Evolving a New Skill Development Framework for Employees: An Empirical Study in a PSU Setup

Sandeep Patnaik[*]

M.A Rasheed[**]

NMK Bhatta[***]

Abstract

Indian Public Sector Undertakings (PSUs) are crucial, requiring a strategic focus on enhancing workforce competencies to meet the demands of an ever-evolving technological landscape. The human resource department plays a crucial role in shaping the skill development of employees, addressing the exponential advancements in technology. An attempt was made to devise an innovative approach within the Indian PSU context to bridge the skill gap between the existing employee skill levels and the escalating demands of global standards. By integrating a transformative training process, this initiative focuses on fostering a highly-skilled, error-free workforce as a driving force for increased productivity, quality and improved customer satisfaction. This paper sheds light on this unique skill development framework and its salient features to meet future business challenges.

Keywords: *Human Resource, Skill set, Skill gap, Competency, Productivity and Quality.*

[*]   Ph.D Scholar, SMS, GIET University, Gunpur
[**]   Professor, SMS, GIET University, Gunupur
[***] Professor & Dean (Research) Xavier Institute of Management & Entrepreneurship, A Recognised Research centre of University of Mysore

1. Introduction

In a rapidly changing world, skill development is an indispensable asset for organisations. Industries now prioritise skill development to unlock the potential of their workforce. A skilled workforce completes tasks efficiently and elevates quality, leading to heightened profitability and increased customer satisfaction. In navigating the challenges of a globalised and technologically advanced landscape, organisations are strategically moving towards a dual approach of operational excellence and innovation (Anita et al., 2020). The significance of a skilled workforce in achieving performance excellence necessitates a steadfast commitment to continuous skill development, facilitated through a customised training plan and a robust performance management system. As India aims to position itself as a global manufacturing hub, public sector enterprises actively undertake organisational restructuring, prioritising evolving a robust skill development framework (Chandra et al., 2020).

2. Literature Framework:

The literature search used a combination of keywords to ensure a comprehensive and targeted approach. Relevant keywords related to skill development, PSU setups, and training methodologies were applied in searches across reputable databases. The author focused on articles that provided insights into employee skill development approaches. This search strategy aimed to capture a broad spectrum of literature while maintaining relevance to the research topic. The systematic approach allowed for a thorough examination of existing literature on workforce skill development, providing a solid foundation for the empirical study.

3. Objective of the Study

The public sector is essential to the Indian economy, and its performance is critical to its growth and development. However, the productivity of PSUs has been a matter of concern for policymakers and stakeholders. Developing a skill development framework can help improve performance by enhancing efficiency and effectiveness (Krishnamoorthy et al., 2019). The primary objective of this research proposal is to develop a skill development framework suited for PSUs.

The framework has been designed to enhance the performance of employees by improving their skill level, efficiency, and engagement. The specific objectives are:

- Identify and analyse the job roles and skill levels.

- Formulate a comprehensive framework to foster skill development.

- Evaluate the effectiveness of the framework in accomplishing the stated objectives.

4. Skill Development Theories

These theories provide different perspectives on how individuals acquire and develop skills, offering valuable insights for Educators, Trainers, and HRD (Human Resource Development) professionals in understanding the learning process. It is essential to recognise that skill development is a multifaceted process influenced by cognitive, behavioural, social, and experiential factors (Johnson, 2003).

(i) ***Social Cognitive Theory:*** Developed by Albert Bandura, Social Cognitive Theory emphasises the role of observational learning, imitation, and modelling in the acquisition and development of skills. It posits that individuals learn from observing others and that self-efficacy plays a crucial role in skill development.

(ii) ***Human Capital Theory:*** Associated with Gary Becker, views individuals as capital investments. Investments in education, training, and skill development contribute to the accumulation of human capital, leading to increased productivity and economic returns.

(iii) ***Experiential Learning Theory:*** Proposed by David Kolb, Experiential Learning Theory posits that learning is a continuous process involving concrete experience, reflective observation, abstract conceptualisation, and active experimentation. It emphasises the

importance of hands-on experience in skill development.

(iv) Self-Determination Theory: Developed by Edward Deci and Richard Ryan, this theory focuses on autonomy, competence, and relatedness in motivating individuals to develop and enhance their skills. People are more likely to develop skills when they have a sense of autonomy and competence.

(v) Goal Setting Theory: Edwin Locke and Gary Latham's Goal Setting Theory emphasises the role of specific, challenging goals in motivating individuals to improve performance and develop new skills. Setting clear and challenging goals enhances commitment and persistence in skill development efforts.

(vi) Competency-based Theory (CBT): A theory that centres on the idea that people are driven to engage in activities to develop or demonstrate their skills. Skills development is collaborative, drawing on insights from cognitive psychology, educational theory, and organisational behaviour. It involves ongoing research, practical application, and feedback from trainers, employers, and learners.

The author has selected the CBT model for this case study, as it is often considered more suitable for industry settings due to its practical and job-focused nature. It provides a practical and targeted framework for defining, developing, and assessing the skills and knowledge necessary for effective job performance. It aligns closely with these roles' specific demands and requirements, contributing to workforce productivity and success (Ericsson, 2018). Here are several reasons why competency-based theory is well-suited for industrial settings:

- Job Relevance
- Skill Emphasis
- Performance Measurement
- Training and Development Focus

- Adaptability to Changing Roles
- Standardization of Skills
- Alignment with Industry Standards

5. The Case Study

This case study was carried out in a typical PSU industry involved in design, manufacture and service. It involves surveying employees, supervisors, and managers to identify the job roles, skill levels, manpower engaged in each job role, skill gaps, etc., about a manufacturing and assembly shop. Based on the data collected, an analysis was carried out to prioritise the job roles for evolving a standard training framework. Accordingly, a systematic training framework was developed and implemented with the help of internal resources. Subsequently, an impact analysis was carried out to measure the effectiveness.

5.1 Skill Mapping

Skill Mapping involves identifying the skill sets required for specific job roles and assessing the current skill levels (Fig-1) of

Fig-1

Skill Level	LEVEL	MEANING
1	Basic	Lacks required knowledge and skill to perform the job
2	Average	Inconsistent in performance
3	Satisfactory	Performs as per the assigned job role under guidance.
4	Highly Effective	Performs independently and effectively as per job role.
5	Exceptional	Performs effectively and can also guide others.

TABLE:1: Employee skill levels

employees in the organisation. These skill sets are required to operate effectively in a specific trade or job role (Dilip Chenoy, 2019). Skill mapping provides a platform to compare current and desired skill levels against an individual's competencies to perform tasks effectively to meet required standards. This process aids in evaluating individual skill gaps and identifying the subsequent training needs to bridge those gaps.

5.2 Skill Matrix

A comprehensive skill matrix was systematically developed, aligning job roles with the corresponding skill levels of employees. The primary objective was identifying job roles requiring urgent attention and prioritising training efforts accordingly. Upon careful analysis of the skill matrix, as depicted in Fig-2, a clear imperative emerged to address the developmental needs of employees in JR-5 to JR-8. This strategic decision is rooted in the observation that these job roles exhibit a significant skill gap among employees, necessitating immediate intervention. Subsequently, a standard training framework has been designed to

bridge these skill gaps and elevate the competency levels of employees to meet the organisational goals and objectives.

| Job Role	Expert	Proficient	Average	Basic
JR-1	5	4	1	0
JR-2	4	6	1	1
JR-3	5	7	0	0
JR-4	4	7	1	0
JR-5	2	1	8	5
JR-6	1	2	6	7
JR-7	1	1	8	7
JR-8	1	2	5	8
JR-9	6	5	1	0
JR-10	3	7	1	1

Basic

Average
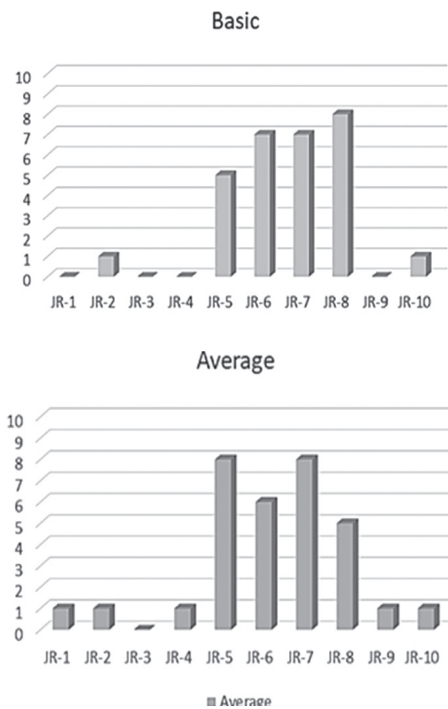
Fig-2

6. Skill Development Framework

By adopting a practical skilling framework, organisations can ensure employees remain adept at handling emerging technologies, leading to increased productivity and efficiency. Moreover, such initiatives contribute to talent retention, as employees are likelier to stay with an organisation that invests in their professional growth (Sousa, 2008). A well-structured skill development framework also aids in succession planning, identifies future leaders, and promotes a positive workplace culture, ultimately enhancing the organisation's ability to meet

stakeholder expectations, comply with regulations, and navigate global competition (Premavasumathi, 2016). At the heart of the skilling framework lies the unique Skill Development Process (SDP), as detailed in this paper. This integration of a skill development framework represents a strategic investment in human capital. This not only enhances the workforce but also positions the organisation for sustained success in the long term.

7. Skill Development Process (SDP)

This includes the systems, procedures, standards, training and assessment process. It has been well-established and documented to ensure the effectiveness of training. SDP mainly comprises the development of Job role standards, Skill mapping, Skill gap analysis and then bridging the skill gap through Training and Development of the workforce. The training methodology consists of distinct stages, namely, Classroom Training (CRT), Shop floor training (SFT), Coaching and mentoring (CMT), Critical Skill Transfer (CST) and assessment (Fig-3). The intrinsic features of this process are explained below.
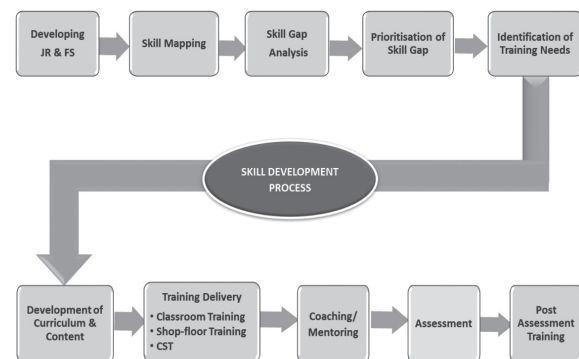

7.1. Digital integration

A dedicated web portal has been established to connect all departments within the organization. Through this portal, skill mapping and training-related databases are created, regularly updated, and maintained. The primary goal is continually enhancing employee skills by identifying and addressing skill gaps through regular mapping and assessment programs. Integrating all these activities across the industry, facilitated by an integrated web portal, ensures continuous learning and development opportunities for employees.

Key Features of this system include:

- The complete database of all the employees available at a single location.

- Separate login credentials are provided for all the stakeholders.

- Job Role standards are made available for the skill mapping.

- Skill gap identification and analysis for individual employee

- Training content and instructions are made available on the Portal.

- Complete MIS (Management et al.) reports can be generated, as illustrated in Fig. 4.
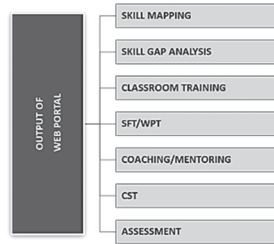
7.2. Development of Job Roles and Functional Standards

Job Role is a set of functional standards describing what Individuals need to do, know and understand to carry out a particular job role (Illeris, 2011). Functional Standards are statements of performance that the individual employee must achieve when carrying out the functions of a job role in the workplace, together with the specifications of the underpinning knowledge and understanding. Functional Standard comprises the following:

- Overview and a summary of the job standard.

- Performance criteria, which state the outcomes of competent performance.

- Knowledge and understanding are required to perform competently in the workplace.

- Parameters about Core Skills and professional skills.

8. Training Delivery

Training involves four modes, as listed below:

- Classroom Training (CRT)

- Shop-floor Training (SFT)/Workplace Training(WPT)

- Coaching/Mentoring (CMT)

- Critical Skill Transfer (CST)

8.1. Classroom Training

Classroom Training is imparted by highly skilled master trainers who are domain specialists in the organisation. The selected persons are initially trained on various training and presentation skills to enhance their effectiveness in becoming Master Trainers. Classroom training effectively transfers theoretical knowledge and know-how to trainees with minimum resources within a short period (Jordan, 2012). The training programs are organised at the respective Departments using the available training facilities.

8.2. Shop- Floor Training/Workplace Training

This approach provides hands-on training to improve employees' practical skills. The training modules are specified in the curriculum developed to address skill gaps. Shop floor training is organised and overseen by the relevant shop supervisors, who are responsible for choosing suitable topics. Eligibility for shop floor training is limited to employees who have completed the corresponding classroom training. The web portal includes a feature that allows shop supervisors to plan and document the details of shop floor training sessions to ensure the database is ready for analysis.

8.3. Coaching and Mentoring
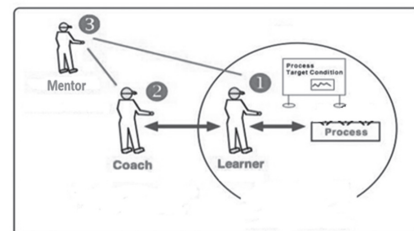
Imposing outdated management rules on today's diverse workforce is not advisable. Instead, we should actively seek new opportunities within the organisation to guide our workforce toward success (Tamkin, 2005). Employees can unlock their full potential and contribute significantly to the company through coaching and mentoring. Coaching and Mentoring is a specialised development approach that involves transferring knowledge and skills, aiming to enhance employee performance in their

respective job roles through guidance and continuous support. The objectives of this approach are:

- To offer personalised attention and support to employees.

- To guide and mentor employees by constant interaction and handholding.

- To empower workers by equipping them with the necessary skills.

A two-level coaching and mentoring system was established in the organisation, wherein the supervisor serves as the coach for the employee at the first level, and the head of the department acts as the mentor at the next level, as illustrated in Fig-5.

8.4. Critical Skill Transfer (CST)

Critical skills are job-specific essential skills required to complete the tasks effectively. Acquired and enhanced through experience, these skills are indispensable for the organisation, as they improve overall company output while fostering employee engagement. An organisation is only as strong as its employees (Smita, 2016); if those employees lack critical skills, it becomes more challenging for the company to stay caught up with the competitors. The special knowledge and skills employees have learned on the job are considered a company's most valuable assets. Therefore, a special training approach known as CST has been developed to document and transfer these skills to other employees within the organisation, as detailed below.

8.4.1. Job Instructions
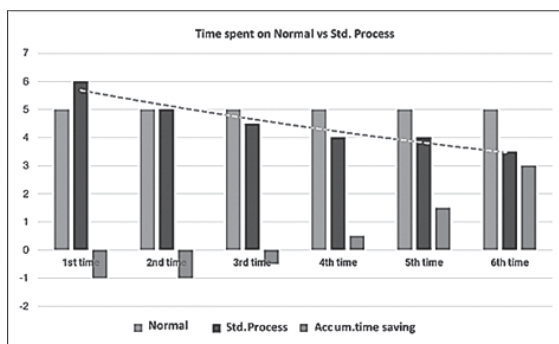
Job instructions/work instructions build and preserve the knowledge and skills about a job. When skills are passed verbally, diverse interpretations are likely by different people, leading to unavoidable human errors (Patil et al., 2021). The knowledge about performing a task correctly and efficiently is lost when a skilled employee leaves the organization. Good job instruction is essential to avoid all these shortcomings. The chart (Fig-6) shows the gradual reduction of cycle time using job instructions to perform critical tasks. This chart explicitly addresses time savings, yet the potential cost savings stemming from avoiding errors and rework could be significantly higher, depending upon the criticality of each job.

8.4.2. Special Features of CST

Fig-7

The work instruction primarily captures the essential steps involved in a specific task. A standard template has been developed, as shown in Fig-7, to document the steps along with key points. This forms the basis for training new employees on those critical skills. CST is a fast and effective method for training the workforce to do a job correctly and safely. The main advantage of the CST method is that training is practical and realistic because the operational steps are demonstrated in real-life settings that encourage personalized, hands-on learning.

This method converts complex jobs into simple steps, enabling employees to carry out tasks easily. Eliminating complexity and potential hazards in the job enhances employee motivation and engagement, reflecting improved job satisfaction and loyalty towards the organization (Rupam Jyoti Deka, 2016).

9. Improvements Made in the Framework

The skill development framework implemented in the industry has undergone continuous refinement and enhancement to adapt to the evolving needs of the workforce. The key improvements made over the research period are listed here:

- **Identification of Key Competencies:** The framework has evolved through ongoing feedback mechanisms and periodic skill assessments to include more specific competencies critical to productivity and quality.

- **Personalized Learning Paths:** Recognizing the diverse learning needs of the workforce, the framework has transitioned from a one-size-fits-all approach to more personalized learning paths.

- **Integration of Technology:** Embracing technological advancements, the framework has incorporated digital learning platforms, virtual simulations, and online resources.

- **Feedback Loops and Continuous Assessment:** Including regular feedback loops and continuous assessment mechanisms has been a notable improvement.

- **Emphasis on Soft Skills and Leadership Development:** Acknowledging the growing importance of soft and leadership competencies, the framework has expanded its focus beyond technical skills.

- **Accessibility and Inclusivity:** In response to the changing nature of work and an increasingly diverse workforce, efforts have been made to enhance the accessibility and inclusivity of the skill development framework. This includes translations, accommodations for various learning styles, and culturally relevant content.

10. Impact of Implementation

Implementing the new skill development framework in the organization has resulted in notable benefits. The accompanying data highlights improvements in diverse performance metrics systematically deduced throughout the study. These positive outcomes validate the framework's effectiveness and affirm its effectiveness in fostering continuous growth and development in the organization.

- **Increase in Productivity:** A nearly 10% increase in overall productivity has been observed.

- **Cost Savings:** Significant cost savings due to reduced rejection/rework.

- **Quality improvement:** Over 25% reduction in defects and quality-related issues.

- **Reduction in cycle time:** The cycle time for critical parts has been reduced to nearly 15%.

- **Increase in customer satisfaction:** Significant reduction in customer complaints.

- **Employee engagement:** Resounding positive feedback affirms the employee support for this new skill development approach.

Conclusion

The emergence of a new skill development framework in a public sector enterprise has proven to be a transformative approach to enhancing employee competence. The systematic methodology in this framework reflects the strategy of maximizing the effectiveness of Training and development initiatives. The positive outcomes observed in various performance metrics underscore the importance of establishing a robust training framework for improving employee engagement and overall performance. In the dynamic landscape of organizational evolution, adopting innovative and tailor-made training approaches to meet global standards becomes crucial for enduring success and heightened competitiveness. The new training framework places the skilled workforce at the forefront of performance excellence and fortifies its agility and resilience in navigating the complexities of the ever-changing business environment.

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