

EXECUTIVE SUMMARY

Skills and knowledge are the driving forces of economic growth and social development for any country. Globalization, knowledge and competition have intensified the need for highly skilled workforce in both the developing and developed nations as it enables them to accelerate the growth rate of their economy towards higher trajectory. Today all economies need skilled workforce so as to meet global standards of quality, to increase their foreign trade, to bring advanced technologies to their domestic industries and to boost their industrial and economic development. Even, it has been observed that countries with highly skilled human capital tend to have higher GDP and per capita income levels and they adjust more effectively to the challenges and opportunities of the world of work. Furthermore, today, companies are also requiring their workforce to have higher levels of skills to enable them to engage in innovation, improve the quality of products/services, and increase efficiency in their production processes.

India is a fast developing country and moving progressively towards ‘knowledge economy’. From primary sector of agriculture, India is stirring to secondary sector of manufacturing, construction and also tertiary sector of trade, transport and finance. Its workforce is second largest in the world after China. Over 65% of India’s large population is below 35 years of age and working age group of 15-59 years is increasing steadily. India has the advantage of productive workforce over the world as 12.8 million young people newly entering the labour market every year (GOI 2011a) but the government recognizes that the country faces a serious skills shortage, as the majority of these new labour market entrants are likely to remain unskilled. So, it becomes increasingly important that the country should focus on advancement of

skills as it is a viable strategy for bringing advanced technologies to their domestic industries, expanding their foreign trade, and thereby boosting industrial and economic development. Moreover, the availability of skilled workforce in a country is a key determinant for MNCs for investments as they increase the efficiency and flexibility of the labour market as well as help to remain competitive and achieve sustainable growth.

As far as engineering discipline concern, it is a profession that is in a constant state of flux as it responds the constantly changing and evolving demands of the society in which it functions and in order to cope up with these demands it is very important that engineering students must have some basic core competency to learn new skills. But many incoming students do not have the background and skills required to succeed in the design of solutions to engineering problems. This resulted in deterioration in the demand of engineering candidates at national and international platform by industries and organization as they are not getting ready made skilled manpower that could be fruitful to their system. These situations somewhere misbalance the demand and supply of engineering aspirants in labour market. Hence it is very essential to identify and better understand the basic set of core competencies that, if possessed by the student, would assure their success in the engineering education environment as well as in industry upon graduation. Therefore, through this project, researcher has focused toward accomplishment of the following objectives:

1. To estimate the number of engineers and requisite skills demanded by industry among aspirants against supply
2. To identify the available employability skills in engineering aspirants.

3. To study the various factors responsible for mismatch between demand and supply of requisite skills.
4. To study the consequences of mismatch between demand and supply of requisite skills.
5. To study the employability of engineering campuses in Madhya Pradesh.
6. Assessing the effectiveness and appropriateness of training imparted to Engineering Aspirants.

In order to achieve the objectives, researcher has targeted three populations: Engineering Students, Engineering Academicians and Industrialists (HR professionals) from IT, Automobile and Pharmacy industry. Through cluster sampling and simple random sampling methods sample of 300 engineering students, 300 engineering academicians and Industrialists (HR professionals) were drawn from total population. Furthermore, for the purpose of data collection, Primary data was collected through questionnaire method and secondary data was collected through Internet, journal, magazines, government websites etc. Before the major data collection, validity and reliability of questionnaire were checked through pilot survey and Cronbach's alpha test. After data were collected, proper tools and techniques like basic statistical methods (Mean, Mode Medium, percentage), factor analysis, correlation and regression analysis, frequency analysis was applied for classification and analysis of data.

The detailed analysis revealed the results that inappropriate training program, lack of collaboration for skill enhancement, lack of innovation and creativity among students, lack of financial support from government, recruitment and retention of qualified teachers, economic and global factors and inappropriate teaching pedagogy methods

are the main factors responsible for the mismatch. Furthermore data also defined that Requisite skill demanded by industry is having positive and significant impact on employability among engineering aspirants. Moreover The results also shown that the most important and first available employability skill at fairly high level is Personal attributes skills in students; Second important skill available in students is Communication skills; Third important skill available in students is Technical skills; Fourth important skill available in students is Management & Entrepreneurial skills and Fifth important skill available in students is Next generation skills. As far as data regarding consequences are concerned, the major consequences due to the mismatch are According to academicians, lack of investment in education sector, lack of innovation and creativity, increase in recruitment of substandard workforce are top three consequences and from industrialists point of view number of enrolments and closure of engineering institutes, deviation of students to other graduate programs and certification courses and increase the recruitment of substandard workforce are the top three consequences of mismatch. In last, analysis on training effectiveness and appropriateness also revealed that Various Training Programs provided by the institutes and universities are helpful in getting good placement after completing the engineering course.

As a solution and recommendations to overcome the problems it is essentially require focusing on school education system. The fundamental knowledge needs to be strong and able to build a personality ready to choose the career of his/her choice. Indian education system should analyze education system of some developing countries like Germany, Singapore, and Finland where education system is being built as a backbone of the country & more than 20 per cent of the GDP is being utilized for education sector. Furthermore, the institutes running in south India are helping the

students who want to start their own business as an option after graduation. The students will get the help of finance and space for start-ups sponsored by the institutions for the innovative ideas. Even it is also require to evaluate our education policy and updating according to famous European policies like bologna, bloom taxonomy, PLO (Programme learning outcome), SLO (Subject learning outcome),CLO(Course learning outcome) etc. Moreover, Institute/University should design their curriculum, which is strongly oriented towards solving industry issues as well technological challenges of the industries. Institute need to think globalized and prepares their students for global challenges and opportunities. There is also need for improvement among faculty members. They should be encouraged to get engaged in suitable outside relationships with the industry. Academicians need to improve training program imparted to students like there must be Increase interaction between educational institutes and industries. Institute should provide interdisciplinary training in order to improve requisite skills in engineering aspirants. Institute must develop feedback mechanism to review effectiveness of training program. Creation of Industry academia hubs for joint consultations, designing of curriculum, joint research, sponsored projects and creation of incubation centers keeping in view local industry ecosystem requirements will reduce the skill gap. The main conclusion of the study comes out with the fact that there is a mismatch between demand and supply of requisite skills in engineering aspirants in Madhya Pradesh. Training and skill enhancement is having positive and significant impact on not only improving the employability of students but also improves the scientific and research productivity of students in India & Madhya Pradesh. Hence this research is very helpful for industry, academicians & government to design strategies for the development of economic status of India.