

BE VIGILANT

In a world increasingly defined by rapid change, technological advancement, and global interconnections, vigilance has emerged as not just a virtue but a necessity. The call to remain vigilant is no longer limited to the realms of security and defence; it spans social, economic, environmental, and personal spheres. Awareness, preparedness, and proactive action are crucial to navigate the uncertainties of our times and safeguard the well-being of individuals, communities, and nations.

At the national level, vigilance is most often associated with security. In an era marked by asymmetric threats, cyber warfare, and transnational terrorism, complacency can be catastrophic. Intelligence agencies, law enforcement, and defence forces are expected to anticipate and neutralize threats before they manifest. Yet, vigilance is not solely the responsibility of officials; citizens, too, play a critical role. Community awareness, reporting suspicious activities, and fostering a culture of alertness contribute significantly to the safety and resilience of a society. Vigilance is therefore both a collective responsibility and a mindset that prioritizes foresight over reaction.

Equally important is vigilance in governance and administration. Corruption, malpractice, and bureaucratic inefficiency can erode public trust and compromise national development. Anti-corruption mechanisms, transparency initiatives, and citizen oversight rely heavily on a vigilant populace. The fight against systemic inefficiencies demands that both leaders and citizens remain attentive, questioning, and proactive in ensuring accountability. History repeatedly shows that the price of negligence is often measured in lost opportunities, misallocated resources, and weakened institutions.

Vigilance also extends to the digital domain. With the proliferation of smartphones, social media, and online transactions, cyber threats have become omnipresent. Phishing, identity theft, misinformation, and data breaches are constant risks. In such a context, remaining vigilant means adopting safe digital practices, critically evaluating information sources, and embracing cyber hygiene as part of daily life. Ignorance or carelessness in the online world can have consequences as serious as those in the physical realm.

Furthermore, vigilance is vital in addressing environmental and health challenges. Climate change, pollution, and emerging diseases require constant monitoring and preventive action. Communities and governments must remain alert to early warnings, respond quickly to crises, and prioritize sustainable practices. Vigilance here becomes synonymous with responsibility toward future generations, natural resources, and the planet itself.

Ultimately, vigilance is more than a reactive posture; it is a proactive commitment to awareness, responsibility, and preparedness. It demands a balance of alertness and discernment, ensuring that actions are informed, timely, and constructive.

In personal life, it translates to mindfulness, self-discipline, and cautious decision-making.

Breaking Silos, Building Bridges: How Physics-Arts Integration Fosters Resilient Innovation

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In the rapidly evolving landscape of Indian education, a quiet revolution is reshaping how we teach, learn, and grow. The paradigm shift from compartmentalized disciplines to a more integrated, interdisciplinary model is breaking the age-old silos that separated physics from poetry and mathematics from music. Today, innovative educators and forward-thinking institutions are building bridges across these divides, transforming not just curricula but the very identities, resilience, and creative potential of Indian students.

**The Power of Interdisciplinary Learning**  
 Interdisciplinary learning represents a departure from rigid, subject-specific boundaries. It invites students to tackle real-world problems by drawing from diverse fields—combining the analytical rigor of physics with the creativity of the arts, the logic of mathematics with the empathy of literature. This holistic approach is gaining momentum across the nation, fuelled by landmark education reforms and a cultural shift towards embracing complexity and collaboration.

**Physics Meets the Arts: Sparks of Creativity**

Why physics and arts? At first glance, these domains may appear antonymous, but their intersection harbors powerful potential for student development. Physics fosters critical thinking, quantitative reasoning, and scientific literacy. The arts nurture imagination, emotional intelligence, and expressive skills. When students experience both, they become adept at viewing problems from multiple vantage points. Whether it's analyzing sound waves in music composition, exploring the physics of dance movement, or producing digital media that visualizes abstract concepts, such collaborations unlock innovative pathways for learning.

This synthesis is evident in projects where physics students choreograph performances illustrating laws of motion, or artists design interactive installations based on principles of optics. When learners see how equations

shape the rhythms they dance to—or how creativity can clarify complex formulas—the joy of exploration returns to the classroom, making learning meaningful and memorable.

**Building Student Identity: From Fragmented to Integrated**

Student identity is shaped not only by academic achievements but also by the breadth of experiences and the diversity of contexts to which they are exposed. In the traditional model, students had to choose—were you a "science person" or an "arts person"? Today's interdisciplinary environment encourages learners to be both. A young physicist who plays the sitar, a poet who codes in Python, and an artist fluent in calculus are not rare exceptions—they are emerging as the new norm in forward-looking Indian schools and colleges.

This integrated identity equips students to thrive in turbulence. They develop both "hard" and "soft" skills—analytical horsepower and empathetic leadership, domain expertise and adaptability. By crossing boundaries, they enhance their flexibility, deepen their understanding of self and society, and gain courage to pursue unconventional career paths, becoming more resilient in an unpredictable world.

**Fostering Resilience: Learning through Collaboration**

Resilience in education is not just about bouncing back from setbacks; it is about adapting to change, persisting through complexity, and collaborating to solve challenges. Interdisciplinary collaborations—such as joint physics-art hackathons or science-literature workshops—immerse students in teamwork, uncertainty, and creative problem-solving. They encounter varying perspectives, negotiate differences, and learn to listen. Every successful project and even every failed experiment strengthens their confidence in seeking diverse allies and integrating feedback.

By making space for such partnerships in curriculum and culture, institutions foster environments where setbacks become stepping-stones to growth. Collaboration across silos teaches the importance of community,

empathy, and shared responsibility—attributes that are as vital to innovation as technical skill.

**From Classroom to Innovation: Unleashing Creative Problem-Solvers**

Innovation rarely emerges within rigid boundaries. Some of India's cutting-edge research and entrepreneurial successes have come from teams where physicists, designers, coders, and communicators join forces. Interdisciplinary education, especially when anchored in physics and arts, prepares students for this reality. They learn to prototype, experiment, and iterate—applying scientific models to aesthetic design, or using dramatic storytelling to communicate complex technological concepts.

The New Education Policy's emphasis on inquiry-based learning, project work, and integrated assessment points in this direction. Already, we see the rise of maker-spaces, interdisciplinary labs, and incubators in universities from Delhi to Bengaluru, where students collaborate on robotics, renewable energy, social innovation, and STEAM projects. These hubs are nurturing the next generation of resilient innovators: individuals who question dogma, imagine possibilities, and leap across disciplinary chasms.

**Technology and Cultural Roots: The Indian Context**

Academic silos are not just structural but cultural. India's intellectual heritage has long valued synthesis—think of the ancient poets who were also mathematicians, or the scientists who wrote treatises on art. The new wave of interdisciplinary education harnesses this legacy, supported by technological tools. Digital platforms now make it easier to blend multimedia content, connect remote collaborators, and make physics as accessible as painting.

At the same time, regional languages and local contexts can be woven into interdisciplinary projects, ensuring every student sees themselves reflected in the curriculum. Here, physics is not taught in isolation but as part of a broader cultural tapestry—whether it's studying acoustics through

music, energy through dance, or systems thinking through traditional crafts.

**Institutional Strategies: Breaking Silos and Building Bridges**

For this revolution to thrive, institutions must purposefully dismantle barriers. This calls for flexible curricula, investment in faculty development, and active encouragement of cross-departmental projects. Universities and schools can organize interdisciplinary events—science-art fairs, innovation weeks, or joint seminars—while awarding credits for collaborative endeavors.

Teacher training must emphasize facilitation over instruction, helping educators to step out of comfort zones and guide students across different domains. Government and private sector support is essential to fund interdisciplinary research, forge industry collaborations, and ensure equity of access.

**Challenges and Opportunities**

Though the vision is inspiring, challenges endure. Logistical hurdles—from timetabling and resource allocation to assessment standards—can slow progress. Resistance from traditionalists who fear dilution of rigor or loss of identity must be overcome through dialogue and evidence of positive outcomes. But at every stage, the rewards—enhanced student engagement, deep learning, and preparation for emerging careers—make the effort worthwhile.

**The Road Ahead: Towards a Resilient and Innovative India**

The twenty-first century will demand not just knowledge, but wisdom—the ability to integrate, adapt, and collaborate. By breaking silos and building bridges, Indian education is nurturing future-ready citizens: physicists who think artistically, artists who reason scientifically, and innovators who embody resilience, empathy, and creativity.

Let us celebrate and advance this movement, strengthening every classroom, college, and innovation hub with opportunities for interdisciplinary exploration and excellence. In doing so, we not only prepare for the future—we help shape it.

(The writer is Physics Educator and Academic Contributor)

Dachigam National Park-Kashmir's living wilderness in a changing world

MOHAMMAD HANIEF



Just 22 kilometers from the heart of Srinagar lies one of India's most remarkable natural sanctuaries - Dachigam National Park, a 141-square-kilometer expanse of forested slopes, alpine meadows, and clear mountain streams nestled in the Zabarwan Range. This park, whose name means "ten villages" in Kashmiri, was established over a century ago to protect the water catchment of the Dal Lake. Today, it stands as the last refuge of the critically endangered Kashmir stag, or Hangul, and as a living symbol of the fragile harmony between people and nature in the valley.

Dachigam is not just a wildlife reserve; it is an ecological lifeline. Stretching from an altitude of around 1,700 meters to over 4,200 meters above sea level, the park's landscape transforms dramatically from lower temperate forests of oak, walnut, and birch to high-altitude coniferous woods and alpine grasslands. Its rich diversity of habitats supports a wide array of species that have adapted to these steep altitudinal gradients and varying climates. Every turn of its narrow trails reveals a different ecosystem - cascading streams, dense canopies, snow-fed cliffs, and serene meadows alive with birdsong.

The Hangul, with its elegant antlers and reddish-brown coat, is the crown jewel of Dachigam's biodiversity. Once found across the entire Kashmir Valley, its population declined drastically due to habitat loss, poaching, and human encroachment. By the late 20th century,

the Hangul had vanished from almost all its historical ranges, surviving only within Dachigam. Recent census reports conducted by the Jammu and Kashmir Wildlife Protection Department indicate that the Hangul population now stands at around 260 individuals. While this number marks a slight increase from earlier years, it remains alarmingly low for a species once regarded as the pride of Kashmir's forests. Conservationists now regard Dachigam as the last stronghold of the Hangul, a species teetering on the edge of extinction.

The park's importance extends far beyond this single species. Dachigam's forests are home to the Himalayan black bear, leopard, serow, musk deer, and the elusive snow leopard, which occasionally roams its higher ridges during harsh winters. Over 150 species of birds have been recorded here, including the Himalayan monal, koklass pheasant, blue magpie, and crimson tragopan. Streams running through the park harbor brown trout and other aquatic life, sustaining an intricate food web that keeps the ecosystem in balance. During spring and summer, Dachigam bursts into colour with wildflowers carpeting its meadows and slopes, attracting pollinators and adding to its scenic charm.

Despite its protected status, Dachigam faces mounting ecological pressures. Urban expansion from Srinagar's outskirts has encroached dangerously close to its boundaries, bringing with it pollution, noise, and waste. Studies conducted in 2023 revealed a troubling 7 percent reduction in forest cover within the park since the 1960s, alongside a threefold increase in built-up areas around its periphery. Grazing by livestock in the



buffer zones, unregulated tourism, and the spread of invasive plant species have further strained its fragile ecosystems. What was once an isolated wilderness now stands as an island of green amidst growing human activity.

These environmental stresses also threaten the water systems that protect. The park's upper streams feed into the Dagwan and Marsar rivers, which flow down to sustain the Dal Lake - the heart of Srinagar's ecology and tourism. Any degradation within Dachigam directly impacts the quality and quantity of water that nourishes the city and its people. In that sense, the park's conservation is not only a matter of wildlife protection but of human well-being and urban sustainability.

Efforts to safeguard Dachigam and its inhabitants have intensified in recent years. The Hangul Conservation Project, led by the Department of Wildlife Protection in collaboration with the Wildlife Institute of India,

focuses on habitat management, anti-poaching surveillance, and population monitoring. During sensitive breeding and rutting seasons, entry into the park is temporarily suspended to minimize disturbance to wildlife. The most recent closure took place in September 2023, ensuring that the Hangul's breeding period proceeded without human interference. Such measures highlight the delicate balance between conservation and public access.

The government has also reintroduced controlled visitor permits through an online booking system. Visitors can now access designated trails and educational facilities under strict supervision. This approach seeks to promote eco-tourism - tourism that educates and inspires without harming the environment. For researchers, students, and nature enthusiasts, Dachigam offers a living classroom to observe the intricate relationships between species, habitats, and human actions. However, officials emphasize that the park cannot accommodate

mass tourism; its preservation depends on restraint and respect.

One of the major conservation strategies now under consideration is the creation of the Greater Dachigam Landscape, a connected ecological corridor linking the park to neighboring forest divisions such as Overa-Aru, Wangat, and Sindh Valley. These areas once formed the Hangul's migratory routes before fragmentation confined the species to Dachigam. By restoring connectivity, conservationists hope to allow gene flow between isolated populations and reduce the risks of inbreeding and disease. Such landscape-level planning represents a modern approach to wildlife management that looks beyond the boundaries of a single protected area.

Dachigam also holds deep cultural and emotional significance for the people of Kashmir. For generations, its slopes have been a source of pride, its forests a symbol of natural abundance. Yet this pride must now translate into collective responsibility. The health of the park reflects the health of the region itself. If Dachigam's forests fall silent, so too will the streams that sustain Srinagar's lakes and farmlands. Conservation, therefore, is not merely an environmental duty but a moral and social imperative.

The challenges are real and growing. Climate change has begun to alter snowfall patterns and vegetation cycles, affecting both plant and animal behavior. Warmer winters shorten hibernation periods for bears and disrupt the breeding patterns of deer. At the same time, rising tourism and urbanization increase human presence in sensitive zones, amplifying stress on the park's limited resources. These issues demand scientific management,

sustained funding, and active community engagement - not sporadic interventions.

For local residents living near Dachigam, sustainable livelihoods are key to reducing pressure on natural resources. Eco-guiding, handicrafts, regulated tourism services, and environmental education programs can provide economic alternatives that align with conservation goals. When communities become stakeholders rather than bystanders, protection becomes more effective and enduring.

Today, as the world grapples with biodiversity loss, Dachigam stands as both a warning and a beacon. It warns of what can happen when neglect and exploitation overtake care and stewardship. Yet it also offers hope - that with awareness, science, and community effort, fragile ecosystems can still recover. The slow but steady rise in the Hangul population, however modest, proves that nature responds positively when given space and protection.

Dachigam is not merely a park on a map; it is a living, breathing system that connects the mountains to the valley, the forests to the city, and the wild to the human spirit. Its preservation demands more than regulations - it requires respect, restraint, and recognition of its priceless value. Every visitor, policymaker, and citizen has a role to play in ensuring that this sanctuary endures.

The quiet rustle of leaves, the flowing streams, and the distant call of the Hangul remind us that true progress lies not in expansion, but in coexistence. If Kashmir is the paradise on earth, then Dachigam is its living heart - beating with the rhythm of nature, fragile yet eternal, waiting to be protected for generations yet to come.

Stop Sending Students So Far: The Exam Center Problem

RAMJI SRIVASTAVA "PRAVEEN"



The conduct of competitive exams, which are the gateway to the dreams of millions of young Indians, has sadly become a bad example of administrative failure in recent times. We are witnessing a trend where top public examination bodies, most notably the Staff Selection Commission (SSC) and the Uttar Pradesh Public Service Commission (UPPSC), are allocating test centres hundreds of kilometres away from the aspirants' homes. This is not just a minor inconvenience; it is a gross negligence that turns a competition based on intelligence into a cruel test of sheer financial and physical stamina.

I have spent decades watching

how our government and public institutions function, and I can say with confidence that this scale of administrative chaos, or 'Duryavastha', is deeply shameful. In the past, exam boards understood the struggles of students and ensured centres were reasonably local and accessible. Today, an aspirant from a small town can be asked to travel 500 kilometres or more, often across state boundaries, to take an exam. This practice fundamentally undermines the promise of equal opportunity.

Consider the aspiring candidate from a poor or rural background. For them, receiving a centre allotment in a far-off city translates immediately into an unbudgeted expense of thousands of rupees for travel, accommodation and food. For countless families living in both rural and urban areas, this expense is an insurmountable barrier. Many

talented, deserving students are being forced to make the heart-breaking decision to forgo the examination entirely. Their years of dedicated study and sacrifice are wasted, not because they failed the test, but because they couldn't afford the ticket and accommodation expenses to reach the testing location. This negligence effectively blocks the entry of students from the poorest sections of society into prestigious public service roles.

The suffering extends to those with medical conditions and physical challenges. A candidate managing a chronic illness, or someone recovering from a recent surgery, finds the stress of a tiresome, multi-day journey debilitating. They arrive at the exam hall physically drained and mentally exhausted. Their performance is compromised before they even pick up their pen. Similarly, for women, particu-

larly those who are pregnant or new mothers, this extensive travel adds layers of risk and stress that no administrative body should impose.

The system, designed to uplift merit, is instead crushing the spirits and opportunities of the genuinely needy.

This burden is compounded by the fact that parents and guardians are compelled to accompany their children. These are often elderly individuals, or working-class parents who must take unpaid leave from their daily wages just to be there. Imagine the scenario: the student and their guardian are thrust into an unfamiliar city with only a few days' notice. Trains are booked solid, forcing reliance on expensive, uncomfortable last-minute travel. Once they reach the city, they face exorbitant hotel prices inflated specifically for exam season.

Even worse, the exam centres

themselves are frequently allocated to remote areas, sometimes 20 or 30 kilometres outside the main city hub. Finding reliable, affordable conveyance to these centres in the pre-dawn hours is a monumental challenge. Students and their parents are left scrambling, wasting crucial hours that should be spent on final revision, grappling instead with logistical chaos. This entire ordeal is an unnecessary tax on the time, finance, and emotional well-being of the entire family. While examination bodies may offer the excuse of high candidate volume or the need for secure locations, these are not justifications for the Duryavastha; they are administrative problems that must be solved.

The path forward is clear and non-negotiable. Examination bodies must immediately adopt an "Exam Near Home" policy. They must use their vast resources and technology

for intelligent, geographical centre allotment that genuinely respects the location preferences given by the applicants. Centres must be strategically located near major railway stations and bus terminals.

Competitive examinations must remain a measure of intellect and dedication. They should never descend into a test of financial resilience or logistical survival. The government and the various commissions must step up, listen to the anguish of the aspirants, and restore faith in the system. It is time to replace this embarrassing administrative chaos with detailed, empathetic planning. The future of our nation's most talented young people depends on the accessibility, not the adversity, of these crucial tests.

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