

Assessing the Impact of Communication Skills and Critical Thinking over Sustainable Employability Skills: A Study on Engineering Colleges Training Programmes

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Abstract:

The role of training programmes is considered to be very much vital for attaining the placements in the engineering colleges. This research paper is focused to disclose the impact of communication skills and the critical thinking over the employability skills. The study has been conducted on selective engineering colleges located in the state of Telangana state. Simple Regression Analysis is deployed to analyse the concerned independent and dependent variables. The sample size of this study is 750.

Key Words: Communication Skills; Critical Thinking; Training Programmes; Placements; Engineering Colleges

Introduction

Formal technical education was worldwide introduced by late 18th century. Mid-19th century can be the formal inception of Technical Education in India. The major policy initiatives can be listed down as, 1) 1902: A formation of the Indian Universities Commission 2) 1904: An Indian Education policy resolution 3) 1905: establishment of IISc. Bangalore. 4) 1913: The Governor General's policy statement stressing the importance of Technical Education Just after independence, the growth in industries in India, also demanded the qualified professionals such as Business Management, Architecture, Hotel Management, Pharmacy etc. Although the traditional courses such as Commerce, Economics, Finance, etc., were taught for a long time, the need of formal Management Education was felt in India only in the fifties.

In 1954, a Board of Management Studies was established under AICTE promote Management Education. Other major initiatives taken in Management Education include: setting up of the administrative staff college of India at Hyderabad in the late fifties, National Productivity Council and Indian Institution of Management in the early sixties. Understanding the commercial aspect of business and fulfilling the required needs, the business education has started its journey in India as follows:

- 1886: India's first B-school i.e. Commercial School of Pacchiappa Charties in the southern city of Chennai (Madras).
- 1903: Presidency College in Calcutta.
- 1913: Sydenham College, Mumbai.
- 1920: Shri Rama College of Commerce.
- 1948: The Indian Institute of Social Science founded as India's first management program with an objective to train manpower to create & spread the knowledge required for managing industrial enterprises in India.
- 1949: Xavier Labor Relations Institute (XLRI) at Jamshedpur by Catholic community.
- 1953: Indian Institute of Social Welfare & Business Management (IISWBM) Calcutta. And also known as India's first official Management Institute.
- 1961: Indian Institute of Management, Calcutta and Indian Institute of Management, Ahmadabad (Gujarat) after receiving grant from the Ford foundation. The IIM Calcutta established in collaboration with the Sloan School of Management with an intention to focus on quantitative &

operational aspects of management. IIM Ahmadabad was founded in 1962, pioneered the case method of teaching in India with an emphasis on Qualitative strategic-integration.

- 1973: Indian Institute of Management Bangalore (Karnatka) and Indian Institute of Management, Lucknow (Uttar Pradesh).
- 1982: The Indian Institute of Forest Management, Bhopal (M.P.) with specialization in management education for the entire forestry system in India with the help of IIM, Ahmadabad.
- 1996: Indian Institute of Management, Kozhikode (Kerala)
- 1998: Indian Institute of Management, Indore (Madhya Pradesh)

Meanwhile, very slow growth was observed in expansion of Institutions and intake remained in the Government, Private-aided and University sectors. It was an era of eighties, where private and voluntary organizations were allowed in the setting up of self-financing Technical and Management Institutions as a part of government policy shift. It was phenomenal expansion of the Technical Education System, and the trend continued during successive Five-Year Plans.

In 1947, before independence, the slow growth of Technical Education as far as number of Engineering Colleges and Polytechnics are concerned (including Pharmacy and Architecture Institutions) was 44 and 43 respectively with an intake capacity of 3200 and 3400 respectively. The National Policy on Education (NPE), 1986, as updated in 1992, imposed greater stress on improvement in the quality and relevance of education at all levels, including technical and professional education.

Review of Literature:

S.P. Gupta et. al.,(2002)¹ mentioned that, ITES industry can create new employment opportunities which could be ten times greater in number than those directly involved in core IT industries as the application of information technology has reached all kinds of traditional industries.

FICCI Report (2004)² Academia Convergence on “How to bridge the skill gaps (FICCI, 2004)” suggests that new learning model should be developed utilizing the learning of persons working in industry. Institutions may utilize the expertise from the industry as well as alumni. As the technology has been changing with a great pace, for developing employable fresher, it is necessary to shift the curriculum from traditionally academic to practically relevant one. As India’s IT revolution has been fuelled by the availability of a very large reservoir of engineers, the challenge is to give them adequate inputs to generate not only sufficient but also surplus capabilities.

P.N. Gupta et al (2003)³, suggests that the educational institutes can develop direct linkages with the industry and utilize it to strengthen quality of education and fulfill the industry requirement. As it is win-win situation for both of them, the linkages can grow faster.

FICCI (2007)⁴ has also suggested domain specific competence, work related skills and nonrelevance of the curriculum as important reasons for unemployability of graduates.

Ramandeep Sudan et al (2012),⁵ emphasize on quality of education in close alignment with local and global industry needs.

V Saravanan (2009)⁶, in the publication “Sustainable Employability Skills for Engineering Professionals” suggested that soft skills training are more relevant instead of personality development. Soft skills training are essential with the help of corporate houses. Also he suggests bringing soft skills within the curriculum with the

preferences to role play, group discussion, seminar, presentation, questioning, brain storming, book reviews, interaction etc.

Government of India introduced a Master of Computer Applications (MCA) program to increase the manpower pool for IT/ITES industry by giving additional enabling inputs to Science and Commerce undergraduates and by offering training in computer education⁷.

“**National Employability Report (2011)**⁸ – Engineering Graduates” (Aspiring Minds, 2011) claimed that maximum efforts are required to be taken to improve programming, logical and quantitative ability of the fresher’s as well as ability to communication in English. A survey of top 100 institutions across India indicates that job opportunities offered in IT product industry fall from 8.44% to 2.17% and the same in IT Service industry falls by 30.95% to 16.32% due to lack of required skills⁸.

Andreas Blom et al, 2011⁹ has identified skills by factor analysis based on survey “Employability and Skill Set of Newly Graduated Engineers in India.” suggested that institutes providing the technical education programmes in India should seek to improve the skill set of graduates and shift the focus toward higher-order skills and creativity . The team found that employers perceive Soft Skills (Core Employability Skills and Communication Skills) to be very important. These findings suggest that engineering education institutions should seek to improve the skill set of graduates, recognize the importance of Soft Skills and revise the assessment schemes as well as teaching learning process. In line with this, they also suggested to prepare the curriculum away from traditional thinking skills, such as remembering and understanding and move towards higher-order skills, such as analysing and logical abilities to solve engineering problems, as well as creativity; and interact more with employers to understand the particular demand for skills in that region and sector .

Ashutosh Kulkarni et al. (2012)¹⁰ suggested that an interaction to understand needs with IT/ITES industries will not only provide the methods for effective teaching learning process but also will give the inputs to improve the employability. In fact, it is a need design a set of guidelines / model for the management or administrators of the institute to improve the employability since a large number of IT graduates are available every year from different universities, but NASSCOM claims that very few IT graduates are employable, in addition, ministry of Human Resource and Development, New Delhi released a report which supports this view expressed by NASSCOM .

Research Gap:

Based on the available literature over the technical education and it’s out comes, it is concluded there is no much research is done in this area. The available literature is also not thrown light over the association between the training programmes of the academic institutions and the placement achievements of the engineering colleges. Hence, this paper emphasised to understand the role of soft skills training inputs such as, communication skills and critical thinking over the sustainable employability skills.

Formulation of Hypotheses

Basically, the present study is considered to be exploratory study because the researcher explored the variables from the past research findings. The basis for the concerned hypotheses is acquired from the different studies held in various countries. Hence, it is mandatory to frame the hypothesis in null form. The following hypotheses are formulated based on the conceptual model of the study:

H1₀: Communication Skills will not have significant effect on Sustainable Employability Skills of Engineering Students

H2₀: Critical Thinking will not have significant effect on Sustainable Employability Skills of Engineering Students

Data Analysis

The relationship between Communication Skills and Sustainable Employability Skills is analyzed through simple linear regression analysis (SLRA). To attain these results, the means scores of the independent variable i.e Communication Skills is regressed upon the dependent variable’s mean scores i.e Sustainable Employability Skills. The statistic results delivered both the regression model summaries and the coefficient summary.

The regression model summary of the proposed variables is presented in the following table – 1. The results prompted that the predictor variable contributes significantly and elicited the high impact over the Sustainable Employability Skills. The results revealed that the R² value of the model is 50.9 and the F-value is 882.387 and the p-value is found to be 0.000.

Table 1 Regression Model Summaries for the Communication Skills on Sustainable Employability Skills

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	ANOVA Results			
					F-Value	df ₁	df ₂	Sig.
1	0.713 _a	0.509	0.508	0.63045	882.387	1	749	0.000
a. Predictors: (Constant), Communication Skills								

The predictor effects and the beta estimates i.e the coefficient summary results are exhibited in the following Table 2. The β value is found to be 0.676; standard error is 0.023; t – value is found to be 29.705 and the p- value is found to be 0.000. With this evidence we conclude that the predictor variable is corroborated with the dependent variable in the proposed hypothesis. So, the researcher stated that the proposed null hypothesis is rejected and the alternative hypothesis (H1_a) is approved. To the concerned hypothesis, the regression equation is as follows:

Sustainable Employability Skills (Y) = 0.218+ 0.676 (Communication Skills) X

Table 2: Predictor effects and Beta Estimates (Unstandardized) for Sustainable Employability Skills Associated with the Communication Skills.

Model	Variable	Unstandardized Coefficients		Standardized Coefficients	t-Value	Sig.
		B	Std. Error	Beta		
1	(Constant)	0.218	0.132	-	1.657	0.098
	Communication Skills	0.676	0.023	0.713	29.705	0.000
a. Dependent Variable: Sustainable Employability Skills						

H1_{0b}: Critical Thinking will not have significant effect on Sustainable Employability Skills

The relationship between Critical Thinking and Sustainable Employability Skills is analyzed through simple linear regression analysis (SLRA). To attain these results, the means scores of the independent variable i.e Critical Thinking is regressed upon the dependent variable's mean scores i.e Sustainable Employability Skills. The statistic results delivered both the regression model summaries and the coefficient summary.

The regression model summary of the proposed variables is presented in the following table – 3. The results prompted that the predictor variable contributes significantly and elicited the high impact over the Sustainable Employability Skills. The results revealed that the R² value of the model is 41.0 and the F-value is 591.621 and the p-value is found to be 0.000.

Table 3 Regression Model Summaries for the Critical Thinking on Sustainable Employability Skills

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	ANOVA Results			
					F-Value	df 1	df2	Sig.
1	0.640 ^a	0.410	0.409	0.69103	591.621	1	749	0.000

a. Predictors: (Constant), Critical Thinking

The predictor effects and the beta estimates i.e the coefficient summary results are exhibited in the following Table 4. The β value is found to be 0.811; standard error is 0.033; t – value is found to be 24.323 and the p- value is found to be 0.000. With this evidence we conclude that the predictor variable is corroborated with the dependent variable in the proposed hypothesis. So, the researcher stated that the proposed null hypothesis is rejected and the alternative hypothesis (H1_b) is approved. To the concerned hypothesis, the regression equation is as follows:

$$\text{Sustainable Employability Skills (Y) = 0.801 + 0.811 (Critical Thinking) X}$$

Table 4: Predictor effects and Beta Estimates (Unstandardized) for Sustainable Employability Skills Associated with the Critical Thinking.

Model	Variable	Unstandardized Coefficients		Standardized Coefficients	t-Value	Sig.
		B	Std. Error	Beta		
1	(Constant)	0.801	0.137	-	4.851	0.000
	Critical Thinking	0.811	0.033	0.640	24.32	0.000

a. Dependent Variable: Sustainable Employability Skills

Conclusion

The study analysed the impact of communication skills and the critical thinking over the sustainable employability skills. The results elicited that there is a positive and moderate impact among the independent and dependent variables of the study. Hence,

we conclude that the variables communication skills and critical thinking are considered to be most important factors in the training and placement programmes.

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