Employability Skills - Perception of the Final Year Engineering Students at South Tamilnadu, India

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Abstract

Researcher conducted in this study in southern districts of TamilNadu especially Tirunelveli, Tuticorin and Kanyakumari with the objectives of identifying the perception of final year engineering students towards their employability skills and how their colleges create exposure to develop the skills to the students in order to compete in the competitive world. For this researcher collected 500 samples from the final year engineering students among the students' southern districts of TamilNadu engineering colleges. In this study researcher found the important skills which is more helpful to the students to fight with this competitive world to get a job and sustain the same job too. The skills are communication skill, problem solving skill, team working skill, planning and organizing skill, creativity and innovation skill, numerical skill, time management skill, and leadership skill derived with the help of factor analysis.

Keywords: *Employability skills, engineering student, institution and exposure.*

I. INTRODUCTION

Insufficient supply of quality skills is one of the main impediments to further economic growth in India. The Indian economy grew more than 8% on average over the past 5 years, including the year of the unprecedented financial crisis in 2009. However, the skill shortage is still one of the major constraints in most industries in India, (World Bank,2009b).According to the widely quoted report by the (National Association of Software and Services Companies (NASSCOM) and McKinsey 2005), only 25% of the engineering education graduates are employable by a multinational company. Many employers give concrete examples on the lack of skills of the newly graduated hires, which the employers link to shortcomings in the education system. Numerous studies have identified these critical employability skills, sometimes referred to as "soft skills." We've distilled the skills from these many studies into this list of skills most frequently mentioned. We've also included sample verbiage describing each skill; job-seekers can adapt this verbiage to their own resumes, cover letters, and interview talking points (RandallHansen & Hansen, 2010). In Australia, a large-scale survey was carried out by (Department of Education, Science and Training (DEST) 2002), on the expectations of graduates by employers. The findings led to an influential report in 2006 entitled 'Employability Skills for the Future'. It collated the employers' responses, identified eight key core employability skills – communication, teamwork, problem solving, initiative and enterprise, planning and organizing, self-management, learning, and technology – and established a national document describing employability skills. According to Yorke, (2006) "a set of achievements – skills, understandings and personal attributes – that makes graduates more likely to gain employment and be successful in their chosen occupations which benefits themselves, the workforce, the community and the economy".

II. REVIEW OF LITERATURE

There are many factors that cause organizations to change, but in this current economic downturn it seems the main problem is downsizing and redundancy, therefore the graduate will need to be equipped with the relevant skills and attributes to cope with a flexible and perhaps short term jobs market. Employers themselves want graduates who can quickly adapt to the organizational culture, and utilize their abilities and skills to facilitate innovative collaboration. (Harvey et al, 1997)

The CBI (2008) highlights the importance employers place on the 'softer' skills that make people more employable. This means being a good team-worker, communicator and problem-solver is vital, and getting work experience goes a long way with a future employer.

'Employability is having a set of skills, knowledge, understanding and personal attributes which make a person more likely to choose and secure occupations in which they can be satisfied and successful.' (Dacre Pool & Sewell, 2007)

It is widely accepted that lifelong learning through acquiring new skills improves employability. However despite there being different concepts to analyzing the make-up of "employability", the consensus of these is that there are three key qualities when assessing the employability of graduates: These are:

A. Job Specific Skills

reading, language, and numeric capacity, listening, written communication, oral presentation, global awareness, critical analysis, creativity and self-management.

B. Process Skills

Problem solving, decision making, planning and delegating, understanding business and its commercial interests, prioritizing, team work, and negotiating. These skills are developed through work experience rather than through academia.

C. Personal Qualities

AGR states that their research has shown that employers are looking for qualities that include "self-confidence, self-control, self- esteem, social skills, honesty, integrity, adaptability, flexibility, willingness to learn, emotional intelligence, stress tolerance, punctuality, efficiency and the ability to reflect."

These qualities are very much embedded with the personality type and shaped through life-experiences. Researchers have been seen to classify these qualities in various ways; the common denominator amongst them is that there is a distinction between core skills and soft skills, with soft skills being learned from different experiences. Martin (2007) states that:

"Therefore, it is to be emphasized that an employer with employability focus is looking for an individual with potentials to be realized, rather than suitable skill sets." (Martin, 1997)

Further research from the UK government stated that:

"Our higher education system is a great asset, both for individuals and the nation. The skills, creativity, and research developed through higher education are a major factor in our success in creating jobs and in our prosperity. Universities and colleges play a vital role in expanding opportunity and promoting social justice. The benefits of higher education for individuals are far-reaching. On average, graduates get better jobs and earn more than those without higher education." (The Future of Higher Education White Paper. 2003, p4)

The 'Skills plus Project' highlights and emphasizes the importance of 'personal qualities' and their insertion into the model of employability, further stating how these can have a considerable bearing on student success. (Knight and York, 2001, 2002, 2003; York, 2001)

From the work of Dweck (1999) and Bandura (1997), there is recognition of the two broad categories of self-belief: an individual/permanent/fixed belief, intelligence for example, that cannot be changed, and an incremental/variable/flexible belief that development is achievable and even likely. They further make assumptions that students with a fixed belief about their intelligence are likely to be discouraged by failure; this is derived from the belief that failure is a lack of intelligence. From this assumption it could be fair to say that these students may avoid more demanding work for fear of disappointment. On the contrary, students with a malleable self-belief are more likely to characterize failure to a lack of effort, and believe that poor performance should lead to further learning. 'Hence, it is the learning that becomes a source of self-esteem.' (Dweck1999. Bandura, 1997).

III. STATEMENT OF THE PROBLEM

In India, more number of engineering students is unemployed or seeking jobs in different companies other than they study. The unemployed engineering graduates are increasing day by day. But the question is the capacity of the students is to compete the organization need and what are the skills acquired by them from colleges and did they really get the exposure from the southern side engineering colleges to compete with the competitive world. Researchers take this issue as a serious problem and conducted the study.

IV. RESEARCH OBJECTIVES

1. To examine the perception of final year engineering students towards employability Skills
2. To identify the important skills needed to compete the organization needs.

V. SAMPLING DESIGN

In the present study, proportionate random for three districts of Tuticorin, Tirunelveli, and Kanyakumari.The total sampling size is 500 from final year engineering students and from 25 employers from Chennai, Bangalore and Tuticorin as a respondents selected through proportionate random sampling method. For analyzing the data from the respondents, relevant statistical tools were used to fulfill the objectives of the study Statistical package SPSS 17.0 has been used to classify and analyze the data collected in the surveys undertaken. The tools used in the study are inferential statistics. ANOVA, t-Test, Chi Square Test, Correlation, and Factor Analysis.

VI. DATA ANALYSIS AND INTERPRETATION

A. *KMO and Bartlett's test for sample adequacy*

The Kaiser-Meyer-Olkin measure of sampling adequacy helps to establish whether the data is suitable for a factor analysis. As a thumb rule, if the KMO test comes out at 0.5 or higher, then the data is suitable for factor analysis.

Bartlett test is used to establish the relationship among variables supposed to investigate. These two tests together provide a minimum standard which should be passed before a factor analysis (or a principal component analysis) could be carried out.

Table No 4.17 : KMO and Bartlett's test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0.955
Bartlett's Test of Sphericity	Approx. Chi-Square	9391.977
	Df	496
	Sig.	0.000

From the above table 4.17, it is found that the KMO value is 0.955, Bartlett's test of Sphericity significant at 5 per cent level. The result shows that the sample is adequate to segment the variables into predominant factors.

B. *Components and Items*

Thus the totals of 32 items (32 variables) of the final year engineering students' perceptions were reduced into 8 major factors using principal component analysis by Varimax rotation with Kaiser Normalization. These factors or constructs were given new names, including the factor loadings in the following table.

Table No: 4.21 : Variables, constructs and Factor Loadings

ITEMS	CONSTRUCTS	FACTOR LOADINGS
Understanding the information in a variety of forms	Communication Skill	0.565
Written and Oral		0.722
Listening and asking Questions		0.740
Sharing information by communication technologies		0.432
Problem identification	Problem solving Skill	0.653
Prioritizing the problems		0.724
Sorting out the relevant facts		0.750
Solving the Problem		0.529
Understanding of conflict in a group	Team working Skill	0.584
Contributing to a team by sharing information and knowledge		0.654
Demonstrating the appropriate skills in interacting with others		0.619
Setting an applicable action plan		0.622
Managing time at priorities	Planning and Organizing	0.645
Assigning and delegating the responsibility		0.704
Being resourceful		0.599
Revising plans to include new information		0.518
Doing task faster and better by new ways	Creativity/ Innovation	0.517
Creative and innovative ideas during group work		0.693
Combining ideas or information in new ways		0.731
Making connection between seemingly unrelated ideas and reshape goals		0.660
Using basic mathematical function of plus,minus,multiply and divide	Numerical Skill	0.690
Solving problems using maths and science concept		0.738
Ability to use MS-excel to manipulate numerical information		0.531
Engagement with statistics modules		0.629
Setting the priorities and allocating the time effectively	Time Management Skill	0.419
Ability to manage multiple task at once		0.652
Completing work assignment within the deciding time		0.538
Using technology efficiency and effectively to monitor time schedule		0.606
Willingness to learn	Leadership Skill	0.677
Influencing and motivating others		0.690
Ability to lead		0.682
Diligence and hard working		0.636

Factor analysis of the perception of the engineering students established 8 components, which all together accounted for 68.216 percent of the variance of this study.

C. *Gender and the Students Employability Skills*

The different perception of students based on their gender as male or female and their various employability skills are estimated through the following independent samples t-test table.

Table No: 4.43 : Independent Samples t-test – Gender and Students skill level

	GENDER	N	MEAN	STD. DEVIATION	T VALUE	SIG.
Communication Skill	Male	289	3.5484	.86416	0.632	0.528
	Female	211	3.5000	.82231		
Problem Solving Skill	Male	289	3.4637	.83540	0.534	0.594
	Female	211	3.4242	.79143		
Team working Skill	Male	289	3.6159	.84032	1.152	0.250
	Female	211	3.5284	.83546		
Planning and Organizing	Male	289	3.6168	.81489	1.828	0.068
	Female	211	3.4846	.77579		
Creativity/Innovation	Male	289	3.6280	.89973	1.690	0.092
	Female	211	3.4976	.81540		
Numerical Skill	Male	289	3.5701	.79799	1.530	0.127
	Female	211	3.4585	.81526		
Time Management Skill	Male	289	3.6047	.89272	1.817	0.070
	Female	211	3.4573	.89872		
Leadership Skill	Male	289	3.8054	.91451	0.632	0.527
	Female	211	3.7547	.84020		

Table 4.43 shows the independent samples t-test that explores the influence of gender on the student's employability skill level. The gender has no significant difference in communication skill, problem solving skill, team working skill, planning and organizing skill, creativity and innovation skill, numerical skill, time management skill, and leadership skill determined by the values of t are 0.632, 0.534, 1.152, 1.828, 1.690, 1.530, 1.817, and 0.632 where the p values are 0.528, 0.594, 0.250, 0.068, 0.092, 0.127, 0.070, and 0.527. Therefore null hypothesis is accepted and there is no influence of gender on the various employability skills of the final year engineering students.

Table 4.48: Exposure getting from institution

ACTIVITIES	N	MEAN	RANK
Carrier Seminars	500	3.15	6
Team work/Working with others	500	3.58	1
Skill acquisition program	500	3.35	5
Industrial visit	500	3.43	3
Interaction with industries/Work placement industries	500	3.14	7
Part time work experience	500	2.80	9
Trade/ Entrepreneurship	500	3.01	8
Laboratory Work	500	3.41	4
Oral/written presentation	500	3.56	2

Table 4.48 shows mean score of Exposure getting from institution. Majority of the respondents are satisfied on Team working, working with other mean score is 3.58, followed by oral, written presentation mean score (3.56), industrial visit 3.43, Laboratory work 3.41,skill acquisition program 3.35, Carrier seminars 3.15,Interaction with industries/ work placement industries 3.14, trade and entrepreneurship 3.01, least number of respondents are satisfied on part time work experience mean score is 2.80.

VII.SUMMARY OF FINDINGS

Factor analysis, it is found that 32 variables are reduced into 8 major factors with total variance of 68.216. The individual variances are statistically significant at 5 per cent level. This leads to formation of eight predominant factors with suitable variable loadings. Factor analysis of the perception of the engineering students established 8 components, which all together accounted for 68.216 percent of the variance of this study.

The independent samples t-test that explores the influence of gender on the student's employability skill level. The gender has no significant difference in communication skill, problem solving skill, team working skill, planning and organizing skill, creativity and innovation skill, numerical skill, time management skill, and leadership skill determined by the values of t are 0.632, 0.534, 1.152, 1.828, 1.690, 1.530, 1.817, and 0.632 where the p values are 0.528, 0.594, 0.250, 0.068, 0.092, 0.127, 0.070, and 0.527. Therefore null hypothesis is accepted and there is no influence of gender on the various employability skills of the final year engineering students.

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VIII. SUGGESTIONS

Once India was facing the torment of unemployment. With the effect of globalization, the problem with regard to employment is unemployability skills among the students. Unemployability is the lack of basic skills where the students or the job aspirants do not have required skills to meet the recruiters' demands. The irony of the situation is that there are no qualified hands to fill the thousands of vacancies in job market. Communication skills is the first and foremost one that students of engineering lack in with most of the engineering students expected to work in multinational companies (MNCs) whose headquarters are abroad, communication skills is the threshold in the job market without which there is no room for opportunities. Hence, the engineering colleges can focus on students' communication skills. Right from the first year, the students can be exposed to the importance of communication skills. Recruits an exclusive person, conducting mock interviews, allowing students to participate as audience in interview processes may be highly helpful to students.

Problems solving skills, another important factor necessary for getting through the recruiting process, helps one to get through the interview easily. This skill may be focused on with the help of case analysis.

Team work and leadership qualities are as important as communication skills. With the thought that the students (employees) would be working among groups, the importance of team work and leadership qualities should be shed light on. These two qualities can be imported on students by allowing students participate in some activities, conduct seminars, workshops etc., such participation will give students great confidence. Moreover, giving responsibility to students is a good tactic to help them with leadership qualities.

IX. CONCLUSION

Un employability, in the long run, is a serious threat for the holistic growth of the Nation. It is a threat that is very much serious than unemployment. Such factors will have adverse effects on Indian job market. Un employability is like opening the Pandora's Box which will give problem after problem for the job aspirants in particular and India in general. It is a sad statistics that 59% of youth in India suffer or lack skill deprivation in one way or the other. Right from school education, students are exposed to just rote learning which has nothing to do with development of any skills. When schools, colleges fight tooth and nail for ranking under the pretext of healthy competition, it is the student and job aspirants who are at the receiving end. They are the victims when schools and colleges encourage rote learning in place of skill development. Parents, adding fuel to the fire, go hand in hand with the schools and colleges in order to get high marks for their children.

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