

Twin threat from China, Pakistan tests India’s defence Budget ambitions

THE need for India’s military to be prepared for a two-front, or “twin-threat”, scenario involving China and Pakistan is now seen as a reality rather than a distant possibility by the country’s military leadership. This strategic requirement stems from deepening collusion between the two neighbours, unresolved territorial disputes, and the imperative to secure India’s long borders: 3,488 km with China and 3,323 km with Pakistan.

The timing of this concern is significant. It comes months after India and Pakistan faced a military standoff in May last year. Following a deadly militant attack in Jammu and Kashmir’s Pahalgam, India launched strikes on terror launch pads in Pakistan and Pakistan-administered Kashmir under ‘Operation Sindoor’. Military exchanges followed, before the Indian Army said tensions eased after a ceasefire request from Pakistan’s Director General of Military Operations (DGMO).

Recent conflicts have also altered the character of warfare. During the India-Pakistan stand-off, drones and surveillance technologies played a visible role.

Senior military leaders have noted that advanced sensors and Artificial Intelligence (AI) are steadily reducing battlefield surprise. They argue that while a technological edge increasingly decides outcomes, technology alone is insufficient. Intellectual preparedness and adaptive military leadership, they stress, are equally critical.

This raises a key question. Does the new Union Budget adequately support these ambitions? Analysts point out that India needs to finalise several major defence deals. Plans include the purchase of 114 new fighter aircraft and six submarines. A proposed \$10-billion submarine deal with Germany is under discussion, while the fighter aircraft programme could cost between \$30 billion and \$35 billion. Such large projects require sustained, long-term financial planning.

Defence now accounts for 14.68 per cent of the total Union Budget, up from 13.45 per cent last year.

Defence budgeting, however, is complex. Factors such as Operation Sindoor, China’s rapid military modernisation, the push for self-reliance, and the urgent need to replace ageing equipment all shape spending decisions.

Modernisation today goes far beyond aircraft and submarines. Drones, cyber warfare and space-based capabilities are now as crucial as traditional platforms. Shortfalls remain severe. The Indian Air Force is authorised 42 fighter squadrons but currently operates only 29 to 30. With each squadron comprising around 20 aircraft, this leaves a gap of nearly 250 to 300 fighters.

Regional comparisons add perspective. After its clash with India, Pakistan raised its defence budget by 20.2 per cent for 2025-26, increasing spending from 2,122 billion to 2,550 billion Pakistani rupees, about 1.97 per cent of its GDP. China’s defence spending in 2024 stood at around 1.7 per cent of its \$18.74-trillion GDP, while Bangladesh spent roughly 0.9 per cent of its \$450-billion GDP on defence. India’s defence budget is about 1.9 per cent of its \$4-trillion economy.

Analysts argue that India needs to spend at least 3 per cent of GDP on defence, a demand military planners have made for decades. While GDP has expanded significantly, defence spending has remained near the 2 per cent mark. Rapid and sustained modernisation, they say, requires a firm 3 per cent commitment.

The new Budget signals intent. The real test will lie in execution, timelines and sustained political will.

Despite the increase in allocations, defence experts maintain that spending of around 2.5 per cent of GDP is the minimum required to effectively counter the dual threat, while the current Budget remains close to 2 per cent of projected GDP for 2026-27. The focus, they say, must remain on strengthening high-altitude warfare capabilities, unmanned aerial vehicles (UAVs) and AI to maintain a decisive edge.



Reviving the Buckingham Canal: Restoring a forgotten lifeline of the Coromandel Coast

A neglected 19th-century waterway holds the key to sustainable transport, disaster mitigation, and regional livelihoods

DR D SREENIVASULU

THE rapid transformation of human civilisation accelerated manifold with the invention and expansion of modern modes of transportation. In India too, beginning with the colonial period and continuing after Independence, sustained efforts have been made to improve transportation networks connecting the length and breadth of the subcontinent. Today, governments are investing heavily in road networks, highways, bullet trains, and national and international air connectivity.

However, the ease and speed of these modes of transport have overshadowed waterways, which once played a vital role in the economy by facilitating the movement of goods, services, and people across regions. As a result of this transformation, coupled with rapid urbanisation, encroachment of water bodies, and pollution, several historic water canals in India have been neglected and have fallen victim to modernisation. It is the responsibility of the government to promote inland waterways through the revival of these canals. One such canal whose plight calls for immediate attention and action is the Buckingham Canal.

Designed by Western engineers, this 19th-century navigation canal runs parallel to the Coromandel Coast, connecting the present-day states of Andhra Pradesh and Tamil Nadu. The construction of the Buckingham Canal took place in several phases and was initially conceived as a private waterway, planned and executed under the Design-Build-Operate project delivery system—the predecessor of today’s much-acclaimed Build-Own-Operate-Transfer model. This model is the predecessor of the present day much-acclaimed Build-Own-Operate-Transfer model.

Construction began in 1806,



with a 16.5-kilometre stretch from Madras Port to Ennore built by the Basil Cochrane Company. In recognition of this contribution, the canal was initially named the Cochrane Canal. Later, the British government extended it northwards and linked it with Kakinada Port via Vijayawada, enabling continuous navigation between Madras and Kakinada. For a period, it was also referred to as Lord Clive’s Canal. During the Great Famine of 1876–78, canal extension works were undertaken as part of famine relief measures. Eventually, the canal was renamed the Buckingham Canal, after the Duke of Buckingham and Chandos, then Governor of the Madras Presidency.

Stretching nearly 796 kilometres parallel to the Coromandel Coast, about one kilometre inland, the canal extends up to Villupuram in Tamil Nadu. It connects with

Pulicat Lake and, within Chennai, intersects the city’s three major rivers: the Kosasthalaiyar, Cooum, and Adyar. These features make the Buckingham Canal a remarkable engineering achievement and a multi-purpose infrastructure project.

Initially, the canal was used extensively for transporting commodities and people, and later supported fishing activities. Settlements emerged along its banks, and several communities came to depend on it for their livelihoods. In History of the Buckingham Canal Project (1898), A.S. Russell observed that the canal placed the erstwhile Madras Presidency “in cheap and easy communication with no less than five districts, and with the large and important towns of Cocanada, Bezwada, Masulipatam, Ongole and Nellore.” He further noted that regions once considered “a dreary waste of sand” witnessed agricultural expansion, improved drainage of low-lying lands, the development of casuarina plantations, and a significant rise in the wealth and prosperity of the population.

Beyond economic benefits, the canal has demonstrated its potential as a natural defence against disasters such as floods and tsunamis. During the 2004 tsunami, the canal acted as a buffer along nearly 310 kilometres of coastline from Pedaganjam in Prakasam district to Chennai, saving hundreds of lives in fishing communities and coastal villages. Scientists believe the canal can serve as a barrier, allowing tidal waves to dissipate into the ocean within

minutes. Despite its historic significance and proven utility, the Buckingham Canal today faces severe degradation. Untreated industrial and urban waste is discharged into its waters, large stretches have been encroached upon, siltation has reduced its depth, and natural disasters have caused structural damage. Mega prawn farms along the canal banks often dump diseased and dead stock directly into the waterway. Ironically, cyclones, against which the canal once served as a protective buffer, have damaged it, while reconstruction and maintenance efforts remain minimal. In several locations, the canal is clogged with debris or disappears entirely, re-emerging only after long stretches.

The urgent need is the immediate restoration of this historic canal. Governments routinely release millions of rupees as disaster relief after floods and cyclones, yet proactive investment in mitigation infrastructure could significantly reduce loss of life and property. The Buckingham Canal presents such an opportunity, while also supporting livelihoods for communities along its route. Medium- and long-term restoration plans should be prioritised by the governments of Andhra Pradesh and Tamil Nadu, in coordination with the Union government.

A measure of hope has emerged with the Inland Waterways Authority of India (IWAI) declaring the Buckingham Canal part of National Waterway-4 (NW-4). Established in 1986, IWAI is tasked with developing and maintaining inland water transport on national waterways. NW-4 covers the stretch from Kakinada to Kalapet in Puducherry, planned in three phases. However, progress has been slow, with survey work for Phase 1 shifted to later phases, jeopardising the project’s momentum.

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Despite its ambition, implementation has been sluggish, and there is an urgent need to reorder priorities and accelerate work, particularly with strong involvement from State Water Resources Departments.

Reviving the Buckingham Canal demands a concrete and time-bound action plan. This includes dredging, removal or redesign of obstructive bridges, recovery of encroached land, reconstruction of canal walls where necessary, and strict regulation of pollutants and untreated waste. Rejuvenation of this multipurpose canal would enable environment-friendly transport of goods and passengers, reduce road traffic congestion, support irrigation, revive fisheries and boating, and generate livelihoods for millions. Importantly, it also offers an opportunity for Andhra Pradesh and Tamil Nadu to collaborate in protecting and benefiting from a shared national heritage. With sustained political will and coordinated action, the Buckingham Canal can once again become a vibrant artery of economic and ecological life.

(The writer is a retired IAS officer)

Younger siblings clock more screen time than firstborns: Study

Research tracking 5,500 children finds later-born kids spend more time on screens and less on learning activities

GAWAIN HECKLEY

WHERE kids are born in a family can be important. But it is not just about who gets more grown-up privileges or parental pressure. Research tells us that firstborn children, on average, tend to do better on a range of outcomes. This includes doing better at school and being more likely to be top managers when compared to those born later. In our new study, we looked at what impact birth order might have on how children spend their time. Both on their own and with their parents. This revealed differences in terms of screen use and time spent enriching their intellectual development.

Our research

In our study, we used survey data from around 5,500 Australian children aged two to 15. The data comes from the Longitudinal Study of Australian Children, a nationally representative survey. This included detailed 24-hour diaries, which recorded how children spent their time from waking up to going to sleep. They specified whether activities were done with parents or independently. We grouped activities into “sleep”, “school time”, “enrichment activities”, “screen time” and “physical activities”. Enrichment activities are outside of school activities that help intellectual development. For example, reading, homework, playing board games or learning a musical instrument. We then compared the diaries of firstborn children to later-born children from different families born in the same year, living in the same neighbourhoods, with similar socioeconomic backgrounds. All families had two or three



children. There is no similar data (such as time use records over years) available on siblings within the same family to capture and compare what siblings were doing at the same age. Other studies looking at different outcomes (such as academic achievement) have shown birth order comparisons within a family are extremely similar to birth order comparisons across different families, once you adjust for family size, as we have done in our study. So, it is likely our results would be similar to actual sibling comparisons within a family.

Younger kids get more screens

When compared to first-born children, second- and thirdborn children spend an extra nine and 14 minutes, respectively, per day having screen time. While this may sound modest, it represents a 10% increase compared to the average daily screen time of firstborns. Over the course of a week, it is between about one and 1.5 hours. This extra screen time also comes at the cost of other activities. In particular, later-born children spent 11 to 18 minutes less per day on enrichment activities, an 11-20% reduction compared to older siblings in the study. We found no consistent differences between older and younger siblings when it came to time spent on other activities, such

as school, physical activity or sleep. Looking across age groups, the effects are generally greater for 10-14-year-old children. This suggests early adolescence is a period where particular attention is needed. To check whether these patterns extend beyond Australia, we repeated the analysis using time-use diaries from a sample of children in the United States. The results were similar.

Why is this happening?

One common explanation for differences between first and subsequent children is parental time. As families grow, parents have less time and attention to foster subsequent children’s development. However, this may not be the whole story. Our study showed that later-born children spent less time on enrichment activities with their parents. But about half of the difference comes from later-born children spending less time on enrichment activities on their own. Screen time shows a similar pattern. The increase among later-born children is largely explained by activities they do alone, rather than with parents or siblings. So this also reflects differences in children’s own choices or opportunities, not just direct parental involvement. For example, a younger sibling may have more freedom to choose to play video games rather than do their

homework. Of course, parenting may still play an important role here. Our study shows that later-born children face fewer rules around screen use, such as limits on programs or time, and are less likely to feel their parents expect them to follow rules. This may in part reflect parents’ desire for fairness in allowing similar use of screens for siblings at any given time, rather than at specific ages.

What does this mean?

The differences we find may seem small on any given day. But they can add up over time. As our 2024 study showed, spending more time on screens and less time on reading, homework, or other learning activities can lead to gaps in academic skill development over childhood, as measured by lower NAPLAN test scores. The increase in solo screen time for later-born children is particularly concerning because it may expose children to inappropriate content online.

What can we do?

First, recognising that later-born children on average spend more time on screens and less time on enrichment activities than firstborns can be helpful for informing parenting strategies. Second, it shows spending quality time with later-born children, actively encouraging enrichment activities, and keeping consistent rules around screen time all matter. Finally, this suggests broader policies, such as the social media limits for under-16s, could help equalise opportunities for later-born children to learn and grow.

(The writer is associated with Monash University, Australia)

When Chatbots can write, what should universities test?

Researchers say assessing judgement, process and ethical AI use matters more than the final answer

SARAH ELAINE EATON AND RAHUL KUMAR

GENERATIVE artificial intelligence (GenAI) is now a reality in higher education, with students and professors integrating chatbots into teaching, learning and assessment. But this isn’t just a technical shift; it’s reshaping how students and educators learn and evaluate knowledge. Our recent qualitative study with 28 educators across Canadian universities and colleges - from librarians to engineering professors - suggests that we have entered a watershed moment in education. We must grapple with the question: What exactly should be assessed when human cognition can be augmented or simulated by an algorithm?

Research about AI and academic integrity

In our review of 15 years of research that engages how AI affects cheating in education, we found that AI is a double-edged sword for schools. On one hand, AI tools like online translators and text generators have become so advanced that they can write just like humans. This makes it difficult for teachers to detect cheating. Additionally, these tools can sometimes present fake news as facts or repeat unfair social biases, such as racism and sexism, found in the data used to train them. On the other hand, the studies we reviewed showed AI can be a legitimate assistant that can make learning more inclusive. For instance, AI can provide support for students with disabilities or help those who are learning an additional language. Because it’s nearly impossible to block every AI tool, schools should not just focus on catching cheaters. Instead, schools and post-secondary institutions can update their policies and provide better training for both students and teachers. This helps everyone learn how to use technology responsibly while maintaining a high standard of academic integrity. Participants in our study positioned themselves not as enforcers, but as stewards of learning with integrity. Their focus was on distinguishing between assistance that supports learning and assistance that substitutes for it. They identified three skill areas where assessment boundaries currently fall: prompting, critical thinking and writing.

Prompting: A legitimate and assessable skill

Participants widely viewed prompting -



the ability to formulate clear and purposeful instructions for a chatbot - as a skill they could assess. Effective prompting requires students to break down tasks, understand concepts and communicate precisely. Several noted that unclear prompts often produce poor outputs, forcing students to reflect on what they are really asking. Prompting was considered ethical only when used transparently, drawing on one’s own foundational knowledge. Without these conditions, educators feared prompting may drift into over-reliance or uncritical use of AI.

Critical thinking

Educators saw strong potential for AI to support assessing critical thinking. Because chatbots can generate text that sounds plausible but may contain errors, omissions or fabrications, students must evaluate accuracy, coherence and credibility. Participants reported using AI-generated summaries or arguments as prompts for critique, asking students to identify weaknesses or misleading claims. These activities align with a broader need to prepare students for work in a future where assessing algorithmic information will be a routine task. Several educators argued it would be unethical not to teach students how to interrogate AI-generated content.

Writing: Where boundaries tighten

Writing was the most contested domain. Educators distinguished sharply between brainstorming, editing and composition: Brainstorming with AI was acceptable when used as a starting point, as long as students expressed their own ideas and did not substitute AI suggestions for their own thinking. Editing with AI (for example, grammar correction) was considered acceptable only after students had produced original text and could evaluate whether AI-generated revisions were appropriate. Although some see AI as a legitimate support for linguistic diversity, as well as helping to level the field for those with disabilities or those who speak English as an additional language, others fear

a future of language standardisation where the unique, authentic voice of the student is smoothed over by an algorithm. Having chatbots draft arguments or prose was implicitly rejected. Participants treated the generative phase of writing as a uniquely human cognitive process that needs to be done by students, not machines. Educators also cautioned that heavy reliance on AI could tempt students to bypass the “productive struggle” inherent in writing, a struggle that is central to developing original thought. Our research participants recognised that in a hybrid cognitive future, skills related to AI, together with critical thinking, are essential skills for students to be ready for the workforce after graduation.

Living in the post-plagiarism era

The idea of co-writing with GenAI brings us into a post-plagiarism era where AI is integrated into teaching, learning and communication in a way that challenges us to reconsider our assumptions about authorship and originality. This does not mean that educators no longer care about plagiarism or academic integrity. Honesty will always be important. Rather, in a post-plagiarism context, we consider that humans and AI co-writing and co-creating do not automatically equate to plagiarism. Today, AI is disrupting education, and although we don’t yet have all the answers, it’s certain that AI is here to stay. Teaching students to co-create with AI is part of learning in a post-plagiarism world.

Preparing students for a hybrid cognitive future

Educators in this study sought ethical, practical ways to integrate GenAI into assessment. They argued that students must understand both the capabilities and the limitations of GenAI, particularly its tendency to generate errors, oversimplifications or misleading summaries. In this sense, post-plagiarism is not about crisis, but about rethinking what it means to learn and demonstrate knowledge in a world where human cognition routinely interacts with digital systems. Universities and colleges now face a choice. They can treat AI as a threat to be managed, or they can treat it as a catalyst for strengthening assessment, integrity and learning. The educators in our study favour the latter.

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