



## Competency Mapping for Engineering College Lecturers: A Study in Madurai District

### KEYWORDS

Engineering, Competencies, Globalization, skill, Engineers, Knowledge.

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**ABSTRACT** *In this world of cut throat competition, Education has become an unavoidable asset for an individual. Particularly, Engineering education has become a fashion or trend among Indian students after their school education. Every year, the demand for engineering seats in prestigious educational institutions rise adding more demand for the course. Similarly, as a result of globalization and outsourcing there is a high need for skilled engineers for performing various roles in the Information technology industry. It is evitable that both the educational institutions and the industry has high opportunities for engineering profession.*

*That said, the major concern among the industry people is the alarming rate of decrease in quality of engineers. There lies a 'competency mismatch' between what is expected and what is produced every year regarding the quality of engineering graduates. One such method to map the gap between existing performance and expected performance is competency mapping which focuses on the skill, knowledge and abilities of an individual required to perform a job effectively and efficiently. Competency mapping in Engineering education industry is still unexplored and only a least number of colleges practice them. A study was undertaken among 88 Engineering college lecturers to understand the competency mapping in Engineering Education industry. This paper helps to understand the Education industry in India, Engineering education, competency in Engineering education and focuses on the competencies required for the lecturers working in Engineering colleges in Madurai district.*

### INTRODUCTION

India, a land of 1.2 billion population, has emerged as the second fastest growing economy in the world after china. However such sustainability for high growth rate has been challenged by the impact of global economic crisis. World over the impact can be observed by the very fact of falling stock markets, declined Information Technology (IT) outsourced projects, organization's financial instability and the like. The major concern for academicians as well as the IT industry people is the concern of decreasing quality of software professionals. According to the widely quoted report by the National Association of Software and Services Companies (NASSCOM) and McKinsey in 2005, shows that only 25 per cent of the total Engineering graduates have Employable "Production worthy" skills. Not only the analytical skills are poor, even the communication skills are very worse which has become a great cause for worry. With the advent of internet, it has become possible to outsource software development task to remote locations such as India and China, making them as an attractive destination both technically and financially. Adding to this, post dot com burst and 9\11, the demand for Indian IT services kept bigger. To cater to the rising demand, Indian IT firms started recruiting from non-engineering, low ranked colleges leading to poor quality engineering candidates. All engineering graduates were considered to be ready for a direct fit with the requirements of IT industry. On the other side, a number of Engineering institutions were started all across the country with poor infrastructure and incapable staff members to expand and grow to satisfy the industry's needs. However the quality of the engineers they produced is below the desired industry expectations. The software industry associations along with academic regulatory bodies have repeatedly shown concern over the decreasing quality of the fresh engineering graduates. Even after recruitment, IT organizations are spending in millions of rupees to equip the recruited engineering graduates to meet their requirements. This clearly

shows that there is a significance gap between the technical education what the education institutions teach the students and the expertise what the industry expects.

One of the major reason behind this 'competency mismatch' can be accounted to the quality of teaching in Engineering colleges. When the quality of the engineering college lecturers is poor, one cannot expect them to impart high quality technical education to the students. Hence, competency among lecturers becomes inevitable for generating competent graduates for the IT industry and also for individual development.

### COMPETENCY MAPPING

Human resource management is a process concerned with the management of human resources and their competencies for achieving the organizational goals. Indian organizations are focusing on a change in management cultures, change in systems and innovative HR practices. Competencies have attracted much attention in MNCs, and there is growing interest in competencies in all organizations. As meeting an individual's career aspirations are concerned, once the organisation gives an employee the perspective of what is required from him/her to reach a particular position, it drives them to develop the competencies for the same. A business might possess extremely capable human resources, but they might not work on the position that suits them. This is where competency mapping and the appraisal tools come to help the HR experts choose who should work on what position. There is always a need to have the best quality manpower. More and more companies are using competency mapping tools to screen and hire people with specific competencies. The competition prevailing in current corporate world requires multi-skill development. Hence, competency mapping helps to assess and develop the technical and behavioral competencies of an individual to achieve the goals and objectives. Identifying and development of the competencies in organization

enable better performance management as well as reward and recognition systems leading to career and succession planning programmes. Also competency mapping is a strategic HR framework for monitoring the performance.

Competency mapping is a process of identifying key competencies required to perform a job role. It can be done for a job role, department/function and an organization. It identifies SWOT of an organization or an individual and helps to enrich them. Every well managed organization should have a competency dictionary which lists all the job roles, their responsibilities and the required competencies to perform them. Competency mapping can be used across all functions of HR like recruitment, Appraisal, training, compensation and retention. Competencies provide standard roadmap for effective performance. Organizations that understand and succeed in competency management becomes leaders in competition of scarce talent and will be viewed as employers of choice.

### COMPETENCY IN EDUCATION INDUSTRY

The system of higher education in India has had a tremendous change in the past sixty years. The need to improve literacy rate, impact of technology on educational delivery, increasing participation of private institutions in education industry has diluted the standards in higher education. These issues create a role for innovative techniques to measure and improve the gaps in quality of teaching and its methodology. As human resources are considered to be an asset in any industry, managing them and getting the best of them becomes a prime focus for most organizations. In such scenario, multinational organizations are using innovative HR practices such as competency mapping to fit the right people in the right job. Competency development and mapping which is still an unexplored area in India is gaining momentum due to the awareness created by such organizations.

The underlying principle of competency mapping is to study the required skill, knowledge and abilities to perform a job better. If the talent is present in the candidate, then he is provided with the job else he undergoes necessary training and mentoring to perform the job according to the standards. For these functions to be done, every educational institution should formulate the right framework for competency mapping. Despite the growing interest in higher education, competency based HR systems are still outsourced or has less usage among other HR functions in education industry.

The research in competency mapping for education industry are fewer in number and a lot more has to be researched in identifying the required and relevant competencies, gap analysis and designing a module for training the engineering college lectures.

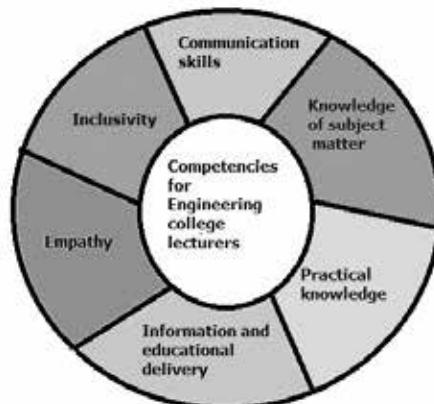
### COMPETENCY MAPPING FOR LECTURERS

The demand for quality lecturers and professors has become inevitable in higher education industry. Over the past 5 years, UGC has insisted on competency based education and assessment initiatives among Educational institutions. There has been a constant remainder among academicians to regulate and update the lecturer potential. There is much need to produce a closer relationship between "world of skilled work" and "world of competent learning".

In order to enhance learning effectiveness in the field of technical education by using technology, the MHRD, in 2003, initiated the Project – National Programme for Technology Enhanced Learning (NPTEL) to enhance quality engineering education in the country by developing curriculum based video courses and web based e-courses to be

prepared by seven IITs at Delhi, Bombay, Madras, Kanpur, Kharagpur, Guwahati, Roorkee and IISc, Bangalore as participating institutions with a total outlay of Rs. 20.47 crores. In the first phase of the NPTEL, the Project had covered core courses of under-graduate curriculum in five major engineering branches, namely, Civil, Computer Science, Electrical, Electronics & Communication and Mechanical Engineering. Apart from this, Faculty development programmes (FDP) are conducted every 6 months across educational institutions to update the skill level of the lecturers.

A detailed study was done among 88 Engineering college lecturers in Madurai district in Tamilnadu. The researcher administered an Interview schedule for collecting primary data from the Engineering College Lecturers. Statements used to assess competencies were picked from the publications of MHRD, UGC, and NAAC. Statistical analysis was done and the results of the study were compiled into a competency model for Engineering college lecturers. The competency model describes the basic competencies required for lecturers in Engineering colleges. Among the various competencies available, lecturers are expected to possess six basic competencies according to this study. The first competency is educational programming and the knowledge of subject matter. Lecturers are expected to handle the technical syllabus within short deadlines and have to focus on practical lab sessions. Engineering syllabus unlike other courses is very vast and tough to teach for the students. As the students arrive from various streams of education in their higher secondary board each concept have to be explained in detail to help the students to grasp the basics. Communication skills becomes second competency as there should be no gap in the information shared and received between a lecturer and the student. This competency is important for all industries and requires excellent communication skills in reading, writing and speaking as well. Empathy is essential for engineering college lecturers as they handle students with higher maturity level and intelligence. Students must be tackled in psychological way keeping in mind of their stress in home and in college. In metropolitan cities, lecturers must have awareness, commitment and ability to include broad cultural perspectives as students from various countries, states and cities come to learn the engineering education. Linguistic barriers, racism and casteism may arise among students and it is the responsibility of lecturers to protect students from them. Information handling and education delivery methods have become essential for all engineering lecturers as they create interest and creativity among the students. Practical work experience in the engineering field looks as an added advantage as they can relate what they teach and what they worked on.



**Fig: Competency model for Engineering college Lecturers**

Competency mapping for lecturers develop both the lecturers and the students who are the future of the country. It helps in individual development and makes them competitive and competent. Educational institutions can offer need based faculty development programs to assess and improve the required competencies. They should change and formulate their HR systems based on competency to improve the quality of teaching and achieve their vision and mission. Competent lecturers produce competent students who in turn transforms to a competent worker.

## CONCLUSION

As competency mapping is found to be a growing concept in service sector industries, it is yet to develop in Education industry in India. The need for highly skilled engineers in industry makes a wakeup call among the engineering institutions to check on their teaching methodology, quality and resources. Steps are to taken by the education regulatory bodies and academicians to imbibe a competency based organizational culture in the engineering institutions which provides a success rate both for the institution as well as the future engineers.

## References:

### Books:

1. Sahu R.K (2009), *Competency Mapping*, Edition 1, New Delhi, Excel Books.
2. Sanghi Seema (2007), *The Handbook of Competency Mapping Understanding, Designing and Implementing Competency Models in Organizations*. New Delhi, SAGE publications.
3. Periodicals:
4. Bindu P Hima (2012), "Role of HR in Business Excellence Competency Mapping as a Tool in Business Excellence in Selected PSU – A Case Study", *International Journal of Social Sciences and Interdisciplinary Research*, Vol. 1, No. 2.
5. Boyatis, Richard B. (1982). "The Competent Manager: A Model for Effective Performance", New Age International (P) Limited, New Delhi.
6. McClelland, David (1973), "Talent and Society, Achievement Motive, The Achieving Society, Motivating Economic Achievement and Power The Inner Experience", *American Psychologist*.
7. NASSCOM and McKinsey, 2005. NASSCOM and McKinsey Report 2005: Extending India's Leadership of the Global IT and BPO Industries, NASSCOM and McKinsey, New Delhi, India
8. Naqvi, Farah (January 2009), "Competency Mapping and Managing Talent." *ICFAI Journal of Management Research*, Vol. 8 Issue 1, p.10.