



## Identification of training needs through effective competency mapping practices – A Study

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**Abstract:** *The present study expels the gaps between the employees' actual performance and ongoing HR practices in Nagarjuna Fertilizers and Chemicals Limited Kakinada, Andhra Pradesh state. The competency mapping scores are finalized after observed 105 responses from the major departments in the industry such as production department, information technology department, finance department, and electrical department. Instead of providing training on competency mapping to the employees, they have to know how far competency mapping is being understood by them and useful to the organization. The training on different competency development workshops (planning, analytical ability, decision making, and hardware usage) should be served to the employees based on their usage in the departments. Before getting the feedback from the head of the departments, it is suggested to be better to consult with the employee as well as departmental working conditions.*

**Key words:** *Competency mapping, employees' job knowledge, skills, and training.*

### Introduction

The human resource management functions can bring people and organizations together to research their desired goals. Phenomenally, over the years, highly skilled and knowledge based jobs are increasing while low skilled jobs are decreasing all over the world. This calls for future skill mapping through proper HRM initiatives. Indian organizations are also witnessing a change in systems, management cultures and philosophy due to the global alignment of Indian organizations. There is a need for multi skill development. Role of HRM becomes more important. The competency mapping is a process of identifying key competencies for a company or an organization and the jobs and functions within it. Competency

mapping is important and is an important activity. Every well managed organization should have well defined roles and list of competencies required to perform each role effectively. The competency mapping analyses an individual's SWOT for better understanding and this helps to improve his career growth. This identifies the gap for improving knowledge to develop. Every industry in the present scenario is trying to achieve high efficiency and effectiveness in order to survive in this cutthroat competition. Industry is basically classified into production and service sector. They try desperately to improve the efficiency of their system. All the methods and approaches for improving the performance and efficiency of their operations points to a basis key factor – "Skill and Competency". Skills



and competency, therefore, becomes a focal point of companies, which aims at improving their performance. Every industry, especially production industries, emphasizes on skill and competency. It becomes mandatory for any production company, aiming at improving their performance, to map the skill level of their workers. Skills mapping is a technique of studying and analyzing the skills possessed by the persons concerned. It is a comprehensive way of knowing the skill levels of the persons. Skill mapping evolves a result, which not only specifies the skill level of the persons but also identifies the Gray areas where improvement can be made by training or by other means.

**Scope of the study:** The competency mapping is a process of identifying key competencies for a company or institution and the jobs and functions within it. Competency mapping is important and is an essential exercise. Since the greater significance of competency mapping in effective operation of human resources in organisations, this study has also prioritised the training needs identification through effective competency mapping practices. The major scope of this study has confined to the employees in Nagarjuna Fertilizers and Chemicals Limited (NFCL), Kakinada, Andhra Pradesh state. About 803 are directly and indirectly employed in this organisation where the employees are executives, retainers, commercial staff, and trainees. The major 30 diversified competency attributes were considered for testing the competency levels among employees in major departments in the industry production department, information technology department, finance department, and electrical department. Apart from these

30 competencies of employees, the scope for future research can be expanded to different factors in competency mapping assessment for different needs of the fertilizers and chemicals industries in the state and even for different needs of other manufacturing and service industries.

**Objectives of the study:** The main objective of the study was to know the competency level of the employees working in NFCL and also to know that the training needs identification process by using the competency mapping process. The objectives of this study are followed as:

1. To know the process of competency mapping and its effectiveness.
2. To identify the training need identification process through competency mapping.
3. To elucidate the competencies of individuals at NFCL Kakinada plant.
4. To know the development of the employees in the organization.

**Review of literature:** The purpose of this study is of gaining in-depth insight of the employees' competency mapping in organizations around the world and reviewed the global leading researches on this current discipline. It has also identified research gap and that justified the present research program. **Solomon (2013)** in his study on Competency mapping has tried to explore the level of Competency prevailing among the executives of public sector. The results of the study show that nearly half of the respondents have moderate level of managerial HR and general competencies. **Yuvaraj (2011)** has explained the job competencies required working in a manufacturing industry, professionals for knowledge, ability and attitude. Gap analysis was also made to a



limited extend. **Md.Ishtiak Uddin et al., (2012)** highlighted that the competency mapping as a tool for HR excellence which is explained various tools for implementing competency model including job analysis, job description, job specification, competency matrix, 360 degree feedback etc. He is of the view that Competency mapping can also be used for coaching and succession planning. **Tripathi & Ranjan (2010)** conducted study on competency mapping for educational institution. In their study, an expert Competence Management Advisor (CMA) is developed for the diagnosis of competence management process. **Sawat & Dhavan (2012)** deliberated in their study as the competency level of the employees can be increased if more training is provided in the organisations. **Nayar (2012)** found that the talent retention can be ensured by providing the employees with the right career development and succession planning through performance management based on the competency framework and gap analysis. Thus, competency mapping if used in education sector for training and development can also improve the performance and development of faculties. **Ogrean, Herciu & Lucian Belascu (2009)** found that as the resource-based view of the firm betted on resources, capabilities and competencies in order to obtain sustainable competitive advantage. Firm management had to identify the core competencies that defined the entity and then to manage them efficiently and with efficiency. Recently, some major challenges occur, bringing with them a whole series of opportunities and threats. **Burgoyue (1993)** employed a functional perspective to define a competency as how the goals of organizations were best achieved by improving members'

performance. **Quinn et al., (1990)** indicated that competencies were associated with knowledge and skills for implementing certain assignments or projects effectively. To be effective in a particular competency, one must be able to accomplish the desired results of a job with specific qualifications and personal attributes.

#### **Sample selection and methodology of the study:**

This study is embodied with both primary and secondary data. The primary data was collected from the employees of crucial departments like production, information technology, finance, and electrical in Nagarjuna Fertilizers and Chemicals Limited (NFCL), Kakinada. This is an analytical study which is mainly based on two scientifically developed close ended questionnaires. The study has a sizeable sample of 105 (i.e. about 63 respondents of production department and about 42 respondents of information technology, finance, and electrical departments). The employees' competencies were analysed through detailed questionnaires in the concern departments during the year of 2015. The cluster sampling technique was used to select the respondents in both departments. Finally, all the gathered respondents' opinion data was analysed through statistical tests like mean, standard deviation, and independent sample t-test. The results of competency mapping are elucidated in two separate tables as the production department has its significant number of employees and their abilities. All the test results were tested in Statistical Package for the Social Sciences (SPSS) software.

#### **Limitations of the study**

1. Some information is not available due to the confidential matters.



2. The study is confined only to NFCL, one of the major Nitrogenous fertilizers production units in south India. So due to heavy work schedule of the employees they could not spare much of their time.

**Hypotheses:** The present study has mainly gone through two defined null hypotheses for disclosing the significant relations among the employees' competency ratings and organisation's predetermined competency attributes. The hypotheses are in this study as:

1.  $H_{01}$ : The competencies of employees' in production department in NFCL are at desirable levels
2.  $H_{02}$ : The competencies of employees' in information technology, finance, and electrical departments in NFCL are at desirable levels.

#### Applications of competency mapping

Competency Mapping is a process of identification of competencies required to successfully perform a particular job or role or a set of tasks at a given point of time. It consists of breaking the given job into constituent tasks and identifying the competencies needed to perform the job successfully. It

Table 1: The desired outcomes of organisation through five competency groups along with five defined role of human resources

Five HR roles	Five competency groups	Desired outcomes
Strategic partners	Analytical	Foresee future challenges
Administrative experts	Technical	Developing individual capabilities
Employee champions	Leadership	Achieving organizational goals
Change agents	Interpersonal	Increase in efficiency
HR Experts	Business	Training Need Assessment

Source: Adapted from "Competency mapping for HR professionals in IT industry" by V.S. Chouhan and S. Srivastava, 2013, The International Journal of Management, 2(3), p. 4.

is a way of assessing the strengths and weaknesses of the employees or organization. It's about identifying a person's job skills and strengths in areas like teamwork, leadership, and decision-making. Large organizations may use some form of this technique to understand how to best use each worker or how to combine the strengths of different employees to produce the highest quality work. Individuals may also find that this type of assessment can help them prepare for a career change or advance in a specific job field. (Solomon, 2013). The competency map provides clear guidelines and reliable process for selection. Competency map for the job position and assessment of candidate's for the required competencies gives comparatively reliable indication about suitability of the candidate. The assessment also provides guidelines on the training needs for the candidate if selected for the position. Normally only core competencies are assessed for selection. Competency based interviews reduce the risk of making a costly hiring mistake and increase the likelihood of identifying and selecting the right person for the right job.



Table 2: Competency mapping assessment in production department in NFCL

<i>S. No.</i>	<i>Competency attributes</i>	<i>Desired level</i>	$\bar{x}$	$\sigma$	<i>t-value</i>	<i>Sig. (2-tailed)*</i>
1	Job knowledge	Superior	1.52	0.62	19.56	.000
2	Job planning	Superior	1.78	0.63	22.27	.000
3	Safety	Superior	2.08	0.70	23.49	.000
4	Systems awareness	Superior	1.79	0.60	23.73	.000
5	Initiative	Superior	2.21	0.54	32.22	.000
6	Process plant knowledge	Superior	1.62	0.55	23.30	.000
7	Team work	Superior	1.70	0.56	24.18	.000
8	Emergency preparedness	Good	1.65	0.63	20.92	.000
9	Operation of lab equipment & calibration	Good	1.57	0.59	21.22	.000
10	Knowledge on chemical properties of process chemicals	Good	1.46	0.56	20.59	.000
11	First aid training	Fair	1.32	0.50	20.81	.000
12	Communication skills	Fair	1.41	0.50	22.59	.000
13	Co-ordination with other sections	Fair	1.59	0.53	23.87	.000
14	Cost management	Fair	1.67	0.57	23.29	.000
15	Problem solving	Fair	1.52	0.53	22.63	.000
16	Human related factor	Superior	1.46	0.56	20.59	.000

Source: Compiled from primary data

Parameters on measurement scale: 1 - Superior, 2 - Good, 3 - Fair, 4 - Poor, Total Number = 63 \* Significant at 5% level of significance

Table 1 show the desired outcomes of organisation though five competency groups along with five defined role of human resources. The first category of human resources is as "strategic partners" who can translate business strategy into action. Employee champions listen and respond to employees and find the right balance between demands on employees and resources available to employees. They promote employee contributions. Change agents understand the theory and apply the tools of change. They serve as catalysts for change, facilitators of change, and designers of systems for change. HR Experts are the technical specialists and they deal in areas like

recruitment, selection, training, performance appraisal etc. (Chouhan & Srivastava, 2013).

**Results:** The competency mapping assessment was carried out by asking the employees, to rate their competencies, in major departments namely production, information technology, finance, and electrical. The competencies of employee in NFCL are duly predetermined by the management. In fact, the competency mapping assessment in this study was mainly considered for the designated employees like managers, assistant managers, supporting staff, technicians, in-charges, and shift in-charges in both departments. The detailed competency attributes were separately asked for both



departments employees. Table 1 and table 2 deliberate the competency mapping assessment results with desired level of priority for each competency attribute, mean values, standard deviation, t-values, and significance of relationships among variables.

Table 2 shows the competency mapping assessment in production department of NFCL. About major 16 competency attributes were considered to ascertain the competency levels of 63 employees of the concerned departments in this study.

Having gone through the detailed examination of employees' responses, the highest mean values were found in the competency attributes "safety" and "initiative" by 2.08 and 2.21 respectively, and least mean value was found for the attribute "first aid training" by 1.32 and least standard deviations were found for the attributes "first aid training" and "communication skills" by 0.50 equally in attributes. On the other hand, the highest

Table 3: Competency mapping assessment in information technology, finance, and electrical departments in NFCL

S. No.	Competency attributes	Desired level	$\bar{x}$	$\sigma$	t-value	Sig. (2-tailed)*
1	Knowledge on hardware	Superior	2.02	0.75	17.52	.000
2	Programming skills	Superior	1.64	0.62	17.24	.000
3	System Analysis and design	Good	1.93	0.60	20.81	.000
4	Knowledge on functional areas in view of SAP	Good	1.62	0.54	19.47	.000
5	Trouble shooting	Good	1.36	0.53	16.50	.000
6	Knowledge on network	Good	1.76	0.62	18.50	.000
7	Knowledge on Unix operating system	Good	1.67	0.53	20.54	.000
8	Knowledge on RDBMS	Good	1.69	0.60	18.13	.000
9	Team spirit	Good	1.31	0.52	16.40	.000
10	Communication skills	Good	1.43	0.55	16.91	.000
11	Presentation skills	Good	1.43	0.55	16.91	.000
12	Decision making	Fair	1.71	0.64	17.48	.000
13	Coordination	Fair	1.74	0.45	25.31	.000
14	Initiative, innovative & creative thinking	Fair	1.71	0.60	18.64	.000
15	Project management	Fair	1.62	0.49	21.35	.000
16	Stress Management	Fair	1.43	0.55	16.91	.000

Source: Compiled from primary data

Parameters on measurement scale: 1 - Superior, 2 - Good, 3 - Fair, 4 - Poor, Total Number = 42 \* Significant at 5% level of significance

Table 3 shows the competency mapping assessment in information technology, finance, and electrical departments of NFCL. About major 16 competency attributes were considered to ascertain

the competency levels of 42 employees in this study. Since, the detailed responses were collected from employees about their level of competencies, the highest mean value and standard deviations were



found in the competency attribute "Knowledge on hardware" by 2.02 and 0.75 respectively. In contrast, the least mean value was found in the attribute "Team spirit" by 1.31 and least standard deviation was found in the attribute "Coordination" by 0.45. Significantly, the t-test revealed the positive correlations among all competency attributes of employees in information technology department. Hence, the ratings of employees' on their competencies are highly significant among 16 competency attributes. Thus, the defined null hypothesis, for the competencies of employees' in information technology, finance, and electrical departments in NFCL are at desirable levels, is accepted.

### Conclusion

The effective competency mapping assessment is highly desirable for every human resource functionalism exclusively in training and development activity in all organisations. The competency mapping is a vital part that can duly be considered for retaining the latent skill sets of all categorical employees to meet job requirements in organisations. Earlier studies proved that there is a strong and positive relationship between possession of competencies and successful job performance irrespective of organisations' size and production. This study has also recognised certain significant competency attributes that highly imparted the skill sets among employees at chosen departments in NFCL. However, the disclosed competency attributes in this study are duly thought as core requisites for performing their jobs successfully. The core competency attributes of employees like safety, initiative, and Knowledge on hardware have impacted their own

significance in NFCL. Since the safety is lesser rated by most employees, the management has to concentrate to enlighten the all categorical employees by conducting periodical mock drills in order to safeguard the lives and property. Instead of providing training on competency mapping to the employees, they have to know how far competency mapping is being understood by them and useful to the organization. The training on different competency development workshops (planning, analytical ability, decision making, and hardware usage) should be served to the employees based on their usage in the departments. Before getting the feedback from the head of the departments, it is suggested to be better to consult with the employee as well as departmental working conditions. In fact, the sharing of practices of competency mapping throughout the all plants gives best result when compare to individual plant. Hence, the NFCL is strongly recommended to conduct special seminars and workshops to provide better idea regarding competency mapping to the employees within the plants to increase the employee participation.

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