Industry Requirements for and Competence of Engineering Graduates -- A study

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ABSTRACT

The problem of skills mismatch between the entry level engineers and the industry needs is universal in nature and India is no exception to this. The present study aimed to address the issue of the industry requirements for and competence of engineering graduates taking Kerala state under a sample survey. The study adopted cluster sampling with sample components comprising three categories namely engineering students, students selected on campus interviews and employed category. In total, 571 subjects were selected drawn from different branches of study such as Information Technology (IT), Electronic and Communication Engineering (ECE) and Computer Science & Engineering (CSE) belonging to 8 Engineering colleges in the Kerala State coming under different universities. The study has been supplemented by views and opinions, suggestions collected from the doyen experts, educationists, legislators and industry personnel through scheduled interviews.

The study gave a wider coverage to the global literature and Indian studies as well for the identification of the problem, methodology, instruments and recommendations. Data were collected through standardized test instruments for measuring the Competency of engineering graduates with the parameters that included Logical thinking, Numerical Ability, Engineering Aptitude, Verbal Reasoning, Speed, Emotional Intelligence and teamwork (Least Preferred Coworker) identified as Employability skills. The first four come under Differential Aptitude Test and the Least Preferred Coworker revealing that of the teamwork. The time and specific instructions regarding each test were given to the respondents well in advance. The entire questionnaire set was served one after another and respondents were made to sit at a stretch and answer fully. The formulated set of hypotheses was tested with the collected data. Correlation matrix could reveal the relationship among the variables representing the skills.

The study revealed a spectrum of results confirming the existence of the skills gap at varying lengths between industry needs and the competence of the engineering graduates. Based on the findings, the study came out with suggestions and recommendations to the authorities at the academic, state and central Government levels for improving the employability skills of the engineering graduates which shall contribute to enhance the GNP of India. The inclusion of life skills at the basic education level advocated by Mahatma Gandhi is coming back as one of the effective solutions in the guise of finishing school program for bridging the skills gap.

Keywords: Engineering education; Skill Gap; Engineering Graduate Competencies; Non-technical Skills Survey; Kerala State; Bridging Skills Gap -- Recommendations.