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**VOCATIONAL TRAINING PROGRAMMES FOR REHABILITATION OF PERSONS WITH
DISABILITY IN INDIAN GARMENT MANUFACTURING UNITS: PRESENT SCENARIO AND
FUTURE DIRECTIONS**

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ABSTRACT

Persons with disability possess vast potential to perform efficiently in Garment Manufacturing Units. However, the majority of the Vocational Training Programmes offered by the segregated and mainstream training institutions for persons with disability did not cater to the requirements of modern high-tech Garment Manufacturing Units. Therefore, demand driven disability-specific training modules were developed for persons with locomotor, hearing and visual impairment. Training in these modules enabled them to work at par with their able-bodied co-workers. This also enables them to become economically independent.

KEY WORDS

Vocational training programmes, persons with disability, garment manufacturing units, segregated institutions,

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INTRODUCTION

Persons with disability (PwDs) represent a huge pool of unrecognized and untapped potential. Their vast energy and hidden talent can be unlocked through training in a rich stimulating environment. Moreover, they can perform competitively in various industrial jobs if their capabilities are judiciously matched (Prasad, 1994). Garment Manufacturing is one of the most important and growing private sector industry in India, which needs trained manpower at every level and more so at the grass root level (Stitch World, 2011). Also, most of the jobs in this industry are repetitive, non-hazardous, non-locomotive and semi-skilled in nature .

Hence these characteristics of jobs in the garment industry provide many opportunities for absorbing PwDs, especially at the lower and middle level job profiles. However, the vocational training and employment opportunities for the PwDs in the mainstream have so far been restricted due to several challenges in the environment. World of work is usually designed for the able-bodied and special needs of PwDs often do not get considered. Mainstream training programmes are inaccessible to PwDs as the training curriculum and equipments are not adapted according to their needs (Rungta, 2004).

Moreover, the world of work is experiencing transformational change, which requires frequent skill updates to maintain employment in many fields (Smits, 2004). Therefore, with the rapid and drastic changes in the skills required in the industry because of automation and specialization, the existing syllabus of training programmes offered to the PwDs should be carefully reviewed to make these more job oriented (Taylor and Taylor, 1967).

OBJECTIVES

1. To analyze the existing vocational training programmes (VTPs) in garment manufacturing process available for PwDs in Delhi, India and National Capital Region (NCR), that is, Noida, Faridabad and Gurgaon.
2. To evolve new training modules in garment manufacturing process for gainful employment of PwDs.

MATERIALS AND METHODS

Phase 1

Efforts were made to study the existing VTPs in garment manufacturing process run by the segregated vocational training institutions for PwDs, and also those offered by the mainstream government training institutions having three percent reservation for them in Delhi and NCR.

Sample selection

The information regarding VTPs available for PwDs in garment manufacturing process and its course content were procured from

- **Personnel in charge of segregated vocational training institutions for PwDs.**

No consolidated list of segregated vocational training institutions for PwDs was available from any governmental source. Therefore, in order to select the sample, list of various segregated vocational training institutions for PwDs in Delhi and NCR was procured from the website of the National Centre for Promotion of Employment for Disabled People (<http://ncpedp.org/eductn/ed-dirctry.htm>). As per this exhaustive list, 70 institutions were providing services to persons with locomotor, hearing and /or visual impairment (three most prevalent disabilities as per the census of India, 2011). Through census sampling technique, information obtained from all these 70 institutions revealed that only 20 institutions were presently running VTPs in the garment manufacturing process. Out of these 20 institutions, personnel in charge of two institutions were not willing to share any information. Therefore, the final sample comprised of 18 institutions.

- **Personnel in charge of mainstream government training institutions.**

Mainstream government training institutions offering VTPs catering to operator level jobs in the garment manufacturing process like Industrial Training Institutes (ITIs), Government Polytechnics, National Institute for Open Schooling (NIOS) and Apparel Training and Design Centre (ATDC) were identified in Delhi and NCR. All these institutions had reservation of three percent seats for PwDs.

In order to procure the course content, these institutions were visited after prior permission. Only those VTPs were made a part of the study, which were directly catering to the skill requirements of operators for working in different sections of garment manufacturing units like fabric/accessory inspection, cutting, sewing, washing, issue-receiving, finishing and packaging. In these sections, operators were required to perform the same task repetitively for bulk manufacturing.

Observation method was used to study the infrastructure available in all these institutions for conducting the vocational training programmes.

Phase 2

This phase involved the actual development of demand-driven disability specific vocational training modules in garment manufacturing process (Figure 1). Review of literature and analysis of information gathered above was carefully incorporated by the researcher for this purpose.

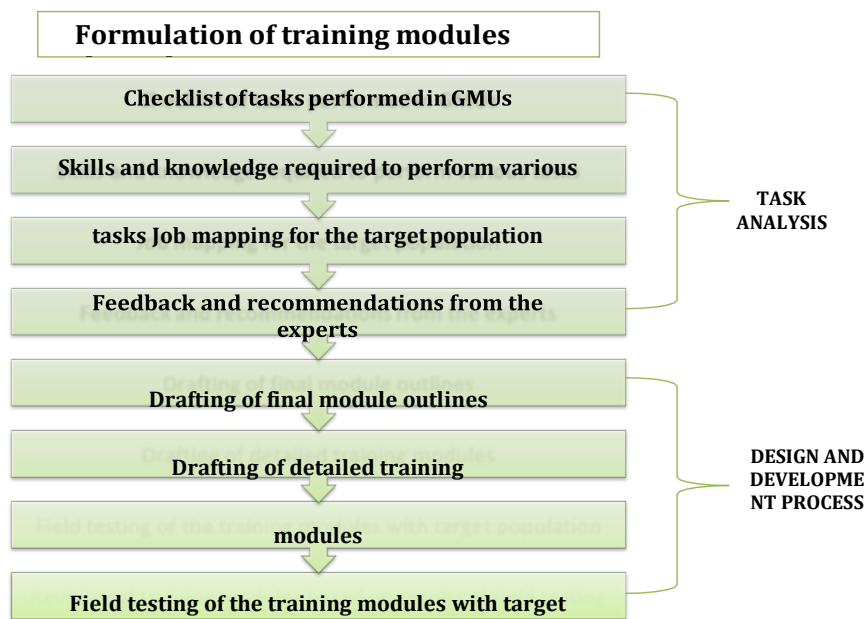


Figure 1: Process for development of training modules

RESULTS AND DISCUSSION

In- depth study of the curriculum of these vocational training programmes was done to get an insight into the content being taught. The findings have been summarised below:

VTPs offered by segregated vocational training institutions for PwDs

The various VTPs offered by segregated vocational training institutions like cutting and tailoring, fashion designing, drafting and tailoring, etc., and its content analysis has been summarized in table 1. Review of literature also reported similar kind of VTPs being run for PwDs. However, there was no study available on the responsiveness of the vocational training system to PwDs (Rungta, 2004).

From the table 1, it was evident that the content of these VTPs had many common features. This showed that almost similar knowledge and skills were being taught through different VTPs run under different nomenclatures, following different guidelines.

The major focus of all these programmes was to give hands on experience of basic sewing skills for personal use, self employment from home or for working with a local tailor. Other areas of garment manufacturing like raw material inspection, bulk cutting, finishing and packaging of garments were not part of any of the VTPs. Only, VTP in Cutting and Tailoring (certified by National Institute of Open Schooling and National Council of Vocational Training) had some theoretical knowledge of ironing and folding of garments.

Table 1: Detailed content of VTPs run by segregated vocational training institutions for PwDs

Vocational training programme	Detailed course content				Infrastructure available for training	
	Common features		Distinguishing features			Analysis
	Theory	Practical	Theory	Practical		
1. Cutting and Tailoring (certified by NIOS)	Basic knowledge of sewing machine, drafting, pattern making, layout and alteration. Selection of fabrics, its estimation, choice of colors, designing for different occasions.	Drafting and construction of kids (frock/skirt variations, boy's half pant, night suit,) and ladies garments (sari blouse/petticoat variations, kurta, salwar/churidar, top, nighty and maxi).	Seam/seam finishes, darts, tucks, pleats, facing, binding, zipper attachment, stitching of elastic, dart manipulation, yoke/ belt/collar attachment, ironing and folding.	-	Provide elaborate theoretical knowledge but reflect lack of enough practice. Thus, it would equip the trainee to either work as a local tailor or as a helper with a small scale fabricator.	
2. Cutting and Tailoring (certified by NCVT)			Use of special attachments, needle/thread/fabric relationship, ironing and folding, introduction to trade, garment costing, managing customers.	Drafting and construction of men's garments (pajama with belt/button or zip fly, shirt with pocket and collar variations).	Similar to Cutting and Tailoring offered by NIOS but covering a wider prospective. Has all the essential elements and hands on experience required for setting up tailoring business.	
3. Drafting and Tailoring (certified by INIFD)			-	Developing basic blocks of skirts, bodices, sleeves, trousers, adapting and constructing basic garments.	Short term practical course which gave general insight into different aspects of basic sewing. Training in this course along with internship in industry would prepare the trainees for the job.	
4. Cutting and Tailoring (developed by NGOs)			-	Drafting and construction of men's garments (underwear, pajama and kurta variations).	Practical in nature giving hands on experience of drafting/cutting/ stitching for personal use or working with a tailor.	

Vocational training programme	Detailed course content				Infrastructure available for training	
	Common features		Distinguishing features			Analysis
	Theory	Practical	Theory	Practical		
5. Fashion Designing (certified by NIOS)	Introduction to fashion designing, history of fashion, fashion terms, fashion designers.	Knowledge of sewing machine, basic design- use of elements and principles, design library, textures, trimmings/fasteners/fabrics, fashion illustrations.	-	Drafting, pattern making, manipulation of standard blocks, designing and construction of kid's, ladies and men's wear.	Combined knowledge of designing and practical skills in pattern making & construction helped the trainees to design garments practically feasible to construct.	Hand machines with no work tables. Lighting was adequate.
6. Fashion Design (developed by NGOs)			Basic principles of fashion design and merchandising.	Seam/seam finishes, darts, tucks, pleats, plackets, closures, pockets, draping, grading, paper pattern. Enlarging/reducing of motif and design development. Basic/traditional embroidery and printing techniques.	Exposure to all the aspects of fashion designing would prepare the trainee for working with designers. However, it had very little practical skills required for garment manufacturing.	Hand/treadle machines with limited work area and adequate lighting.
7. Dress Designing (developed by NGOs)	-	Basic design idea, pattern making, layout & stitching of apron, pillow/cushion cover, frocks, night suit, ladies suits-salwar/chudidar, sari blouse, night-gown set, lengha-choli with design variations.	-	-	Course was practical in nature and gave hands on experience of basic sewing skills which would equip the trainee for sewing from home.	Hand machines with insufficient work area/lighting.
8. Basic Tailoring (developed by NGOs)	-		-	-		Hand/treadle machines with limited work area and sufficient lighting.

9. Basic Stitching for Home Management (developed by NGOs)	-	Threading, basic hand stitches, sewing fasteners, operating hand/ treadle machine, use of measuring tape stapled at every inch, sewing straight stitches using a seam guide, alterations, mending and care of garments- washing, ironing, folding and storage.	-	-	Designed to prepare the persons with visual impairment in daily living skills. Observation of trainees performing these tasks was an eye opener to how they could manage to do all these activities without vision.	Hand and treadle machines with sufficient work tables/area and lighting.
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NIOS: National Institute of Open Schooling
 NCVT: National Council on Vocational Training
 INIFD: Inter National Institute of Fashion Design
 NGO's: Non-Government Organizations

VTPs offered by mainstream government training institutions

Mainstream government training institutions offering VTPs in the garment manufacturing process were:

- Industrial Training Institutes (ITIs)
- Government polytechnics
- National Institute of Open Schooling (NIOS)
- Apparel Training and Design Centre (ATDC)

Industrial Training Institutes

The Director-General of Employment and Training (DGET) under the Ministry of Labour and Employment (MoLE), Government of India, was offering two major formal programmes through Industrial Training Institutes (ITIs). These were the Craftsmen Training Scheme (CTS) and the Apprenticeship Training Scheme (ATS). Various courses offered under these two schemes have been tabulated below (Table 2):

Table 2: VTPs in garment manufacturing process offered under CTS and ATS

Training scheme	Vocational training programme	Duration of the VTP	Eligibility for the admission
Craftsmen Training Scheme (CTS)	Cutting and Sewing	1 year	8 th Standard
	Dress Making	1 year	10 th Standard
	Fashion Technology	1 year	12 th Standard
	Fashion Designing	1 year	8 th Standard + ITI (NTC) in Cutting and Sewing
Apprenticeship Training Scheme (ATS)	Designer and Master Cutter	2 years	ITI (NTC) in Cutting and Sewing
	Tailor (Men)	1 ½ years	ITI (NTC) in Cutting and Sewing
	Tailor (Women)	1 ½ years	ITI (NTC) in Cutting and Sewing
	Tailor (General)	2 years	ITI (NTC) in Cutting and Sewing
	Dress Maker	2 years	ITI (NTC) in Dress Making

1. Craftsmen training scheme (institutional training)

The craftsman training was provided to youth with the objective to prepare semi-skilled workers for the industry. It was open to students who left school after completing anywhere from standard 8-12 and had uniform training courses and certification procedures (table 2). The trainees after completion of craftsmen training appeared in the All India Trade Test conducted under the aegis of the National Council for Vocational.

Training (NCVT). Successful students received a National Trade Certificate (NTC) which was a recognized qualification for recruitment to the posts at the shop floor level (Rungta, 2004).

2. Apprenticeship training scheme (on the job training)

Apprenticeship training scheme (ATS) was imparted under the Apprentices Act, 1961 in industrial establishments to school leavers and ITI graduates with the objective to prepare skilled workers for the industry. It utilized the training facilities available in the industry so as to supplement the availability of trained technical personnel. For all the VTPs under the ATS (Table 2), trainees had to undertake one year basic training in Cutting and Sewing or Dress Making. Thereafter, they got further training in the actual industry setting by working on the job in the area of specialization. This practical training equipped the trainees with all the knowledge and experience required to handle a particular job efficiently. After the completion of the programme, All India Trade Test for apprentices was conducted under the aegis of NCVT. Successful apprentices were awarded National Apprenticeship Certificate (NAC), which was a recognized qualification for recruitment to the posts at the shop floor level (Rungta, 2004).

In- depth study of the contents of VTPs offered under both the schemes highlighted that it was good structure having combination of institutional and apprenticeship training and had uniform curriculum, procedures, regulations, trade testing/certification, and national coverage. However, the effectiveness and efficiency of the system was found low as there was mismatch between the skills requirement of the world of work and skills produced by the system. The courses catered mainly to the needs of the traditional manufacturing sector, the requirements of modern high-tech industries were not properly taken care of.

Moreover, there was inadequate involvement of stakeholders in the design and implementation of the training programmes. Though the infrastructure was available for providing skill training at various levels, it was not used adequately and maintained properly. There were hardly any PwDs pursuing these courses which show that facility of 3% reservation for them have not been utilized properly. Only some of the ITIs running these programmes had very few persons with locomotor impairment. Whereas, persons with hearing and visual

impairment were not the part of any of programmes.

3. Skill development initiative on modular employable skill (MES)

The skill development for most of the PwDs took place mostly in the informal way due to socioeconomic circumstances of the family and the compulsions of earning a livelihood rather than attending a formal course. Moreover, they could not afford long term training programmes due to higher entry qualifications, lack of opportunity, fee structure etc. Therefore, to address the above mentioned skill inadequacies; a new framework for skill development based on Modular Employable Skill (MES) was evolved by the DGET in close consultancy with industry, state governments and experts in pursuance of excellence in vocational training for the informal sector (Dhar, 2009).

MES was minimum skill set which was sufficient to get an employment in the world of work. Demand driven short term training programmes based on MES were developed to provide vocational training to PwDs in the garment manufacturing sector (Table 3). It allowed skill upgradation/formation, multi entry and exit, vertical and horizontal mobility and lifelong learning opportunities in a flexible manner and also recognized the prior skills. The skills of the trainees would be assessed by the assessing body mainly from the industry organizations and certificate would be issued by NCVT (Dhar, 2009).

Analysis of content in table 3 highlighted that some of the tasks in VTP for Basic Sewing Operator and Garment Cutter could be omitted as sewing operator working in the assembly line production system required skills related to sewing only and the cutting operator required skills related to cutting only. The table further revealed that persons with locomotor impairment were eligible for admission to VTPs like Garment Packer/Ironer/Checker. However, operators performing these tasks had to stand throughout the shift in the GMUs. Therefore, certain modifications would be required to accommodate persons with locomotor impairment in the units.

It was a good effort on the part of DGET for giving special focus on vocational training for the PwDs through skill based industry oriented short term VTPs. Besides, the content discussed in table 3, all the VTPs focused on health and safety precautions while using various tools and equipments. However, it was found that these

VTPs were not being run in any of the ITIs visited in Delhi. This shows that PwDs were not able to get the benefits of these schemes due to lack of implementation.

Table 3: Demand driven short term VTPs based on MES for PwDs

S. No.	Vocational training programme	Duration/ Eligibility for the admission	Detailed content of VTPs	Analysis
1.	Garment Packer (Level – I)	120 hrs/5th Standard/ Persons with L.I. (lower limb)/H.I./MMR/Low Vision	Knowledge of color, texture, fabric, accessories, quality aspects, loose threads, broken buttons, fabric defects; tags and labels; folding of garments, packing in poly bags, cardboard cartoons, packing ratio as per specification sheet, operating needle detector machine.	Would equip the trainee with skills required to work in packaging section of GMUs.
2.	Garment Ironer (Level – I)	120 hrs/5th Standard/ Persons with L.I. (lower limb), H.I.	Use of steam pressing, dummy blowers; safety precautions while handling various types of irons; knowledge of thread sucking machine and quality aspect.	Trainee would be able to operate thread sucking/spot cleaning machine and press garments in finishing section.
3.	Tailor (Basic Sewing Operator) (Level – I)	270hrs/5th Standard/ Persons with L.I. (lower limb), H.I.	Operation and maintenance of treadle sewing machine, practice of different types of seams/stitches, necklines, plackets & collars; measuring, drafting, pattern making of basic upper and lower garments as per specification; cutting and sewing garments like baby suit, baby frocks, suits, skirts, tops, salwar, kameez, nightgowns, housecoats, shirts, trousers, pyjamas/kurtas.	A machine operator does not make patterns or do cutting in the GMUs, he only does the stitching. Therefore, emphasis should be on sewing techniques having universal application.
4.	Garment Cutter (Level – II)	270 hrs/8th Standard and module on Tailor (Basic Sewing Operator) Persons with L.I. (lower limb), H.I.	Identifying different parts of garments; practice of cutting various kids, ladies and men’s garments with straight knife, band knife and circular knife cutting machine; knowledge of drafting, marking, laying on fabric and construction; uses of garment as per trend/occasion/season; fusing technology.	Again, pattern cutter for industry should be trained to cut number of plies with accuracy and precision irrespective of the type of garment. Moreover, knowledge of drafting, marking, laying and construction can be omitted.
5.	Garment Checkers (Level – II)	210 hrs/8th Standard and module on Tailor (Basic Sewing Operator)/ Persons with L.I. (lower limb), H.I.	Knowledge about various fabrics, accessories, stitching and quality control; knowledge about garment as per comfort/occasion/season; to check the fabric for defects, stains, stitching, accessories, measurements, quality principles in finished garments and approving or rejecting the finished product; specification sheet and its importance.	Would equip the trainee with skills required to inspect garments at different stages of manufacturing in GMUs.
	Skilled Sewing Operator (Level-II)	210 hrs/8th Standard and module on Tailor	Knowledge about damages, quality aspects and special attachments for sewing operations; use of necklines, yokes, cuffs, collars & pockets; practice of cuffs,	The focus of this course is only on stitching which would equip the

6.		(Basic Sewing Operator)/ Persons with L.I. (lower limb), H.I.	collars and pockets, loop making, back and yoke attaching folders, necklines, facing, bindings; practice of plackets like faced placket, continuous placket, standard placket, diamond placket and kurta placket; safety precautions to be followed while operating the machines.	trainee with skills required to perform critical sewing operations in the GMUs.
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L.I. - Locomotor Impairment; H.I. - Hearing Impairment; MMR- Mild Mental Retardation; LV- Lower Vision

Government polytechnics

Department of Training and Technical Education (DTTE), under Ministry of Human Resource Development (MHRD), Government of India, run formal VTPs through government polytechnics (Table 4). These VTPs were either full time or part time diploma programmes certified by All India Council for Technical Education (AICTE) or Board of Technical Education (BTE).

Analysis of the content of VTPs offered by government polytechnics highlighted that these programmes were also providing similar knowledge and skills as discussed above in VTPs offered under the CTS. Moreover, there was lack of enough exposure to industrial machines/equipment, though the content mentions its use. Besides, it was found that only few trainees with locomotor impairment were enrolled for these VTPs and persons with hearing and visual impairment were not pursuing any of the programmes

Table 4: VTPs offered by government polytechnics

S. No.	Vocational Training Programme	Duration/ Eligibility for the admission	Detailed content of VTPs	
			Common features	Distinguishing features
1.	Fashion Design (affiliated to AICTE)	3 years/8 th standard	Use and care of machines i.e. single/double needle, button holer/tackar, overlock and tools/equipments; seam and seam finishes, disposal of fullness in a garment, placket opening, closures, pockets, collars, cuffs, yokes; drafting, paper pattern, layout, pattern adjustment, construction, fitting of garments for kids, ladies and men; fabrics handling while cutting/stitching/ ironing/ pressing.	Introduction of fashion & its history; basic elements and principles of design, design library; classification and identification of fibres, yarn, weaves, dyeing, printing; basic and traditional embroidery; fashion illustration and portfolio, CAD-corel draw, merchandising.
2.	Garment Fabrication Technology (affiliated to AICTE)	3 years/8 th standard		Selection of sewing thread/materials/trimmings, calculation of material.
3.	Mechanic Cum Machine Operator (affiliated to BTE)	1 year/8 th standard		Sewing machine adjustments, special attachments, sewing defects/solutions, change defective machine parts; hand stitches/hems used in tailoring, bound button, corners- turned/ trimmed/bound.

National Institute of Open Schooling (NIOS)

NIOS was established as an Autonomous Registered Society in 1989 under MHRD with the mission to provide education and training through an open learning system for school drop outs as an alternative to the

formal system. It was especially suited to the needs of certain categories including PwDs and provided opportunities to those who would have otherwise missed out (Pant, 2002). Two VTPs in garment manufacturing i.e., Cutting and Tailoring and Fashion Designing were being provided through NIOS. The content of these programmes and its analysis have been already discussed in table 1 earlier.

From all the mainstream VTPs discussed above, it was evident that the content of these programmes have not been reviewed since long. Earlier, garments were produced on piece rate basis where the operator was supposed to either sew the complete garment individually or perform in a group of 3-4 operators. This required complete knowledge of all the aspects related to sewing as included in these VTPs. However, assembly line production system which was presently followed in the industry required fewer skills comparatively. Therefore, need of the hour was to review the existing VTPs as per the demands of the industry. Moreover, the infrastructure available should also be upgraded, so that training could be conducted using tools and equipments similar to those used in the industry. These efforts would effectively lead to better representation on PwDs in the mainstream government training institutions.

Apparel Training and Design Centre (ATDC)

Founded in 1991, ATDC was registered as a society under Society Registration Act, sponsored by Apparel Export Promotion Council (AEPC) and supported by the Government of India. It offered various short term certificate VTPs in garment manufacturing process which catered to the demands of the industry for skilled operators (Table 5).

Table 5: VTPs offered by Apparel Training and Design Centre

S. No.	Vocational Training Programme	Duration/ Eligibility for the admission	Detailed content of VTPs	Analysis
1.	Sewing Machine Operator Course (SMOC)	3 months/ 8 th pass	Introduction to single needle and over lock sewing machine and its operation, upkeep of sewing machine, use of measuring tools, basic sewing machine control, threading of sewing machine, stitching on different shapes, seaming garment components together in various fabrics to specified quality standard, stitching and seaming quality; use of work aids and attachments, specific operations like pocket, collar, sleeve, cuff, zipper, waistband attachment; garment construction- men's shirt/trouser, T-Shirt.	Imparted skills required for operating basic industrial sewing machines and trained machine operators got absorbed in assembly line production of garments factories.
2.	Measurement and Quality Control	3 months/ 10 th pass	Quality control in different production systems, raw material inspection, in-process inspection during spreading/cutting/sewing/pressing/ finishing/ packing, types of sampling, measurement checking, seam/seam classification, care labeling and placement, fabric testing, stain removal, responsibilities of a quality controller, handling of machines like single needle, lock stitch/button hole/button fixing/5 thread over lock/feed off the arm/elastic inserting/flat lock machine.	Provided training in the field of checking measurements and other quality parameters related to garment inspection. Trainees got employed as garment checkers and quality controllers in the industry.
3.	Finishing and Packing Supervisor	3 months/ 12 th pass	Pressing- purpose/categories/types/ means/extent of pressing on various fabrics/pressing systems, stain removal-identification/means/equipment used, types of folds and folding equipments/ accessories, packing department-packing/ packing material/size and colour assortment for packing/packing list/record keeping.	Equipped the trainee with knowledge and skills to perform all the major tasks in finishing and packaging section.

Analysis of the content of the VTPs offered by ATDC revealed that these were providing knowledge and skills as per the requirements of industry. The content was focusing on all the aspects of garment manufacturing and the training was being conducted using tools and equipments as used in the industry. However, these programmes were not specifically designed for PwDs and as a result, they could not draw benefit from these VTPs.

Development of demand-driven disability specific vocational training modules

In light of the above, efforts were made to develop demand-driven disability specific vocational training modules in garment manufacturing process for the target population, i.e., persons with locomotor, hearing and

visual impairment.

Exploration of GMUs in Delhi and NCR to study the various tasks being performed in different sections revealed that all of them specialized in ladies wear. Therefore, only those tasks which were commonly being performed for manufacturing high fashion ladies garments were incorporated in the final checklist of tasks performed in different sections i.e., fabric/accessory store, cutting, sewing, issue-receiving, washing, finishing and packaging. Based on the information gathered on skills and knowledge required to perform various tasks, a detailed profile of each task, including job skills and tools/equipments used for performing were recorded systematically for further reference during development of detailed drafts of training modules. Equipped with the required information, researcher made efforts to match the compatibility of a particular job to the target population and to recommend job modification/accommodations, if required. Job mapping for the target population revealed that PwDs could be eligible to perform a wide variety of tasks in the different sections of GMUs if they were trained in rich stimulating environment.

Feedback and recommendations were obtained from the industry experts (HR managers, production managers and industrial engineers), academic experts and special educators working with PwDs on the tasks segregated after job mapping. According to the feedback from experts from the industry, scope of employment of persons with visual impairment in GMUs was considered quite narrow. However, the feasibility study of tasks shortlisted for them highlighted that they could be eligible to perform majority of the tasks. Cost effective working aids were designed for tasks like cutting of garment components using fixed templates and operating machines in washing area for versatile work profile. Incorporation of information gathered earlier, valuable inputs/suggestions from the various experts and feasibility study of tasks shortlisted for persons with visual impairment led to development of following modules.

Modules for persons with locomotor impairment in lower limbs

1. Basic Sewing Operations- level 1 (for persons having one functional lower limb to operate sewing machine)
2. Advanced Sewing Operations- level 2 (for persons having one functional lower limb to operate sewing machine)
3. Helper in Cutting, Sewing and Finishing (for persons having an impairment in both the lower limbs)

Modules for persons with hearing impairment-

1. Raw Material Inspection & Cutting Operations
2. Basic Sewing Operations- level 1
3. Finishing and Packaging Operations

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1. Helper in Sewing and Washing
2. Helper in Finishing and Packaging

Each module was then developed into a detailed reference manual for the trainer. Skills and knowledge required to perform each task in a module were broken into activities/steps and compiled systematically along with suitable illustrations/evaluation exercises, training time, its learning outcome and materials required. All the modules had a common introductory section on orientation and adjustment training which exposed the trainees to the structure/functioning of GMUs, occupational safety/health hazards and job related work behaviour (social skills). Besides, guidelines were provided to the trainer on training strategies for persons with locomotor/hearing/visual impairment, preparatory work required, training sequence and evaluation process of the trainees during the training programme. This information facilitated the trainer in planning the training programme adequately.

Due to limitations of time and logistics, field testing was done for both the modules for persons with visual impairment (five trainees per module) at Radnik Exports, Okhla, Delhi. In addition, module on Basic Sewing

Operations- level 1, which was common for persons with locomotor (five trainees) and hearing impairment (three trainees), was selected for field testing at Radnik Exports, Noida. After initial orientation and adjustment training, the basic motions/skills of each task were demonstrated to each trainee individually using specialized training strategies. They were allowed to perform the task under constant supervision and given ample time to practice to achieve maximum output. Each trainee was observed individually and his/her progress was measured every two hours through time study and efficiencies were calculated.

The trainees were given target oriented exercises which equipped them with adequate skills to perform the tasks and also helped in building their stamina to work for eight hours working shift in a factory. The results of the field testing revealed that there were wide varieties of jobs in the garment manufacturing units that could be safely and efficiently performed by PwDs. They were found to be more focused while performing a task. The

efficiency level (calculated through time study) of most of the trainees was comparable with that of the experienced operators or at times, even better. Due to the level of efficiency achieved during training, these trainees were also offered jobs by the garment manufacturing units.

Hence, training of persons with locomotor, hearing and visual impairment in these comprehensive and sustainable disability specific training modules would enable them to acquire appropriate skills and knowledge to carry out jobs in GMUs efficiently. As a result, they would not only have improved life socially and economically in the mainstream, but also empower them with self-dignity and provide recognition in the family and society (Chahal et al,2015).

CONCLUSION AND RECOMMENDATIONS

Thus, it can be concluded that each developed module was disability specific, oriented to the requirements of industry, short term with flexible time duration. Eligibility criteria for each module was defined in terms of minimum physical and mental capacities required so that each PWD was individually evaluated. Moreover, each module was complete entity in itself, included multiple tasks and emphasis was on teaching minimum knowledge and skills required to perform each task using industrial tools and equipments. Wherever possible, assistive working aids were suggested and focus was laid on good handling techniques. Training in social skills related to work behaviour and one month internship was incorporated for overall empowerment of the trainees.

It is recommended that these demand-driven disability specific training modules should be run through mainstream vocational training institutes so that more and more PwDs are able to learn these skills and secure a gainful employment in garment manufacturing units. Also, it is equally important to sensitize and convince the employers to extend suitable employment opportunities to these people based on their potential. This would maximize their physical and vocational abilities and create self-confidence in terms of competing with able-bodied co-workers.

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