SCIENCE COLLEGES IN RAJASTHAN

DECEMBER, 2025

HIGHER EDUCATION Review

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Dr (Fr.) Arokya Swamy SJ, Principal

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Publisher & Editor Alok Chaturvedi

Editor Mary Janifha Evangeline X

Editorial Team Viswanathan A
Lakshmi Prabha
Ashirvadh Nair
Grena P

Editorial Queries editor@thehighereducationreview.com

GM Sales & Marketing Rohit Kumar

Sales & Advertisement Simran Singh
Nidhi Singh
Vithal Dondu Kolapte

Advertisement Queries advertise@thehighereducationreview.com
Tel: 080-46441103

GM - Media & Graphic Designing Visualizer Prabhu Dutta A.R.N Ray

Visualizer GIRISHA M

Circulation Manager Magendran Perumal

Office Higher Education Review
No.124, 2nd Floor,
South Block, Surya Chambers,
Airport Main Road, Bangalore 560017
Tel: 080-46441103

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Editorial

Fuelling a New Era of Innovation

Rajasthan, a state known for its majestic landscapes and cultural legacy, is quietly engineering a powerful transformation in the realm of scientific education. Over the past decade, its science colleges have evolved into vibrant centres of academic excellence, research innovation, and interdisciplinary discovery - shaping a new generation of thinkers, analysts, and problem-solvers who are ready to contribute to India's scientific future.

Across cities like Jaipur, Udaipur, Jodhpur, Kota, and Ajmer, science institutions are redefining what modern education looks like. They offer far more than traditional classroom learning; they foster a mindset of inquiry, experimentation, and exploration. Advanced laboratories, digital classrooms, innovation centres, and collaborative research hubs give students the opportunity to work on real-world challenges - from climate science and biotechnology to materials research, data science, artificial intelligence, and environmental sustainability.

What distinguishes Rajasthan's science colleges is their commitment to blending strong academic foundations with practical, industry-linked exposure. Partnerships with research institutes, technology parks, healthcare networks, and industry clusters allow students to engage in internships, field research, scientific projects, and emerging-tech workshops that expand their perspectives and sharpen their skills.

Equally important is the state's rising academic ecosystem - driven by experienced faculty, upgraded curricula, merit-based opportunities, and a supportive environment for scientific competition and innovation. As India strengthens its position in global STEM advancements, Rajasthan is steadily building a talent pipeline that is thoughtful, technically skilled, and future-ready. Today, science colleges in Rajasthan stand as dynamic gateways to discovery - empowering students to question, innovate, and lead in a world that increasingly depends on scientific progress.

After scrutinizing some of the **Top Science Colleges in Rajasthan, Higher Education Review** has selected the top performers who have showcased exceptional academic expertise. With the intent to transform the lives of students, these colleges have exhibited the acumen to adapt to the evolution of the educational field and help students emerge victorious.

We look forward to receiving your feedback and suggestions.

Janifha Evangeline
Editor
editor@thehighereducationreview.com

ISME

STUDY IN ONE OF THE TOP B- SCHOOLS IN BANGALORE
WITH AN INTERNATIONAL OUTLOOK

Dr. Nitin Garg, IIT Bombay, MBA Carnegie Mellon-USA, Ph.D. IIM Lucknow.
Tanuj Garg, MBA-Wharton, MS Carnegie Mellon-USA.
Dr. Rony G Kurien, BSc, MBA-Symbiosis, Ph.D. Anna University.

K.G. Garg, IIT Roorkee, AeSI-USA.
Pallavi Jain, MBA-Symbiosis, HRM-Wharton School of Business-USA.
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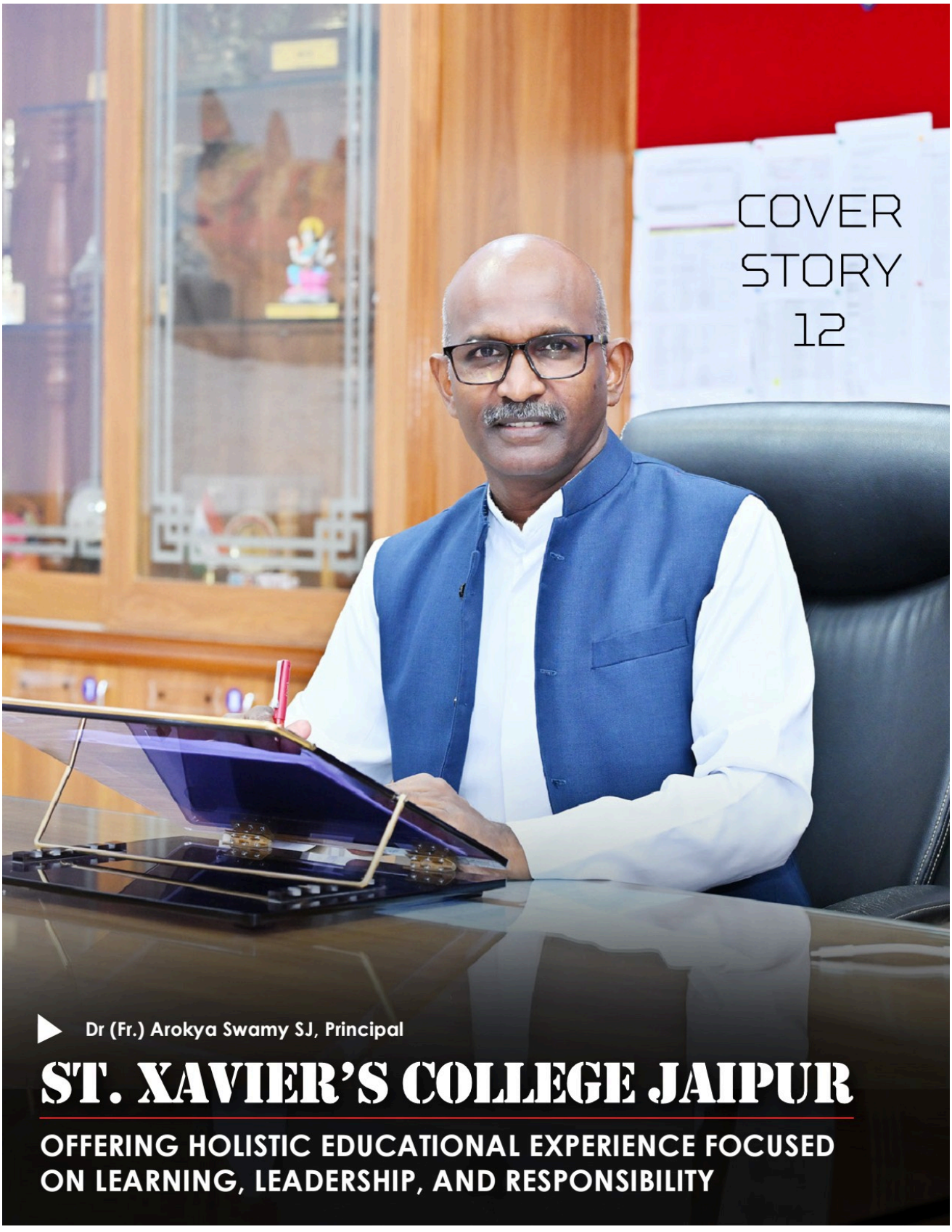
CONTENTS



COVER STORY 12

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ST. XAVIER'S COLLEGE JAIPUR

OFFERING HOLISTIC EDUCATIONAL EXPERIENCE FOCUSED ON LEARNING, LEADERSHIP, AND RESPONSIBILITY

BEST ALTERNATIVES TO IITS FOR SCIENCE & RESEARCH COURSES

By Grena, Correspondent, Higher Education Review

The Indian Institutes of Technology (IITs) are recognized as the leading institutions when it comes to science and research education in India. However, they are not the only institutions developing the next generation of scientists, innovators, and researchers. India has several universities and specialized institutions that offer world-class degrees, cutting-edge laboratories, and research opportunities recognized internationally in specific domains.

These alternative institutions offer students flexibility in their academic path and opportunities for interdisciplinary exploration. For students who want to pursue cutting-edge research, access international collaborations, or explore niche scientific fields, these institutions stand as excellent choices, proving that quality science and research education in India extends far beyond the IIT ecosystem.

Indian Institutes of Science Education and Research (IISERs)

Indian Institutes of Science Education and Research (IISERs) are designed to create another generation of scientists. Their flagship BS-MS dual degree program provides students with theoretical learning and exposure to research experience. Students also have opportunities to participate in summer research internships, and collaborative projects with national and international laboratories. IISERs provide an ideal space for physics, chemistry, biology, and mathematics for students interested in carrying out scientific research at the undergraduate level. IISERs also offer integrated PhD programs and Doctoral programs, and remain viable sites of learning and research for the next generation of researchers.

Sunil Kumar Khare, Director, IISER Kolkata, said, "With computational methods driving breakthroughs across scientific fields, IISER Kolkata's new programme is designed to equip students with cutting-edge computational and data science skills while maintaining a strong foundation in the natural sciences."

Tata Institute of Fundamental Research (TIFR), Mumbai

Tata Institute of Fundamental Research (TIFR), Mumbai, is one of the prime institutes of fundamental research in India with a focus on physics, mathematics, biology, and computer science. Also an institute of higher education, TIFR provides PhD and integrated PhD programs that are research intensive. These programs are competitive because they have a Graduate School (GS) entrance examination and subsequently involve an interview. The GS exam is designed to assess candidates' skill levels across a range of subjects including physics, chemistry, and mathematics. The TIFR has many world-class laboratories, computing resources and academic and industrial collaboration opportunities. Above all, TIFR emphasizes a culture of research

and innovation. Graduates from TIFR move into academia, research institutes, and industry roles requiring deep expertise.

Prof MC Arunan, Tata Institute of Fundamental Research (TIFR), said, "Education cannot be what we teach, it is learning along with our students."

Birla Institute of Technology and Science (BITS), Pilani

Birla Institute of Technology and Science (BITS), Pilani, and its campuses in Goa, Hyderabad, and Dubai, is a leading private institution recognized for its high academic quality and entrepreneurial culture. BITS offers undergraduate, postgraduate, and PhD programs in science, engineering, and technology. The Integrated First Degree Programs (B.E., B.Pharm. and M.Sc.) have BITS Admission Test (BITSAT) and an online entrance exam testing proficiency in physics, chemistry, and mathematics. BITS Pilani is a pro-innovation, research, and industry-ready institution with a flexible curriculum that allows for interdisciplinary engagements. As well as this the students will have access to advanced laboratories, computing equipment, and guidance from faculty with extensive industry experience.

Kumar Mangalam Birla, Chancellor, Birla Institute of Technology & Science, Pilani, stated, "For over six decades, BITS Pilani has nurtured generations of professionals, thinkers, and entrepreneurs who have played an important role in shaping India's growth story on the global stage," he said. "Our latest efforts are not just about scale, but also about building an ecosystem that empowers learners, nurtures innovation, and fuels inclusive growth."

Indian Statistical Institute (ISI), Kolkata

The Indian Statistical Institute (ISI) is recognized worldwide for its excellence in statistics, mathematics, computer science, and quantitative economics. The institute offers multiple programs including B.Stat, B.Math, M.Stat, M.Math, and Ph.D. Programs in undergraduate degrees through the ISI Admission Test which evaluates students in mathematics and reasoning proficiency. Admissions to postgraduate programs are based on students' performance in national qualifying exams such as GATE, JAM, or CUET-PG. Graduates from ISI are sought after internationally in academia, data science, analytics, and research institutions.

Mukherjee, Chairman of the governing council of ISI, said, "ISI has a key role in policymaking and formatting plan objectives. It is a premier institution in its own right and has been doing world-class research."

Jawaharlal Nehru Centre for Advanced Scientific Research (JNCASR), Bangalore

Jawaharlal Nehru Centre for Advanced Scientific Research (JNCASR), Bangalore is a unique multidisciplinary research institute focusing on Materials Science, Molecular Biology, Chemistry, and Nanoscience. JNCASR has PhD and integrated PhD programs where research is an integral part of a student's academic involvement right from the beginning. Admission to these programs is based on academic performance, national-level fellowship tests such as CSIR-UGC NET, GATE, or JAM, and an interview. Students are mentored by top scientists, involved in cutting-edge laboratories and work on collaborative projects that cross disciplines or scientific domains. JNCASR encourages interdisciplinary education and values experimentation, critical thinking and problem solving ability. JNCASR's strong emphasis on innovation, and collaboration across disciplines, has established it as a center for state-of-the-art scientific research and training.

Conclusion

While the IITs are associated with engineering excellence, they aren't the only route to successful careers in science and research. The institutes organized within the alternative academic opportunities list, have a completely different range of opportunities within India's academic opportunities. Every institution provides specialized opportunities, ranging from pure sciences and mathematics through the life sciences and medical observations as well, so that students can find areas of programs that match their interests. By exploring their alternative options, aspiring scientists and researchers can forge different academic paths, contribute to exciting discoveries, and develop successful careers beyond the IIT route. HER

HOW EARLY CRITICAL THINKING SHAPES STUDENT SUCCESS

Matthew Jaskol, Founder & Program Director, Pioneer Academics

Matthew Jaskol, Founder and Program Director, Pioneer Academics in an interaction with Higher Education Review shared his views on the importance of nurturing critical thinking skills in early childhood rather than waiting until secondary or higher education, how can teachers effectively integrate critical thinking exercises into traditional subjects like math, science, and language without overloading the curriculum and more.

Matthew Jaskol is the founder of Pioneer Academics, leading global educational innovation that empowers high-school students through accredited research-based and problem solving learning opportunities. Matthew Jaskol is the founder of Pioneer Academics, leading global educational innovation that empowers high-school students through accredited research-based and problem solving learning opportunities.

Why is it essential to begin nurturing critical thinking skills in early childhood rather than waiting until secondary or higher education?

Critical thinking skills are always essential in education, and this is the era with the tech development that calls for these skills more than ever before. From the talent development perspective, critical thinking skills work similarly like knowledge-based skills, art skills or sports skills, the earlier a student starts understanding it, the longer he or she will be able to practice it, and therefore stronger critical thinker they will become. The Government of Ireland Postgraduate Scholarship funded the research about critical thinking teaching in early childhood and found empirical evidence to support the benefit of teaching critical-thinking early. It shows that early interventions in thinking-skills can positively affect dispositions like language use, independent thinking, and cooperation.

In India especially, where children often enter highly structured academic environments at a young age, critical thinking can act as a counterbalance to the pressures of performance and memorization. It helps young learners build confidence in their own reasoning and problem-solving abilities, which is essential not just for academic success but for long-term adaptability. And in a world that is rapidly changing, where technology evolves faster than curriculum, this adaptability becomes one of the most important life skills a child can develop. Ultimately, early critical thinking nurtures a generation of learners who see themselves not as passive recipients of information, but as thoughtful, independent participants in shaping their own future.

How can teachers effectively integrate critical thinking exercises into traditional subjects like math, science, and language without overloading the curriculum?

Integrating critical thinking exercises into curriculum that focus on building knowledge requires an overhaul of the teaching system, ranging from what critical thinking skills are set as the outcome, to how they are taught, and to how to assess the learning outcome.

Different subjects require different approaches:

Math and science itself are strictly a logical process. Error analysis in these subjects is an effective way to reinforce that critical thinking. In mathematics, for example, asking students why a method works or encouraging them to arrive at multiple solutions cultivates deeper conceptual understanding. In science, even simple acts like inviting students to predict outcomes before an experiment or challenge a hypothesis, help them internalize the scientific method rather than memorize it.

Language and humanity subject teachers can increase critical thinking teaching by shifting focus on answers to explaining hypotheses and evidence in the materials. In

literature classes, exploring a character's choices or debating alternative endings naturally strengthens analytical and interpretive thinking.

These moments don't demand extra time; they simply shift the focus from answer-getting to meaning-making. And this is especially important in India, where teachers often manage large classrooms. Small reframings, consistently done, create a lasting impact. When teachers build these micro-moments into their routine, critical thinking becomes not an additional task, but the lens through which every subject is understood.

What role do parents and home environments play in shaping a child's ability to question, analyze, and think independently?

I would say either parents help a lot or not so much. It takes parents who are great critical thinkers and who are conscious about nurturing critical thinking into daily conversations. In most cases, it is really hard for critical thinking skills to be developed at home. Besides that critical thinking is a sophisticated skill set that requires systemic teaching and practicing.

There are still tips that parents can encourage critical thinking in early childhood. In a way they can create a child's first learning environment. When parents in India encourage open conversations, they signal that thinking is valued. Even simple habits like asking children what they think about a story, or involving them in small household decisions, build analytical confidence. When homes become safe spaces for dialogue, children learn that independent thought is not a challenge to authority, but a pathway to growth.

How can schools strike a balance between academic achievement and the development of reasoning, creativity, and problem-solving abilities?

Schools do not need to choose between academic excellence and the development of reasoning or creativity - these strengths reinforce each other. When students learn to question, analyse, and think independently, they don't just memorize more; they understand more, and that deeper grasp translates into stronger academic outcomes. The real shift comes from moving away from content overload toward cognitively rich learning that emphasizes analysis, justification, and application.

This is especially important in high-pressure systems like India, where success is often reduced to percentages. Inquiry-based tasks - designing experiments, reinterpreting events, breaking down complex problems step by step - make students more engaged, confident, and resilient.

In a world increasingly driven by AI and automation, how does early critical thinking education prepare students for future job markets and civic life?

In a world increasingly shaped by AI and automation, early critical thinking education is one of the strongest predictors of future success - both in the job market and as an engaged citizen. When students learn critical thinking from a young age, they develop the ability to evaluate information instead of passively absorbing it. This skill becomes essential as AI-generated content floods daily life and misinformation spreads quickly. Students who can question sources, weigh evidence, and detect assumptions are far better equipped to make informed personal and civic decisions.

Early critical thinking also trains students to understand complex systems - economic, technological, environmental - and to identify problems or opportunities within them. This systems-level awareness is fundamental to navigating interconnected challenges in society, from climate change to algorithmic bias.

In the workplace, these early foundations translate into highly valued competencies: creative problem-solving, leadership, communication, and adaptability. As automation handles routine tasks, human advantage shifts to skills machines cannot replicate easily - contextual judgment, ethical reasoning, and the ability to collaborate and innovate across disciplines.

How can assessments evolve to measure critical thinking effectively, rather than focusing solely on rote memorization or standardized testing?

Assessments can evolve to measure critical thinking more effectively by shifting from product-only evaluation to process-based assessment. Instead of rewarding students solely for memorizing information or selecting the right answer on a standardized test, process-based assessments examine how a student thinks: how they gather evidence, analyze assumptions, revise ideas, and build arguments over time. HER

HIGHER EDUCATION Review TOP 10 PROMISING

SCIENCE COLLEGES IN RAJASTHAN - 2025

> At a time when higher education faces scrutiny over relevance and adaptability, St. Xavier's College Jaipur offers a compelling model, rooted in tradition yet responsive to contemporary challenges

Dr (Fr.) Arokya Swamy SJ, Principal

ST. XAVIER'S COLLEGE JAIPUR

OFFERING HOLISTIC EDUCATIONAL EXPERIENCE FOCUSED ON LEARNING, LEADERSHIP, AND RESPONSIBILITY

By Ashirvadh A Nair

India's higher education sector is undergoing a rapid transformation, focusing on bridging the gap between academics and employability while fostering innovation, sustainability, and digital inclusivity. The growing emphasis on quality education that combines knowledge, ethics, and adaptability is redefining the role of colleges. The NEP 2020 envisions institutions as spaces that promote multidisciplinary learning, integrated research, and character development as core elements of academic excellence.

Colleges are now evolving into centers of innovation and integrity, equipping students to think critically, embrace technology, and address global challenges such as sustainability and equity. A balanced approach that connects technology with values, research with real-world impact, and global perspectives with local relevance is essential to building a dynamic and inclusive learning ecosystem.

Against these challenges, St. Xavier's College Jaipur presents a model of how value-based education can evolve within contemporary academic and social expectations. Established in 2010 under the Jaipur Xavier Educational Association and affiliated with the University of Rajasthan, St. Xavier's College Jaipur is a Christian minority, co-educational institution known for its academic integrity and community focus. Accredited 'A' Grade by NAAC and ISO 14001:2015 certified, the college operates under the Jesuit motto "Competence, Character, and Compassion".

Its 25-acre eco-friendly campus at Nevta–Mahapura Road houses undergraduate, postgraduate, and doctoral programs supported by ICT-enabled classrooms, digital resources, and research-oriented facilities. The college emphasizes inclusive education, blending academic structure with social engagement and ethical development. The leadership team comprising Principal Dr (Fr.) Arokya Swamy SJ, Vice Principal Dr (Fr.) Raymond Cherubin SJ, Dean Research Dr (Fr.) M. Amaldass SJ, and Campus Administrator Fr. Pradeep Indwar SJ continue the Jesuit tradition of education.

Academic Structure & Learning Environment

The institution offers nine undergraduate, three postgraduate, and two Ph.D. programs across sciences, arts, and commerce. The curriculum is designed to promote coherent and multi-dimensional thinking, learning through experience, creative learning, and early engagement in research activities.

Beyond classroom instruction, the college promotes skill development through seminars, fieldwork, workshops, and internships. The Xavier Centre for Career Advancement (XCCA) is a distinct initiative that integrates preparation for competitive examinations, including Civil Services, alongside degree programs. The dual model gives students opportunities to align their career ambitions with academic learning within the same campus environment.

Research, Innovation, and Sustainability

The institution maintains a clear focus on research-led learning. "Our Lab to Land initiative connects classroom research with practical outcomes, encouraging students and faculty to address issues of sustainability, agriculture, and entrepreneurship", says Dr (Sr.) Ligimol Louis CMC, Head, Department of Science at St. Xavier's College Jaipur. Guided by Krishnendu Acharya, University of Calcutta, a globally recognised scientist ranked among Stanford University's top 2 percent of Scientists, this initiative translates academic inquiry into field applications.

In addition, the Sustainable Mycofarm Project, which is Rajasthan's first sustainable, college-level mushroom farm, is a model of both applied learning and environmental stewardship. The Centre for Sustainability employs organic food production, waste management, and renewable energy to engage the campus in eco-centric education more effectively. Both these initiatives also envision providing an alternative source of income for farmers and supporting budding agripreneurs from the institution.

The campus has been coined "Green Desert," which signifies responsible management of resources, with 25 acres of flourishing ecosystem and over 4,000 trees planted, all within the dry ecosystem in Rajasthan. The college engages in local and global initiatives to advance the UN Sustainable Development Goals and conducts environmentally conscious research.

Experiential Learning through Modern Laboratories

Under the guidance of Dr (Sr.) Ligimol Louis CMC, the Science Department emphasizes experiential learning through modern laboratories in Physics, Chemistry, Botany, and Zoology and Maths. "Our students engage in faculty-guided projects, mini-research assignments and collaborative studies connecting science to social and environmental needs", says Dr (Sr.) Ligimol Louis.

The Department of Computer Science, led by Dr Arpita Banerjee, aligns its curriculum with the rapid evolution of digital technology. Courses in artificial intelligence, data science, and cybersecurity are structured around problem-solving and practical applications. Assignments focused on research, hackathons, and workshops with industry participation help students connect theory to innovation. Facilities such as R&D cells, high-performance computer labs, and incubators for entrepreneurship underpin the learning of applied technology and the development of the next-generation professionals in the digital world.

Integrating Theoretical Foundations with Experiential Learning

The Arts faculty brings together disciplines that explore human behaviour, governance, communication, and culture. The Economics Department trains students in analytical reasoning and policy interpretation, empowering them to drive informed decisions for a more equitable future. The Department of English merges literary studies with creative writing, digital media, and impactful communication training, preparing students for diverse cultural and professional landscapes where storytelling and expression matter. The Political Science Department fuels civic participation through parliaments, policy debates, and experiential learning, shaping governance. The Department of Psychology combines academic research with practical counselling, promoting mental health literacy and applied practices to make a difference in people's lives through empathy and Science. Complementing their academic strengths, the departments actively organise a wide range of events - workshops, seminars, expert lectures, film screenings, field engagements, and annual fests - that foster holistic development and experiential learning. These events address contemporary and socially relevant issues, encouraging students to think critically, engage in dialogue, and apply their knowledge beyond the classroom. The Departments regularly invite distinguished scholars, industry experts, and practitioners to broaden students' perspectives. Notably, the Department of English also functions as a recognised research centre, hosting research scholars and promoting an environment of inquiry, innovation, and advanced academic work. The departments take pride in their alumni who have progressed to join prestigious institutions and secure positions in multinational companies.Across these departments, transdisciplinary collaboration occurs through joint seminars and community-based projects focusing on sustainability, gender equity, and social justice because inclusivity matters.

Holistic Development & Global Exposure

The institution focuses on student development programs under NCC, NSS, the Swachhta Action Plan (SAP), and Rovers–Rangers, which engage students in service learning, environmental initiatives, and civic outreach. By collaborating with Unnat Bharat Abhiyan and the Innovation & Incubation Cell, students participate in village development programs, entrepreneurial projects, and innovation challenges. This approach connects learning and social responsibility, ensuring that graduates leave not only with degrees but with a sense of civic and environmental accountability. The campus also supports a range of cultural, literary, and athletic activities, with facilities for major sports and regular inter-collegiate tournaments promoting teamwork and inclusivity.

With 70 national and 3 international collaborations, the institution is facilitating research and cultural exchange partnerships. Its partnerships with Nanzan University and Sophia University in Japan reflect the commitment to developing cross-cultural academic opportunities. In addition to meaningful opportunities for bilateral research, student exchange, and curriculum enrichment, these

partnerships will also allow students to experience, develop, and implement academic work across cultures.

St. Xavier's College Jaipur is redefining professional readiness through strong industry partnerships and research collaborations. These networks expose students to real-world academic and economic shifts, preparing them for advanced studies and global careers. From internships and live projects to international exchanges, students engage with evolving challenges beyond the classroom. The institution, through its innovative pedagogies, aims to nurture professionals who can think critically, adapt globally, and lead responsibly.

Future Pathway

St. Xavier's College Jaipur is poised for a major transformation as it prepares to transition into Xavier University Jaipur (XUJ), signalling its ambition to expand academic and research horizons. The proposed university will integrate liberal arts with technology-driven disciplines, launching new schools in Communication, Engineering and Technology, Biosciences, Design, and Education. This phased evolution includes infrastructure growth, interdisciplinary learning, and deeper industry-academia ties. With a sharpened focus on research, innovation, and social engagement, XUJ aims to emerge as a vibrant academic hub in Rajasthan.

At a time when higher education faces scrutiny over relevance and adaptability, St. Xavier's College Jaipur offers a compelling model, rooted in tradition yet responsive to contemporary challenges. The college has positioned itself as a key stakeholder in Rajasthan's evolving academic landscape through its focus on research, sustainability, and inclusive growth. As it prepares to transition into Xavier University Jaipur, the institution continues to redefine higher learning—not just as a measure of achievement, but as a commitment to reflection, responsibility, and lifelong pursuit of knowledge. HER

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BEYOND DEGREES: HOW B-SCHOOLS MUST EVOLVE TO BUILD ENTREPRENEURS

Prof.Himanshu Rai, Director, IIM Indore

Prof. Himanshu Rai, Director of IIM Indore, has led the institution's achievement of the coveted "Triple Crown" accreditation of AMBA, AACSB, and EQUIS, an honor shared by just 100 global institutions. His extensive background includes leading academic positions at esteemed institutions like SDA Bocconi, Milan, IIM Lucknow, and XLRI, coupled with a distinguished corporate journey at Tata Steel, where he molded Quality Systems and Communication Policy.

Over the decades, business education has undergone a profound transformation, shifting from a traditionally structured discipline focused almost exclusively on foundational pillars such as finance, marketing, operations, and strategic management to a far more dynamic and interdisciplinary approach. Historically, the mission of business schools was to produce competent managers capable of excelling within established corporate hierarchies. Graduates were trained to integrate seamlessly into the machinery of multinational companies, banks, consultancies, and legacy industries, where the emphasis was on stability, efficiency, and incremental growth. However, the acceleration of technological advancement, the democratization of digital tools, increased access to capital, and a growing appetite for innovation have dramatically altered what the professional world demands from its business graduates.

Today, top-tier business schools realize that their responsibility extends beyond grooming corporate executives to actively cultivating visionary entrepreneurs. The global economy is increasingly being shaped by fast-growing startups that challenge incumbents, introduce breakthrough technologies, and offer novel business models. The surge in entrepreneurial activity is not merely a trend but a powerful economic force, signaling a shift in how value – and even knowledge, is created, curated, and disseminated in the 21st century.

Embracing Entrepreneurship

In India and around the globe, the role of entrepreneurship has undergone a seismic transformation. India was home to over 1.61 Lakh (1,61,150) startups as of January 31, 2025, and this number is growing consistently. Against this backdrop, the imperative for business schools is to embrace entrepreneurship and to create an ecosystem that encourages experimentation, risk-taking, and venture creation. The classroom must serve as an incubator of ideas, where students are equipped to identify unmet needs, design scalable solutions, test hypotheses in real time, and navigate ambiguity with resilience. This transformation in business education mirrors the larger transformation in global business itself, where agility, creativity, and entrepreneurial thinking are becoming the most valued assets in any professional toolkit.

While many business schools in India and abroad are redesigning their syllabi, integration needs to go deeper than elective only modules or periodic workshops. One effective strategy is embedding entrepreneurship into the core curriculum: case studies featuring startup founders alongside corporate case studies; experiential

projects where students craft business plans, test ideas with real customers; mentorship from founders and angel investors; and immersion in an incubation environment where risk, failure, and iteration are normalized learning tools. Assessment also needs transformation in terms of evaluating a student's skills based on prototype progress, investor pitch, rapid cycle feedback, and evidence of customer validation.

The urgency of this integration is apparent. We now live in a volatile, uncertain, complex, and ambiguous world, and are moving towards a brittle, anxious, non-linear, and incomprehensible era. Graduates who only know how to join a company and climb a ladder may find themselves ill-equipped for the reality of jobs that change every few years, or for labor markets dominated by gig work or project-based assignments. Thus, equipping students with entrepreneurial skills, problem identification, opportunity evaluation, experimentation, resourcefulness, and resilience broadens their horizons regardless of whether they launch their own venture or work within an organization, where they become innovators and intra-preneurs.

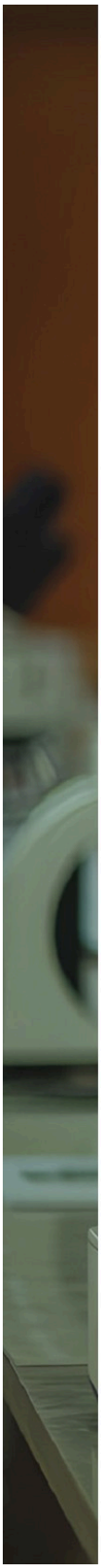
However, integrating entrepreneurship into mainstream business education is a complex yet rewarding endeavor. While the enthusiasm is high, robust education systems, mentorship, and practical support are needed to channel that interest into action, which can limit the practical depth of startup-focused pedagogy. Moreover, traditional accreditation frameworks often prioritize academic rigor over experiential learning, making it challenging to embed flexible, venture-oriented curricula. Building and sustaining incubators also requires long-term financial and human investment, and consistent engagement from industry mentors and alumni. On the student side, it's not hesitation but rather a pragmatic concern. MBA graduates express interest in entrepreneurship, yet many delay launching ventures due to concerns around financial risk and initial market access. These are not deterrents but signposts that signal where support systems such as structured incubation, early-stage funding access, and mentorship need to be strengthened.

Building Strong Industry Connections & launching Student Ventures

With the right environment, these perceived challenges become opportunities for learning, resilience-building, and long-term success. B-school need to build strong industry connections to bring in experienced start-up practitioners as adjunct faculty and mentors. Tie-ups with investors and incubators can help launch student ventures and ease market entry. Workshops on lean start-up methodology, agile decision making, legal and IP basics, and fundraising can reduce knowledge gaps. Peer-to-peer start-up clubs, co-founder matching platforms, internal seed grants, and pitch competitions create a supportive environment. Most importantly, resilience training and risk normalization help students embrace the possibility of failure and learn to iterate.This virtuous cycle of current students, alumni, and investors can help build sustainable entrepreneurial growth, supported by real-time domain guidance and capital inflows.

Beyond infrastructure, B-school must regularly revisit their offerings. Landing metrics to track include the number of active start-ups incubated, average funds raised per venture, student-driven job creation, revenue generated by alumni ventures, long-term survival rates, and student satisfaction. Feedback loops from graduates who started businesses should guide improvements in curriculum, mentorship, and infrastructure, ensuring continued relevance and effectiveness.

As India seeks to further position itself as a global startup hub, with government programmes like Startup India, greater digital penetration, and an expanding middle class, the hungry search for innovation across sectors will only intensify. In this scenario, B schools have both a duty and an opportunity. They must craft systems that nurture entrepreneurial capabilities; from teaching, mentoring, funding, and ecosystem interface, to ensure graduates are not only employment-ready but venture-ready. Students, too, must learn that failure is a mentor, not an end. The time has come for every B-schools to become, in effect, a launchpad; for startups, for ideas, for future leaders.HER



HIGHER EDUCATION Review TOP 10 PROMISING

SCIENCE COLLEGES IN RAJASTHAN - 2025

Rajasthan has emerged as a significant hub for science education in India, offering a strong ecosystem of colleges that combine academic depth, research exposure, and industry-aligned learning. Science colleges across the state are known for their multidisciplinary approach, integrating traditional scientific foundations with modern technological advancements. From established government institutions to rapidly growing private universities, Rajasthan provides a wide spectrum of options for students pursuing undergraduate and postgraduate studies in fields such as physics, chemistry, biology, mathematics, environmental science, biotechnology, and computer science.

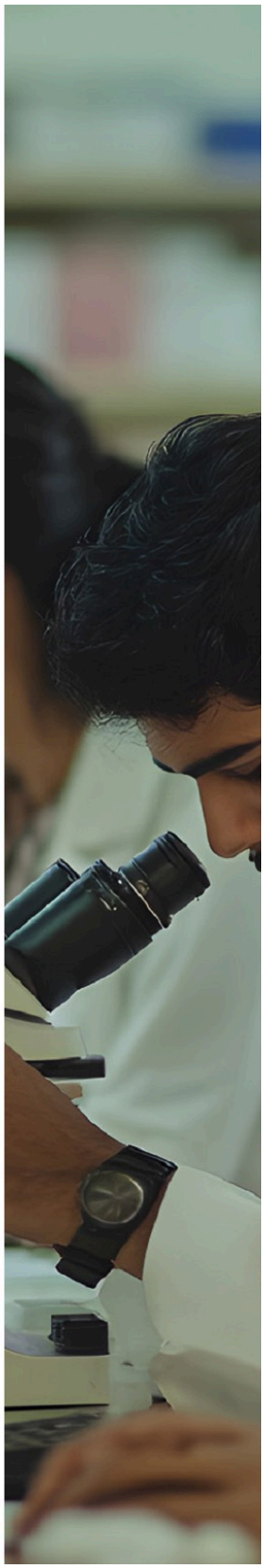
A defining strength of Rajasthan's science colleges is their focus on experiential learning. Many institutions have invested in advanced laboratories, innovation centres, incubation spaces, and research facilities that encourage students to explore scientific concepts through hands-on experimentation. Collaborations with research bodies, industry partners, and national laboratories further enhance academic exposure and open pathways for internships, fieldwork, and project-based learning.

The state's emphasis on modern infrastructure, qualified faculty, and updated curricula has made it an appealing destination for students from across India. Rajasthan's science institutions also promote competitive academic culture through seminars, science fairs, research conferences, and interdisciplinary workshops that build problem-solving skills and scientific temper.

Moreover, the growing presence of industries - ranging from pharmaceuticals and biotechnology to renewable energy and IT provides science graduates with ample opportunities for employment, internships, and collaborative research. As India continues to strengthen its scientific capabilities, Rajasthan's science colleges play a crucial role in nurturing the next generation of scientists, researchers, educators, and innovators.

Overall, Rajasthan stands out as a promising landscape for students seeking quality science education grounded in both academic excellence and real-world relevance.

This issue of **Higher Education Review** talks about some of the professionally managed colleges in the country, which has been nurtured with best technical and professional infrastructure and assistance from efficient and skilled faculties ensuring delivery of quality higher education and research. This issue spotlights a list of **'Top 10 Promising Science Colleges in Rajasthan - 2025',** the list has been crafted by a team of Industry veterans, CEOs, VCs and the Higher Education Review editorial team.



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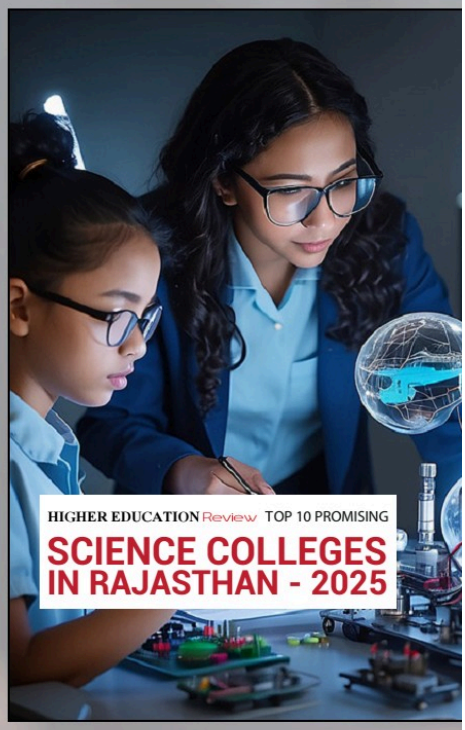

BITS Pilani
Pilani
bits-pilani.ac.in

Dr Kumar Mangalam Birla
Chancellor

Provides science programs, including integrated M.Sc. degrees (like Biological Sciences, Chemistry, Physics) and online B.Sc. in Computer Science, focusing on theoretical knowledge, practical skills via projects, and more

Central University of Rajasthan
Ajmer
curaj.ac.in

Dr K Kasturirangan
Chancellor

Offers science programs, including integrated M.Sc. (Physics, Chemistry, Mathematics, Life Sciences), M.Sc. in specialized areas (like Physics, Biotechnology, Environmental Science) and more

Indian Institute of Technology, Jodhpur
Jodhpur
iitj.ac.in

Prof. Avinash Kumar Agarwal
Director

Offers science-oriented programs through departments like Biosciences & Bioengineering, Chemistry, Mathematics, and Physics, focusing on foundational sciences alongside engineering

JECRC University
Jaipur
jecrcuniversity.edu.in

Prof. Victor Gambhir
President

The university offers diverse programs, including B.Sc. (Hons.) in Forensic Science, BPT (Physiotherapy), and research-focused options in Bioinformatics, Nanotechnology, and Genomics

Leela Devi Parasmal Sancheti Kanya Mahavidyalaya, Vidyawadi
Pali
vidyawadicollege.org

Kantilal N Mehta
President

Offers a Bachelor of Science program and Master of Science degrees in both Chemistry and Mathematics, and focuses on enriching student capacity in emerging fields such as Animal Sciences, Ecology, Environmental Studies, Aquaculture, and Biotechnology

Malaviya National Institute of Technology
Jaipur
mnit.ac.in

Prof. N P Padhy
Director

Offers science programs including postgraduate (M.Sc.) and PhD levels in Physics, Chemistry, and Mathematics, and core engineering (B.Tech, M.Tech) and architecture (B.Arch) programs

Manipal University
Jaipur
jaipur.manipal.edu

Dr. N N Sharma
President

The university provides science programs, from core Biology/Chemistry to applied Health Sciences, Pharmacy, Engineering (Biotech, Biomedical), and Clinical programs

NIMS University
Jaipur
nimsuniversity.org

Prof. (Dr) Balvir S Tomar
Chancellor

The university offers diverse science programs spanning Allied Health, Forensic Science, Biotechnology, and traditional Sciences (Physics, Chemistry, Maths), with UG/ PG/Doctoral options like B.Sc. (Hons) in Sciences

St. Xavier's College Jaipur
Jaipur
sxcjpr.edu.in

Dr (Fr.) Arokya Swamy SJ
Principal

The institution offers nine undergraduate programs, three postgraduate programs, and two PhD programs across the fields of science, arts, and commerce

University of Rajasthan
Jaipur
uniraj.ac.in

Prof. Alpana Kateja
Vice Chancellor

Provides B.Sc. (Pass Course) and B.Sc. (Honours) in various science disciplines (like Biology, Physics, Chemistry, Maths), along with related fields like Bachelor of Computer Applications (BCA)

LEELA DEVI PARASMAL SANCHETI KANYA MAHAVIDYALAYA, VIDYAWADI

EMPOWERING WOMEN TO LEAD THE FUTURE OF SCIENCE EDUCATION

Over the past decade, science education in India has undergone a significant shift driven by rapid technological disruptions, a rising demand for research-oriented talent, and the need for interdisciplinary learning to address complex industrial and societal problems. Digital literacy, hands-on exposure, analytical skills, and the creativity to be innovative in an international scientific ecosystem is far more than the textbook knowledge required by today learners. The issue of mental well-being, skill development, and readiness to be employed has also become a pressing concern as students go through the competitive and rapidly changing academic environment. In this evolving landscape, empowering women to excel in science and assume leadership roles is equally essential, ensuring that female students contribute meaningfully to research, innovation, and industry. The college is managed by Marudhar Mahila Shikshan Sangh, Vidyawadi.

Rising to these challenges with a forward-looking vision, Leela Devi Parasmal Sancheti Kanya Mahavidyalaya (LDPSKM), Rajasthan, has positioned itself as a progressive science institution committed to modern education, women empowerment, and holistic student development. The philosophy of the college is entrenched in life-long improvement in upgrading its pedagogy, facilities, and academic plans so that all students of science will be ready to meet the expectations of research in the professional world. The institution is actively filling the gap between classroom learning and current scientific requirements by incorporation of digital classrooms, renewed laboratories, skill development programs, and faculty training programs. Its ongoing expansion into diverse academic streams reflects a dedication to addressing the evolving educational needs of the region, culminating in the National Assessment and Accreditation Council (NAAC) accreditation of B++ in 2023.

Building a Campus for Scientific Excellence

LDPSKM began as a visionary initiative founded on one bold belief: girls/women deserved access to quality education and opportunities for academic and personal growth. What began as a small initiative has grown to be a 65-acre campus that today accommodates Hindi and English Medium Schools, Undergraduate and Postgraduate courses, Integrated B.Ed. courses, Hostels, Staff Quarters, Sports amenities and a technological enabled academic infrastructure. This is the voyage that shows how the institution is determined to keep up with time and remain loyal to its initial mission, of empowering women through education.

Kantilal N Mehta,
President

One of the strong points of the college is the distinctiveness of the science programs offered by the college, integrating theoretical studies with a broad scope of practical experience. Laboratory experiments, industrial visits, seminars, scientific exhibitions, small-scale research projects, field visits, internships all contribute towards the development of critical thinking and practical knowledge in students. "We frequently invite professional scientists, researchers, and industry experts to interact with students, helping them connect theoretical knowledge with current

Chandan M Parmar, Vice President

Kailash T Kaveria, Secretary

scientific applications", says Kantilal N. Mehta, President, Leela Devi Parasmal Sancheti Kanya Mahavidyalaya.

Throughout the Bachelor of Science program, the college emphasizes holistic scientific development. Students acquire practical skills in scientific instrumentation, experimental design, data analysis, field sampling and projective execution with the end result that they will have the skills to translate classroom knowledge into meaningful scientific practice. The college also offers career oriented programs and skill development programs which are specifically designed to meet the current industry demand. The curriculum is regularly updated to meet the current market demands with special skill development modules, as it is always in touch with modern industry requirements, providing students with both academic and professional skills.

Future-Ready Training

The college specifically concentrates on enriching student capacity in new fields such as Animal Sciences, Ecology, Environmental Studies, Aquaculture, and Biotechnology. The college actively encourages innovative student-led projects that take on local and global ecological issues. Most importantly, this experience develops scientific creativity, in addition to leadership, critical thinking, and problem solving skills which will be essential for future researchers and environmental caretakers. "We inspire our students to embrace social responsibility through active participation in NCC and NSS community service programs", says Kantilal N. Mehta.

The college offers Master of Science degrees in both Chemistry and Mathematics, which are designed to prioritize research orientation and analytical rigor. Graduate students will be exposed to new laboratory techniques, computer applications, instrumentation, and project-based research that will prepare them for careers in academia, pharmaceuticals, data science, and the research and development of industry. Through continuous interaction with research institutions and industries, the college ensures that students are aware of emerging scientific trends and technological innovations.

A broad array of infrastructure and campus facilities lays the groundwork for this academic framework. LDPSKM has a virtual learning environment with Wi-Fi enabled smart classroom, a full-use library/e-library, resident canteen, conference and educational facilities, hostels and staff housing, and multi-purpose sports facility. "Our faculty development programs, encourage the use of technology to deliver coursework, and ongoing syllabus revisions and updates, also help bridge both educators and learners to the scientific community around the globe", says Kantilal N. Mehta.

Looking ahead, the institution sees a forward-thinking, innovative academic future. Plans include expanding professional courses like Integrated Teacher Education Programme (ITEP) and introducing new two-year B.Ed and M.ED programs. With its focus on effective teaching methods, research projects, technology use, and women's empowerment, LDPSKM aims to uphold high standards of academic excellence while supporting each learner's personal and scientific growth. The college is dedicated towards making it sure that students stay informed about global scientific advancements and become empowered contributors to the society. HER

BRIDGING THEORY AND PRACTICE: DRIVING HANDS-ON LEARNING IMPACT

Amey Karkare, Professor and Dean of Resources and Alumni, IIT Kanpur

Amey Karkare, Professor and Dean of Resources and Alumni, IIT Kanpur, in an interaction with Grena, Correspondent, Higher Education Review magazine, shared his views on the importance of practical, experiential learning in modern higher education. He stresses that the academic success comes when the theory and practice are in sync and students are able to work with the real world problems instead of relying solely on textbook knowledge.

Prof. Amey Karkare has extensive experience in compiler optimization and program analysis. He has served as Head of CSE (2023-2024) and held key roles in digital infrastructure and online education at IIT Kanpur. He is recognized for innovations in programming pedagogy, notably developing the Prutor platform and leading large-scale programming courses impacting tens of thousands of students.

How can academic institutions redesign curricula to integrate hands-on learning without compromising theoretical foundations?

Practical learning is a necessary component of any educational institution and more impactful than learning by observation or hearing. Curriculum redesign must be rooted in the philosophy that theory and practice are not adversaries but complementary. Many advanced courses at IIT Kanpur incorporate the practical aspects such as laboratory activities, mini-projects, case studies and exercises that address real world problems. These components ensure that the theoretical integrity is upheld while students also acquire significant hands-on experience. Across the curriculum, we strive to ensure that students engage deeply with hands-on, experiential learning.

What innovative teaching methods best help students apply classroom knowledge to real-world scenarios?

One of the important approaches is project-based learning, where students are presented with open-ended tasks and must create tangible outcomes. Case studies help students refine decision-making skills through solving real-world challenges. New teaching methods have emerged in recent years. One is the flip classroom method, where students

learn specific concepts by reading books or watching videos and classroom hours are dedicated to engaging discussions. This will ensure that the lectures remain interesting and the students can answer any questions that may arise as a result of their self-directed learning. In general, these approaches motivate students to learn independently, try out new things, encounter challenges, and subsequently consult an expert to understand why a particular method failed. The core idea is learning by doing.

How can partnerships with industry enhance experiential learning opportunities for students?

Industries serve as a significant source of meaningful and relevant problem statements. In the case of industries collaborating with educational institutions, the curriculum is given credibility and better fitment to practical needs. Such partnerships can also help students to work on real-world projects and gain access to the latest developments and innovative technologies. Furthermore, internships and apprenticeship programs also provide students with an opportunity to apply classroom learning in practice, thereby improving practical skills, project management skills, and overall career readiness.

The courses and laboratories should be developed in collaboration with the industry, and the problem statements used in the laboratories are often offered by the industry directly. Such problem statements put students in touch with the real-world problems, practical constraints, and the reasons why ideal solutions are not always applicable, and what kind of engineering approximations are required in practice.

What are the biggest challenges that students face when applying theoretical knowledge in practical settings?

One of the major challenges in the application of the theoretical knowledge is the fact that theory is normally taught in an ideal environment. In practice, these ideal conditions are rarely exist and requiring the use of engineering approximations. Real-world problem-solving is not a one-step action; it has to be iterative, refined and constantly adjusted.

There are also psychological barriers. When students step into real-life situations, they often experience a fear of failure and a fear of the unfamiliar. These issues can be overcome with practical training, internship, and even environment simulation. Providing safe spaces for experimentation such a tinkering labs, maker spaces, VR labs, or active campus clubs such as the Science and Technology Council allows students to engage with real-world problems.

How does hands-on learning improve employability and career readiness compared to traditional learning?

Employers no longer require textbook knowledge; they demand flexibility, problem-solving skills and confidence - all of which can be most effectively acquired by practical education. Most of the alumnus acknowledge that classroom learning was the least effective when compared to the outside of the classroom experiences in the form of clubs, lab work, industry internships, or professor research experiences during the summer terms. Rote learning mainly results in basic recall of knowledge. Experiential learning fosters the ability to apply knowledge effectively. This capacity for application is what truly prepares students to be job-ready in the modern workforce.

Hands-on learning can only be measured using both qualitative and quantitative measures and the indicators differ among the various stakeholders.

In what ways can students proactively seek real-world exposure when such opportunities are limited?

Technology is a great equalizer these days, and the lack of resources should not limit the curiosity of a student anymore. Massive open online courses offer useful learning opportunities. YouTube, Kaggle, and GitHub are some of the platforms that provide a significant amount of knowledge and allow students to enhance their hands-on skills. Students can network with alumni. Moreover, the one-on-one Alumni Inspired Mentorship Program offers an opportunity for an alumnus to mentor students, with matching based on areas of interest.

How can industries support academia in building labs, internships, and apprenticeships that drive real-world learning?

The industry can be transformative through co-investing in infrastructure, expertise, and exposure of real-life issues into academic settings. The joint laboratories developed in cooperation with industry offer the accessibility to equipment and problem statements that are aligned with the existing professional requirements. Academic structures can also be integrated with the industry internships and apprenticeships to make them credit-bearing courses or modules, ensuring they meet academic requirements.

How can impact of hands-on learning be measured - both for students and industries?

Hands-on learning can only be measured using both qualitative and quantitative measures and the indicators differ among the various stakeholders. In the case of students, such measures include the rate of employment, entrepreneurship, and objective results such as patents or other achievements. In the case of industry, it revolves around optimized productivity, lowered training expenses, and the robustness of their innovation streams. The wider community impact is also to be evaluated. This can be measured using surveys, longitudinal studies and performance analytics. The general idea is to measure the way practical training changes people, organizations and sectors.

Is there anything else you'd like to share that you think students should know?

For students, the most critical thing to do is to get to know their own interests and inclinations. The trend today is to go in one direction in the field of AI and machine learning, just because they seem profitable. But not everybody fits in the same field and every person has unique strengths and weaknesses. Students should understand what actually matters to them. Any profession can be successful when followed with proper preparation and interest. Thus, the main advice is not to be guided by the trends but to choose the path that has one's own passion and skills. Success will come automatically with the dedication and determination.HER

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BUILDING A CAREER IN AGRIBUSINESS MANAGEMENT

R Jadoun - Director CGG, Convenor VCS & Dean, G. B. Pant University of Agriculture & Technology

R Jadoun - Director CGG, Convenor VCS & Dean, G. B. Pant University of Agriculture & Technology in an interaction with Higher Education Review, shared his views on the key skills and academic backgrounds are most valuable for students aspiring to build successful careers in agribusiness, how professionals can bridge the gap between traditional farming practices and modern agribusiness models driven by data & technology, role of startups and digital platforms played in creating new employment opportunities within the agribusiness ecosystem and more.

What key skills and academic backgrounds are most valuable for students aspiring to build successful careers in agribusiness?

Agribusiness today welcomes students from a wide range of academic backgrounds—Agriculture, Biotechnology, Food Technology, Engineering, Economics, and even Commerce or Management. What matters most is a blend of domain understanding and modern business skills. On the skills side, three clusters are crucial such as Technical & Analytical Skills - Basic agri-science knowledge, Data analytics, GIS, Excel, and digital literacy and Understanding of agri-tech tools (IoT, drones, sensors). These help students work in precision farming, agri-tech startups, and supply chain analytics.

Business & Managerial Skills: Marketing and sales competence, Supply chain and operations management, Financial literacy and agri-fintech understanding. These are essential for roles in input companies, FMCG, procurement, and agri-marketplaces.

Soft Skills & Field Orientation: Communication and negotiation, Problem-solving and adaptability, Ability to work with farmers, FPOs, and rural stakeholders. Agribusiness is people-intensive, so field exposure is as important as classroom learning.

In conclusion, a strong foundation in agriculture or science combined with business management, technology awareness, and communication skills enables students to thrive in this rapidly evolving, tech-driven agribusiness ecosystem.

How can professionals bridge the gap between traditional farming practices and modern agribusiness models driven by data and technology?

The most effective way to bridge this gap is by combining technology with trust. Professionals need to translate complex digital tools into simple, practical solutions that farmers can easily adopt. First, they must build strong field relationships - spending time on farms, understanding local practices, and demonstrating small success stories. Technology adoption increases only when farmers see real benefits.

Second, professionals should focus on capacity building: training farmers on digital advisory apps, IoT devices, soil sensors, and market platforms through hands-on demos, farmer clubs, and extension programs. Third, creating low-cost, localized agri-tech solutions - such as mobile-based advisories in local languages, affordable credit through agri-fintech, or micro-irrigation kits - makes modern tools accessible to smallholders.

Finally, collaboration is key. Working closely with FPOs, cooperatives, agri-startups, and government schemes creates an ecosystem where data-driven farming

naturally integrates with traditional wisdom. In essence, bridging the gap requires technology + communication + trust + local adaptation - not just digital tools but human connection, continuous learning, and farmer-centric innovation.

What role do startups and digital platforms play in creating new employment opportunities within the agribusiness ecosystem?

Startups and digital platforms are acting as the biggest job creators in modern agribusiness. They are transforming the sector from input-driven to technology-driven, and this shift is generating roles that never existed earlier.

First, agri-tech startups - working in precision farming, drones, AI-based advisory, soil analytics, and IoT - are hiring professionals for product management, data analytics, farm operations, and field adoption. Second, digital marketplaces like DeHaat, Ninjacart, eNAM, and ONDC are creating opportunities in supply chain management, procurement, logistics, last-mile delivery, quality control, and digital sales. Third, agri-fintech platforms are opening roles in credit risk analysis, digital lending operations, insurance analytics, and rural fintech support.

Fourth, D2C food brands such as Licious, FreshToHome, and Country Delight are driving demand for experts in cold chain management, consumer insights, branding, and food safety. Finally, startups encourage entrepreneurship by enabling youth to build services in drone operations, custom hiring centers, post-harvest management, and FPO consulting.

In conclusion, startups and digital platforms are creating a vibrant, skill-intensive job landscape - blending technology, supply chain, finance, and sustainability - and making agribusiness one of India's fastest-growing career domains.

How important is understanding global trade policies, agri-finance, and sustainability frameworks for today's agribusiness managers?

It is absolutely essential. Modern agribusiness is deeply interconnected with global markets, financial innovation, and sustainability standards. Managers who understand these three areas gain a significant strategic advantage. First, global trade policies - such as WTO norms, SPS standards, export regulations, and free-trade agreements - directly influence commodity prices, market access, and the competitiveness of Indian agri-products. Without this knowledge, managers cannot navigate international markets or design export-oriented value chains.

Second, agri-finance is now central to the sector. With the rise of agri-fintech, digital credit, insurance models, and risk assessment tools, managers must understand rural finance, working capital, credit structures, and

farm economics. Financial literacy enables them to design viable business models for farmers, FPOs, and agri-startups. Third, sustainability frameworks - ESG, carbon accounting, resource efficiency, and climate-smart agriculture are becoming mandatory for food companies globally. Managers must ensure their supply chains meet environmental, ethical, and traceability standards.

In conclusion, these three domains are no longer optional. A successful agribusiness manager today must be globally aware, financially smart, and sustainability-driven to thrive in a rapidly evolving, tech-enabled agri-food ecosystem.

> Modern agribusiness is deeply interconnected with global markets, financial innovation, and sustainability standards

What career paths exist beyond farming - such as marketing, consulting, policy, and agri-innovation - for those entering this field?

Agribusiness today offers a wide spectrum of careers far beyond traditional farming. In fact, most high-growth opportunities lie in allied sectors like marketing, consulting, policy, technology, and supply chain.

First, marketing and sales roles dominate the agribusiness landscape - ranging from agri-input marketing (seeds, fertilizers, machinery) to brand management, D2C fresh food marketing, and digital marketplace operations. Second, consulting has become a major segment. Professionals work with FPOs, development agencies, agri-tech startups, government programs, and global consulting firms to improve value chains, design business models, and build market linkages.

Third, policy and development roles exist in ministries, NABARD, ICAR institutions, NGOs, multilateral agencies, and think-tanks. These involve shaping agri-trade regulations, sustainability guidelines, rural development programs, and food security strategies. Fourth, agri-innovation and startups offer positions in product development, precision farming technologies, drone operations, data analytics, and farm digitization. Many graduates also become entrepreneurs.

Additionally, careers are expanding in supply chain management, food processing, export management, agri-fintech, sustainability (ESG), food quality & safety, retail operations, and corporate procurement. In conclusion, agribusiness is now a multi-dimensional field with opportunities across technology, markets, finance, policy, sustainability, and entrepreneurship - making it far more diverse than traditional agriculture alone.

In what ways can youth and entrepreneurs contribute to making agribusiness more profitable, inclusive, and environmentally responsible?

Youth and entrepreneurs are uniquely positioned to transform agribusiness because they bring technology, innovation, and fresh business thinking into a sector that has long needed modernization. First, they can make agribusiness more profitable by introducing tech-enabled solutions - like precision farming, digital market platforms, AI-based advisory, drones, and smart supply chains. These innovations reduce production costs, improve yields, cut middlemen inefficiencies, and help farmers earn better prices. Young entrepreneurs also build D2C brands and value-added products that capture higher margins.

Second, they promote inclusivity by working with FPOs, cooperatives, and women-led rural enterprises. Youth-led startups enable smallholders to access quality inputs, credit, market intelligence, and fair-price linkages through mobile apps and digital platforms. This democratizes market access and brings marginalized communities into the mainstream agribusiness economy.

Third, they strengthen environmental responsibility by championing climate-smart agriculture, regenerative practices, waste-to-value enterprises, clean energy solutions, water-efficient irrigation, and low-carbon supply chains. Young innovators also adopt ESG standards and traceability systems that encourage sustainable practices across the entire value chain.

In essence, youth and entrepreneurs can make agribusiness competitive, inclusive, and climate-resilient by combining technology, business innovation, and social impact - positioning agriculture as a vibrant, future-ready industry.

About the Author:

Dr R.S. Jadoun Graduated and post-graduated from IIT Roorkee with a Gold Medal. With 39 years of experience in industry, teaching, research, extension, and administration, he served as Dy. Collector in the state of Bihar and Jharkhand. Also, he served as Transport Officer, Security Officer, Director, Placement and Counselling, Dean, Students Welfare, Dean of Faculty, Director, CGG, Convenor, VC Secretariate in GBPUAT, Pantnagar. HER

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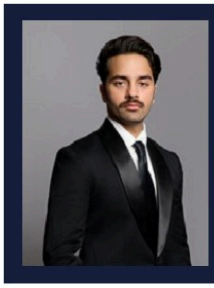
HOW EXPERIENTIAL LEARNING IS TRANSFORMING INDIAN EDUCATION

Nirvaan Birla, Managing Director, Birla Open Minds



Nirvaan Birla, Managing Director, Birla Open Minds has been at the forefront of redefining education in India since 2016, when he began his journey with Birla Open Minds Education. Under his leadership, Birla Open Minds expanded from just 30 schools to over 280 institutions across 160+ cities in 24 Indian states, nurturing a thriving community of learners. This remarkable growth reflects Nirvaan's commitment to fostering holistic, inclusive, and future-ready education that adapts to evolving learner needs.

What if classrooms looked more like laboratories of life, where students did more than they read? That's the heart of experiential learning, a concept that's quietly rewriting the rules of education. It's not about cramming for a test or memorizing definitions. It's about rolling up sleeves, asking "why," and discovering "how." Whether it's building a model city to understand urban planning, growing a garden to explore biology, or running a mock business to learn economics, students learn by doing, reflecting, and connecting what they experience to what they know.

Because the truth is, the future of education won't be decided by how much a child can memorize, but by how well they can think, apply, and adapt. As the world changes faster than ever, our classrooms need to evolve too, from spaces of instruction to spaces of exploration. That's where experiential learning steps in, as the bridge between knowledge and wisdom, between lessons and life.

For decades, Indian education has been about content and recall. But knowledge without context is like a recipe without taste, it looks good on paper but doesn't stick. Experiential learning changes that. It brings subjects to life, connects theory with reality, and encourages students to reflect on their learning journey, making lessons that last long after the exam bell rings.

Globally, this shift is gaining ground. From Finland to Singapore, schools are rethinking learning itself, not as a one-way transfer of information, but as an experience that builds curiosity and courage. India too is catching up fast. The National Education Policy (NEP) 2020 and CBSE's competency-based framework are nudging schools toward inquiry, experimentation, and collaboration. Project-based learning, design thinking, and reflective exercises are making classrooms more dynamic and relevant.

At its core, experiential learning follows a simple but powerful cycle, experience, reflect, conceptualize, experiment. Students dive into a real situation, observe what happens, draw insights, and then test their understanding again. It's learning on loop, until concepts become second nature. For example, a student studying nutrition doesn't just read about it, they decode food labels, experiment with recipes, and even create their own "healthy bites."

The beauty of this approach is that it doesn't stop at academics. It builds thinkers, problem-solvers, and empathetic humans. When learners are encouraged to question, collaborate, and create, they develop the confidence and adaptability needed to thrive in a world that's constantly evolving.

But this shift needs more than new curriculums, it needs a new mindset. Schools have to move from 'marks to mastery'. Teachers must become facilitators of curiosity, not just carriers of content. And parents must celebrate the "Aha!" moments as much as the "A+" ones.

Experiential learning makes education come alive, more joyful, more human, and infinitely more relevant. As India stands on the cusp of an education revolution, the goal is clear: move from teaching to learning, from knowing to doing, and from grades to growth.

Because the future won't belong to those who simply know, it will belong to those who can "think, create, and experience their way forward." HER

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