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A study on competencies of professional students in placement performance

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Abstract
The university-business relationship plays a key role in today's rapidly changing educational context, which indicates that company training needs and student employment preparation must be coordinated. Employers in various industries have increasingly emphasized the importance of a balanced skill set that includes not only technical knowledge but also essential soft skills such as communication, teamwork, leadership, and problem-solving abilities. This study highlights the role of such competencies in determining placement outcomes. While technical skills may open doors to job opportunities, soft skills are often decisive in ensuring that candidates succeed in interviews, group discussions, and real-world work environments. Furthermore, the research delves into the relationship between experiential learning, such as internships and live projects, and placement performance. Internships provide students with opportunities to apply their academic knowledge in real-world scenarios, gaining valuable practical experience that enhances their employability. The study aims to determine whether students who participate in internships or other experiential learning programs have a higher rate of job offers compared to those who solely rely on classroom learning. The findings of this research are expected to provide valuable insights into how educational institutions can better align their curricula with industry requirements, enhance placement training programs, and foster the development of essential soft skills among students. Additionally, the study aims to offer recommendations for improving the overall effectiveness of institutional support in placement activities. By addressing the current skill gaps and proposing solutions for better alignment between academia and industry, this research contributes to the broader discourse on employability and career readiness in higher education.

Keywords: Soft Skills, competencies, placement performance, skill gap

1. Introduction
In the current competitive job landscape, obtaining placements has emerged as a significant hurdle for students enrolled in professional degree programs such as MBA, M.Tech, and Engineering. Achieving success in placements now necessitates a combination of robust technical expertise and a variety of soft skills, including effective communication, leadership abilities, and time management. For example, leading MBA programs in India, especially those at the IIMs, boast nearly 100% placement rates, with average salary packages hovering around INR 30-35 LPA, and some graduates earning as much as INR 1 crore. Similarly, M.Tech programs at prestigious institutions like IIT Bombay and IIT Madras report impressive placement rates of about 90%, indicating a strong market demand for advanced technical skills. Engineering placement statistics across Indian colleges vary significantly, ranging from 60% to 100%, with fields such as Computer Science typically experiencing higher demand, while areas like Civil Engineering show lower placement rates, approximately 57%.
This research intends to evaluate the congruence between student competencies and industry requirements, as well as the impact of institutional support, including mentorship and skill enhancement, on improving placement outcomes. By analysing both technical and soft skills in relation to placement success, this study aims to pinpoint the critical factors that affect the employability of professional graduates.

1.1. Problem Statement
Professional students, especially those enrolled in MBA, Engineering, and M.Tech

programs, are increasingly pressured to ensure their skills align with industry requirements for employability. Although numerous institutions provide placement training and mentorship, the actual effectiveness of these programs in equipping students for successful job placements is still a matter of discussion. Additionally, there is growing apprehension regarding whether students possess an adequate mix of technical and soft skills, including communication and leadership, which are crucial for obtaining placements. This study seeks to assess the adequacy of students' skills in meeting industry standards, the influence of institutional support on improving placement results, and the significance of soft skills in facilitating students' placement achievements.

2. Review of Literature

- **Bosch *et al.* (2023) [1]:** It is incumbent upon educators in higher education to engage in reflection and research regarding the technical skills that are essential for workers to maintain their competitiveness in the job market, as well as for the successful integration of future generations into this environment. Following a thorough analysis and assessment of the market, it is crucial to identify innovative solutions that can be applied within academic and professional training frameworks, to address the evolving demands of a job market that is in constant need of new skills**.**
- **Duclos Bastías *et al.* (2023) [2]:** A well-organized educational framework centered on the development of competencies enables students to gain essential skills necessary for sustained success. This process requires an understanding of the dynamic nature of these competencies and their relationship with the labor market, which is influenced by the prevailing demands within their respective fields. There exists a distinct positive relationship between competencies and job performance, underscoring the importance of objectively measuring and evaluating these competencies. Such assessments are vital for verifying job performance, enhancing training methodologies, and integrating them into selection processes to boost overall success.
- **Sato *et al.* (2021) [4]:** Conducted a study that did not focus on any specific degree or industry. However, they found that 75% of companies surveyed experienced challenges in filling job vacancies due to candidates' insufficient skills. Additionally, 76% of these companies reported a disconnect between their requirements and the training provided to new generations in vocational training institutions. The most pronounced skill gaps were identified in artificial intelligence (94%), Big Data (85%), and digital marketing (82%). Companies indicated that by 2025, essential skills they will seek include expertise in Big Data management, digital marketing, environmental regulations, artificial intelligence, and robotics. In the field of Physical Activity and Sports Sciences, Sato *et al*. also conducted a mixed-methods study, using both qualitative and quantitative approaches, to identify the fundamental competencies necessary for effective professional development based on insights from specialists in sports organizations. Key findings highlight that competencies such as the ability to engage others, curiosity, ethical standards, and respect for diversity are crucial attributes that graduates should possess.
- **Fuller *et al.* (2020) [3]:** identified a range of key competencies essential for professional development, including decision-making, organizational and planning abilities, oral and written communication, interpersonal skills, commitment to quality, analytical and synthetic thinking, problem-solving, leadership, adaptability in international contexts, flexibility in new situations, initiative and an entrepreneurial mindset, information management, and teamwork. The study suggests that the SPAS degree effectively cultivates most of these professional competencies, though areas like communication, social skills, workplace dynamics, and collaboration may require further development.
  To strengthen these competencies, it is recommended to focus on enhancing organizational and planning skills, decision-making abilities, and adaptability. Increasing the number of work placement hours within the SPAS program is also advised, as practical experience greatly benefits professional growth. In light of these findings and the evolving job market, aligning vocational training with these competencies is crucial. However, given the rapid pace of digitalization, a static training approach may be insufficient, as many skills considered essential today could quickly become obsolete due to technological advancements.

2.1 Objective of the study

- Assess the adequacy of professional students' technical and soft skills in meeting industry demands.
- Evaluate the impact of institutional support, such as placement training and mentorship, on student employability and placement success.
- Examine the role of soft skills, including communication, teamwork, and leadership, in influencing placement outcomes.

2.2 Hypothesis Development

Null Hypothesis (H0): There is no significant relationship between the technical and soft skills of professional students, institutional support (such as placement training and mentorship), and placement success.

Alternative Hypothesis (H1): There is a significant relationship between the technical and soft skills of professional students, institutional support (such as placement training and mentorship), and placement success.

3. Methodology

The research employs a descriptive design aimed at examining the competencies necessary for professional students (M. Tech, MBA, Engineering) to achieve successful placements. It utilizes questionnaires to collect comprehensive data regarding the skill sets of students and the influence of institutional support on their employability. Primary data is gathered through questionnaires distributed to professional students, offering direct insights into their competencies, the support received from institutions, and the outcomes of their placements. Additionally, the study incorporates secondary data from journals, articles, and books to contextualize the competencies, trends in employability, and the significance of experiential learning in preparing for the workforce. The key variables identified

include technical skills, soft skills (such as communication and leadership), institutional support (including placement training and mentorship), and placement outcomes. Metrics analysed consist of skill rating percentages and placement success rates, evaluated using statistical methods like chi-square and correlation analysis. The sample for this study comprises 100 respondents from MBA, Engineering, and M.Tech programs, chosen to reflect the diversity of competencies and readiness for employability within these disciplines.

4. Results and Interpretation

Table 1: Demographic profile

Particulars	Classification	Number of respondents	Percentage
Gender	Male	53	53%
	Female	47	47%
Age	18-25	52	52%
	26-30	48	48%
Degree program	MBA	40	40%
	Engineering	32	32%
	M.Tech	28	28%
Total		100	100%

Interpretation

The data illustrates the demographic distribution of respondents categorized by gender, age, and degree program. Males represent 53% of the participants, females account for 47%. In terms of age distribution, those aged 18-25 comprise 52%, whereas individuals aged 26-30 constitute 48%, pointing to a younger demographic. Concerning academic pursuits, 40% of respondents are enrolled in MBA programs, 32% are studying engineering, and 28% are in M. tech programs, showcasing a diverse range of interests in higher education. This overall distribution underscores a male-leaning demographic, a youthful age profile, and a notable preference for MBA studies among the participants.

Table 2: Essential skills for securing a placement

Particulars	Classification	Number of respondents	Percentage
Essential skills for securing a placement	Analytical	20	20%
	Communication	17	17%
	Problem solving	18	18%
	Technical	18	18%
	Time management	27	27%
Total		100	100%

Interpretation

The information presented identifies the key competencies necessary for obtaining a position among the respondents. It reveals that time management is regarded as the most critical skill, with 27% of participants underscoring its significance. Analytical skills are also important, with 20% of respondents highlighting them, while communication, problem-solving, and technical skills are rated at 17%, 18%, and 18%, respectively. This distribution indicates that, although all skills are deemed valuable, effective time management is viewed as essential for achieving successful job placements, emphasizing the importance of organizational and efficiency skills in the current job market.

Table 3: Table showing test associated with degree program one-sample -t test

Test Value = 0						
Degree program	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
	22.928	99	.000	1.88000	1.7173	2.0427

Interpretation

The analysis using a one-sample t-test for the "Degree Program" variable yielded a significant outcome ($t = 22.928$, $df = 99$, $p < .001$). This result indicates that the mean difference from the hypothesized value (0) is statistically significant, with a mean difference of 1.88 and a 95% confidence interval between 1.7173 and 2.0427. These findings suggest that the degree programs chosen by students significantly differ from the expected test value, underscoring the diversity in program selections.

Table 4: Table showing test association between test degree programs and participation in placement training

Chi-Square Tests			
	Value	df	Asymp. Sig. (2-sided)
Chi-Square	7.093[a]	8	.527
Likelihood Ratio	7.257	8	.509
Linear-by-Linear Association	1.035	1	.309
N of Valid Cases	100		

Interpretation

The results of the chi-square test examining the relationship between two categorical variables reveal no significant association ($\chi^2 = 7.093$, df = 8, p = .527). Since the p-value exceeds 0.05, it indicates that the distribution of responses among the categories does not show a significant difference. Consequently, the observed and expected frequencies align closely, implying that there is no substantial relationship between the variables under investigation in this analysis.

Table 5: Table showing testing relationship between satisfaction with placement training and benefit of institutional support programs for job preparedness

Correlations		Satisfaction with Placement Training	Benefit of Institutional Support Programmes for Job Preparedness
Satisfaction with Placement Training	Pearson Correlation	1	
	Sig. (2-tailed)	.000	
	N	100	
Benefit of Institutional Support Programmes for Job Preparedness	Pearson Correlation	.937**	
	Sig. (2-tailed)	.000	
	N	100	

Note: Correlation is significant at the 0.01 level (2-tailed)

Interpretation

The results show a very strong positive correlation (r = 0.937, $p < 0.01$) between satisfaction with placement training and the perceived benefit of institutional support programs for job preparedness, based on a sample of 100 respondents. This significant correlation suggests that as satisfaction with placement training increases, so does the perception of institutional support programs as beneficial for job readiness, indicating a strong association between these two factors.

4. Findings

The research findings reveal that students enrolled in MBA, Engineering, and M.Tech programs experience considerable pressure to fulfill industry standards regarding employability. This necessitates the development of both technical and interpersonal skills, including communication, leadership, and time management, with 27% of participants identifying time management as the most essential skill. The demographic assessment indicates a well-balanced gender representation, predominantly comprising younger individuals aged 18 to 25. Furthermore, the study emphasizes the variety of program selections, noting a statistically significant inclination towards MBA programs. A robust positive correlation (r = 0.937, $p < 0.01$) was found between satisfaction with placement training and the perceived advantages of institutional support for job readiness, highlighting the critical role of effective institutional initiatives in enhancing job preparedness and aligning with industry demands. This indicates that educational institutions are crucial in addressing skill deficiencies through organized support and training, thereby improving students' employability and placement success.

4. Recommendations for future research

1. Investigate targeted soft skill development programs that could be incorporated into academic curricula to address skill deficiencies.
2. Assess the long-term effects of internships on students' career advancement following their placements.
3. Analyse the influence of collaborations between industry and academia in the ongoing refinement of curricula to align with current labor market requirements.

5. Conclusion

This research highlights the critical need to align student's competencies with the expectations of the industry, stressing the significance of both technical and soft skills for successful placements in professional fields such as MBA, Engineering, and M.Tech. While technical skills form the foundation of employability, attributes like communication, time management, and leadership are increasingly sought after by employers, thereby enhancing a candidate's attractiveness in competitive job markets. Institutional support, including mentorship, placement training, and practical experiences such as internships, is vital in addressing skill gaps and fostering job readiness. Furthermore, the rapid expansion of technology-driven sectors has led to a heightened demand for STEM (Science, Technology, Engineering, and Mathematics) skills, indicating a shift towards specialized technical knowledge as crucial for success in the contemporary workforce. This underscores the necessity for educational institutions to continuously adapt their curricula to align with these evolving trends and improve students' employability in an ever-changing job environment.

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