

# Education

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## ARTIFICIAL INTELLIGENCE

# Rise of the machines

How business schools are meeting the demand for incorporating AI and machine learning in MBA programmes

THE ECONOMIST

**ASK 100 STUDENTS** what they want from an MBA programme and you're likely to get 100 different answers. However, ask them what they want more of, and trends are easier to discern. At the Kellogg School of Management at Northwestern University, a survey of the current class earlier this year asked what students wanted to learn more about. The biggest response by far? Artificial intelligence (AI) and machine learning. "It has rapidly consumed a lot of mental real estate with our MBA students," says Brian Uzzi, who teaches a course on AI to MBAs at Kellogg.

That is not surprising. AI has become a key tool for businesses in all industries. By harnessing the power of computers to rapidly analyse data, detect patterns and suggest courses of action, businesses are able to work much faster and with fewer overheads. British supermarkets Tesco and Ocado use machine learning to help improve the routing of delivery drivers and to detect fraudulent transactions. Customer-facing businesses including Virgin Holidays use algorithms and Big Data to tweak marketing messages on the basis of real-time feedback. Uber harnesses machine learning to forecast demand and help direct its taxi drivers ahead of time to customers. It has also used AI to determine the level of price increases individual customers are willing to tolerate. A wave of recruitment start-ups use AI to weed through job candidates and screen for the best prospective interviewees—and even prospective MBAs.

Where business leads, business schools follow. Machine learning and AI will soon permeate the entire DNA of the MBA programme at Kellogg and elsewhere, believes



Mr Uzzi. Kellogg teaches AI in two different ways: one track of students takes an intensive, data-heavy course in which they learn hands-on how to develop neural networks that can solve problems. The other is a broader look at the impact AI can have on all aspects of a business, from hiring and firing decisions to helping a firm operate with greater efficiencies.

Three-quarters of Kellogg's MBAs elect to take the broader track, though the numbers of those interested are currently higher than the school can serve: the school's course on human and machine intelligence is oversubscribed by a fifth, Mr Uzzi says. When the professor began incorporating AI into his research a decade ago, all but a handful of the 3,000 students he taught knew what AI was. Now, almost all do.

MBAs want to learn how AI is being used in the firms they are likely to graduate into, explains Michael Gibbs, a professor at the University of Chicago Booth's School of Business, and former director of its Executive MBA (EMBA) programme. "Our stu-

dents are not going to be deploying AI themselves, but they're going to be hiring somebody to deploy it," he says. Demand for it is high. Last summer, around 30 of Chicago Booth's EMBA class of 240 students across three campuses chose to take machine learning or algorithm-related electives, says Mr Gibbs. By contrast, just two chose an elective in business ethics. Chicago Booth has long been a data-driven school, but the makeup of students Mr Gibbs teaches has changed in recent years. When he started teaching nearly three decades ago, most students came from a finance or consulting background. Now, he estimates 40% have a technology background.

Chicago Booth incorporates AI throughout the entire EMBA programme: classes on organisational design and human resources touch on how AI is changing the workplace. Other schools are also throwing their weight behind AI: Imperial College London's business school has a two-year master of science in business analytics that teaches machine-

learning applications for business. Other schools, including MIT Sloan, Harvard and Hult all incorporate AI into their teaching.

MBAs and executives are eager to learn about the power of AI. The challenge is in anticipating how automation will make jobs obsolete, and identifying the opportunities it provides to boost expertise. For years, IBM has been training AI to help doctors diagnose patients more quickly and accurately; similar decision-making processes in business, previously the preserve of executives in the c-suite, could also be aided by AI. The technology is likely to become yet another tool a business can use to gain competitive advantage. Those destined to lead these firms need to have knowledge of how to use them to their full potential. And, of course, MBAs are looking to create the next big, disruptive company. "You've got to remember MBAs are driven by role models," says Mr Uzzi. "Jeff Bezos is now the richest person in the world and he's been pretty much able to do that thanks to advances in AI."

## Have a degree, not a job

The importance of including entrepreneurship development component in academic curriculum

NARENDRA KUMAR SHYAMSUKHA

**UNEMPLOYMENT IS ON** the rise in India. One reason is the lack of understanding about market requirements among young people on the threshold of a new career. Education cannot prevent unemployment. A large number of graduates are unable to find jobs because our universities fail to promote the innovative and entrepreneurial attitude necessary today, not just for entrepreneurs, but also for employees. Even as graduates after graduates pass out of universities, their lack of requisite skills stands in the way of getting a break. They have a degree, but not a job.

Growing disconnect

At the root of the problem is the disconnect between university education and the requirements of the economy and society. Most academic courses are heavily theory-oriented with hardly any practical component. Add to this the infirmities in planning and implementation of economic development and the lack of focused approach to training human resources for specialised jobs, and we have the recipe for mounting unemployment. So despite PM Narendra Modi's exhortations of Make-in-India, our graduates are always looking for jobs (mostly unsuccessfully) and not able to create any.

Inculcating entrepreneurship

The fast-changing economic environment is creating new challenges. Entrepreneurship is becoming a priority on the national agenda in most developing countries. It serves as an engine for growth, employment and wealth generation. The need to develop entrepreneurial skills to create new businesses, use unused capacities and develop new capabilities to solve economic and social problems cannot be overemphasised. It allows people, using

expertise and ingenuity, to create opportunities and generate employment and income. Entrepreneurship training can be done in different ways and by various methods, but is most effective if it is included as part of university curriculum

Systematic and goal-oriented

Introducing entrepreneurship education in the curriculum requires planning and research. It has to be a systematic and goal-oriented process. The objective should be to introduce students to the concept of entrepreneurship and to develop skills in those who show potential. This would entail increasing students' knowledge about entrepreneurial career and helping them understand the process of setting up and managing a new business; increasing their knowledge of potential businesses and start-ups; improving their ability to be self-employed; and providing an understanding of the role of new enterprises in the economy. But, above all, it would involve instilling in them the spirit of taking risks, embracing change. Entrepreneurship education has the potential to build skills and competencies, and a good teacher can inculcate such skills, knowledge and attitude in students.

Innovative techniques

We need to devise modern teaching techniques to build students' capabilities through problem-based learning, industry apprenticeship and proper funding. Appropriate teaching methodologies and relevant learning processes must be identified and adopted. Teachers must be well-trained and motivated to promote an entrepreneurial attitude among students.

Institutions could tie-up with industries to develop the entrepreneurial component in the curriculum. A joint effort will be mutually beneficial. It can ensure that students inclined towards entrepreneurship are identified and groomed. The skills of teachers could improve the competencies of entrepreneurs, leading to growth and strengthening of the economy.

*The author is chairman, ICA Edu Skills, a pan-India vocational training and placement institute*

## QUICK TAKE

### YouTube Blogger is a sought after job

Have you thought about using YouTube, Snapchat, Instagram and Facebook for something more than posting videos, photos and stories? As per a recent YouGov survey commissioned by Vodafone, five out of the top 10 appealing jobs were modern digital careers, including YouTube Blogger (26%), Internet of Things Product Designer (18%), Cyber Security Specialist (26%), and Robotics Engineer (18%). The survey found that young women equally favour modern jobs as men, with 52% saying they would prefer a modern job over a traditional job. The full survey can be found here: <https://goo.gl/FNpEhc>

### Analytics jobs see salary surge: study

Great Learning and Analytics India Magazine have released findings from the 'Salary Study 2018' that explores compensation trends in analytics and data science space. It noted that the median salary of analytics professionals is growing, even though IT sector has shown a downward trend. "Average salary of data science professionals was ₹12.7 lakh in 2017, an 8% increase since 2016 ... Mumbai, with highest cost of living in India, is the highest paymaster in analytics (₹13.3 lakh per annum) followed by Bangalore (₹12.5 lakh) and NCR (₹11.8 lakh)," it noted. It added that while there is a rise in mid-senior professionals earning between ₹25 lakh and ₹50 lakh, those with salaries in extreme brackets (over ₹50 lakh) have seen a decline from 3.7% in 2017 to 3% in 2018. Lastly, it added that more entry-level (fresher) professionals have entered analytics this year, indicating the industry is maturing.

### Scholarship offers by Pearl Academy

Pearl Academy has announced scholarships for students seeking a career in the creative field. These will be offered to those who want to pursue UG courses in media & communication and advertising & marketing, and PG in media & communication, and will be based on the results of the entrance test

to be conducted on April 21, 2018, at Pearl Academy campuses in Delhi, Mumbai, Jaipur and Noida. The institute said it will offer a scholarship of up to 50% on tuition fees. The last date of registration for the test is April 16. Application forms are available online.

### Strathclyde opens global scholarships

Strathclyde B-School, Glasgow, has said it is offering scholarships to international students starting their studies in September 2018. "Candidates for all full-time MSc programmes in Glasgow will be automatically considered, so no separate scholarship application is necessary," the school said. The number of scholarships is up to 30. To be eligible, candidates must already have an offer to one of the courses they want to study. The scholarships will be awarded on merit, rather than financial need. The deadline is May 1, 2018.

### USF's Abdul Kalam PG fellowship

The University of South Florida (USF) has extended the deadline for its Abdul Kalam PG Fellowship to April 30. This award is for a student who has graduated from or is about to graduate from an Indian university and wants to pursue a PhD in selected disciplines at USF. USF will waive off tuition fee and contribute a stipend of \$18,000 per academic year for up to four years to the selected student. Previous recipients are Avijit Sengupta from IIT Bombay and Veena Subramanian from the IISc Bangalore.

### Waste microfactory at UNSW, Sydney

The world's first microfactory that can transform components from e-waste items such as discarded smartphones and laptops into valuable materials for reuse has been started at the University of New South Wales (UNSW), Sydney, Australia. Using technology developed following research at UNSW's Centre for Sustainable Materials Research and Technology, the microfactory, UNSW said, can reduce the growing problem of e-waste.

## Need to fast-track higher education reform



Jitendra K Das

**THE DRIVE TO** attain the label of 'world-class institution' is becoming stronger by the day, particularly as a credibility measure, considering the relatively poor image of Indian institutions in the international arena. The active presence of international accreditation agencies in India is an indication of this. Addressing the centenary celebrations at the Patna University last year, PM Narendra Modi had said it is a blot that no Indian university figures among the top few in the world, while in the past universities such as Nalanda and Taxila attracted students from across the globe.

In line with this, to ensure 'greater excellence and innovation' in higher education, the government had announced a corpus of ₹10,000 crore for five years to 10 private and 10 government universities to be chosen by the government. Further, these 20 institutions would be free from the constraints of government rules and regulations in order to facilitate them to emerge as world-class institutions.

While this initiative is welcome, the



exclusive pursuit of status and ranks by a few chosen universities, rather than by all institutions who meet a certain milestone to become the 'chosen one', may not be able to achieve the objective. The desire and ability of institutions who wish to push their frontiers to achieve this must be given a chance. The identification of these 'chosen ones' who may not want government funding but they, for sure, would want full autonomy must be on an auto mode, i.e. milestone-based, to increase the prospect of success from India perspective. The Hyderabad-based Indian School of Business (ISB) getting one of the top global ranks in a recent *Financial Times* ranking is a case in point. The ISB is not governed by any Indian academic regula-

tor and does not take government funds.

It is not appropriate for a country like India to invest a huge amount of taxpayer money to fund the effort of only a few universities to attain global rankings, precluding others who also may have intent. All options to make fund utilisation optimal must be explored. For example, to encourage fund flow into higher education—a non-profit activity—the government may do well to incentivise private fund flow through tax exemption. This would ensure, at current corporate tax rates, three times the tax forgone by the government into higher education. If the government forgoes ₹2,000 crore as tax revenue adjusted against the corpus, then about ₹6,000 crore can flow into higher

education from private sources. Add this to the ₹10,000 crore fund outlay, and the total fund mobilised would be ₹14,000 crore. To further strengthen fund flow, the mandatory corporate CSR activity can be aligned with higher education in line with the Companies (Amendment) Bill, 2016. Such a redefinition will broaden the scope of institutions wanting to push their boundaries and, thus, improve the chance of success in meeting the objectives. The fund allocation in its current form appears inefficient and of skewed priority.

It must also be understood that the bygone era Nalanda and Taxila universities received grants from the kings and thereafter the kings neither asked questions on fund utilisation nor were there any audits. These universities did with funds what they considered the best. In the current Indian context, the impact of questions that may be asked by government agencies on fund utilisation by private universities, in particular, can be a matter of a debate. Milestone-based parity in raising or utilisation of funds, autonomy, competition and government monitoring in equal measure for all educational institutions must be the only way to fast-track higher education reform in India.

*The author is director, FORE School of Management, Delhi. Views are personal*

## GOOD WORKPLACE PRACTICES

# Boosting progress on diversity & inclusion

How to improve diversity and foster a climate of inclusion in companies?

FE BUREAU

**DESPITE THE GROWING** interest and commitment from both practitioners and scholars in 'diversity' and 'diversity management' over the last three decades, inequality and discrimination persist at the workplace, globally. This alarming observation, pointed out by several studies and many observers, is also highlighted by the findings of the latest study of the EDHEC Open Leadership Centre, at the EDHEC Business School, France.

The study, carried out among 767 people within organisations, found that:

▶ Participants rate their organisations just above average in terms of diversity and inclusion (6.2/10 on diversity, and 5.5/10 on inclusion);

▶ On gender equality, perceptions are below average—the overall score is 4.9/10;

▶ Women are more critical than men in their perceptions of diversity and inclu-

In collective imagination, the image of a leader is linked to heroism & carries 'masculine' connotations. This portrayal excludes many profiles from the population of potential leaders—for example women, but also men who don't match with this image.

— HAGER JEMEL  
DIRECTOR, EDHEC OPEN LEADERSHIP CENTRE FOR DIVERSITY & INCLUSION, FRANCE



sion (for diversity, women gave an average score of 6.1/10, while men gave a score of 6.6/10; for inclusion, women gave a mean score of 5.3/10, while men gave 5.9/10);

▶ When it comes to gender equality, women attribute a score of 4.1/10, while men rate it at 6.8/10.

These results point to the need for an alternative approach that could accelerate

progress on diversity and inclusion. Traditional diversity programmes—formalised HRM procedures, surveys, diversity training, performance evaluation, networking, mentoring—haven't met their promises.

In this study, EDHEC Open Leadership team proposed and tested the hypothesis that putting leadership representations and behaviours at the heart of diversity

policies and practices will lead to effective and lasting transformations that favour diversity and inclusion in organisations.

**Leadership representations:** This can be an important impediment to diversity improvement within an organisation. When the characteristics expected of a good leader are associated with 'one specific profile', all other profiles are less likely to be identified and perceived as 'leaders' or 'potential leaders'.

Hager Jemel, the director of the EDHEC Open Leadership Centre for Diversity & Inclusion, said that leadership is particularly associated with vision and charisma, and the most representative traits of a good leader are being strong, energetic and willing to take risks. "In the collective imagination, the image of a leader is strongly linked to heroism and carries 'masculine' connotations. This narrow representation excludes many profiles from the population of potential leaders—for example women, but also men who don't match with this image," Jemel said.

The study noted that transforming leadership models will open up positions of responsibility to a greater diversity of talent and contribute to the progress made by companies on diversity and inclusion.