion	Towards end of meeting	Wait for others to speak first
		Looking for conclusion		
03	Clasping both hands behind neck	Extreme confidence	Non-threatening situations	Maintain openness of situation
		Relaxation	In charge of situations	Be positive about your own case
04	Straight gaze no head movement	Failing attention	Disputed occasions	Ask for reactions/feelings
		Dislike what is communicated instructions	Unwelcome	Ask for suggestions
		Lack of cooperation		
05	Narrowing	Disapproval	Expects to challenge	Allows ex-

	eyes			pression of opinion
		Disbelief	Patience may be short	Shows that you acknowledge difference
		Dislike		Give your reasons

Source: Adapted from Communication Skills, 1996 by Carter Wendy

### Creativity and Problem Solving

An entrepreneur has to be creative. He has to arouse and enhance creativity and experience competition not only with others but also the standards of excellence set for him-self. Certain pre-conceived ideas create barriers in the growth of creative thinking. The barriers are:

- Self-imposed
- Restricted mindset
- Nature of compliance
- Backtracking to obvious challenge
- Jumping to conclusion
- Fear of being ridiculed

It calls for a positive attitude, an open mind, insight and right perception to remove these barriers and arouse and enhance creativity. Everyone faces problems of different nature and magnitude. Sometimes in daily life, we encounter problems so often that we don't even notice them and this is because of our monotonous experience in dealing with them and hence the spontaneous reactions result in solutions. But we do get stuck when faced with unusual and difficult problems, as our routine reactions fail to produce solutions. In such cases, different approaches and ways have to be tried out. Similarly, as an entrepreneur you may face several problems while managing your small-scale enterprise. If you develop an appropriate system, approach and methodology to solve problems, it will prepare you to manage your affairs and problems smoothly and without tension.

There are several qualitative and quantitative approaches evolved in management science to help solve problems. The right strategy would be to understand your own environment, resources, capacities, limitations, strengths and weaknesses in order to design the right approach. This approach will help you, initially, in working on problems and, later, in formulating your

own strategy to solve them. These steps help you have a problem-solving attitude and mechanism:

Create a desire to solve problems

Recognize the problem

Formulate the possible causes

Specify the problem

Test each cause

Explain each cause with minimum assumptions

Verify your explanation and determine the cause

Establish objectives about the resources to be produced and resources used

Classify objectives into ‘MUST’, ‘DESIRABLE’ and ‘CAN BE IGNORED’ categories

Generate alternative solutions

Choose one solution

Compare each solution in terms of positive and adverse consequences

Make a decision to implement

Internalise the process

### Time Management<sup>20</sup>

Busy lives and work schedules can sometimes affect the way we think and make decisions. Rushed decisions can lead to costly results. The secret to good management of a business is good time management. Ensuring that your company runs like clockwork must start at top level. Bad management can only decrease the morale and efficiency of the company.

Good leadership is the key to success of any business. The decisions and future of the company relies at Management level, but ensuring that decisions are made correctly and action is taken promptly relies on the individual’s Time Management. A delay in making a decision or reacting to a problem can be a costly business mistake.

Time Management is something that needs to be learned and practiced; it must be mastered and become part of your life to be truly effective. Once you have mastered good time management skills at work, you will find that automatically apply them to other areas of your life.

### Planning

Good planning is probably one of the most important aspects of good time management. Knowing what is happening at present and what will be happening in the future will help you to plan your time more efficiently.

### Prioritizing

Assess your tasks for the day and work out a priority system. Critical tasks, important tasks, essential tasks and other tasks. From your list, give each

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<sup>20</sup> Khadi & Village Industries Commission, (Undated) Government of India

task a priority and within each priority an order of importance. Once you have done this, you can begin tackle each to task in order of importance. So even if your day ends up being chaotic, at least your critical tasks would have been done.

### Being Prepared

Being prepared will ensure you don't waste any valuable time. There are many ways of being prepared from being informed to ensuring you have everything ready. Knowing what is coming up in the future and by anticipating what might be required of your will ensure that you are prepared adequately.

### Delegating and Allocating Resources

Learn to delegate effectively and you will be more efficient at everything you do. It is not a matter of getting everyone else to do your work; it is more a matter of using resources wisely. There is no point you attempting to do something and wasting 3 hours on it, when someone else could do it in ½ hour.

### Follow- up

Following up on outstanding issues will ensure there is no last minute panic. By ensuring that things run on track and work is progressing steadily, you will ensure that deadlines are met comfortably. Leaving things to the last minute or finding out that something hasn't been done at the closing of a deadline is not good time management

## Importance of Human Relations<sup>21</sup>

### What is Human Relations?

The skills that are necessary for good relations with others are the most important skills anyone can learn in life. Human relation is the skill or ability to work effectively through and with other people. Human relations include a desire to understand others, their needs and weaknesses, and their talents and abilities. For anyone in a workplace setting, human relations also involve an understanding of how people work together in groups, satisfying both individual needs and group objectives. If an organization is to succeed, the relationships among the people in that organization must be monitored and maintained. In all aspects of life, you will deal with other people. No matter what you do for a living or how well you do it, your relationship with others is the key to your success or failure. Even when someone is otherwise only average at a job, good human relations skills can usually make that person seem better to others. Sadly, the opposite is also true: poor human relations skills can make an otherwise able person seem like a poor performer. A doctor who respects patients, a lawyer who listens carefully to clients, and a manager who gets along well with others in the workplace: all of these people will most likely be thought of by others as successful.

### Develop mutual respect (with customers)

1. Develop your self-esteem.
2. Develop your self-awareness.
3. Develop trust.
4. Learn to self-disclose.
5. Cultivate mutual respect.

Although these are big tasks, they can be achieved by anyone with a clear understanding of human relations.

1. Develop your self-esteem. First, you must develop your self-esteem. Self-esteem can be encouraged or damaged very early in life, and some people who have self-esteem problems do not even realize it. However, no matter what your age or self-esteem level, you can always learn to like yourself more. Chapter 2 will cover self-esteem in great detail and provide tips on how you can build your own self-esteem.
2. Develop your self-awareness. Without self-awareness, you will find it hard to develop self-esteem or any of the other issues that are important to successful human relations. This is because you must know yourself before you can value yourself highly and express yourself honestly to others.

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<sup>21</sup> [highered.mcgraw-hill.com/sites/dl/free/.../Lamberton\\_ch01.pdf](http://highered.mcgraw-hill.com/sites/dl/free/.../Lamberton_ch01.pdf)

3. Develop trust. Without adequate self-esteem, you will find it difficult to trust. With trust, however, you will find that your relationships will grow deep and meaningful, and that you will be able to tell other people what's in "your gut" without unnecessary fear.
4. Learn to self-disclose. As you develop trust, you will be able to disclose more about yourself. Self-disclosure and trust are areas that you can develop simultaneously: As you learn to self-disclose appropriately, you will develop deeper trust in your relationships.
5. Cultivate mutual respect. Developing trust will lead to mutual respect, as you forge relationships that are based on honesty.

#### Planning a Small-Scale Unit: Whom to approach for what

The speed with which you implement your project is critical during these days of competition. If you have planned in advance and evaluated resources required, your project will be implemented in the shortest possible time. The first step to initiate planning is to identify a suitable project.

#### Project Identification

There are no set rules to identify a suitable project, though this is one decision on which the success of your entire venture hinges. So, don't take hasty decisions. Most prospective entrepreneurs tend to display the herd tendency and go for a project, which people have already ventured into. This is not a healthy attitude as success of one in a particular field does not guarantee success of the other. While identifying a suitable project, you should make a SWOT analysis of your own strengths and weaknesses. There are more details in a separate chapter.

The next step, after you have selected your project, is to collect all information about it. The most important information is about the potential market of the items you selected. There are several ways for this. You may go for a basic desk survey, a snap survey or a detailed market survey. A separate chapter provides guidelines to assess the market potential.

#### Whom to Approach for What?

New entrepreneurs must know where to go for a particular piece of information as this knowledge will help them avoid a lot of running around. For this, they must know clearly what they are looking for.

Some may be completely ignorant, a few may know about marketing or production or finance, etc. The completely ignorant will require initial desk work and discussions with knowledgeable persons like the EDP trainer, extension officers, businessmen, small-scale industrialists, etc. This will help you accelerate the process of enterprise establishment.

Those with some knowledge will require specific information. It will be useful for them to list the various things to be completed to set up their enterprise. This

desk work will give them a clear idea about the assistance they need to fulfil their activities.

Various development agencies assist entrepreneurs:

- a. Some agencies provide only general information and you yourself have to collect specific information.
- b. Some provide technical/marketing expertise in specialized areas.
- c. Some provide guidance in technical and financial matters, besides taking up turnkey responsibility (implementation assistance).

But government formalities will have to be completed by the entrepreneurs themselves. They can contact the concerned departments/offices for information.

You should only retain the relevant information/data while collecting information. You must keep important information at a proper place to find them when needed. The compilation and segregation of information will need table work and it should be compared with the checklist prepared earlier to ensure all data has been collected before actual commencement of work.

Expert guidance will help in decision-making process. It will be useful to acquire first-hand information from institutions to get a clear picture of the entire exercise.

A table below shows various sources of information for a new entrepreneur. They need not contact all agencies except the relevant ones. However, they must contact at least the following agencies to have knowledge about small scale industries and the procedures:

- District Industries Centre
- Directorate/Commissioner of Industries Office
- State Financial Corporation
- Technical Consultancy Organisation and
- Agencies Conducting Entrepreneurship Development Programmes

## Whom to contact and for what information

For Selection of a Project	SISI, DIC, TCOs, SFCs
Registration	DIC
Finance	Banks, SFCs, NSIC
Technical Guidance	DIC, TCOs, CFTRI, SISI, NSIC, DFRI
Training	ED Inst., SISI, TCOs, DICs, CFTRI, NGOs
Infrastructure	DIC, IDCs, LA
Raw Materials	DIC
Plant & Machinery	DIC, NSIC, SISI
Marketing Information	DIC, TCOs, EPC, (APEDA, MPEDA)

DIC = District Industries Centre

SISI = Small Industries Service Institute

TCOs = Technical Consultancy Organisations

SFCs = State Financial Corporations

NSIC = National Small Industries Corporation

DFRI = Defence Food Research Laboratory

ED Inst. = Entrepreneurship Development Organisations CFTRI = Central Food Technology Research Institute IDCs = Infrastructure Development Corporations

LA = Local Authorities like Municipalities

EPC (APEDA, MPEDA) = Export Promotion Council (Agriculture and Processed Food Export Development Authority, Marine Products Export Development Authority)

### Business Plan Preparation:

New entrepreneurs often have a misconception that planning is essential only for large enterprises. Usually they have following doubts –

- i. Is planning in small enterprises as essential as it is in big ones?
- ii. Can small entrepreneurs contemplate long term planning when they do not enjoy the advantages of huge finance and expert staff as big ones does?
- iii. Can small enterprises successfully implement long term plans?

But planning for the small entrepreneur is critical for the very same reasons. The entrepreneur has limited resources in terms of time, finance and manpower. The small entrepreneur is going to put his life's savings to start the venture and to lose this investment is a risky and unsettling proposition. He normally puts all his stakes in his ventures and expects the business to make reasonable profit and

give returns on his investment. The opportunity to be ‘your own boss’ is part of this return. It is of utmost importance that the enterprise succeeds as the entrepreneur has totally committed himself to the venture. It is, therefore, necessary that small enterprises select very carefully the fronts for action and formulate all the strategies with due care and calculated risk as the entrepreneur cannot afford to make mistakes which will cost him time, money and mental peace.

### 1. Why Planning?

Planning is essentially choosing a course of action from available alternatives. It involves detailing of the course chosen. It differs from other functions not only in form of the activities involved but also in the faculties involved. It forces the entrepreneur to view reflectively, analyze his environment, the enterprise, the people involved and himself in a certain perspective.

(i). Planning is essential to survive in the most dynamic situations:

Most small entrepreneurs tend to be controlled by the volatile environment of today. Earlier it was possible to avoid developing or evolving your product or process until your competitor successfully established his own product or process. Today this is no longer valid. Such an enterprise would soon ruin itself. To lead in a fast changing environment, an entrepreneur should plan for aggressive strategies to shoulder the inherent risk. These risks can be reduced by continuous planning and re-planning.

(ii). Planning strengthens the position of entrepreneurs:

If the small entrepreneurs do not adopt planning they may keep on drifting without purpose or direction, in the belief that their survival in business depends on the mercy of over-powering forces. This will prevent them from taking any decisive steps for their own development. On the other hand, they may feel tempted to indulge in reckless and blind gambling. Planning hence helps to lead them in the right direction.

(iii). Planning gives an overall picture:

Because of constraints on his various resources, it is essential for an entrepreneur to have pre-knowledge of all the steps involved in implementing and running his enterprise so that he will be better organized to co-ordinate his limited resources.

(iv). Anticipation of problems:

The entrepreneur will have a clear picture of his project and the requirements at various stages if the project is thoughtfully planned. Planning equips him with the knowledge of the problems that are likely to arise and he can therefore, rehearse for alternative actions to the many “What ifs”.

(v). Planning helps in time management:

Again, because a small entrepreneur has to play the multi-faceted role, fulfilling various needs of his enterprise, it is essential for him to define his action in terms of time. This will give him pointers to the areas which should claim his priority and help him to effectively utilize and co-ordinate his resources. Successful entrepreneurs differ from unsuccessful ones in their method of decision

making. They examine all possible options, evaluate all arguments for or against and they keep on looking for new options or alternatives.

There is evidence in support of successful ones who adopted planning against those who did not examine any options or alternatives. It has been proved that those who use systematic planning and intelligent implementation are most likely to succeed. Planning, therefore, should be integrated into the company's system and for the small entrepreneur it should be directed more towards findings and exploiting opportunities rather than waiting to create them. Most small entrepreneurs are constrained in their planning because

- a). They believe planning is not needed for them;
- b). As the enterprise is small, they believe they can keep everything in their heads;
- c). They feel that planning is a waste of time as it cannot be implemented.

## 2. Areas of Planning:

For the small entrepreneur planning need not be complex. If he were to put down on paper what is in his mind, a lot of clarity would emerge.

He should start planning by defining

- a). His present status: the resources available to him
- b). His goal: within the constraints of his resources, what can be achieved.
- c). How best to attain it: coordinating and mobilizing the above two factors to achieve his goal in the shortest possible time.

To plan, then, he will have to start posing a few questions:

Internal: - To analyse his personal strengths and weaknesses:

What am I good at ?

## 3. Where can I improve?

What are the resources available to me?

What is the volume of resources that I can effectively mobilize?

Market: - To check if the plans he foresees are supported by demand:

Will what I produce sell?

Why will people buy it?

How does my product compete with others in the market?

Environment: - A small entrepreneur should always take into account the outside factors over which he has no control but which are likely to affect him.

What are governments' policies?

How do they affect me?

Will changing trends in social customs and culture affect my product demand?

Can I diversify if the need arises?

Basically then an entrepreneur should plan for

- i). Survival
- ii). Profit
- iii). Diversification

### 3. Some Principles of Planning for Small Enterprises:

Any noting, no matter how short, for planning is much better than no noting at all. The most difficult part of planning is to start. Once started it is then easy to proceed ahead. The factual basis of the venture, its customers and its environment should be thoroughly investigated.

To make planning realistic, it is necessary to have a clear understanding of one's business, strength and weakness. Many a time an outsider is more objective and a keener commentator than the owner and inside personnel. Effective planning needs creativity and constructive thinking and many a time insiders are not able to perceive what an outsider can. Alternative opportunities based on the resources of the venture and the anticipated needs of the customer should be developed. Planning is a process, not an isolated occasional act, hence plans should always be periodically reviewed and should be kept alive through constant updating and feedback. It should never become a ritual or mere paper work. For the small enterprise it is essential to have plans that can be implemented as early as possible. Planning should take into consideration the implementation.

Planning should be supplemented by performance reporting. One who wishes to implement his plans successfully must regularly examine the expected progress against actual progress to decide further course of action.

### Costing, Pricing and Profit Making

#### Costing and Pricing of Products

A realistic and comprehensive knowledge on costing and pricing is required to build the financial management capabilities of entrepreneurs. This will help in running the enterprise successfully and enable one to give due importance to costing and pricing.

Costing can be defined as the process of determining how much it costs to produce and sell a product or service. Costing is very important as the cost of a product can decide its profit or loss. There are two costs involved in determining the cost of a product / service, i.e. direct cost and indirect cost.

**Direct Cost:** The cost of those items that become part of the end-product are known as direct costs such as; raw material, labour, packing material, etc.

**Indirect Cost:** All expenses incurred in running a business and that which cannot be directly identified with the end product are indirect costs.

The following exercise could be used as an illustration for a better understanding of the concept:

#### Costing Exercise

Mr. Ramesh is processing mangoes for a pickles manufacturer, who subcontracts the work, when he has orders for processing less than 5000 Kgs of mangoes. The pickles manufacturer provides raw mangoes, but all other inputs and expenses are the responsibility of Mr. Ramesh.

To process 200 Kgs of mangoes, he needs spices and oil costing Rs.400/- and fuel costing Rs.100/-. In addition, he pays Rs.2000/- to workers who work for eight hours, processing 2000 Kgs of mangoes.

Calculate the price that he must quote per Kg of processing, to the pickle manufacturer if he decides to earn a minimum of Rs.20 per Kg for himself

The correct solution is:

Cost of processing 200 Kgs of Mangoes Rs.

i) Spices and Oil	400.00
ii) Fuel	100.00
iii) Labour	200.00
	<b>700.00</b>

He wants to earn Rs.20/- per Kg. Hence for 200 Kgs targeted earning is Rs.4000/- (i.e.  $200 \times 20$ ). Therefore, he must quote Rs.700.00 + Rs.4000 = Rs.4700/- for 200 Kgs i.e. Rs.23.50/- per Kg.

Please note that more the price the higher the profitability. But then proper pricing should be done so that the product finds a place in the market. Cost reduction is the other way to earn more profit. For pricing a product/ service, an entrepreneur could exercise the following options:

- A desired margin may be added to the total cost to obtain the price.
- All possible efforts are made to make the price competitive and keep it less than the existing brands.
- In this option the price is kept exorbitantly high. This happens in a monopoly market

## Marketing Management

### Seven Tips for Successful Marketing

#### a) Know Your Consumers/Customers

There are two types of clients:

**BUYERS/CUSTOMERS** who buy goods from you to sell to others. The customers may not be the direct users of one's products. Normally, wholesalers buy in bulk and sell to retailers, who sell to individual consumers or exporters, who in turn sell goods abroad to chain stores and retailers.

Users who directly consume the products, who are **CONSUMERS**.

#### b) Satisfy Your Customers/Consumers

They may be satisfied:

- When they are happy with the features and quality of the product.
- When the price of your product is reasonable (reasonable means within the budget).
- When one delivers on time and maintains agreed terms.
- When extra efforts are put in to make them happy; like by working overnight to deliver on time.

### c) Attract More Customers

Marketing must ensure that consumers repeatedly buy one's products and also speak well about it to others. One should always remember the four Ps discussed earlier:

#### i. Product

Consumers want the product to satisfy their needs and they may want it to last long.

- The product should be worth the money spent by buyers on it.
- The product should meet the best standards of quality and aesthetics.

#### ii. Price

Prices should be affordable and there are ways to make them acceptable also. Match your competitors' prices. One could use the formula (price - cost = profit) when (i) one is relatively new to the business (ii) the competition is strong and (iii) when consumers are used to prevailing prices.

Look at the costs

The price could be set by adding a reasonable profit to the cost and this can be used during (i) low competition and (ii) when the product is new.

Make the price attractive

Prices may be made attractive in other regions than one's own by different ways. Attractive prices can, for instance, be like Rs.49.95 for Rs.50.00.

#### iii. Promotion

A satisfied client is one's best promoter not only in terms of repeat orders but also for references.

Some ways to promote one's product: Discount and credit offers can be publicised by placards placed in retail outlets or by distributing pamphlets to existing and potential clients.

Discount and credit offers: Give limited-period discounts or credits to regular and new clients as also bulk buyers. This will attract potential customers and strengthen the existing ones. Offer high discount on high-margin products as this is likely to encourage sale and manufacture of such products without affecting profits. Also, distribute pamphlets among exporters/wholesalers, if necessary.

Promotional items: Paperweights, calendars etc. with one's brand name can be good advertisements.

#### iv. Place

Determine where to sell the product and where should the client to find it.

### d) Network and Reach-out to New Consumers

This helps in expanding one's customer base.

There are several ways by which one can network and reach new customers and expand one's market base:

- i. Personal visits to potential clients
  - ii. Participation in trade fairs where potential is found
  - iii. Product catalogues and web pages which could be forwarded to distant customers
  - iv. Promotion methods like selling incentives to increase sales
- Rather than waiting for customers to come, the entrepreneur should look for them. While i, iii and iv are means to network with new consumers, it helps one network with both new and existing customers.

Participating in trade exhibits in different regions

- i. Prepare for an exhibition:

Inquire about trade exhibitions from government offices and non-government organisations that organise such fairs.

Participate in fairs after considering its location, the fees and products featured.

Print business cards, product catalogue and price lists.

Prepare samples for display.

Keep a logbook to record visitors' contact details.

- ii. During the trade exhibit:

Approach visitors and talk informally about the products.

Encourage them to analyse the product.

Exchange business cards.

Request them to fill the logbook.

- e) Give Selling Incentives

Marketing starts even before business identification and often involves all management areas, while selling is about increasing sale. Selling incentives are various:

Reduced price or discount

Multiple products for the price of one

Fixed-time discount coupons for repeat purchase

Better credit terms

- f) Know Your Competitors

It is very important in business to know one's competitors and their strategies to remain competitive and there is a simple framework to understand them:

The competitor as a food processor

what is his experience in the business?

what are his resources: (i) size of operation, (ii) technology, (iii) financial resources and (iv) market credibility.

The competitor's clients

Does he have many clients?

Who are they?

Are his clients happy?

Can he retain customers?

The competitor's product

Is his product better?

How is his product different?

The Competitor's price

Is his price cheaper? Why?

The competitor's promotional strategies

Does he provide better credit/discounts?

The competitor's place

Does he directly deal with consumers?

Does he have agents/distributors?

g) Developing a Sustainable Marketing Advantage:

A business that does not develop any or all of the three advantages below is sure to lose out to competition:

A sustainable cost advantage: This will help an enterprise offer lower prices. Cost savings can also help in offering better credits.

A differentiation advantage: This offers buyers better value than that of the competitors, as the product is different by its features and services as well as by brand image.

A niche market: Here consumers are delivered specially customised products in small volumes.

Finally, Remember The Cardinal Principles To Succeed In The Market:

- The customer is the most important person.
- Put yourself in customers' shoes.
- Good marketers sell products that never return but customers do.
- Successful marketing is about building and sustaining human relationships.
- Be flexible so as to encourage people to do business with you.

Marketing strategy and sales techniques:

When entrepreneur start the unit, there is some idea in the mind considering the position of that particular product in the market. Sometimes the unit is started considering the heavy demand of that product in the market. Sometimes it is taken into account that one unit is very successful in a particular field or when there is a shortage of a particular item and market demand is more. Then very important aspect with which an entrepreneur came across is marketing.

Marketing involves following activities.

1. Research:

This would be a never ending activity throughout the existence of the SSI unit.

It starts with a market survey to establish the demand and supply position in order to determine the feasibility of setting up a unit for the manufacture of a particular item. One has to see the product as the consumer sees it and “consumer satisfaction” must be the main criteria for evaluation of all policies and actions. Even after the unit has gone into production, research must continue on how to improve the product, packaging, distribution, improvements, in the packaging etc.

## 2. Planning:

This activity starts at the project stage and is extremely necessary throughout the life of the project. At the project stage this would include activities such as planning, market development, development of packing, setting up distribution networks, warehousing, short-term and long term sales planning. After the unit is in production it will include sales planning. The sales plan will include a forecast of sales for the future, a plan for territorial coverage, a programme to achieve the forecasted sale and a sale promotion plan if required.

## 3. Branding:

Branding is absolutely essential in consumer products as well as consumer durables and industrial products. This is so because the same product having widely diverse qualities is available from different manufacturers. However, it helps the manufacturer, retailer and consumer in the following ways – It enables the consumer in effective and easy identification of the product of a particular manufacturer.

The manufacturer benefits since the consumer also asks for his specific brand. It enables the manufacturer to have a better control over the sales outlet and price of the product.

If the brand is popular it benefits the retailer by attracting consumers to his sales outlet enabling him to sell other products as well.

## 4. Pricing:

The price is usually associated with

- i). Value
- ii). Status
- iii). Quality
- iv). Durability

The point to remember is that a consumer is more sensitive to price when the purchase frequency is high or when the quality of competing products is more or less the same. Examples of this are hardware, matches, gums, stationery, chemicals, petroleum products, etc.

There are five different methods that can be employed in pricing products.

1. Pricing in line with similar products already in the market.
2. Pricing slightly higher than the price leader in the market.
3. Pricing slightly lower than the price leader in the market.
4. Pricing on a cost plus basis.
5. Pricing on the basis of profit yield at different sales levels.

Before fixing the price of your products always ask yourself the following questions

1. At what range of price will the product be economically attractive to the consumer?
2. What sales volume can you expect at different price levels?
3. What will be the competitors' reaction to your price.

Attempts at answering these questions will help the entrepreneurs in price fixing.

#### 5. Distribution:

The objective of a distribution network is to conveniently make available goods to the largest number of consumers in required quantities where and when they are needed. This can be achieved through

1. Agents
2. Stockiest
3. Whole-Sales
4. Distribution
5. Manufactures Shops
6. Retailers
7. Street Vendors
8. Mail Order

The selection of sale outlets will depend on nature of product, number of consumers and the financial resources.

#### 6. Selling:

A sale can be described as “converting goods into cash”. Most people confuse a sale to be booking of an order. However, no sale is complete till the goods have been delivered and their value recovered. This must be kept in mind when assessing the performance of your own sales staff and also when finalizing terms with agents, distributors etc.

The most effective method of selling is personal selling, i.e. through your own trained staff. This is so since no agent, distributor, stockiest or dealer would know your product or its plus points as well as your own sales staff would. However, it is seldom possible for a SSI unit to resort to personal selling since it cannot afford a large sales organization to cover the vast geographical area of our country.

# Appendix IV – Impressions

