EDUCATIONPLUS

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

Julian Kopli

Artificial Intelligence or Academic Integrity?

Should AI-assisted writing be allowed in academic journals?

GETTY IMAGES/ISTOCKPHOTO

If you search Google Scholar for the phrase "as an AI language model", you'll find plenty of AI research literature and also some rather suspicious results. For example, one paper on agricultural technology says, "As an AI language model, I don't have direct access to current research articles or studies. However, I can provide you with an overview of some recent trends and advancements."

Obvious gaffes like this aren't the only signs that researchers are increasingly turning to generative AI tools when writing up their research. A recent study examined the frequency of certain words, such as "commendable", "meticulously" and "intricate" in academic writing, and found they became far more common after the launch of ChatGPT; so much so that 1% of all journal articles published in 2023 may have contained AI-generated text.

Why do AI models overuse these words? There is speculation it's because they are more common in English as spoken in Nigeria, where key elements of model training often occur.

Concerns

Many people are worried by the use of AI in academic papers. Indeed, the practice has been described as "contaminating" scholarly literature. Some argue that using AI output amounts to plagiarism. If your ideas are copy-pasted from ChatGPT, it is questionable whether you really deserve credit for them.

But there are important differences between "plagiarising" text authored by humans and text authored by AI. Those who plagiarise humans' work receive credit for ideas that ought to have gone to the original author. By contrast, it is debatable whether AI systems like ChatGPT can *have* ideas, let alone deserve credit for them. An AI tool is more like your phone's autocomplete function than a human researcher.

Another worry is that AI outputs might be biased in ways that could seep into the scholarly record. Infamously, older language models tended to portray people who are female, black and/or gay in distinctly unflattering ways, compared with people who are male, white and/or straight, though this is less pronounced in the current version of ChatGPT.

However, other studies have found a different kind of bias in ChatGPT and other large language models: a tendency to reflect a left-liberal political ideology. Any such bias could subtly distort scholarly writing produced using these tools.

The most serious worry relates to a well-known limitation of generative AI systems: that they often make serious mistakes that have been referred to as "AI hallucinations". It may be much harder to identify mistakes ChatGPT makes when surveying scientific literature or describing the state of a philosophical debate. Unlike most humans, AI systems are fundamentally unconcerned with the truth of what they say. If used carelessly, their hallucinations could corrupt the scholarly record.

To ban or not?

One response to the rise of text generators has been to ban them outright. For example, *Science* – one of the world's most influential academic journals – disallows any use of AI-generated text. I see two problems with this approach. The first is a practical one: current tools for detecting AI-generated text are highly unreliable. This includes the detector created by ChatGPT's own developers, which was taken offline after it was found to have only a 26% accuracy rate (and a 9% false positive rate). Humans also make mistakes when assessing whether something was written by AI.

It is also possible to circumvent AI text detectors. Online communities are actively exploring how to prompt ChatGPT in ways that allow the user to evade detection. Human users can also superficially rewrite AI outputs, effectively scrubbing away the traces of AI.

The second is that banning generative AI outright prevents us from realising these technologies' benefits. Used well, generative AI can boost academic productivity by streamlining the writing process. In this way, it could help further human knowledge. Ideally, we should try to reap these benefits while avoiding the problems.

The most serious problem with AI is the risk of introducing unnoticed errors, leading to sloppy scholarship. Instead of banning AI, we should try to ensure that mistaken, implausible, or biased claims cannot make it onto the academic record. After all, humans can also produce writing with serious errors, and mechanisms such as peer review often fail to prevent its publication.

We need to get better at ensuring academic papers are free from serious mistakes, regardless of whether these mistakes are caused by careless use of AI or sloppy human scholarship. Not only is this more achievable than policing AI usage, it will improve the standards of academic research as a whole.

This would be (as ChatGPT might say) a commendable and meticulously intricate solution.

The writer is Lecturer in Bioethics, Monash University, and Honorary fellow, Melbourne Law School, Monash University, Australia.

A range of opportunities

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

OFF THE EDGE
Nandini Raman

I work in a public sector bank and have experience as a pre-sales consultant in the IT industry. I cleared UGC-NET in 2021 and qualified for Assistant Professorship. Is this a good option? Adhiyaman

Dear Adhiyaman,
What do you like: the public sector, the IT industry or academia? If you have a genuine interest in and are passionate about teaching, and research, then pursuing an Assistant Professorship could be an excellent choice, given your UGC-NET qualification. You will land on a good secure job across academic positions in public institutions, work-life balance is great compared to a corporate role, there are opportunities to publish papers and contribute to the academic community, and further growth is possible. However, ensure that you thoroughly research the institutions you are interested in, its reputation and location and are aware of the academic demands, as all this will impact your career prospects and quality of life.

I have completed B.Sc. Statistics. What are my career options if I do a Master's? Abhishek

Dear Abhishek,
You could become a data scientist, a statistician, a business or market research, or financial analyst, an actuarial scientist, a biostatistician, an academician/researcher, or an operations research analyst. Pursue the relevant Master's degrees (Statistics or Data Science) and certifications such as SAS Certified Data Scientist, Certified Actuarial Analyst to develop your skills and enhance your exposure. Programming skills (Python, R) and data visualisation tools (Tableau, Power BI) will also help you gain proficiency in statistical software. Stay updated with the latest trends and technologies in your field.

I have finished B.Com. and am preparing for banking exams. I want to pursue accounting and Tally. Should I train under a CA or CS? What are the growth prospects? Vaibhav

Dear Vaibhav,
Pursuing Tally Certification is essential for practical accounting skills and immediate job readiness. With skills in Accounting and Tally, you can work as an accountant, financial analyst, or auditor in corporate firms, SMEs, and public sector organisations. Courses for Accounting and Tally include Tally ERP 9 and Tally Prime Certification Courses, Diploma in Financial Accounting, Certified Management Accountant (CMA), PG Diploma in Computerised Accounting (PGDCA). Train under a CA if your primary focus and interest is in accounting, auditing, financial management, taxation, and corporate law. You will learn accounting principles and practices and get practical experience in financial auditing and tax filing, financial analysis and reporting and direct application of Tally software for accounting tasks. Train with a CS if are interested in corporate law and governance. The focus will be on on corporate governance, company law, corporate secretarial practice, and compliance management. You will gain experience in handling legal and regulatory aspects of corporate management and be exposed to governance frameworks and company secretarial practices. With experience and additional certifications (CA, CMA), you can advance to senior roles. With adequate experience and certifications, you can start your own accounting or consultancy practice.

My daughter is studying B.Tech. Food Technology. What kind of jobs will she get? Will she be able to get a job abroad? Manoharan

Dear Manoharan,
A B.Tech in Food Technology can open up a wide range of job opportunities. In India, she could work in quality control or assurance across food-manufacturing companies, regulatory bodies, certification agencies; as a product development scientist in FMCG companies, food-processing firms, research institutions; as a food safety officer in government agencies, food-safety organisations; as a production manager in food-processing companies, dairy industries, beverage companies; in research and development across labs, academic institutions, multinational food companies; as a supply chain manager in food-distribution companies, retail chains, logistics firms; or a food technologist in food-processing industries, packaging companies, agri-business firms. Prospects abroad include roles in global food companies across R&D, quality control, and product development, research institutions, regulatory bodies, agri-businesses and so on. She can do her Master's or specialised certifications (from international bodies like ISO, HACCP) to enhance her expertise and employability skills. By gaining relevant experience, enhancing her knowledge, and actively networking, she can secure a promising career in food technology anywhere in the world. The food industry is constantly evolving with new technologies and regulations, so she needs to keep up with the latest trends.

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

---

FREEPIK

Catalyst for change

Corporate Social Responsibility offers students a unique opportunity to make a tangible difference while setting themselves up for career success.

Neha Singal

In today's rapidly evolving job market, having a degree alone is no longer enough to stand out. Employers are increasingly looking for candidates who demonstrate a commitment to social responsibility and possess a diverse skill set. Enter Corporate Social Responsibility (CSR) in higher education, a powerful tool that allows students to make a meaningful impact whilst bolstering their CVs.

Universities across the globe are recognising their role in shaping socially responsible leaders. Many institutions now offer CSR programmes that enable students to engage with local communities and tackle global issues. These initiatives not only benefit society but also provide students with invaluable real-world experience.

Get involved
Eager to join the movement? Here are some ways to get involved in CSR programmes on your campus:
• Join student-led organisations focused on social or environmental issues.
• Participate in volunteer programmes organised by your university.
• Propose your own CSR initiative to the university administration.
• Seek internships with companies known for their strong CSR practices.

Remember, the key is to find a cause you're passionate about. Whether it's climate change, social inequality, or education access, there's likely a CSR programme that aligns with your interests.

Ripple effect
CSR initiatives in higher education have far-reaching effects. For instance, a group of students from the University of Edinburgh, the U.K., partnered with local businesses to create a food redistribution network, significantly reducing food waste while addressing food insecurity in the community. On a global scale, students from universities have collaborated on projects addressing the UN Sustainable Development Goals, from clean water initiatives in developing countries to educational programmes for refugee children.

Participating in CSR programmes is not merely about doing good. It is a robust platform to develop crucial skills such as include leadership, teamwork, project management, problem-solving, critical thinking, cross-cultural communication, budgeting and resource allocation. Honed in real-world scenarios, these skills set you apart in the job market.

Showcase experience
When it comes to CV and job interviews, the CSR experience can be a goldmine. Here's how to effectively present it:
• Quantify your impact (e.g., "Led a team that reduced campus energy consumption by 15%").
• Highlight specific skills developed and how they apply to the job you're seeking.
• Use your CSR experience to demonstrate your values and work ethic.

During interviews, use the Situation, Task, Action, Result (STAR) method to narrate your CSR experiences compellingly.

The increasing focus on social responsibility has opened up new career paths and roles such as such as Sustainability Manager, CSR Consultant, and Impact Investment Analyst across industries. Your university CSR experience can be a stepping stone into these fields.

While CSR involvement is valuable, it's crucial to maintain a balance with your academic commitments. Time management becomes essential. Many students find that their CSR work actually enhances their academic performance by providing real-world context to theoretical concepts.

Benefits
The benefits of CSR engagement extend far beyond your university years. It shapes you into a more aware, empathetic, and skilled professional. Many CSR participants report increased job satisfaction and a sense of purpose in their careers. Moreover, the networks you build through CSR work can prove invaluable throughout your professional life. You'll connect with like-minded individuals, potential mentors, and even future employers.

CSR in higher education offers a unique opportunity to make a tangible difference while setting yourself up for career success. It's not just about padding your CV; it's about becoming the kind of leader the world needs.

So, why wait? Explore the world of CSR and start changing the world; one project at a time.

The writer is Sr. Manager of Marcoms, Bhumi NGO.

WIDE ANGLE
Albert P' Rayan

The circular read, "A general staff meeting will be held at 9.00 p.m. tomorrow. The Director will address the staff. Attendance is mandatory." The announcement caused an immediate stir; never in the college's history had a staff meeting been scheduled so late in the evening. One teacher suggested, "It's probably a typo. Maybe they meant 9.00 a.m., not 9.00 p.m." Yet, most teachers were reluctant to question the principal. One teacher mustered the courage to ask for clarification and also requested that the principal to double-check with the Director, pointing out that a 9.00 p.m. meeting would be difficult for many to attend. The principal, however, refused to consult the director and insisted the meeting was scheduled for 9.00 p.m.

When the Director later reviewed the circular, he asked: "Why is the meeting scheduled for such an unusual time?"

"Sir, you specified 9 p.m. during our conversation," the principal explained.

The Director frowned. "Have we ever held a staff meeting at 9.00 p.m.? Even if I misspoke, you should have checked with me."

This incident revealed the principal's reluctance and lack of courage to question his superior, even when common sense suggested otherwise.

I recalled this situation when I read reports about a visually impaired teacher named Shankar who questioned a guest speaker, Mahavishnu, during a so-called "motivational talk" at a government school in Chennai. The speaker discussed concepts like rebirth and karma, and made unscientific assertions that reciting specific mantras could heal bodies, cause "rain of fire", or enable flight. He also suggested that deformities such as blindness and social inequalities such as home-

To be a teacher today

Today's teachers need to create an environment where students are empowered to think independently, ask questions, explore ideas, and act ethically

lessness and the disparity between poor and rich were the results of actions from previous lives.

A video of Shankar challenging Mahavishnu's claims and sparking a heated argument went viral, leading to widespread discussions about the role of a teacher in such questioning unscientific claims. Thanks to the teacher's intervention and courage, the event has become a major topic of discussion.

Contrasting attitudes

These two anecdotes are sharp contrasts: the head of the institute who lacked basic courage, and the visually impaired teacher who demonstrated intellectual courage. Despite his impairment, Shankar's vision for education is far clearer than that of many other teachers.

What other lessons can be drawn from these stories? Why was Shankar the only teacher to confront the speaker? Why didn't the other teachers raise the issue? What might have happened if a private school teacher had taken the same stance as Shankar? What kind of teachers does our society need today?

These questions prompt deep reflection on the changing role of educators in a rapidly evolving world. In a society marked by tension between rational and irrational thinking, culture of silence versus critical discourse, and authority versus equality, today's ideal teacher must embody a range of qualities to effectively guide and inspire students.

Many teachers have been conditioned to view their role as limited to transferring knowledge and preparing students for examinations, resulting in a narrow view of education. W.B. Yeats's words - "Education is not the filling of a pail but the lighting of a fire" - suggest that teachers should focus on sparking curiosity and inspiring a lifelong love of learning, rather than merely transferring information and making students passive recipients.

Today, teachers face several challenges. Their role extends beyond teaching assigned subjects. They need to be educators who not only impart knowledge but also create awareness about human rights and global issues, enable students to think critically and ethically, analyse media content, question irrationality, and contribute to society in various ways.

Required qualities

Do our teachers ignite passion and encourage students to explore, think, and learn on their own? What traits do teachers need to effectively fulfil this role? They should have a strong sense of ethics and integrity, critical thinking and intellectual courage.

Teachers who demonstrate ethical reasoning can help their students to differentiate between right (morally acceptable) and wrong (morally unacceptable) thinking and thus enable them to make good decisions.

Those with intellectual courage are equipped to challenge long-held beliefs, question their own assumptions, address controversial issues, and encourage students to think critically and form independent, well-informed opinions. Without this, teachers may deprive students of the opportunity to engage with diverse perspectives.

Analytical reasoning is another crucial skill. In a world saturated with information, teachers must help students distinguish fact from misinformation and disinformation, develop problem-solving abilities, and think analytically. Without these skills, students may struggle to navigate complex issues independently.

In addition to being knowledgeable and skilled in effective teaching, teachers who exemplify ethical reasoning, intellectual courage, and analytical reasoning not only impart knowledge but also create an environment where students are empowered to think independently, ask questions, explore ideas, and act ethically. By focusing on these areas, teachers can better prepare students for the challenges of the 21st century.

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

---

GREEN CAREERS HUB

Into the wild

Sejal Worah, Programme Director at WWF-India, talks about working close to Nature

The seventh 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

Right from a very young age, I knew that I wanted a career that would keep me close to Nature. A major influence was the outdoor experiences I had shared with my father. My early inspiration came from reading books by Gerald Durrell, travelling to remote places, and interacting with people.

After finishing school, I came across a new field called Life Sciences that, to my joy, included Ecology as a subject. I graduated in this, followed by a Master's in Wildlife Biology at the State University of New York, Syracuse, the U.S. Inspired by a talk by the then Secretary General of WWF-India, I joined the organisation and began coordinating a new project on "People and Plants".

Early days

Being interested in education and working with young people, I took on the role of an Education Officer with WWF-India and learnt from an excellent mentor, Chandrakant Wakankar. I was also greatly inspired by women like Medha Patkar and Aruna Roy and aspired to be strong, committed, and passionate about a cause.

During a monsoon bike trip to a small hill station in South Gujarat, I fell in love with the tribal district of the Dangs. I found that there was an elusive small wild cat – the rusty-spotted cat – last reported from this area and thought it might be worth exploring. In the days before camera traps, this meant roaming the forests night after night and sitting up at waterholes with a torch. Finally, I did spot it a few times!

About a year later, I met the Head of the Department of Environmental Science at the University of Poona, who suggested that I enroll for a Ph.D. A typical day had me waking up at 4.00 a.m. to conduct bird transects and the day would end after midnight, looking for the elusive cat.

After transcribing field notes and a short rest, I generally headed to the village to meet the community. I found my interactions with the community so interesting that I shifted the focus of my research from wildlife to the interactions between people and the forest. Throughout my Ph.D., I was guided and mentored by Dr. Alan Rodgers, who helped to bring scientific temper and reasoned arguments to my chaotic thinking, taught me how to observe, analyse, and write, and, most importantly, demonstrated how you can be serious about your work but still approach it with a sense of fun and joy.

After my PhD, I presented my work at a Parks Congress in Venezuela where I was offered a job with WWF-UK. I spent a few years working as the Head of the Asia/Pacific programme at WWF-UK but the travel to Asia had me itching to live in that part of the world.

I designed a project that had me based out of Thailand and working in countries across Asia-Pacific. It was a capacity-building initiative that aimed to build an understanding of the links between conservation and community development. After five years, I was eager to get back to India. So I packed up my bags to come back home to Uttarakhand. From here, I worked as a consultant for three years, exploring new parts of the world, including East Africa. When offered the role of Programme Director at WWF-India, I was ready to settle down and develop new skills as a team manager and leader. More than 15 years later, I am still here, where it all began.

Looking back, the time I spent in the field was the most interesting and the main reason why I chose this career. I am also excited to learn new things constantly - including aspects of health, economics, governance, climate change, agriculture, hydrology, and more.

To those considering a green career, my first piece of advice is that you have to believe in the cause and not just see it as a career. If you are passionate about green issues, it will reflect in your work. Don't let people deter you.

When I first embarked on this journey, many people would taunt my parents that their daughter had "gone wild". Today, the same folks come to me for career advice for their children!

The writer was involved in establishing Jabarkhet Nature Reserve, the first private nature reserve in Uttarakhand.

Sunil Sarangi

Create an enabling ecosystem

How management institutions foster entrepreneurial self-efficacy (ESE) for start-ups

Entrepreneurial self-efficacy (ESE) is an outcome of entrepreneur's innate belief in their own cognitive ability to perform all the necessary tasks that go along with ideating, launching and growing new ventures. With management institutions playing a prominent role in creating and supporting entrepreneurs, this concept becomes a differentiator in steering start-ups beyond the Death Valley phase, which poses the maximum challenges in terms of having a sustainable business model and positive cash flow.

How it helps

It also gives a budding entrepreneur the confidence to take calculated risks and informed decisions and fosters personal resilience and perseverance that becomes a counter-weight to short term setbacks and failures. A higher level of ESE has often been found to be the reason of entrepreneurial adaptability, problem-solving ability, agility and resourcefulness. Entrepreneurs with higher ESE display not only higher cognitive ability but also a high level of Emotional Intelligence (EI), which makes them more motivated to communicate their vision adept at networking to learn many different perspectives during meetings.

The perspective-taking ability refers to a key element in EI: Empathy. This ability to take a deep dive into the minds of others is a crucial starting point for entrepreneurs to become Design Thinkers and become efficient in the five-step process of Design Thinking that comprises Empathy, Define, Ideate, Prototype, and Test.

Similarly, start-up founders adopt a "Lean Mindset" to tide over the initial struggles by creating effective survival strategies, setting Specific, Measurable , Actionable, Realistic and Timely (SMART) goals through a Build-Measure-Learn loop, validated learning, and pivoting. Management institutions build these capabilities by deploying their robust intellectual capital through an ecosystem of educators, start-up mentors, industry experts, and the various networks that they collaborate and work with.

Possessing ESE is an outcome of mastery of experience, social persuasion, social modelling and imagining and visualising positive experiences, which essentially have been embedded in the myriad platforms that management institutions offer such as established incubators, accelerators, campus ventures, and different centres of entrepreneurship. The unique and well-researched ways of designing specialised entrepreneurship courses by incorporating tried-and-tested methods of finance, marketing, human resources, organisation- design, and management communication certainly enhances the capability and self-efficacy in the early-stage start-up founders. Management institutions become a hub of specialised workshops, pitching events, business plan competitions, hackathons, networking events.

These interactive forums impart the requisite knowledge to entrepreneurs, provide them with an exposure to the global standards and best practices and, importantly, showcase their ventures to potential angels and venture capitalists (VCs). Additionally, such institutes have become the nodal points of an enabling ecosystem for entrepreneurs in their respective geographies and form the bedrock for start-up founders to take an informed plunge into the challenging, unknown and highly complex world of entrepreneurship.

The writer is Chief Executive Officer, XCEED, XLRI Jamshedpur.

Asim Akhtar

Master the fundamentals

What is the difference between a BBA and a B.Com? How does one choose a BBA specialisation? Read on...

One course that is becoming increasingly popular is Bachelor of Business Administration (BBA). Often this is confused with a B.Com, with many thinking they are similar. Actually the two are different. While a BBA focuses on business and management principles, the B.Com is about commerce, accounting, economics and finance.

What it's about

While the latter is for students who wish to make a career in accounting/auditing domain, a BBA offers an understanding of business management and lays the foundation for managerial/leadership roles in the future.

A BBA programme has a variety of specialisations such as Finance, Marketing, Human Resource Management, Operations Management, Analytics, Information Management, Entrepreneurship. Let's look at what each one is about.

Finance: Offers knowledge and skills related to financial management, investment, banking, and related fields.

Marketing: Provides an understanding of market research, consumer behaviour, digital marketing, branding, and strategic marketing management.

Human Resources Management: Prepares one to handle various aspects of workforce management, including recruitment, training, employee relations, and strategic HR planning.

Operations Management: Gives one the knowledge and skills necessary to manage and improve business processes, supply chains, and production systems.

Analytics: Equips one with the skills to analyse data, extract insights, and make data-driven decisions and combines elements of business management with data science.

Information Management: Prepares one to manage and leverage information technology (IT) resources to meet organisational goals and covers topics such as data management, information systems, IT strategy, and cybersecurity.

Entrepreneurship: Develops the knowledge, skills, and mindset needed to start and manage their own businesses with a focus on creativity, innovation, business planning, and the practical aspects of running a business.

Apart from this, students can choose additional subjects/papers in their area of their interest as electives so that they can get a deeper understanding if those subjects and gain expertise.

How to choose

Given the variety on offer, how does a student choose the specialisation? As you navigate this process, first reflect on your interests,

strengths, values and skills. After this self-assessment comes research. Explore various options and industries and the qualifications, job responsibilities, and growth prospects for different careers.

Then talk to professionals in the fields you are interested in about career paths, daily responsibilities, and experiences. Now consider the educational requirements for the career you have chosen. Do you need a degree, diploma, certification, or vocational training? Which colleges or institutes offer relevant courses?

Consider your long-term goals and how different options align with them. Once you done all this, make a decision based on what feels right.

Remember, it's okay to change your mind and pursue different paths in the future. As you take concrete steps towards your chosen path – whether it's applying to colleges or enrolling in courses – stay motivated and proactive in pursuing your goals.

The writer is General Manager-Operations, T.I.M.E.