

# Shaping future careers

**Industry-academia collaborations are expected to transform education and its role in society**

In today's rapidly evolving, technology-centric world, the interplay between industry and academia is perhaps more crucial than ever for India's success as a nation. The evolution of advanced technologies, such as artificial intelligence, space communications, bio-manufacturing, and adaptive organic chemistry, further complicates collaboration. Yet, these technologies, like AI, also enhance the effectiveness of these collaborations by streamlining processes and improving both educational outcomes and corporate performance. This is particularly relevant in the context of Industry 4.0, where the synergy between academia and industry is essential for developing a skilled workforce capable of adapting to rapid technological changes. As industries shift and technological advancements accelerate, a dynamic and responsive education system is essential to equip students with a combination of theoretical knowledge, practical skills, and an adaptive learning mindset required to meet the demands of the modern workforce.

*Education and industry:* The traditional model of education, which often emphasises theoretical knowledge, is no longer sufficient to meet the demands of modern industries. Industries are now increasingly looking for candidates who possess not just academic credentials but also the ability to apply their knowledge in real-world scenarios. This shift has led to a growing recognition of the importance of integrating industry-relevant skills into educational curricula.

Furthermore, the traditional approach that four years of training will prepare someone for forty years of work is losing validity. Industry-academia collaborations are emerging as a solution to this challenge, offering a platform for the co-evolution of learning systems. By working together, educational institutions and industry players can ensure that curricula are aligned with the latest industry trends, technologies, and practices. Relevant curricula are only the starting point, as they make today's students immediately prepared to meet industry needs. Students must also be prepared not only to survive but to grow, learn, and adapt over their careers. Collaboration must not only enhance the relevance of students' education but also prepare them for the complexities of the modern workforce.

There is even a need to rethink the traditional four-year model with its 'fire and forget' trajectory. Academia needs to co-evolve with industry without compromising its long history



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of independence and autonomy. For example, the budding space industry ecosystem in India needs academic partners to help build sustainable innovation paths. The question is whether these partners will be found domestically or internationally.

*Bridging the gap:* A key element of industry-academia collaboration is the development of joint research initiatives. These partnerships enable academic institutions to contribute to the advancement of industry by conducting research that addresses real-world problems. Industries benefit from access to cutting-edge research that can drive innovation and competitiveness, while academic institutions enhance their reputation for relevance, attracting not only high-quality candidates but also world-class faculty researchers.

For instance, collaborative research projects can focus on areas such as artificial intelligence, renewable energy, or bio-technology, where academic expertise can be leveraged to solve industry-specific challenges. By involving students in these research initiatives, educational institutions provide them with valuable hands-on experience. This not only enhances students' understanding of their field but also equips them with the skills needed to tackle complex industry problems.

Curriculum development is another critical area where industry-academia collaborations play a pivotal role. By involving industry professionals in the design and delivery of courses, educational institutions can ensure that their programs are aligned with the needs of the job market. This collaboration can take various forms, such as guest lectures, workshops and even co-teaching arrangements, where industry experts bring their real-world experience into the classroom.

For example, in certain institutions, academic programs have successfully incorporated real-world projects into the classroom by inviting industry leaders to participate in class evaluations. In one case, a project involving a leading space agency led to a student group recommending the cancellation of a major program, a decision that was ultimately implemented. This experience empowered students to make informed assessments and provided them with direct involvement in significant industry decisions.

Traditionally, universities have found ample ways to collaborate with industry in the hard sciences and engineering, where projects are tangible and

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can be broken down into classroom-sized pieces. However, business and management problems are often more difficult to present in such a way. Some forward-thinking institutions have addressed this by integrating industry executives into the classroom, not merely as guest lecturers but as active educators, facilitating a more hands-on approach to business education.

*Enhancing employability:* Internships and work-integrated learning opportunities are vital components of industry-academia collaborations, providing students with the opportunity to apply their theoretical knowledge in practical settings. For industries, internships offer a chance to identify and nurture talent, while for students, they provide invaluable exposure to the workplace, helping them develop the competencies essential for career success.

Moreover, industries play a crucial role in mentoring students, offering guidance and advice as they navigate their educational journey. This mentorship helps students better understand workplace expectations and develop the professional skills often not covered in traditional academic programmes. By actively participating in the educational process, industries can help shape the outcomes of academic programmes to better meet their needs, including providing feedback on curriculum design and offering real-world case studies for classroom use.

For instance, there is a growing recognition that many high school students lack an understanding of their career options. They often have limited exposure to the range of possible careers and tend to base their choices on family or friends' experiences. Initiatives aimed at providing students with early exposure to multiple career paths can help them make more informed choices. Odyssey, is one such, making inroads to help these teens build road maps and experience multiple career exposures so they can find out what they are captivated by and how those careers might play out. Such programmes, which integrate career exploration into the educational journey, set the stage for a more informed and motivated student body entering higher education, necessitating closer integration between industry and academia to meet the needs of these well-prepared entrants.

*The global perspective:* While the benefits of industry-academia collaborations are well established, their potential extends far beyond individual institutions or industries. As these partnerships evolve, they hold the potential to transform education on a national and even a global scale. By fostering a more responsive education system, industry-academia collaborations can help address both current and future industry needs, ensuring that the next generation of graduates is well-equipped to thrive in an ever-changing world.

One example of this global impact is the growing trend of cross-border collaborations, where academic institutions and industries from different countries work together to address shared challenges. These collaborations not only facilitate the exchange of knowledge and expertise but also help to bridge the gap between developed and developing countries, providing students with access to a broader range of learning opportunities.

In addition, industry-academia collaborations can play a crucial role in addressing global challenges such as climate change, public health, and social inequality. By bringing together the resources and expertise of both academia and industry, these partnerships can drive innovation and create solutions that positively impact society.

*The future:* It is clear that industry-academia collaborations will continue to play a vital role in shaping the careers of tomorrow. However, to fully realise their potential, these partnerships must be built on a foundation of mutual respect and shared goals. Both academic institutions and industries must be willing to invest in these collaborations, recognising that the benefits extend far beyond the immediate outcomes.

By fostering collaborations responsive to the needs of the job market, we can create an education system capable of driving innovation and positive change on a global scale. These partnerships are not just a trend but a necessity in today's fast-paced world. As they continue to evolve, industry-academia collaborations will undoubtedly transform the way we think about education and its role in society, ensuring that students are well-prepared for the careers of tomorrow.

