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## **Bridging the Gap Between Higher Education Curriculum and Industry Requirements: An Empirical Case Study from India**

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### **Abstract**

The difference between the skills taught in higher education and demanded in the industry in India is studied highlighting challenges like curriculum relevance and industry expectations of employability skills in the present work. The purpose of the study is to determine the prominent gaps associated with the academic programs and the significance on employability of graduates. The research design adopted for this research work is Descriptive and Empirical Research Design and both primary and secondary data sources are used. Structured questionnaires were used for the collection of primary data from the students, faculty members and industry persons. For data analysis & interpretation, statistical tools like percentage analysis, correlation, regression analysis and chi-square test were used. The results indicate that some of the biggest obstacles to being employment-ready are outdated curricula, lack of industry interaction and lack of practical exposure among graduates. This study also underscores the increasingly critical role of skill acquisition in technical areas, communication and hands-on experience in the work world. The study indicates that effective closures between the employability gap are possible by strengthening industry-academy partnership and carrying out the needed reforms in the education system, with special emphasis on skills.

**Keywords:** Higher Education, Employability, Industry Requirements, Curriculum Gap, Skill Development, Industry-Academia Collaboration, Employability Skills, India.

### **Introduction**

Higher education has been considered as an important tool towards economic growth, development of human capital and social change. The modern global economy has placed an added requirement to universities to not just impart theoretical knowledge but in conjunction with this, to equip graduates with industry-relevant competency and employability skills. A long-standing imbalance between the academic programs and curriculum and industry demands has become a significant issue in both developing and developed economies. This issue has been aggravated by the rapid technological development, era of digital transformation, globalization, automation, and work nature in India. Employers often complain that graduates are not exposed to real-life experiences, communication skills, problem-solving, and technical skills that are essential in the workplace, regardless of obtaining formal educational qualifications (Sarin and Sharma, 2019).

India has one of the highest youth population in the world and the number of graduates increases with millions of graduates every year. However, graduate employability is relatively low in that higher learning centers tend to ignore the changing industrial needs through alignment of their respective curriculums. According to recent studies, a significant number of employers still focus on separate aptitude and skill tests as academic credentials in themselves are not good predictors of job performance (Economic Times Education, 2026). The paradox of employability thus has emerged as a major concern concerning the

educational fabric of India. Whereas the universities focus more on theory and examination-centered learning, the industry focuses on practical knowledge and innovation, adaptability and interdisciplinary skills.

The National Education Policy (NEP) 2020 realised this expanding gap and suggested reforms that focus on experiential education, skill-based education, internship, and multi-disciplinary approaches as well as industry-academia engagement. The policy recommends outcome-based education and teaching vocational skills in higher education institutions in a bid to increase employability and economic productivity. Nevertheless, these reforms have not been carried out uniformly throughout the institutions (Rao, 2022).

It is even more important in the light of Industry 4.0, artificial intelligence, big data analytics, digital platforms, and automation, where job roles continually change. Employers are also demanding graduates who are proficient in analytical thinking, technological skills, teamwork, leadership and adaptability in place of graduates who were merely theoretically knowledgeable. Research shows that the higher education institutions in India continue to be significantly reliant on outdated methods of pedagogy and outdated curriculums, which do not reflect the prevailing market demands (Singh, 2024).

Industry-academia partnership has become one of the more successful strategies to help close this gap. Cooperation practices, including internships, industrial training, live projects, curriculum co-designing, guest lectures by industry professionals, incubation centers and skill certification programs can all be of significant help in enhancing employability of graduates. An emerging trend in the global university system is the collaboration between universities and industries to redesign university courses based on this need. In India, though, such partnerships usually stay on high-profile institutions, and many institutions and colleges still face issues of resource limitations, faculty constraints and lack of exposure to industry (Bhasker and Jayadatta, 2020).

The other significant aspect to the curriculum-industry gap is the lack of soft skills in the graduates. Some of the commonly cited skills that employers see fresh graduates lacking and that they think fresh graduates should have include communication abilities, critical thinking, collaboration, leadership, as well as professional ethics. The idea of technical competence cannot be reckoned on conceptual knowledge on professional success in the contemporary work environment. This means that schools are under strain to ensure that their schools have integrated holistic skill development into its school program. Studies have revealed that most students tend to believe that they are ill-equipped to expand into professional careers due to the fact that in many instances curricula focus on memorizing subject matter rather than applying in real-life professional settings and through practical experience learning (Agbu, 2025).

The disconnect between education and employment has more widely socio-economic consequences. Unemployment and underemployment in graduates leads to inefficiencies in the economy and there is also a lowered payoff to education. The industry pays extra training fees to develop employees to be operational in the industry, and graduates become frustrated and uncertain about their career. This lack of connection influences productivity, innovation and competitiveness of a nation. As such, the issue of bridging the curriculum-industry gap has now become a strategic concern by policy makers, educators and corporate organizations.

This Indian empirical case study seeks to analyze the level of fit between the curricula in Indian higher education and the needs of industry to enhance employability levels. The research involves insight into perception of students, the faculty, and the industry on the relevance of the curriculum, skill gaps, and industry readiness. The proposed analysis will contribute to the growing discussion on educational reform and workforce readiness in India.

### **Literature Review**

The relationship between higher education and employability has been examined by various researchers in the past years. Samarin and Sharma (2019) noted that higher education institutions are largely concerned with academic qualification, as opposed to competency-based learning, which has led to a considerable skills gap between graduates and the demands of employers. The paper has highlighted the significance of curriculum redesign and practical methods of learning towards enhancing employability.

Bhasker and Jayadatta (2020) examined the gaps in the employability skills taught during the contemporary Indian professional education and emphasized the significance of internship, industrial exposure, and experiential learning. The researchers discovered that most graduates are not ready to enter the workplace as a result of insufficient practical training and outmoded pedagogical techniques.

Singh (2024) analyzed the approach to developing skills in higher education and reported that employers showed an increased interest in critical thinking, communication abilities, flexibility, and digital literacy. As hypothesized by the study, institutions of higher learning should incorporate the use of industry-based pedagogical approaches to enhance the level of graduate employability.

Rao (2022) investigated the implication of the National Education Policy 2020 and found that the NEP reforms would be prone to reduce the employability gap by implementing multidisciplinary education, vocational integration, and flexible curriculum structures. Nonetheless, they also found that Indian universities had implementation issues.

Agbu (2025) explored graduate preparedness in Indian open higher education institutions and discovered that there was a severe decoupling between the outcomes of academic learning and industry expectations. The paper has highlighted the fact that graduates are usually knowledgeable in theory, but they have no knowledge of professional competencies and exposure to the real world.

The gap between higher education and software industry was explored by Dobsław et al. (2023) then found that university syllabi could be far more behind the rapidly changing demands of technological use. The researchers suggested the ongoing revision of the curriculum and enhanced cooperation with industry stakeholders.

Garousi et al. (2018) performed a systematic literature review on education of software engineering and the requirements of industry. Their results revealed that applied technical skills, teamwork and project management competency are more emphasized by the employers whereas in universities there is a greater emphasis on theoretical training.

Ayofe and Ajetola (2009) studied the mismatch between computer science programs and those in industrial IT. The research suggested an integration of academic rigor with industrial pertinence to make sure that the graduates are competitive within the workplace.

Jaiswal, Kuzminykh, and Modgil (2024) studied gaps in AI skills between the industry requirements and the universities. In the study, universities provided sufficient programming foundations but did not focus on data science, application AI tools, and industry-driven competencies.

The presence of a curriculum-industry disconnect in India is further supported by recent reports in the industry and news analysis. According to experts, academic institutions of higher education still heavily depend on rote learning and conventional assessment techniques, yet employers have become more and more demanding of practical problem-solving skills and innovation-oriented skills (Economic Times Education, 2026).

This is further emphasized by the characteristics of industry-academia partnerships as effective in reducing challenges in employability. Mittal et al. (2026) highlighted that collaborative curriculum development, skill certification programs, and practice training programs, can effectively increase graduate readiness to take up employment.

Moreover, it has been shown that soft skills and communication skills are also relevant to the enhancement of employability. Chavan Deb, Jain, and Metre (2025) have discovered that the graduates of the non-professional courses struggle especially with critical thinking, communication, and market-oriented skills, which restrict their employment opportunities.

On the whole, the literature at hand has proved that the divide between the Indian higher education curricula and the needs of the industry is a significant challenge in India. Even with policy reforms and institutional effort to this issue, dramatic improvement is still needed in the key areas of curriculum design, pedagogy, integration of skills and collaboration with industries to ensure sustainable employability outcomes.

### **Objective**

The study is designed to study the relevance of curricula, market vocational skills, firms expectation of workers and the preparedness of students in higher education in India. It also aims to pinpoint gaps in current soft skills and practical skills, and proposes effective measures to bridge soft, practical skills gaps and increase graduate employability.

### **Methodology**

The study used descriptive and empirical research with the type of research is primary and secondary. Data will be gathered primarily from the convenience sampling of students, faculty and industry professionals using questionnaires of structured questionnaires. Journal articles, reports, books and policy documents will be used to gather secondary data. Data interpretation will be made using the statistical tools percentage analysis, mean analysis, correlation and regression.

### **Result and Discussion**

The responses received from the students, faculty members, and industry experts were analysed in the present study to determine the mismatch between industry needs and higher

education curriculum in India. The data collected were classified, tabulated and analysed using the statistical methods like, the percentage analysis, mean score analysis, correlation, regression and the chi-square test. Analysis will be based on the perception of the respondents on relevance of curriculum, practical exposure, employability skills, interaction with the industry, and employability. The main results of the study are presented in summary, systematic, and comparative tables and interpretations that highlight their most important points.

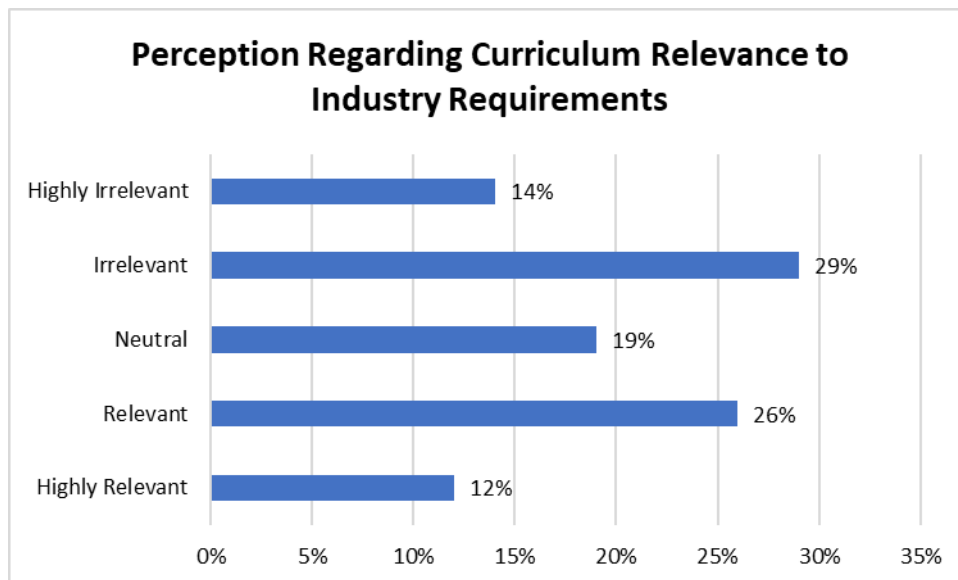


Fig. 1 Perception Regarding Curriculum

43% of all respondents felt the curriculum was not relevant or at least was considered highly irrelevant while 38% felt it was relevant. This shows that there is a gap between school programs and industry requirements which then gives emphasis that curriculum must be upgraded and oriented to practice.

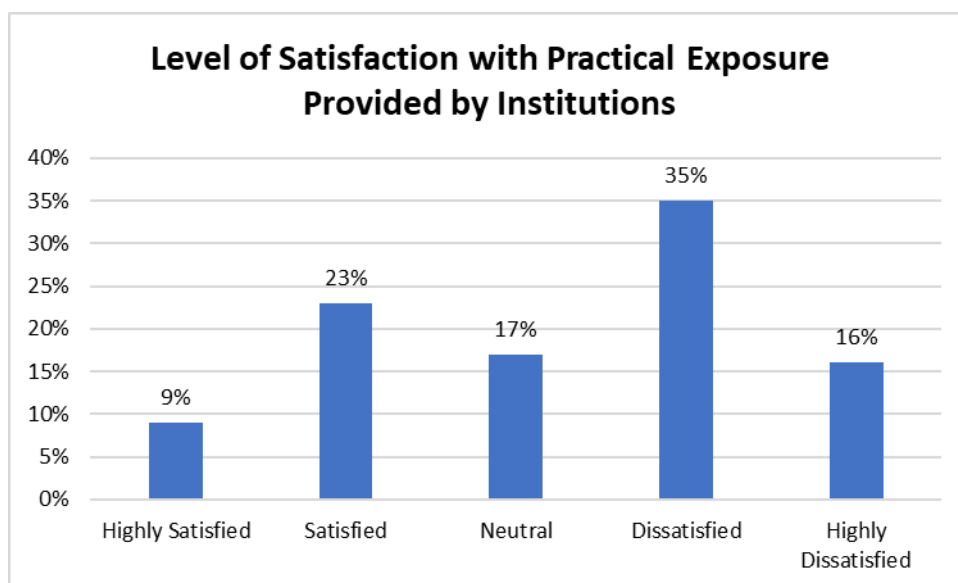


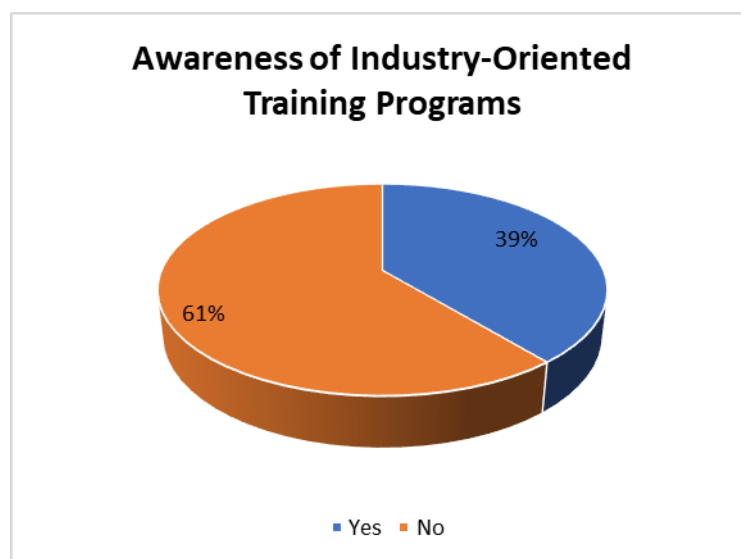
Fig. 2 Level of Satisfaction

The majority of the respondents (51%) were not satisfied with the practical exposure imparted by higher education institutes. Nictify only 32% was satisfied with the industrial visits and live projects and internships. The findings indicate problems with experiential activities in training programs.

**Table 1 Important Skills Expected by Industries**

Skills	Mean Score	Rank
Communication Skills	4.62	I
Problem-Solving Ability	4.48	II
Technical Skills	4.31	III
Teamwork	4.15	IV
Leadership Skills	3.96	V
Analytical Thinking	3.88	VI

The highest mean score was obtained for communication skills (4.62) and the second highest is problem-solving skill (4.48). This means that skills other than the technical are important in industry, too, as well as the technical. Schools must then emphasis on a skill development instead of just examining.



Most respondents (61%) reported not being aware of any training and/or certification programs that have been developed for the industry. This is due to poor communication and failure to enact employability enhancement programs in higher education institutions.

**Table 2 Relationship between Curriculum Relevance and Employability Skills**

Variables	Correlation Coefficient (r)	Significance Level
Curriculum Relevance & Employability Skills	0.74	0.01

It can be seen from the correlation coefficient retrieved that there is a strong positive correlation between curriculum relevance and employability skills bearing a value of 0.74. The significance level ( $p < 0.01$ ) verifies that new and work-ready curricula have a significant effect in enhancing workplace readiness and employability of the graduates.

**Table 3 Regression**

Variables	Beta Value	t-value	Significance
Curriculum Relevance	0.68	9.42	0.000
Practical Exposure	0.57	7.86	0.000
Industry Interaction	0.49	6.74	0.001
Model Summary	Value		
R	0.81		
R Square	0.66		
Adjusted R Square	0.64		

Analysis of regression shows that curriculum relevance, practical exposure and interaction with industries have significant effect in an employable personality. The coefficient of multiple determination 'R square' value is 0.66 which means that 66% of the variation in the dependant variable (Employability) can be explained by these independent variables. The ability to relate to daily work life in the jobs market was the strongest predictor of employability in graduates.

**Table 4 Association Between Internship Experience and Employment Readiness**

Variables	Chi-Square Value	Degrees of Freedom	Significance
Internship Experience & Employment Readiness	18.54	4	0.001

As the significance value is under 0.05, there is a significant relationship among internship experience and employment readiness. All those students who got the industrial training were more confident and prepared to start their professional career than those who did not receive any industrial training.

The findings of the analysis reinforce the fact that there is a significant learning gap between higher education curricula and industry in India. Practical exposure, communication skills and interaction with the industry were identified as being significant in enhancing employability by the respondents. The study also exposes that unmodernized curriculum, lack of internships, and the lack of industry partnership are significant issues that hinder a student's ability to be ready for graduate school. Focusing on improving industry-academy

collaboration, embedding skills in the curriculum and refreshing courses flexibly will have a considerable impact on increased employment success for students upon graduating.

### **Discussion**

The study has clearly shown the existence of some significant gap between the higher education curriculum and the need of the industries in India. The study indicated that significant numbers of the respondents felt that the curriculum was not being taught as relevant to the needs of industry at present. This reflects previous research that stressed that university and tertiary students are more inclined towards theoretical and exam-oriented education rather than the development of competencies. Absence of curriculum relevance has a direct impact on employment and readiness for work of graduates.

The study also found out that not enough of the students had exposure to the practical requirements, and it was one of the top concerns raised by employers. The respondents indicated their lack of satisfaction with Internship, Industrial Visit, Live Projects and Experiential Learning at Educational Institutions. Real-life application, problem-solving skills and professional competencies, are becoming more and more in demand from industries for job-ready graduates. But there are still a lot of organisations that practice the outdated and traditional style of teaching which places constraints on students that restrict their contact with real business scenarios.

The other key results of the research is the increasing significance of employability skills namely soft skills. Students' communication skills, teamwork, analysis and leadership were highly ranked by the respondents, reflecting industries' expectations that graduates also have interpersonal skills and/or leadership qualities. This illustrates that the only criterion for employability is not academic achievement alone but mainly a personality and skill development.

A significant positive correlation and regression between curriculum relevance, industry interaction and practical exposure and employability outcomes was found. Experience during internships also had a significant effect on the employment readiness of students. The findings are significant and show the significance of enhancing industry-academy relations by revamping the curriculum, developing skills driven initiatives, guest lectures & industrial training, and producing liaison projects.

The study recommends that higher education institutions in India need to explore rather more pro industry and skill-based education to effectively solve the Indian education problem of path to employment. To produce workers who can respond to the changing needs of market demands and their role in economic development, the continuous revision of the curriculum, the use of technology and improved working relationships with the industries need to be ensured.

### **Conclusion**

The study findings indicate that there is a huge mismatch between Higher Education Curriculum and demand of the industry in India, which is impacting the employability of graduates and preparedness to the workplace. The results indicate lack of preparedness of students in the areas of practical knowledge, technical competency and soft skills required by the current industries when teaching through traditional and theory-oriented curriculum.

Other factors that adversely impact employability include lack of industry exposure, industry internships and inadequate industry-academic linkages. Data processing revealed that the level of relevance, practical training and interaction in the industry significantly affects the employability of graduates, and this was confirmed by the statistic. Hence, bridging the gap has become imperative to enhance caliber of higher education and sustainable efforts to create employable workforce in India.

### Recommendations

The study suggests revision of academic curricula every now and then after consulting with industry experts which will adjust such academic activities to be in line with the needs of the market. Internships, live projects, industrial visits and skill based certifications should be given greater emphasis to achieve more experiential learning. Communication skills, leadership, teamwork, digital literacy and problem-solving, as well as skills in other areas should also be incorporated into academic structures and programs to improve their overall development by the institutions. To enhance the employability outcomes, there is a need to deepen the industry-academy relations in the context of joint training, projects, delivering presentations on industry-related subjects, and initiating placements. Further, there is a need for policies and educational authorities to promote outcome based learning and teachers' in-service training so as to benefit the effective implementation of the industry-oriented learning.

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