

Establishment of Training Centre at Construction Site under Recognition of Prior Learning (R.P.L.) Process for Skill Development of a Workman

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Abstract—One of the major challenges in the global construction sector is “lack of skilled construction workmen”. The contest of high productivity and quality of work is pronouncing rapidly, which requires continuous supply of skilled workers in construction Industry. Thus, there is need for a government organization that provides skilled workers to the Construction Industry and skill certificates to the worker as per their skills, knowledge and behavior. This paper provides for, how the training centers can be establish at the construction sites for imparting skill training to the workmen along with a skill certificate that will help in enhancing productivity of the Industry, quality of construction work and the worker’s own professional development. Recently, there were several new Construction Skill Development programs initiated in many countries which are now responsible for providing skill training (based on National Occupational Standards–NOS) and certificate to the workmen on basis of their assessments. The training and assessment at construction site would be based on “Recognition of Prior Learning (RPL) process” which is described in the paper.

1. INTRODUCTION

The definition of ‘Skill’ is—“proficiency, facility, or dexterity that is acquired or developed through training or experience” (Bacolod., 2009). The global Labor force is projected to be 3.5 billion in 2030, 60% of which will come from India, South Asian countries and Africa and at present, there are 45 million potential shortage of workers to work (Dobbs., 2012). In many developing countries, most of the population is illiterate and as inflation is also increasing, people from different sectors are coming in construction industry. The aggregate output from the Indian industry would be around 52.31 lakh crore, which directly emphasis the need for the construction industry to grow faster (Planning Commission., 2012). In the Indian contraction industry, there is around 42.3 million construction workers employed, out of which only 6% have benefited from structured training and skill building. The majority of work force in the construction industry is from the agriculture sector or the rural areas (76.4% of total workforce). The workers from these strata’s are mostly unskilled for construction work. This adversely affects the productivity and quality of construction in India which is the biggest reason for India being ranked

85th out of 148 nations for the quality of its infrastructure despite being one of the largest markets for construction (Rao., 2014). According to the Ministry of Housing and Urban Development (HUD)—Iran, the useful life of a building in Iran is about 20–30 years, due to lack of skilled workers. In terms of skills required for construction sector, China’s labor profile is projected to resemble Germany in 2000 (Dobbs., 2012). Thus, for all such reasons and more, in the G20 summit at Pittsburgh in 2009, leaders from different countries agreed to start a mission for Skill Development of a worker for an improved productivity, employment growth and quality enhancement. An unskilled worker who enters into the construction Industry in any developing country has a very restricted professional growth because of lack of any career mapping done by any national organization providing skills training or skilled certificates to them on basis of their work efficiency, or experience. There is a need for opening of countrywide skill training institutes for workers at construction sites offering skills training and certificates to workmen by assessing them on basis of their knowledge, skills and experience. By having the proper skill for a particular job in construction Industry, a workman can help the industry in achieving high productivity and quality, while in return can get a higher salary, social and professional security along with an enhanced standard of living than an unskilled workman.

There are various training institutes providing training facilities and skill certificates to workmen, they run full time training programme in specific trades, for a particular duration and afterwards, on assessment, a qualified workman gets level certificate by which he/she can get employment in any construction company. The training process is based on NOS of particular trade of work. The National Occupational Standards (NOS) are the set of performance, knowledge, skills and behaviour that a particular workman of a particular job in construction Industry has to perform as per the required level of his/her position. In Table1, It shows different organizations in across countries providing training to the workmen in training institutes. Pursuing this approach, skilling of

workmen can be achieved but at the cost of a reduced production rate of the industry initially as the work force will not be available for the actual work at the site for a particular duration for which they will get the training in training institutes. Thus, this brings us to a natural requirement for a SITE-BASED TRAINING INSTITUTE (S.B.T.I) that could be opened at every construction site. Here the worker can get trained simultaneously along with some actual construction work. Post the training of a particular batch of workers, an assessment should be carried out by Skill development Authorities of that country for providing a skill certificate to those who successfully clear their assessments. The completely Indian construction industry is grouped into different levels as per National Skill Qualification Framework (NSQF) parameters, which are same throughout the country in such a way that, a worker can do work in different countries as per his / her level certificate (The Gazette of India., 2013). The Indian construction levels as per NSQF are shown in Figure1. Similarly, the Qualification and Credit Framework (QCF) covers England, Northern Island and Wales (CIC Skills., 2014).



Construction Industry Career Path

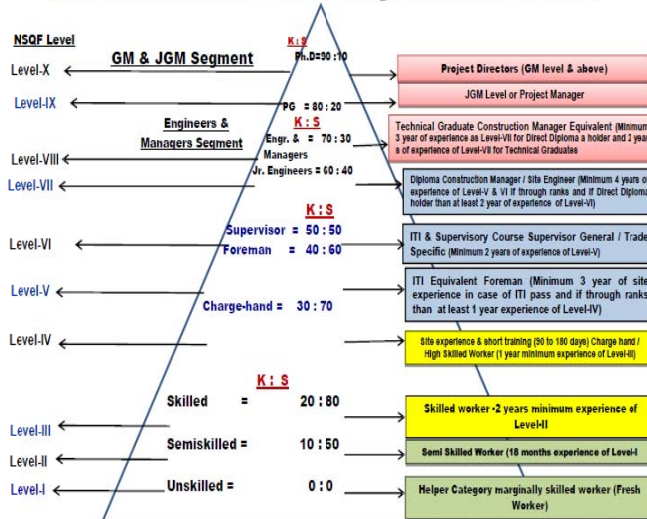


Fig. 1: NSQF Level Pyramid

2. RECOGNITION OF PRIOR LEARNING (RPL)

The Recognition of Prior Learning (RPL) is a universal process under which a construction worker of a particular NSQF level can get training at site and on successful completion of his/her, assessment receives a skills certificate. As per the Directorate General of Employment & Training

(Government of India) the RPL process is shown in Fig. 2 (RPL, DGET., 2014).

In this process, a worker first undergoes an assessment for determination of his/her prior learning, which comprises of written, verbal and demonstration activities. After the determination of the prior learning of the workman, a level certificate is issued to that particular worker, where a worker's assessment is low; a particular training module is recommended—short term training module at construction site or long term training at training institute based on the performance. After completion of the training, a final assessment is done, and if he/she clears it then a skill certificate is provided.

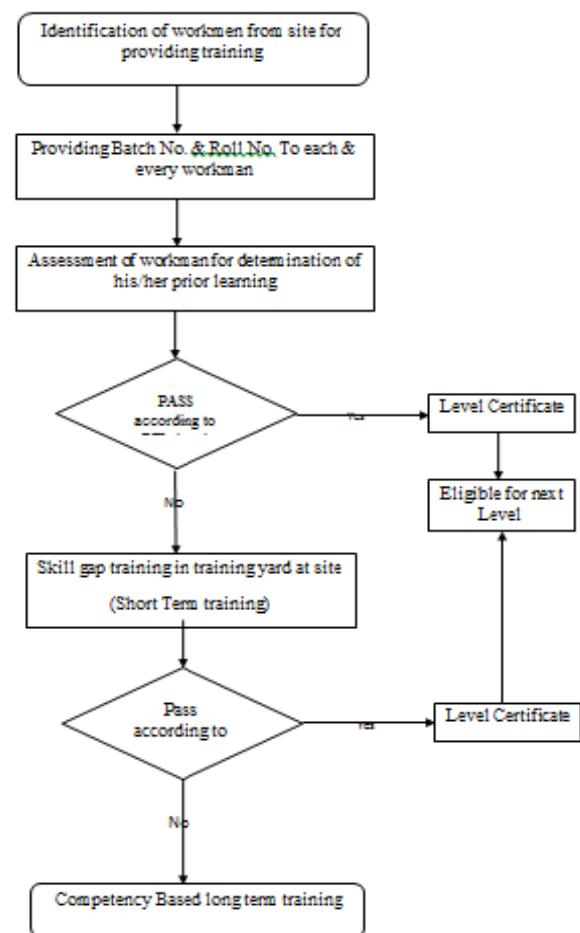


Fig. 2: RPL Process

3. PROCESS FOR ESTABLISHMENT OF TRAINING CENTER/YARD AT CONSTRUCTION SITE

For providing training at the construction site or for running the RPL process, there is a need to establish training centers at construction site. The process for establishment of such training centers at construction site is prepared and organized in to a flow chat shown in Fig. 3.

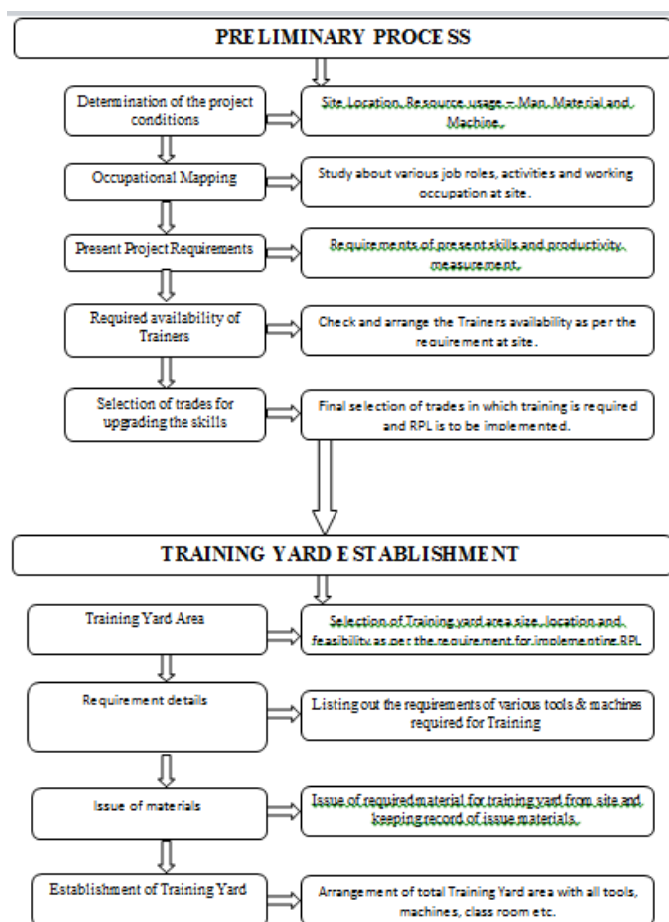


Fig. 3: Process for Establishment of Training Centre

The whole process is divided into two parts, and further subparts, which is as follows:-

4.1 Preliminary Process: - The job related in the preliminary process is more about analysis, occupational mapping and survey of the construction site. The process is further subdivided into five subparts that are:-

4.1.1 Determination of the project conditions:- The first step is to determine the project scope, viability, subsectors and other project details like-project cost, construction period, project location, project importance, workforce availability, kind of resources and machine usage, etc. These details would give a fair perception about the required training centre in consideration to its location, size, scope, etc. at construction site.

4.1.2 Occupational Mapping: - It is described as a collaborative process between the therapists, the client and the social environment by which participants attempt to capture the complexity of the individual's occupations within a particular context (Creek., 2010). It is one of the important steps in the process where all the occupations, activities and related job roles are determined from the construction site.

This will help in identifying the job roles for which training is to be provided.

4.1.3 Present project requirements: -Identification of a particular project requirement is very essential for establishment of the training center. At many times, a project requires a set of specific skills in particular trades of workers for enhancing quality and productivity of construction work. Thus, there is a need to identify project requirements by calculating productivity of construction work, present skills of workers, important activities that are to be finish with greater skills, etc. All these information would help in identification of particular job role for which training is required to be initiated.

4.1.4 Required availability of Trainers: -When job roles are decided for training as per the site requirements, the next step is to determine the availability of trainers of those particular job roles for which the training is proposed. There might be unavailability of required trainers of particular job role, which is to be curbed by a robust hiring process prior to the establishment of the training center.

4.1.5 Selection of trades for upgrading the skills: - After the whole process, all the job roles are listed down as per the site requirements for which training is required, and then available trainers are matched with each particular job role. Eventually, the selection of job roles are based on two parameters-site requirement and available trainers of those particular job roles.

4.2 Training Yard Establishment: - The job related in this part of the process is more about the actual establishment of a training yard, stocking of tools & materials and data management. The process is further subdivided into five subparts that are:-

4.2.1 Training Yard area: -The selection of area should be based of various criterions-a) For class room learning, sufficient space is required to accommodate at-least 20 workmen, 2 trainers and 4 additional personals at a same time for maintaining a virtual class room for a workman during training session, and during assessments, it can also be used as a test centre. b) For demonstration classes, yard should have sufficient space to provide different construction trade samples like-reinforcement cage of column, beam, slab etc., conventional & system formwork for walls, columns, footing etc., scaffolding up-to 3.6 m height for column, concrete mixer, tile placing, brick masonry etc. c) For actual practice work, additional space in a yard is required where workmen do their jobs under training like cutting and bending reinforcement bars with the use of working tables, machines, cutting, smoothening of form etc. d) The location of the training yard must be chosen in such a way that the workers and officials of that particular construction site can easily identify it.

4.2.2 Requirement details: - A list of all the materials, machines, tools, equipment, kit etc. is to be prepared. a) For Class room-a shipping container, Almira, chairs, table, white

board, markers, air conditioner etc. b) For yard training—adequate safety kits for worker, operation tools like hammer, plum bob, tying rod etc. c) For demonstration class—scaffolding, formwork, reinforcement bars etc.

4.2.3 Issue of materials:- All the required materials is to be issued at the construction site and proper records have to be maintained. The issued materials should be stored at a proper and a safe place at the training yard. Arrangements should be done well before the materials are procured.

4.2.4 Establishment of Training Yard: - As per the drawings and strategies, learning area, demonstration area and practice area of a training yard are to be established for efficient and effective skill training for workers.

4. ESTABLISHMENT OF S.B.T.I

On the basis of above procedure, the authors have established the first ever training yard with the help of CSDCI at the site DLF–The Crest, Construction by L&T, sector–54, Gurgaon, Haryana, India. The aim of this training yard is to encourage workmen to understand the importance of skill certificates for his/her career progression along with the increase in productivity by providing skills and knowledge through various training programs. The training yard has been established in the area of 20m *10m at site, equipped with all the necessary tools, equipment and demonstration activities. Fig. 4 shows the photographs of the training yard. For providing training to each and every workman who is working at the site, there was a need to introduce the schedule plan for the workman according to which he/she had to come to the training yard for 2hrs a day. The new process has been introduced at the site in which a particular batch of workmen were provided a time to attend the learning class at the training yard before going back to work at actual construction site.

In first step of the RPL process, 60 workers were grouped into 3 batches (20 in each group)—Bar-bending, Masonry and Formwork. The database was created and uploaded on to the CSDCI portal for initiation of the training process of a particular batch by providing batch No. and roll No. to all workers who are getting training and assessment under RPL process.

Before the start of an actual training, trainers identify the potentials of each and every workman with the help of assessment, formats and skill-gap analysis. The assessment formats and skill-gap analysis which are based on National Occupational Standards are prepared by Construction Skill Development Council of India.

On basis of Skill-gap analysis and prior learning assessment of workmen, trainers provide necessary training to each and every workman according to the training curriculum which is designed on the basis of National Occupational Standards by CSDCI and as per site requirements. The training curriculum is of 8 days for each trade of work.

After completion of training program of a particular batch of workers, an assessment is done by CSDCI and an assessment body for providing skill certificates to those workers who successfully qualify the assessment.



Fig. 4: Training Yard Photographs

5. CONCLUSION

In today's time, where various new construction companies are emerging there is a necessity for each company to deliver a quality construction within the stipulated time. For doing this, there is a need of skilled workforce to be employed at site which is difficult to find in developing countries, as major workforce of workmen are from agriculture sector, thus there is a need to provide skill training to each and every workmen in the construction Industry. Many Skill sector councils have emerged as bodies in various jurisdictions providing the National Occupational Standards (NOS) for every job role in the construction Industry according to which skilling can be done. On the basis of the abovementioned procedure, CSDCI has already started a site based training for construction workmen in India under the construction of L&T at DLF–The Crest, which should be encourage by other companies to take initiation to start S.B.T.I at other construction sites in labor intensive countries like–India, China, Pakistan, Iran Africa etc.. By providing skill training to a construction workman, three important results are achieved being– higher productivity at site, higher quality of construction work and creating a career growth plan for a workman which does not exists currently.

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