CAPABILITY ANALYSIS OF UNDERGRADUATE ENGINEERING STUDENTS

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Abstract: *Employable is a person's capability of gaining initial employment, maintaining employment. The researcher here has focused about the unemployment of fresher's and where they are lacking, and what is the level they are employable. Millions of graduates remain jobless. So what goes wrong? There could be various reasons that contribute to this mismatched scenario but the most pertinent of them is lack of job – specific skills. Survey is conducted with the help of questionnaire and the survey conducted with the 100 engineering students who have attended the campus interview 2014 the researchers analysis based on some statistics analysis.*

Key Words: *Capability, Employment, Mismatched*

1. INTRODUCTION

India is a fast developing economy, emerging as one among the top industrial countries in the world. The higher education policy of government of India is projected to empower the manpower system of the country to gain competitive advantage in the global market. The supply of intellectually equipped and technically qualified manpower in the form of software engineers, scientists and other professional graduates to the global market is a good sign to the country. With regard to higher education, most of the graduates used to perceive that higher education is a stepping stone for their good employment. A major challenge for higher education and research is to build a learning environment that is contributing to acquire and develop new skills to fit to the global business competitive environment. It is apparent that the learning environment is to be aimed for acquisition of creative knowledge, competent learning and innovative thinking skills. Globalization is a dynamic environment where the graduates have to work in a cross-cultural environment. There is an urgent need to explore skills and competencies of graduates who intend to gain full employment domestically and in the cross-cultural context. Many researchers confirmed that there is a wide gap between skill-sets of the graduates and the skills required by the

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employers in the global organizational context[1], Susima Samudrika Weligamage,[2]. This study tries to test and explore skills and competencies of graduates for employability in Indian higher education context .

In the present globalized economy most organizations operate in a business environment that is uncertain, risky and complex besides being highly competitive. The pressure mounting from all sides induce organizations to match worldwide standards. The all-time high accent on technology, quality and service has led companies to class of move away from the mechanized workforce to the employability of the workers; this deviation has led to an enhanced requirement for competent and self-directed workforce. Globalised business scenario where the entire world has come at the same plane serving as the potential job market along with the employee market where people varied ethic and demographic background are encouraged to work under the same umbrella.

Today as we all stand witness to the IT revolution we have seen and experienced the inevitable role of computers, in the personal and professional lives of human beings. With a push of a button, people are executing big ideas, enjoying shopping without getting mob-cramped, seeking entertainment and recreation, meeting strangers without travelling, and above all, connecting with their loved ones regardless of how for they are placed. Today's easy to marvel at how far we have come. Doctors in India diagnose patients in Denmark, in such a way our talents have been developed.

The study undertaken based on Descriptive Research and sampling was done in engineering colleges. The samples are 100 engineering college students. The data collection done through questionnaires. The books in Human Resource and articles related to recruitment from journals were gone through to understand the concept which used in the study. The collected data represented through table and charts and inference provided. The analyses were done with statistical tools and suggestions given at the end of study. I hope that this study will give brief outline about the expectations of employers and engineering college students perception from which the process can improve further.

2.   BACKGROUND OF THE STUDY

The very purpose of the graduate education is not gaining knowledge and skill but also to acquire employment fit to the qualification. The challenge of new graduates is not completed with merely getting a job; the challenge continues even after entering into the job. Hence, variety of skills and competencies are required for new graduates. In general, Rao[3] explained two types of skills; hard skills and soft skills. According to him, hard skills are technical or administrative procedures that are related to an organization s core business and in contrast, soft skills or generic skills are behavioural skills characterized by intangible attributes and entail emotional intelligence. Most of the studies were conducted on employees/executives skills. This study differs as it covers employability skills and competencies of new graduates.

The modern societies with innovative expansion of global business blame academia and universities of higher education for not fulfilling the required skills and

competencies of new graduates likely to be employed in a highly competitive environment. The different groups and stakeholders involved in the process are higher education institutions, employers, faculties or trainers and students. Acquisition of adequate skills and competencies are the problem for the students; for the teachers or trainers, it is the problem of importing required skills and knowledge. Employers play an important role in reducing the gap through induction training, placement training and orientation programs. But, when the gap between the skills acquired and the skills required is wider, then the employability of the graduate is a question mark.

The acquisition of skills and competencies of graduates involves many factors such as local availability of educational opportunity, graduates attributes, ability of the resource personnel/institution and employers perceived attributes. More number of theories and concepts were developed to identify employee's skills both in domestic and cross-cultural context. Increasing opportunities in globalization and a severe thrust in information technology industry have made the employability skills more crucial. Previously, the assessment of skills and competencies of graduates were from the perspectives of *supplier market* i.e. territorial curriculum, domestically framed higher education policy and locally motivated culture and learning. Today s learning environment is steadfast, very different and often across borders. The demand for graduate skills and competencies are from „*demand side* and the feature of graduate study would be highly volatile. The requirement of skills and competencies in the global organizations is going on changing. Keeping abreast of the situation, teaching institutions are becoming „*massively learning organizations* with a view to update the skills and competencies of the graduates. It is also the process of professionally oriented manpower readiness for future organizations.

3. CAPABILITY: CAMPUS TO CORPORATE

In students point of view the main objective of their studies is to get employment in a decent organization and moreover they must identify the qualities required from job seeker and expectations from freshers as employee

Key Areas	Qualities Required from Job seeker	Expectations from Fresher's as employee
Academic Vs Practical Learning	Academic Scores, Scholastic achievements	Adaptability, learning from experience, Impression management
Performance criteria	Performance in Technical/ Aptitude Test, Group Discussion, Interviews	Performance in ambiguous situation, Motivating self, stress management
Social skills	Extracurricular activities	Team work interpersonal relationship
Emotional Range	Aspiration Geneses: Self-doubt, Anxiety about future, stress due to pressure from family and peer-pressure and so on	Reality perception Geneses: Confusion, apprehension, Alienation, Depression, Stress, Anxiety of Learning and so on

4.   REVIEW OF LITERATURE

4.1. Employability Skills of Graduates in India

India is one of the emerging markets in the world. India's change from an agrarian economy to an industrialized economy is lagging due to the shortage of skilled labour (The skill development landscape in India and implementing quality skill training, August 2010). Although the country has enough potential to deliver to the needs of the global talent market, the strong employability challenge of the graduates, especially engineering graduates became the bottleneck for India's growth perceptive (Talent shortage survey, 2005) (Global talent risk-seven responses, 2011). Even in India, which produces 400,000 engineers annually, corporations are finding it increasingly difficult to find the qualified workers they require. (Replacement migration, 2009). India's National Association of Software Services Companies estimates a potential shortfall of 500,000 technology professionals by 2010 (Talent shortage survey, 2005).There were several studies conducted in India to know the employability skills *Employability Skills -A Study on the Perception of the Engineering Students* 527 of the students. It is found that 75% of the Indian graduates are unemployable. (Talent shortage survey, 2005).There was an argument that this study doesn't give a clear picture of Indian graduates and it is outdated. But the recent study conducted by World Bank (2011) points out that 64% of the employers say they are only somewhat satisfied with the performance of the engineering graduates in India (Andreas Blom,2011). Globally about 34% of the employers (Talent shortage survey, 2005) find it difficult to fill the talent gap and in India 67% of the employers find it difficult to find right talent in India(from both arts and science graduates).These results points out the need for proper awareness and training among the graduates to enhance their skills.

Capability is concerned with the ability to get placement. But when we look on the NASSCOM report says that the involvement of the students in getting the job conversion is very less, because the perception among the students is to obtain a degree that will give them a good chance of getting a good job, and there would be a choice with the employment options. The purpose of university education is gaining a high quality professional qualification and a good degree, also to feel that after four years the students will be provided an invaluable learning experience both socially and academically.

Students should not think that their degree is their achievement end, it should be a basic foundation for their career, each and every candidate should think of their qualities, which help the students to determine and to analyze themselves.

4.2. Employability

Employability is concerned with the eligibility of basic qualification and ability to get into national and international employment. This requires certain basic skills that might be or may not be developed during the graduate course. Much effort has been taken

by the engineering colleges to develop the key skills like problem solving, communication, teamwork, information technology, and self-management. These talents can be assessed and measured and their competencies can be further enhanced by training.

Employability skills are those skills necessary for getting, keeping and being successful in a job. Employers are often looking for skills that go beyond educational qualifications and experience. For employers, getting the right people means identifying people with the right skills and qualities to fulfill the role and contribute to the organizations success. Candidates may have the qualifications and 'hard skills' needed to be able to manage the job role but without a well-honed set of 'Employability skills ' employers are less inclined to hire. 'Employability skills' are the foundation of one's career building blocks as they can be transferred between different jobs and across different employment sectors.

4.3. Graduate Employability and Skills

Engineering education in India is a slow process till last decade. The concept of employability remains abstract and vague[4]. Different qualifications offer different employment opportunities, even in engineering qualifications, different domains play different insight on employability. It is hard to come up with good and clear definition for the concept. Both academician and employers speak about employability, but no one arrive a defined construct. However, employability is defined as the continuously fulfilling, acquiring or creating work through the optimal use of competences [5]. Employability skills are defined as skills required not only to gain employment, but also to progress within an enterprise so as to achieve ones' potential and contribute successfully to enterprise strategic directions[6]. DETYA report [7] on „*Employer Satisfaction with Graduate Skills* comments that, this skill is of great importance to employers, and seems to be the most sets apart successful from unsuccessful applicants. In a report by CBI [20], UK, the discussion on employability defined the employability skills as: • Positive attitude • Self-management • Team working

With regard to engineering graduates, Felder[8] reviewed that the engineers taught primarily mechanics, and not reasoning methods, memorization and routine application, and not analysis, synthesis and evaluation. It was observed that the engineering education failed to elevate a significant number of students to level five as per Perrys' nine level models and the average growth after four years of college was only one level[9]. *Technical job skills* was defined by different terms by different authors such as technical skills by Cleveland et.al.[10], professional, technical and manual skills by Byrnes[11], job competence by Stein[12], job ability factors by Hays[13], job skills by Hautaloma and Kaman[14], technical competencies by Tung[15], technical expertise by Stone[16] and job knowledge and motivation by Arthur & Bennet[17].

Skills and attributes pertaining to graduate employability in a global cross-cultural context are termed with different meaning and concepts such as core skills key skills

common skills, transferable skills, essential skills, functional skills for life, generic skills and enterprise skills. Gores approach was on employability by emphasizing the shift to a knowledge based economy, marked by intangible inputs dependent upon employee knowledge and skills such as creativity, design proficiency, customer relations and goodwill, and innovative marketing' drawing on.

According to Harvey *et al.*[19], most employers are looking for graduates who are proactive, can use higher level skills including analysis, critique, synthesis and multi layered communication to facilitate innovative teamwork in catalyzing the transformation of their organization.

6. OBJECTIVES OF THE STUDY

This paper is focusing on the Employability skills of engineering graduates in India. The aim of the paper is to identify the skill gap of engineering graduates who wish to join in Software Industry.

The following are the objectives of the study

- ➢ To find out the employability gap in engineering students.
- ➢ To find out the priority of the area that academic has to focus for overall development of employability skills for students.
- ➢ To examine the essential skills required for the career development.
- ➢ To identify the gap between the perception of students and professionals.
- ➢ To identify whether gender and work experience affects the employability skills of graduates

7. DATA ANALYSIS

7.1. Demographic Statistics of the Graduates (Age and Gender)

Age	Male	Female	Total	Total (%)
20	13	24	37	41.11
21	9	6	15	16.67
22	10	12	22	24.44
23	2	3	5	5.56
24	2	2	4	4.44
25	1	3	4	4.44
26	1	3	4	4.44
27	2	0	2	1.11
Total	40	50	90	100.00

Majority (82.2%) of the respondents were in the 20-22 year age group. There were 40 male respondents and 50 female respondents participated in the survey. (14.44%) of the respondents were in 23-25 years category. Rest (3.33%) of the candidates were in 26-27years age group

7.2. The following hypothesis analysis shows about the engineering students are lacking their technical skill due to communication skill and as well whether supporting or not.

Table 7.2

	N	Average	S.D	T. Value
Engineering students are not expressing their technical skills due to communication skills	5	1.4	44.85	1.4 (0.0698)

Result: Ho is Accepted and H1 is Rejected

7.3. For T – Test the following pairs has been taken for the analysis ie.,Corporate Exposure, Online employability test, Impart certification course, Placement Training

Paired Samples Statistics

|	Mean	N	Std. Deviation	Std. Error Mean
pair 1 Corporate exposure interaction with industry experts	3.50	50	1.418	.201
	3.48	50	1.216	.172
pair2 online employability test placement trainining	3.50	50	1.313	.186
	3.92	50	1.085	.153
pair3 technical updating short term courses	4.22	50	1.075	.152
	2.96	50	0.947	.134
pair 4 impart certification courses communication development	3.30	50	1.216	.172
	3.74	50	1.275	.180
pair 5 corporate exposure communication skill development	3.50	50	1.418	.201
	3.74	50	1.275	.180

The standardized coefficients for the discriminant function calculated and result inferred for table no. the corporate exposure and interaction with industry experts are not highly correlated (.391), the online employability test and placement training are not highly correlated (0.315), the technical updating and short term course is moderate relationship (.571)the corporate exposure and communication skill is very low relationship between the both variable. Compare with among above paired relationship the impart certification course and communication skill development is not correlated with both variable due to –ve correlation.

Paired Samples Correlations

		N	Correlation	Sig.
Pair 1	Corporate Exposure & Interaction with Industry Experts	50	.391	.005
Pair 2	Online Employability Test & Placement Training	50	.315	.026
Pair 3	Technical Updating & Short Term Course	50	.571	.000
Pair 4	Impart Certification Course & Communication Skill Development	50	-.054	.710
Pair 5	Corporate Exposure & Communication Skill Development	50	.017	.907

7.4. Employer and Graduates Gap in Perception

The mean score rating of the students and employers were collected and the discrepancy score was found out by deducting the rating of students from employer rating. Mean score of both employers and employees and the discrepancy score are shown in figure.3. Highest discrepancy was found in skills like empathy (1.71) reliability (1.52), integrity (1.32), willingness to learn, knowledge in contemporary issues (1.40) and advanced computer skills (1.00). Figure 3 represents the gap in perception.
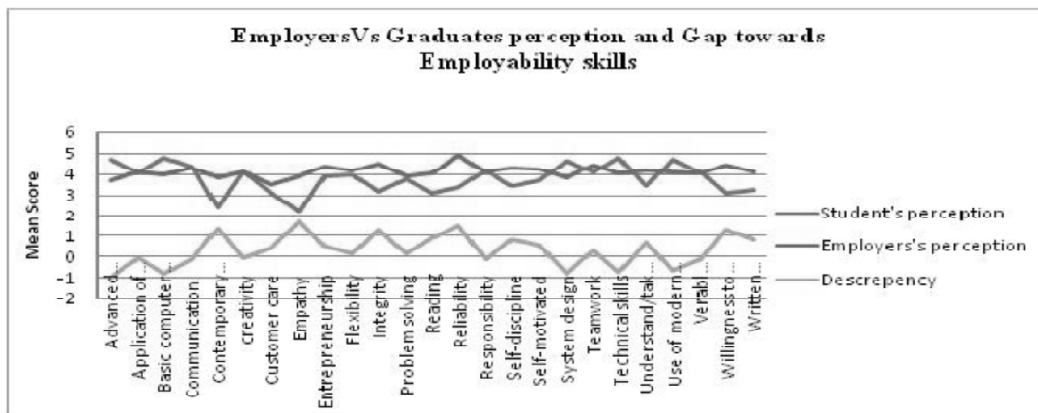
7.5. Difference in skill (Gender wise)-Graduates Students

Calculation of ANOVA among male and female graduates gave the following results. In Core employability skills, there is no significant difference between male and female respondent's rating. Only one attribute which has significant difference is integrity (0.01). Professional skills like Creativity (0.01), problem solving (0.01), knowledge in contemporary issues (0.02) and customer service (0.01) has significant difference among the respondents. In case of communication and technical skills, there is significant difference between the respondents. Basic computer skills (0.0), Analysis and interpretation of data (0.01) and advanced computer skills (0.03) are the three skills that have significant difference in rating of the candidates.

8.   CONCLUSION

The study shows that there is a strong need for awareness among the Indian graduates to know the employability skills required by the global talent market. We cannot blame the graduates for this reason. It is necessary to update the curriculum at regular interval to cater the needs of the industry. Further, there should be long and sustainable plan to train our young graduates to raise their bar to attain jobs in the global talent market. It is essential to increase the industry-academia contact. This will assure regular supply of talent to the global talent workforce. The research shows that the students with work experience have better awareness of the employability skills than the students

with no work experience. Enhancing the skills and application of knowledge through specific training will enable the workers to perform their jobs in the best possible manner and that is the need of the hour.

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