Monday, June 24, 2024
CHENNAI

THE HINDU

EDUCATIONPLUS

GET THE EDGE Follow us facebook.com/thehindu twitter.com/the_hindu instagram.com/the_hindu

Bytes and rights

Understanding digital rights is imperative in the context of digital classrooms, where students interact with diverse educational technologies

GETTY IMAGES/ISTOCKPHOTO

Saurabh Sinha
Sajai Singh

The foundation of digital classrooms rests upon intricate systems of data collection, spanning from learning management systems and educational apps to virtual classrooms and online assessments. Within this ecosystem, interactions generate a plethora of data points, encompassing student demographics, academic performance metrics, browsing history, and engagement patterns. This collection of student data is fundamental to tailor educational experiences and enhance learning outcomes.

Educational technology platforms leverage data analytics and machine learning algorithms to personalise instruction, identify areas of improvement, and provide targeted support for student progress. However, the indiscriminate gathering of sensitive information without informed consent or transparent disclosure raises significant concerns regarding individual privacy rights and autonomy. The commercialisation of student data poses risks related to ownership, security breaches, and potential exploitation by external entities. To address these issues, various legal frameworks and regulatory mechanisms including the Digital Personal Data Protection Act, 2023 and Information Technology Act, 2000 have been implemented to safeguard student data privacy.

In the context of digital classrooms, where students interact with diverse educational technologies, understanding digital rights becomes imperative. The proliferation of digital communication channels exposes students to a range of cyber threats, such as identity theft, fraud, and online harassment. Sharing personal information online without due diligence can lead to severe consequences, compromising students' privacy and security. It is essential for students to exercise caution and discretion when sharing sensitive information online and remain vigilant against potential cyber threats.

The fine print

Examining privacy policies acts as a frontline defence in defining the boundaries of student data collection, storage, and utilisation. Through meticulous review, students assert their authority in safeguarding personal information, thereby upholding their inherent rights to autonomy and dignity. Understanding the utilisation of their data by digital platforms and educational tools empowers students to make informed choices about their engagement levels. Therefore, it is important for students to acquaint themselves with the privacy policies and terms of service governing digital platforms and educational tools used in the classroom to make discerning decisions regarding online activities.

Scrutinising terms of service enables students to grasp the scope and purpose of data collection, storage, and utilisation and facilitates assessment of implications for privacy and digital security. Delving into privacy policies embedded within terms of service elucidates students' entitlements and safeguards concerning personal information handling. Attention to provisions regarding data access, consent mechanisms, and data-sharing practices empowers students to effectively assert their privacy rights. Moreover, terms of service delineate users' responsibilities and obligations, fostering adherence to ethical standards and nurturing a safe digital environment.

Copyright laws

In the digital age, accessing and utilising educational resources often involves navigating complex copyright laws and regulations. Students must adhere to these laws while using digital resources for educational purposes, ensuring proper attribution and compliance with licensing agreements. When in doubt about the legality of using copyrighted materials, students must:

- Seek explicit permission from copyright holder. Contact the rights owner or use materials that are licensed under open access or Creative Commons licenses, which often grant permission for educational use with proper attribution
- Practise proper attribution by citing sources accurately in academic assignments and projects
- Adhere to recognised citation styles, and provide detailed references for all borrowed materials, including text, images, videos, and other multimedia content
- Take advantage of licensed resources provided by educational institutions, libraries, and digital repositories
- Access e-books, journals, databases, and multimedia resources that are legally acquired and compliant with copyright laws
- Use these resources responsibly to support academic research and learning objectives.

Understanding digital rights empowers students to navigate the digital world responsibly. They have rights such as knowing how their data is used, reviewing and correcting it, deleting unnecessary data, and objecting to data processing. By understanding their privacy and data protection rights, students can advocate for themselves and ensure ethical treatment of their personal information. This is essential to promote digital literacy, protect privacy, and foster responsible digital citizenship in today's technology-driven education landscape.

Sajai Singh is Partner and Saurabh Sinha is Senior Associate at JSA Advocates and Solicitors.

SCHOLARSHIPS

Legrand Empowering Scholarship Programme 2024-25
Legrand aims to support meritorious students pursue a career in Engineering, Architecture, Finance and Sciences.
Eligibility: Open to girls, differently-abled girls, LGBTQ+ students, Covid-19-affected students and those with single parents or orphans across India who have secured admission in B.Tech., B.E., B.Arch., B.B.A., B.Com., or B.Sc. degrees in India in this academic year. Annual family income must be less than ₹5 lakhs.
Reward: Tuition fees and other allowances.
Application: Online
Deadline: July 15
www.b4s.in/edge/ LFLS9

Raman Kant Munjal Scholarships
The Raman Kant Munjal Foundation, supported by Hero FinCorp, aims to help meritorious students continue their education.
Eligibility: Indian nationals with at least 80% in Classes 10 and 12 who are enrolled in the first year of BBA, BFIA, B.Com. (H, E), BMS, IPM, B.A. Economics, BBS, BBI, BAF, B.Sc. Statistics, or other Finance-related UG courses. Annual family income should be less than ₹4 lakhs.
Reward: Between ₹40,000 and ₹5,50,000 a year for three years
Application: Online
Deadline: August 8
www.b4s.in/edge/RMKSP4

Courtesy: Buddy4study.com

What's your best fit?

Uncertain about your career options? Low on self-confidence? This column may help

OFF THE EDGE
Nandini Raman

I want to do PG in Animation and work for Disney. I am not eligible for IIT. I am also not sure about taking a year off to prepare for entrance exams. Where else can I pursue this? Shruthi

Dear Shruthi,

Animation and working for Disney or any other leading animation studio requires dedication, hard work, continuous learning, and creative thinking. Develop your skills and portfolio, network professionally, gain practical experience, and seize opportunities. Some Indian colleges you can consider are National Institute of Design (NID), Ahmedabad; Symbiosis Institute of Design (SID), Pune; Whistling Woods International, Mumbai; Arena Animation, Mumbai; Maya Academy of Advanced Cinematics (MAAC), Frameboxx Animation and Visual Effects, and Zee Institute of Creative Art (ZICA).

Abroad, look at California Institute of the Arts (CalArts), School of Visual Arts (SVA), and Ringling College of Art and Design, in the U.S.; Sheridan College and Vancouver Film School (VFS), Canada; Gobelins, l'école de l'image, France; and Bournemouth University, the U.K.

Research and explore the colleges and their programmes, curriculum, faculty, infrastructure, industry connections, and placement opportunities before you make a decision. Develop a strong portfolio to demonstrate your creativity and storytelling abilities to the admissions committee and potential employers.

I am final-year student of History. I am interested in Art History. Which colleges in India or abroad will be good for this course? Varsha

Dear Varsha,

Colleges in India and abroad that offer UG and PG programmes in Art History are National Museum Institute of History of Art, Conservation and Museology, New Delhi; Jawaharlal Nehru University (JNU), New Delhi; Banaras Hindu University (BHU), Varanasi; Maharaja Sayajirao University of Baroda, Vadodara; University of Mumbai, Mumbai; Visva-Bharati University, Santiniketan; Aligarh Muslim University (AMU), Aligarh; and Delhi University (DU), New Delhi; The Courtauld Institute of Art, London, University of Oxford, University College London (UCL), and University of Cambridge, the U.K.; Sorbonne University, Paris, France; Harvard University, and Yale University, the U.S.

Explore, study, and interpret art, culture, and society through different periods, styles, and regions, to achieve success and recognition as an art historian, researcher, scholar, curator, educator, or professional in the field of art, culture, and academia.

I completed my B.Tech. in 2019 and am working in a BPO. Despite my limited resources, I would like to be an entrepreneur. How can I transition into business? Robin

Dear Robin,

It is integral to have a sharp business mindset and a resilient approach to launch, and grow a successful and sustainable business. You will need to overcome challenges, seize opportunities. Identify your passion and reflect on your interests, skills, and experiences to identify potential business ideas. Assess the market needs, trends, and opportunities to ensure its viability, demand, and potential for growth and success. Define your business model and have a complete business plan, from value proposition, target audience, competitive advantage, revenue model, and growth strategy. Develop a detailed financial budget with projections, expenses, cash flow, and funding requirements, and explore potential sources of funding, investment, and financial support available. Enroll in entrepreneurship courses and training programmes offered by universities, incubators, and accelerators to gain knowledge. Network with experienced entrepreneurs, and industry experts to learn and grow. Create an online presence and use social media platforms, digital marketing strategies, content marketing, and online advertising to build awareness, visibility, and engagement for your brand and reach the target audience. Finally, embrace challenges, take calculated risks, and learn from failures to achieve success.

I am a B.Com. (Hons) graduate in a Group B job with the Government of India. My resume has a four-year gap due to UPSC CSE attempts. I plan to do an MBA. Is this a wise idea? Amal

Dear Amal,

Why not? You need to decide if you want to do this while you continue to work or to quit and enrol in a full-time course. This requires careful consideration, preparation and planning.

An MBA can offer valuable skills, knowledge, and opportunities to advance your career but, first, assess your core interests, goals, and aspirations. Evaluate your options and consider alternatives available.

Do you want to change roles or industries? Do you wish to move to the private sector? Why are you dissatisfied? Do you want a career change or to advance in your current field? Speak to a professional career counsellor and assess your current skills, strengths, weaknesses, and areas for improvement. Then see if an MBA is the solution.

Also, remember the financial investment and ROI of obtaining an MBA degree. You will also need to consider the time you need to commit.

Research the programmes, specialisations, and opportunities and evaluate the curriculum, faculty, reputation, accreditation, rankings, alumni network, placement record, and career services before you decide the institution. Also seek guidance and advice, from mentors and advisors at your current job and from some MBA alumni, professionals, and experts.

Disclaimer: This column is merely a guiding voice and provides advice and suggestions on education and careers.

The writer is a practising counsellor and a trainer. Send your questions to eduplus.thehindu@gmail.com with the subject line Off the Edge

Creativity to the fore

South Summit 24, co-organised by IE University, Madrid, showcased the work of talented young entrepreneurs

R. Sujatha

(Left) A view of the hall in IE University where entrepreneurs showcased their start-ups. (below) Gerardo Galvez Garcia, scientific project manager of Bitsphi; PHOTOS: R. SUJATHA

The buzz in the hall at La Nave in Madrid was impressive. For two-and-half days, lay observers were witness to animated discussions among entrepreneurs, young students and investors. While the beehive buzzed in the background, entrepreneurs shared their experiences in closed auditoria during the South Summit, co-organised by IE University, Madrid. During the inauguration of the 13th edition on June 5, Maria Benjumea, president and founder of South Summit, announced that the first Asian summit will be held in South Korea from September 25 to 27, 2024.

"Our motto (for South Summit 24) is Human by Design. We are convinced that all technologies are key to the evolution of society and that the person is at the centre and is the creator of these technologies. In the new era, it is more crucial than ever to ensure that technology not only improves our lives but does so inclusively, ethically, and sustainably by putting people at the centre," she told an audience comprising representatives from across Europe, Canada and South America.

The summit showcased start-ups that helped the community they emerged from and beyond by working in healthcare (developing apps for visually challenged persons to helping diagnose children and adults with Attention Deficit Hyperactivity Disorder (ADHD)) or in the sphere of human resources (developing networks for aspirants to find employment that fitted their skillsets or helping students learn through their network of guides and lessons) and those that worked with civic bodies to improve community living.

Of the 100 start-ups shortlisted, around 10 were selected across various categories for scaling up. One of the winners was Spanish start-up NaviLens, which helps persons with visual impairment. Difficulty in using traditional signage immobilises them in unfamiliar environments. The start-up has developed an app with which the user can scan a QR code and get the information contextualised.

Joinrs, says Lodovico Graepel, project coordinator and founder, works in the Human Resources sphere and tries to match skillsets of job searchers with companies at home. The employees are primarily in the 20-35 age group and work from Brazil, Colombia, Albania and the UK, explained Francesca Capozzo, a junior marketing specialist. Graepel adds that the company has "a lot of users (including) students from India. But everyone wants to come to Europe and the U.S. to work.

Another interesting start-up presented was Penseum, which has developed an AI-powered platform that turns study material into interactive guides. Launched in September 2023 in Canada, it has 20,000 users across the world. "In India and Brazil, we have 10 million views on our videos. Students get in touch through Instagram. It is free for students while institutions are charged," explains Kamyar Hosseini, the co-founder.

Nova Talent – a recruitment start-up, based in Italy, Spain and Sweden – aims to connect talented individuals with businesses. This professional network group has around 20,000 members and is meant for students and professionals, says Celia Rico Sanchez-Mateos, Marketing and Communications Associate. Asked about the low placement numbers (just 1000 have been placed), she says, "Since they are already in high paying jobs they don't want to change professions."

Bitsphi Diagnosis aims to transform the standard of ADHD neuro diagnosis. Children are given a cognitive task while an EEG collects data from the brain. This is processed in a cloud-based backend and a comprehensive report is offered to healthcare professionals for an accurate diagnosis. However, says Gerardo Galvez Garcia, scientific project manager, this is a prototype and clinical testing is yet to be done.

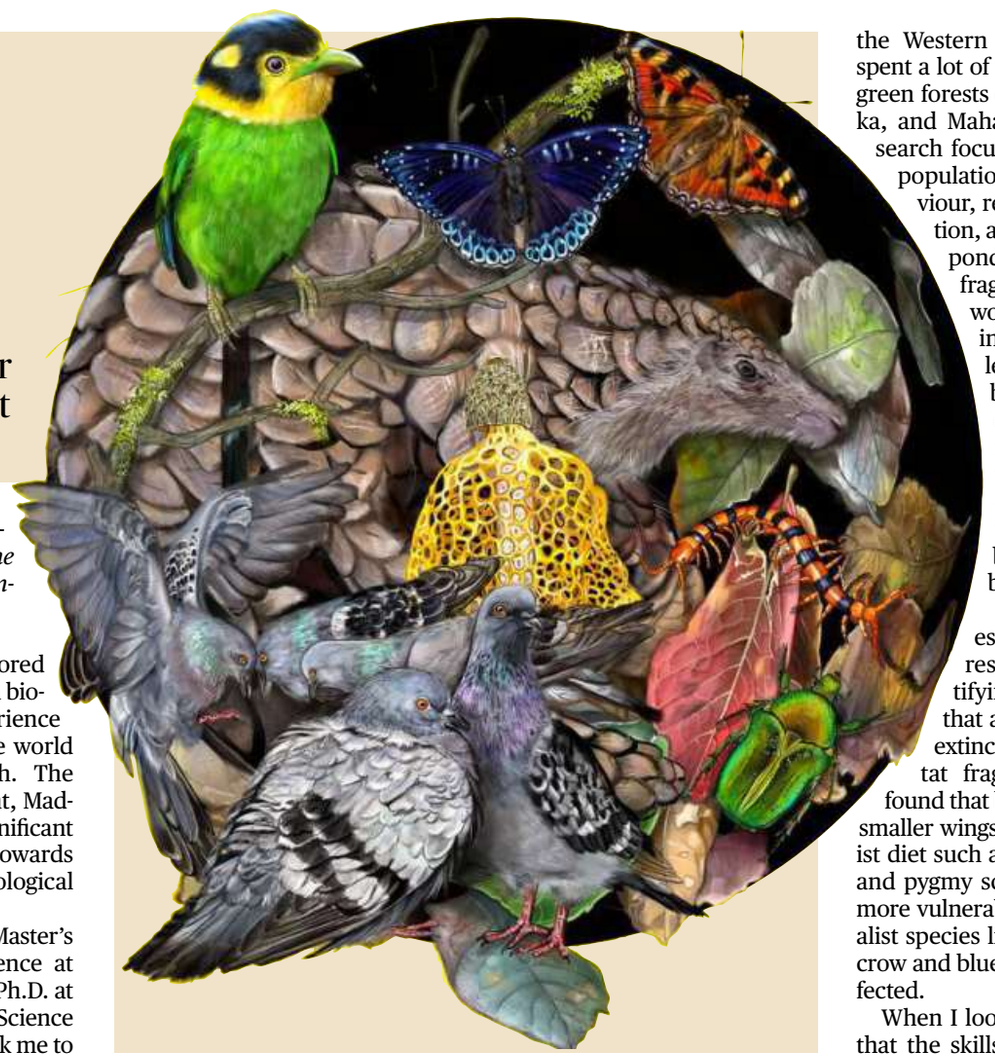
The summit also hosted sessions in which speakers explained the importance of staying local but garnering global attention. South Summit is a platform to promote development of business opportunities in the innovation and entrepreneurship ecosystem. South Summit, Madrid, has hosted more than 36,000 start-ups in 12 editions and its start-up competition has produced seven unicorns. It has produced more than 1,000 finalist start-ups with a survival rate of 90% and more than $15,007 million in investment, a University statement said.

The writer was in Madrid at the invitation of IE University.

GREEN CAREERS HUB

Sketching Science

Urban biodiversity specialist and natural history artist Ravi Jambhekar on how he combines Science and Art to promote conservation



(left) An illustration by Ravi Jambhekar (above) on biodiversity in cities. SPECIAL ARRANGEMENT

The fourth in the monthly series by **WWF-India** *that highlights niche and unconventional green careers through the stories of well-known personalities from the field of environment and conservation*

Growing up in Mumbai, I maintained a small garden at home and was always fascinated with animals and plants, especially their behaviour. However, I never imagined turning this interest into a career.

Early days

I was introduced to the field of research during my Bachelor's in Zoology. At Ruparel College, Mumbai, we had a butterfly garden that we monitored regularly for changes in biodiversity. This experience opened my eyes to the world of ecological research. The head of the department, Madhavi Indap, played a significant role in steering me towards natural history and ecological research.

I later undertook a Master's in Environmental Science at Pune University and a Ph.D. at the Indian Institute of Science (IISc). My fieldwork took me to the Western Ghats, where I spent a lot of time in the evergreen forests of Goa, Karnataka, and Maharashtra. My research focused on butterfly populations, their behaviour, resource distribution, and how they respond to habitat fragmentation. I would spend hours in the field, collecting data on butterflies. An experience that made field surveys unusually exciting was being charged at by domestic buffaloes!

The most interesting part of my research was identifying the species that are vulnerable to extinction due to habitat fragmentation. We found that butterflies with a smaller wingspan and specialist diet such as the plum judy and pygmy scrub hopper are more vulnerable, while generalist species like the common crow and blue tiger are less affected.

When I look back, I realise that the skills of observation and patience have been the most crucial for my research. My Ph.D. guide, Dr. Kavita Isvaran, also played an important role in teaching me the principles of study design, data analysis, and scientific writing.

Enter art

Coming to illustrating, I always enjoyed drawing as a hobby, but never considered it professionally. It all started when a senior botanist asked me to create a diagram for his paper publication on a new plant species that he had discovered. I immersed myself in library books, which helped me create scientific illustrations. While out in the field, I would use the latter half of the day, when the butterflies are generally inactive, to sketch. I would practise regularly and make a sketch or small paintings of whatever I would come across: butterflies, birds, flowers, trees, and more. Watercolour on paper has generally been my go-to medium but I've recently started exploring digital illustrations as well.

Thanks to these different experiences, combining science and art has now become a key part of my work. By integrating visual media and scientific principles, I can communicate science more effectively and reach a wider audience. This not only eases the way we create awareness about nature conservation but also helps us reach the public.

My current role as an ecologist at the Indian Institute for Human Settlements is quite academic. In the Urban Fellows Programme, I teach youth from all over the country about the impact of urbanisation on birds and butterflies and how we can include nature-based solutions in cities.

I would encourage you to pursue a career in Ecology as there are many opportunities in this field, with new and expanding organisations offering various roles. What we've got to do is put our skillset to the right use. Remember, small things can make a huge difference!

Don't rewrite the past

We need to fight the distortion of history in NCERT textbooks, as a commitment to truth and historical integrity is essential to foster a just and informed society

WIDE ANGLE
Albert P' Rayan

Recently, I came across a cartoon titled "History for Peace" depicting a student studying a book called "History of India - Revised Edition." The room is illuminated by a table lamp labelled "NCERT" (National Council of Educational Research and Training). Both the book and the lamp are saffron-coloured. The text below reads: "Bapu died peacefully on January 30, 1948, with God's name on his lips. A truly blessed life." This powerful cartoon is a classic example of historical distortion. It indirectly suggests that Mahatma Gandhi (Bapu), the Father of the Nation, died a natural death, omitting the crucial fact that he was assassinated by Nathuram Godse, a Hindu fanatic.

Distortion of history is not new in India. Over the past decade, it has been discussed and debated numerous times in mainstream and social media. Recently, the controversy surrounding the revised NCERT textbooks has been widely covered, following the threat by academics Yogendra Yadav and Suhas Palshikar of taking legal action against the NCERT for publishing new textbooks under their names without consent. "Both of us do not want the NCERT to hide behind our names to pass on to students such textbooks of political science that we find politically biased, academically indefensible and pedagogically dysfunctional," the letter said.

However, NCERT director Dinesh Prasad Saklani defended the revisions on the grounds that an "expert committee felt that mentioning a few (riots) selectively is not good. Why should we teach about riots in school textbooks? We want to create positive citizens, not violent and depressed individuals." He also mentioned that the changes in the textbooks align with the National Education Policy (NEP) 2020. Saklani seems to have conveniently forgotten that these revisions go against the NEP 2020 objective of "enhancing critical thinking among students."

This is not the first time that the NCERT has faced controversy. It received criticism for reducing the focus on Mughal history while increasing coverage of ancient Hindu history and the Vedic periods. Additionally, there was backlash for diminishing the content related to the assassination of Mahatma Gandhi and the role of his assassin, Nathuram Godse.

In this context, it is crucial to analyse the importance of accurate historical representation. Historical negationism differs from historical revisionism: the former distorts history, while the latter corrects it through rationale, evidence, and reinterpretation. However, if distortion is permitted under the guise of revisionism, it risks glorifying the falsification of history while vilifying accurate historical accounts.

Anti-history

There is no such thing as good or bad history; accurate history is simply history. Manufactured narratives and myths constitute anti-history or pseudo-history. While the ideal of history is to provide an accurate and objective account of past events, pseudo-history involves promoting alternative historical accounts that lack credible evidence or scholarly consensus. Anti-history can take forms like denialism, revisionism, propaganda, and myth-making.

Accurate history serves as the foundation upon which societies build their identities, values, and future. Understanding the true events of the past allows societies to learn from both previous mistakes and successes. Presenting historical facts without distortion encourages students to think critically about the past, grasp the complexities of historical events and promotes cultural awareness and tolerance.

Distorted history perpetuates stereotypes and justifies unjust practices and perpetuates errors and misconceptions about the world. Creating narratives based on myths and presenting them as historical facts can undermine historical integrity and impact society. If historians, academics, educators, and students do not actively oppose these distortions, falsehoods may become entrenched in public consciousness.

Measures

The distortion of history in textbooks, driven by political agendas, is a critical issue with significant implications for education. Here are a few suggestions to improve the quality of history textbooks:

- Ensure that history textbooks are authored by educators without political affiliations to provide objective and unbiased perspectives and maintain the credibility and accuracy of historical content.

- Implement a rigorous review process involving reputable academics and historians to ensure that textbooks are comprehensive, balanced, and free from ideological biases.

- Require proper justification for any revisions to enhance transparency and accountability and ensure changes are based on scholarly evidence and not political influence.

- Ensure that authors and reviewers represent all sections of society to capture the multifaceted history of India, including the experiences and contributions of various communities.

- Encourage the media to publish well-researched articles on revised textbooks and bring public attention to changes to promote informed discussion and scrutiny of revisions.

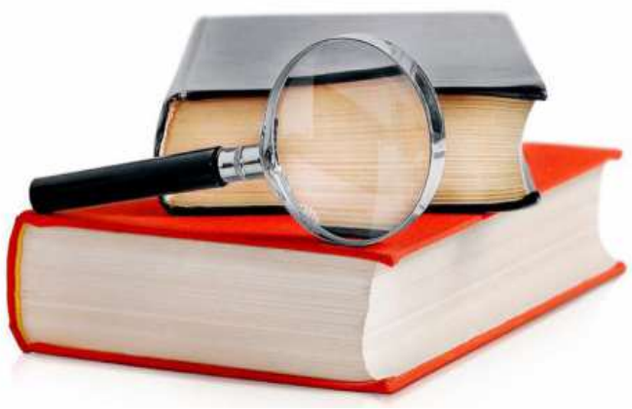
- Media groups should organise debates on textbook revisions and encourage healthy criticism to ensure broader engagement with content and foster a more informed and critical society.

- Encourage educational institutions to organise seminars and talks on the importance of improving history textbooks so that teachers are aware of issues such as historical negationism, distortion of historical records, and historical revisionism.

The present is possible because of the past. An accurate account of the past paves the way for a wonderful present and a beautiful future.

Views expressed are personal

The writer is an ELT resource person and education columnist.
rayanal@yahoo.co.uk



GETTY IMAGES/ISTOCKPHOTO

Prepare for multi-cloud

With multi-cloud strategy gaining ground, how can students of Cloud Computing succeed in a changing environment?

Abhinanda Sarkar

FREEPIK

Cloud engineering offers a promising career path for graduates and young professionals. However, with multi-cloud strategy gaining, traction, staying updated on industry trends is crucial. According to a 2023 study commissioned by Oracle Cloud Infrastructure, 98% plan to use multiple cloud infrastructure providers. What is multi-cloud strategy? How can students succeed in this dynamic environment?

What it's all about?

When an organisation integrates multiple cloud services, possibly from different vendors, we have a multi-cloud. The approach gives organisations better control over their application infrastructure, streamlining it efficiently. Multi-cloud environments offer redundancy, cost efficiency, and flexibility, ensuring uninterrupted operations within budgets, avoiding vendor lock-in, and meeting fluctuating market conditions. Aspirants can explore numerous opportunities, as they leverage multi-cloud development to build scalable, resilient applications that address specific customer and end-user concerns.

The positive career outlook makes more sense when multi-cloud development is seen in the context of Artificial Intelligence (AI). Technologies like Machine Learning (ML) and Natural Language Processing (NLP) are embedded into various multi-cloud environment components. This integration can help one consolidate advanced analytics, automate various tasks within the environment, and allow multi-cloud systems to help arrive at intelligent decisions.

Requirements

What are the essential skills and learning pathways that aspirants in this sector need? Here are a few:

Cloud computing fundamentals: A solid grasp of cloud architecture principles, service models (IaaS, PaaS, SaaS), and virtualisation is a must.

Platforms: Knowing your way around at least the leading cloud platforms (AWS, Azure, and GCP) is essential to designing and implementing effective multi-cloud solutions

Automation tools: Expertise in automation tools such as Puppet, Ansible, Kubernetes, and so on is needed to build dynamic cloud solutions that can perform with minimal human involvement.

Networking, cybersecurity, and containerisation: These are vital to navigating the complexities of multi-cloud environments, ensuring their security, scalability, and interoperability.

Options

There are diverse career paths available for a multi-cloud specialist. As a cloud architect, one can work on client-facing software and backend infrastructure. Alternatively, as a Cloud DevOps engineer, one can oversee operations of a cloud computing infrastructure. These positions typically require a Bachelor's degree and relevant certifications. Those interested in AI can learn AI/ML technologies and deploy them on different clouds such as a cloud engineer with multi-service expertise learning AI solutions that can be worked into multiple clouds or a DevOps or full-stack developer who uses cloud-hosted backends for AI frontend solutions.

Consider online courses/certification programmes or online bootcamps and hybrid programmes offered by universities and tailor your learning journey to your requirement. Aspirants should grasp the opportunities available just as the intersection between Cloud and AI deepens further.

The writer is Academic Director, Great Learning.

Interdisciplinary engineering

Hybrid engineering has created a space for collaboration and exchange of knowledge.

Ketan Kotecha

Hybrid Engineering is nothing but bringing multidisciplinary studies into the domain of engineering. At its core, it unites core fields such as Mechanical, Electrical, Civil Engineering and applies intelligent automation layer through AI, computer, and Robotics Engineering.

Real-world examples

The rise of hybrid engineering can be illustrated by real-world examples that demonstrate the significant impact of interdisciplinary collaboration. Consider the aerospace industry, where companies like Ricardo, in collaboration with Pratt & Whitney Canada, are innovating advanced hybrid-electric propulsion technology for next generation aircraft. This effort integrates Mechanical Engineering's knowledge of structural mechanics alongside the complex Electrical Engineering's power systems, as well as the sophisticated control algorithms of AI and Computer Engineering.

Another example is the creation of hybrid and electric vehicles in the automotive industry. Vehicles, like the Toyota Prius, underscore the necessity of bridging different engineering disciplines to tackle complex issues like energy efficiency and environmental sustainability. This interdisciplinary approach not only enhances the vehicle design but also contributes to reducing carbon emissions.

FREEPIK

The emergence of hybrid engineering has fundamentally changed the way problems are viewed and solved. It helps break down the barriers that traditionally impeded the development of new ideas, and creates a space that allows for collaboration and the exchange of knowledge. Since the boundaries of disciplines have become blurred, the significance of encouraging interdisciplinary collaboration is crucial. Engineering education, today, is increasingly focused on projects that are team-based and resemble the real-world of interdisciplinary collaboration. Here are some ways through which institutions can foster this collaborative spirit:

Mixed Plantation Approach: Imagine an engineering school where disciplines don't sit apart but are interwoven, like a mixed plantation. Energy Systems Engineering courses combine ideas from Electrical, Mechanical and Environmental disciplines to address real-world problems such as designing sustainable energy solutions.

Interdisciplinary labs: Establishing cross-disciplinary labs or a "Smart City Technology" lab will bring together Civil, Electrical, and Computer engineers to design intelligent transportation systems and energy-efficient buildings.

Hybrid Engineering mindset: To fully harness its potential, academia and industry must foster an environment that prioritises flexibility, curiosity, and collaboration among engineers. Encouraging engineers from different backgrounds to collaborate across disciplinary lines, while remaining open-minded towards novel ideas and methodologies will foster innovative thought.

Hybrid engineering offers a way to solve today's complex challenges and to shape our world for a better future.

The writer is Director, Symbiosis Institute of Technology Pune.