

AN ANALYSIS OF COCUBES SKILL ASSESSMENT SYSTEM FOR TRAINING AND PLACEMENT ACTIVITIES: A CASE STUDY OF SKILL ASSESSMENT SYSTEM

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Abstract:

Training and placement management system is an integral component of any premier educational institution. Often, the course curriculum choices and imparted skill-set of the students do not match the industry expectations. In such a situation, training plays a significant role in choosing the suitable job roles and enhancing the domain-specific (as per industry demand) skill-set requirement. In this global scenario of Industry 5.0, it is critical for every institution, to have an effective training and placement cell, so that students are able to sustain and excel in the real world situations. Along with technical skills, professional programs such as Bachelor of Technology, require skill-set such as effective communication, knowledge of artificial intelligence and reasoning capabilities. To develop these skills, institutes focus on activities like skill-development workshops, seminars, group discussions and industrial visits. This study parleys, the efficiency of training and placement management system amongst Bachelor of Technology students. This study also examined the skill transformation amongst the students through effective training and placement management system. Researchers have studied the training & placement process of one of the prominent institutions of Central India, which while working on the lines of Industry 5.0 has implemented the “Cocubes Online Assessment System” to evaluate the progress of ‘skill-set development’ in the students. This study analysed the data of 197 students pursuing Bachelor of Technology program. The data gathered from Cocubes was analyzed using SPSS 21 Software. The study observed a positive correlation amongst various assessment parameters of the training such as Aptitude, Communication Skill, Quantitative Skill, Analytical Skill, Domain knowledge, IT Skills and Coding. Findings revealed that the correlation test between *Quantitative skills* was positively associated with *Aptitude*. Together, they tested the job preparedness of the students which is essential for landing into a suitable job role. Findings of the study would help the training and placement cell of any institute in the formulation of effective training & placement management system.

Keywords: Training, Placement, Industry 5.0, Aptitude, Quantitative, English

Introduction

During the undergraduate program, engineering is considered as one of the most preferred career options for science students. One has to be versatile and well-trained to be a preferred candidate for a high-paying job position [1]. Thus, the student needs to have specific skill upgradation and training before joining any company while starting their career. Suitable job opportunities are crucial for the graduating students. The training systems have hitherto been manual, time-consuming, and with difficulties of maintaining coordination between students and companies. Hence universities are fast adopting online training and placement system to improve the effectiveness of Training & Placement activities.

Online Training and Placement system automates the process of Training and Placement cell and provides the suitable coordination between student skill set and company job roles. It provides the tools to the student community to use collective intelligence in order to increase the selection ratio and to ease out the process of interview. Online training and placement focuses on the automation of placement cells. Activities of the placement cell includes, structuring the resume, communicating about various job openings to students, managing the corporate relationships, monitoring the progress of the selection process, and communicating with different placement teams[2].

According to the Aspiring Mind's, latest Annual Employability Survey 2022, 80% of engineers are unfit for any position because they lack the skills that industry demands. Just 6% of engineering graduates are hired by the top ten IT firms. According to the IT Stalwart, 94 % of engineering graduates are unsuitable for jobs, and hence the rest of them end up being unemployed. The primary explanation for this existing gap is the lack of necessary skills such as comprehension, problem-solving, and analytical reasoning[3-8].

The online training and placement programs help students to enhance their interdisciplinary knowledge and practical implementation of theoretical knowledge of various disciplines, thus, enabling a deeper learning experience. It also, measures the progress of the student through placement mock drills. Training programs enable students to know how the industry operates and what standard procedures must be followed in the real working environment [9-12].

Efficient training programs empowers students to develop necessary skill set as per the industry requirement and job roles[12].

Objective

The objective of the study is to analyze the skill transformation in Bachelors of Technology graduates through online training and placement management system .

Research Methodology

The study was conducted in Indore, India. A dataset of 197 Bachelor of Technology final year students was analysed. The study conducted was descriptive in nature. The study was made to understand the present working status and functioning of the training and placement cells in the engineering college at Indore, India. Data was retrieved by Cocubes online assessment. CoCubes is a scientifically designed employability assessment test. It uses technology to help assess and hire candidates. It helps in assessing the student's skillset online, shortlisting the qualified students in shorter time, managing interviews, and providing final job offer. This saves time and cost for both the firms and the job-seekers.[9]

Cocubes assess the students based on the following skills:

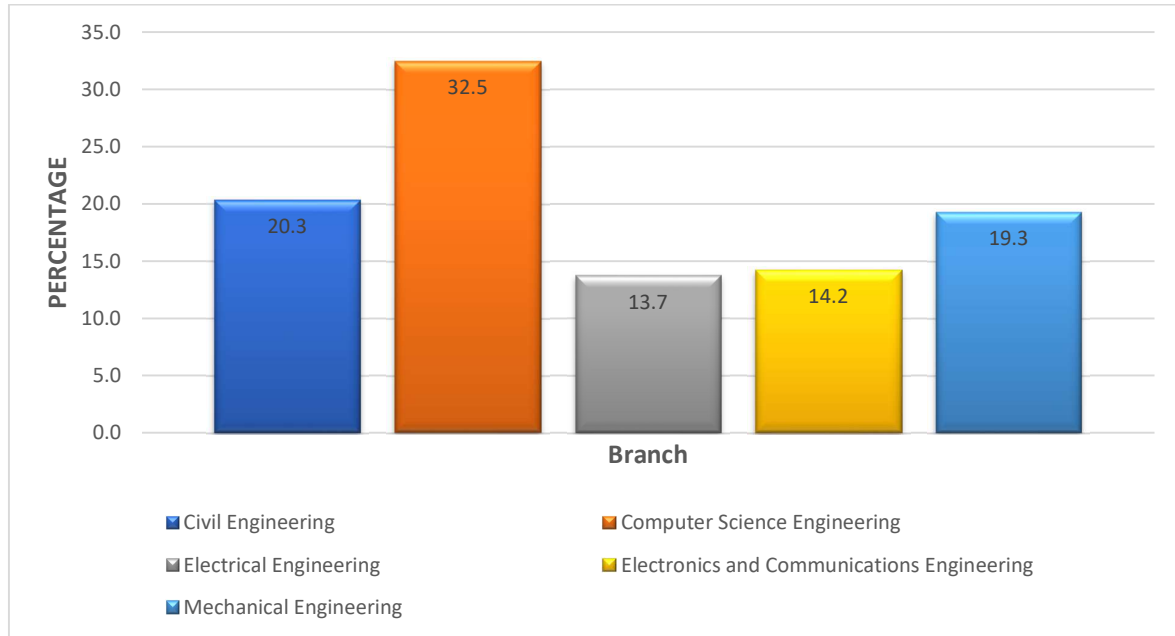
- Aptitude
- Computer fundamentals
- Programming
- Technical domains
- Personality
- Written English

(The engineering specializations include Computer science/Information Technology, Electrical, Mechanical, electronics, Civil and Chemical)

Students' demographic Profile

Out of 197 students 58.4% students were males and 31.6% were females, 20.3% were from Civil Engineering, 32.5% were from Computer Science, 19.3% were from Mechanical Engineering, 13.7% were from Electrical Engineering, and 14.2% were from Electronics and Communications Engineering (Figure 1).

Figure 1: Branch-wise percentage distribution of students



Data Analysis and Interpretation

Reliability and Validity

Reliability was analyzed using SPSS 21 software. Cronbach's alpha coefficient technique was used to check the reliability status of the variables. The value of Cronbach's α obtained for the various factors of training was 0.836 which fulfill the threshold criterion ($\alpha > 0.7$) [10].

Correlation Statistics

Pearson correlation (r) is used to measure the strength and direction of a linear relationship between two variables. Mathematically this can be done by dividing the covariance of the two variables by the product of their standard deviations [10].

$$r = r_{xy} = \frac{cov(x, y)}{S_x * S_y}$$

The computation of the descriptive and correlation analyses is presented in Table 1.

Table 1: Mean, Standard deviation of the parameters and correlation matrix

Assessment Parameters	Mean	SD	Aptitude	English	Quantitative	Analytical	Domain	Computer_fun	Coding	Written_english
Aptitude	43.06	12.85	1	.641**	.767**	.815**	.510**	.500**	.392**	.531**
English	42.62	15.91	.641**	1	.217**	.303**	.271**	.255**	.222**	.372**
Quantitative	38.06	17.87	.767**	.217**	1	.459**	.408**	.401**	.333**	.366**
Analytical	48.57	18.65	.815**	.303**	.459**	1	.448**	.453**	.318**	.446**
Domain	34.87	18.88	.510**	.271**	.408**	.448**	1	.408**	.335**	.300**
Computer_fun	46.18	18.77	.500**	.255**	.401**	.453**	.408**	1	.387**	.484**
Coding	6.38	18.41	.392**	.222**	.333**	.318**	.335**	.387**	1	.221**
Written_english	48.86	23.88	.531**	.372**	.366**	.446**	.300**	.484**	.221**	1

** . Correlation is significant at the 0.01 level (2-tailed).

The value of r ranges between -1 and 1. A correlation of -1 shows a perfect negative correlation, while a correlation of 1 shows a perfect positive correlation. A correlation of 0 shows no relationship between the movements of the two variables [10].

According to Stephen et al., (2003), the range of correlation from 0.9 to 1 (-0.9 to -1) are considered as very high positive (negative) correlation, 0.7 to 0.9 (-0.7 to -0.9) as high positive (negative) correlation, 0.5 to 0.7 (-0.5 to -0.7) as moderate positive (negative) correlation, 0.3 to 0.5 (-0.3 to -0.5) as low positive (negative) correlation and .00 to 0.3 (.00 to -0.3) as negligible correlation [11].

As shown in table 1, the mean score of all the parameters is more than 35% which shows the need for training among the students regarding the improvement in engineering skills. All the correlations between these assessment parameters are positively associated with each other. Among the training assessment parameter aptitude has a high positive correlation with quantitative and analytical skills, and moderate association with english, specialization, computer fundamentals, and written english.

English has a low relationship with all the variables of training assessment except aptitude, the reason could be that the english is the language of communication and may not necessarily help in improving the analytical understanding of the students.

Quantitative skills and aptitude shows a high correlation. Together, they test the mental alertness of the student which is essential for getting a job in the complex business environment.

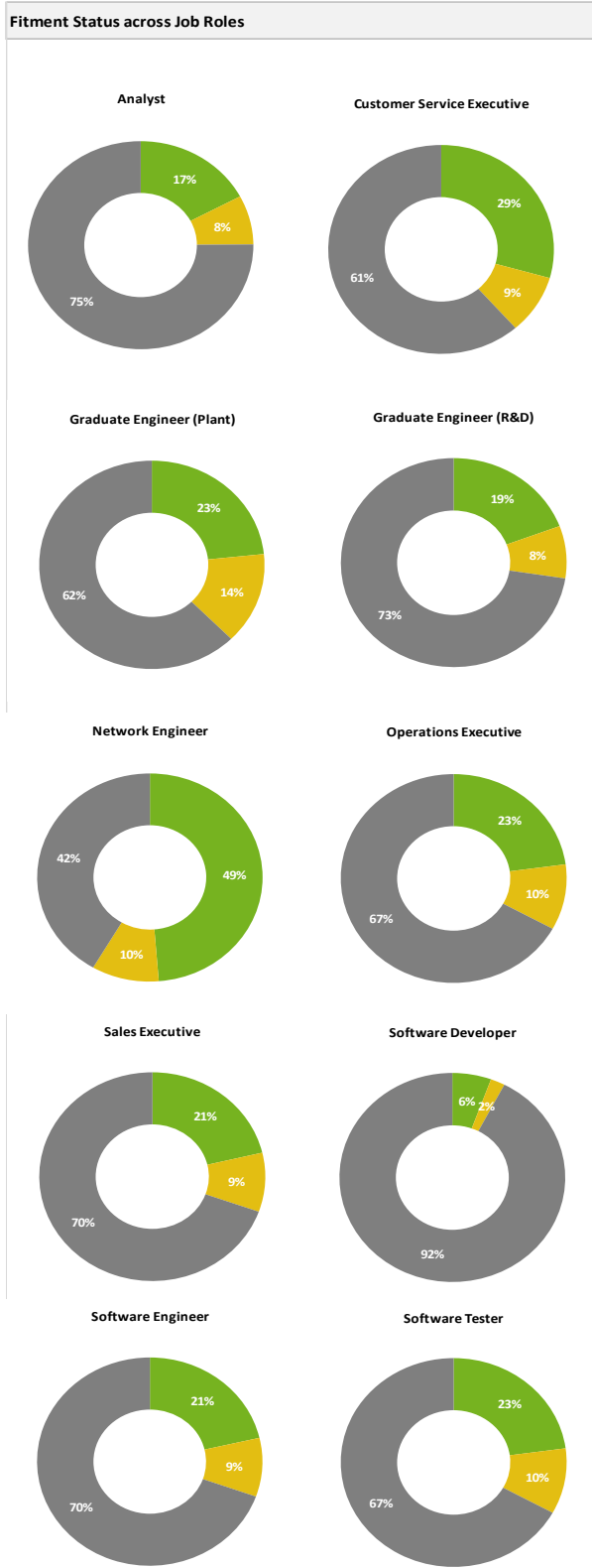
Fitment Status according to Job Roles




Figure 2 represents the number of students who have attempted the Cocubes assessment/section. It had been observed that for the job role of 'an Analyst', 75% of students were found to be 'not eligible'. The possible reason could be the lack of skills like quantitative analysis and logical reasoning in the students. Results concluded that about 8% of the students were found to have a 'low fit' and required training. Only 17% of the students were found to be suitable for the job-role of an analyst.

For the job role of 'Customer Service Executive,' about 29% of the students were found 'fit', the reason was effective communication & presentation skills with strong domain knowledge. 9% of the students were in need of skill-based training sessions. About 61% of the students were 'not eligible', due to lack of communication skills.

Figure 2: Graphic representation of B-Tech students across Job roles

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-  **Fit (Good to go, can apply for respective job role)**
-  **Low Fit (Need training, can apply for respective job role)**
-  **Not Eligible (Need training, cannot apply for respective job role)**

Sum of percentages shown in pie chart is based on number of candidates who have attempted the assessment/section

For the job role of 'Sales Executive' and 'Software Engineer', only 21 % were found suitable, and 70% of students failed to fulfill the requirement for the respective job role. Similarly, 6% of students were 'found fit' for the job role of software developer, 23% for software tester, and 23% for network engineer and operations executive. These students were recommended for remedial training program to overcome their weak areas.

Conclusion

Training in the engineering domain is the gateway to find a good job in the real world. Extensive remedial training should be given as per the requirement and need of the students. Sometimes choices and skills of students do not match. In such a situation, training plays a significant role in fulfilling the gap, clearing the doubts and training the students to choose the right career option as per domain-specific skill sets.

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