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In This Issue

Breaking the Silos: Reimagining Universities without Subjects for the AI Era

Neeraj Saxena*

The architecture of modern higher education has been fundamentally shaped by an organisational principle that once served humanity well but now constrains our potential: the division of knowledge into distinct, isolated subjects. This compartmentalisation emerged during the Industrial Revolution when the primary challenge facing educational institutions was how to systematically organise and transmit vast bodies of accumulated human knowledge to successive generations. Mathematics, physics, literature, economics, biology, and dozens of other disciplines became separate kingdoms, each with its own methodologies, terminologies, and gatekeepers.

This subject-based approach represented a rational response to the information scarcity that characterised pre-digital civilisations. When books were rare and expensive, when libraries were accessible only to the privileged few, and when knowledge transmission depended entirely on human memory and oral tradition, the systematic categorisation of information into teachable chunks made perfect sense. Universities developed as repositories of specialised knowledge, with professors serving as human databases who had devoted their lives to mastering specific domains.

The pedagogical model that emerged from this context was built around what we might call "just-in-case" learning. Students were required to memorise extensive catalogues of facts, formulas, dates, and procedures on the assumption that they might someday need to recall this information in their professional or personal lives. The emphasis was on knowledge accumulation rather than knowledge application, on information storage rather than information synthesis. This approach proved remarkably effective during the industrial age, when most careers followed predictable patterns and required relatively stable skill sets that could be acquired once and applied throughout a working lifetime.

However, the cognitive ecosystem of the 21st century bears no resemblance to the world for which this educational model was designed. We now inhabit an environment of unprecedented information abundance, where virtually any fact, formula, or procedure can be accessed instantly through devices that fit in our pockets. The revolution in information technology has not merely made knowledge more accessible; it has fundamentally altered the nature of human cognition itself. We no longer need to serve as biological storage devices for information that can be retrieved more quickly and accurately through digital means.

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This transformation has profound implications for how we think about education and learning. Technology theorist Clay Shirky captured the essence of this shift when he observed that our challenge is "not information overload" but rather "filter failure." In an age where information is abundant and instantly accessible, the critical skills are not those related to information storage and retrieval, but rather those related to information evaluation, synthesis, and application. We need learners who can navigate vast information landscapes, identify reliable sources, recognise patterns and connections across domains, and apply knowledge creatively to solve novel problems.

The World Economic Forum's research on future workplace skills reinforces this analysis. Their comprehensive studies consistently identify capabilities such as critical thinking, complex problem-solving, creativity, emotional intelligence, and systems thinking as the competencies most valued by employers and most essential for societal progress. Notably, none of these skills is inherently tied to mastery of traditional academic subjects. Instead, they emerge from learning experiences that mirror the complexity, ambiguity, and interconnectedness of real-world challenges.

This fundamental mismatch between educational structure and contemporary needs has created what we might call an "educational time lag." Our institutions continue to operate according to principles developed for a world that no longer exists, while the world that does exist demands entirely different approaches to learning and knowledge development. The persistence of subject-based education represents not educational conservatism but educational anachronism—a failure to recognise that the conditions that once made this approach optimal have been permanently transformed.

The Paradigm Shift: From Knowledge Storage to Real-time Problem Solving

The traditional educational paradigm rested on a fundamental assumption about the nature of knowledge and its relationship to human capability. This assumption held that knowledge was a finite, codifiable resource that could be systematically transmitted from experts to novices through structured instruction. Students were viewed as empty vessels to be filled with predetermined content, with learning success measured by their ability to accurately reproduce this content on demand.

This model reflected what we might call the "banking concept of education," where knowledge was deposited into student accounts for future withdrawal. The metaphor is apt because it captures both the transactional nature of traditional education and its emphasis on accumulation over utilisation. Students were expected to build substantial knowledge reserves during their formal education years, creating intellectual capital that would sustain them throughout their careers.

The digital revolution has shattered this paradigm by fundamentally altering the economics of information. When knowledge becomes freely available and instantly accessible, the value of human cognition shifts dramatically from storage capacity to processing capability. Educational psychologist John Seely Brown articulated this transformation when he noted that "the half-life of a learned skill is shrinking" and emphasised that what matters now is "not so much what you know, but how quickly you can learn something new."

This insight points toward a completely different understanding of learning—one that begins not with predetermined content but with authentic problems and genuine curiosity. In this new paradigm, learning becomes a dynamic, iterative process where knowledge acquisition is driven by immediate need and contextual relevance rather than abstract completeness. Learners encounter complex situations first and then develop the knowledge, skills, and understanding necessary to navigate those situations effectively.

Consider the example of a student who becomes interested in addressing the challenge of plastic pollution in marine environments. In the traditional educational model, such a student might be required to complete separate courses in chemistry, biology, environmental science, economics, and public policy before being considered qualified to work on this problem. By the time they had accumulated this formal knowledge, their initial passion might have dimmed, the specific problem might have evolved, and the knowledge itself might have become outdated.

In contrast, a problem-cantered learning approach would begin with the student's genuine

interest in marine plastic pollution and build learning experiences around that authentic engagement. The student would immediately begin investigating the chemical properties of different plastics, studying marine ecosystems and the biological impact of pollution, analysing economic incentives that drive plastic production and consumption, examining existing environmental policies and their effectiveness, and exploring technological innovations for plastic alternatives or cleanup strategies. This learning would be driven by curiosity and necessity rather than external requirements, making it both more engaging and more memorable.

More importantly, this approach develops what we might call 'learning agility'—the capacity to quickly acquire new knowledge and skills in response to changing circumstances. In a world where technological change accelerates continuously and career paths become increasingly non-linear, this meta-skill becomes far more valuable than any specific knowledge domain. Students learn not just about marine pollution but about how to learn, how to synthesise information from multiple sources, how to collaborate with experts from different fields, and how to translate knowledge into action.

Research from institutions that have pioneered problem-based learning approaches consistently demonstrates superior outcomes across multiple dimensions. Students report higher levels of engagement and motivation, develop stronger critical thinking and communication skills, and demonstrate better retention of learning over time. Perhaps most importantly, they develop confidence in their ability to tackle unfamiliar challenges—a crucial capability in an unpredictable world.

The Institute for the Future of Work's comprehensive survey of student preferences reveals that this shift toward authentic, contextual learning reflects not just pedagogical theory but actual learner demand. When given choices about how they learn, most students prefer experiences that are relevant, collaborative, and application-focused rather than abstract and individual. They want to work on problems that matter, with people who share their interests, using tools and methods that reflect real-world practice.

This transformation from knowledge storage to real-time problem solving represents more than a change in educational technique; it constitutes a fundamental reimagining of human potential and development. It recognises that in an AI-augmented world, human value lies not in our ability to compete with machines in information processing but in our uniquely human capacities for creativity, empathy, ethical reasoning, and meaning-making.

Comprehensive Analysis of Subject-Based Education's Critical Flaws

The persistence of subject-based instruction in higher education reflects what organisational theorists call "structural inertia"—the tendency for established systems to resist change even when their foundational assumptions have become invalid. While this organisational structure once served important functions, its continued dominance now actively impedes the kind of learning that contemporary society requires.

The most fundamental flaw in subject-based education lies in its artificial compartmentalisation of knowledge. Human understanding and real-world problem-solving are inherently integrative processes that draw connections across multiple domains simultaneously. When we encounter challenges in our personal or professional lives, we don't experience them as "physics problems" or "psychology problems" or "economics problems." Instead, we encounter complex situations that require us to synthesise insights from multiple perspectives and apply diverse tools and methodologies.

Consider the seemingly simple challenge of improving public transportation in a mid-sized city. This problem immediately involves urban planning principles, environmental science, economics, psychology, political science, engineering, data analysis, and community organising. A traditional subject-based approach might require students to master each of these domains separately before attempting to address the transportation challenge. By the time they had completed this prerequisite learning, the specific problem would likely have evolved, their understanding would remain fragmented across disciplinary boundaries, and they would have little experience in the integrative thinking that the problem requires.

This compartmentalisation creates what educational researcher David Perkins calls "fragile knowledge"—information that remains inert and inaccessible outside the specific context in which it was taught. Students may perform well on subject-

specific examinations while remaining unable to apply their learning to novel situations or connect insights across domains. This fragility represents a catastrophic failure of educational efficiency, producing graduates who have invested years in learning that proves largely unusable in real-world contexts.

The artificial boundaries created by disciplinary structures also generate what we might call "jurisdictional thinking"—the tendency to view problems through narrow lenses that obscure important dimensions and interdependencies. Students learn to think like economists or biologists or historians rather than learning to think like human beings confronting complex challenges that require multiple perspectives. This jurisdictional thinking becomes particularly problematic when graduates enter workplaces that increasingly require collaboration across functional boundaries and the ability to translate insights between different professional languages and cultural contexts.

Beyond these cognitive limitations, subject-based education creates structural barriers to innovation and creativity. When knowledge is organised into separate silos, opportunities for novel combinations and unexpected insights are systematically reduced. History's most significant intellectual breakthroughs have typically occurred at the intersections between established domains—when insights from one field illuminate problems in another or when methodologies developed for one purpose prove useful in entirely different contexts. The rigid boundaries maintained by traditional academic disciplines actively discourage this kind of cross-pollination.

The assessment mechanisms associated with subject-based education compound these problems by emphasising individual performance on standardised measures rather than collaborative problem-solving or creative synthesis. Students learn to optimise their performance for tests that measure their ability to reproduce predetermined answers rather than developing their capacity to generate novel solutions or ask important questions. This assessment approach not only fails to measure the capabilities that matter most but actively discourages their development by creating incentive structures that reward conformity over creativity.

Furthermore, the credentialing system that has grown up around subject-based education creates artificial scarcity and exclusion mechanisms that serve institutional interests rather than societal needs. Students are required to accumulate credits in predetermined combinations, often regardless of their actual learning goals or the relevance of these requirements to their intended pursuits. This system creates barriers to access and progression that particularly impact learners from non-traditional backgrounds or those whose learning paths don't align with conventional academic trajectories.

The economic implications of these structural flaws are substantial. Employers consistently report difficulty finding graduates who can work effectively across functional boundaries, communicate with diverse stakeholders, adapt quickly to changing circumstances, and apply their learning to novel challenges. The disconnect between what universities produce and what society needs represents a massive misallocation of human and financial resources, with consequences that extend far beyond individual career outcomes to encompass national competitiveness and social progress.

Perhaps most troubling, subject-based education actively undermines the intrinsic motivation that drives sustainable learning. When students are required to study predetermined content according to external schedules and artificial timelines, they learn to view education as something that is done to them rather than something they actively pursue. This learned passivity carries forward into their professional and personal lives, reducing their likelihood of engaging in the lifelong learning that rapid technological and social change demands.

The Complex Reality: How the World Actually Works beyond Academic Boundaries

The fundamental disconnect between academic organisation and real-world complexity becomes apparent when we examine how challenges present themselves outside educational institutions. The world does not organise itself according to university department structures, and the problems that matter most to human welfare consistently transcend traditional disciplinary boundaries.

Climate change provides perhaps the most compelling example of this complex reality. Understanding and addressing climate change requires simultaneous engagement with atmospheric chemistry, oceanography, ecology, economics,

psychology, political science, engineering, urban planning, agriculture, public health, international relations, ethics, and communication. These domains are not merely related to climate change; they are inextricably interconnected within the climate system itself. Changes in atmospheric composition affect ocean chemistry, which influences marine ecosystems, which impacts food security, which creates economic disruption, which generates political instability, which affects international cooperation, which determines the feasibility of mitigation strategies.

No single academic discipline provides adequate tools for understanding this system, much less for developing effective interventions. Climate scientists may understand atmospheric dynamics but lack expertise in human behaviour change. Economists may understand market mechanisms but have limited knowledge of ecological systems. Political scientists may understand governance structures but lack technical knowledge of renewable energy systems. The challenge demands not just interdisciplinary collaboration but genuinely integrated thinking that can hold multiple perspectives simultaneously and recognise the dynamic interactions between different system components.

Similar complexity characterises virtually every significant challenge facing contemporary society. The development and deployment of artificial intelligence technologies involves computer science, cognitive psychology, ethics, law, economics, sociology, and philosophy. Creating sustainable food systems requires agriculture, ecology, nutrition, economics, logistics, technology, and cultural understanding. Improving educational outcomes involves learning science, developmental psychology, neuroscience, technology, economics, political science, and community organising.

Even challenges that might appear to fall within single domains reveal their complexity upon closer examination. Improving public health outcomes requires not just medical knowledge but understanding of social determinants, economic incentives, cultural practices, environmental factors, policy mechanisms, and communication strategies. Developing new technologies requires not just technical expertise but market understanding, ethical analysis, user experience design, regulatory knowledge, and social impact assessment.

The business world has long recognised this reality and has increasingly organised itself around cross-functional teams, project-based work, and system-level thinking. Companies that continue to operate through rigid functional silos find themselves unable to respond effectively to market changes, customer needs, or technological disruptions. The most successful organisations are those that can integrate diverse perspectives, leverage specialised expertise within collaborative frameworks, and adapt quickly to changing circumstances.

Progressive educational institutions around the world have begun experimenting with approaches that better reflect this complex reality. Stanford University's d.school brings together students from engineering, business, medicine, education, and social sciences to work on real-world challenges using design thinking methodologies. Finland's phenomenon-based learning approach organises education around complex topics like "The European Union" or "Water" that naturally require integration across traditional subject areas. MIT's Media Lab explicitly seeks to create new knowledge at the intersections between technology, art, science, and design.

These institutional innovations demonstrate that alternative approaches are not only possible but often produce superior learning outcomes. Students engaged in integrated, problem-based learning report higher levels of engagement and motivation. They develop stronger systems thinking capabilities and better collaboration skills. They demonstrate improved ability to transfer learning across contexts and apply knowledge to novel challenges. Perhaps most importantly, they develop confidence in their ability to tackle unfamiliar problems—a crucial capability in an unpredictable world.

The persistence of subject-based education in the face of this overwhelming evidence for alternative approaches reflects not rational decision-making but institutional inertia and vested interests. Academic departments have strong incentives to maintain their territorial boundaries, faculty members are rewarded for specialised expertise rather than integrative capability, and accreditation systems continue to evaluate institutions based on traditional disciplinary metrics.

However, the growing gap between educational preparation and real-world demands is becoming increasingly difficult to ignore.

Employers consistently report frustration with graduates who possess theoretical knowledge but lack practical problem-solving skills. Students express dissatisfaction with educational experiences that feel disconnected from their interests and aspirations. Society faces mounting challenges that require exactly the kind of integrated, collaborative, adaptive thinking that traditional education systematically fails to develop.

Revolutionary Vision: Embracing No Curriculum, No Classrooms, No Examinations

The inadequacy of traditional educational structures demands not incremental reform but fundamental reimagining of how learning occurs. The revolutionary proposition of eliminating curriculum, classrooms, and examinations may appear radical, but it represents a logical response to the transformed conditions of knowledge work in the digital age. This vision, grounded in the principles of heutagogy—literally "self-determined learning"—recognises that effective education must align with how humans naturally learn and how knowledge operates in contemporary society.

The concept of "no curriculum" does not imply absence of learning goals or intellectual rigor. Instead, it recognises that predetermined, standardised content sequences cannot adequately serve the diverse interests, backgrounds, and aspirations of individual learners. When curriculum is externally imposed, it inevitably reflects the assumptions and biases of curriculum designers rather than the genuine needs and interests of learners. More fundamentally, fixed curricula assume that knowledge can be packaged into discrete, sequential units and that all learners should engage with these units in the same order and at the same pace.

This assumption conflicts with everything we know about how learning occurs in real. Human beings learn most effectively when they are intrinsically motivated, when learning connects to their existing knowledge and experience, and when they can immediately apply new understanding to problems they care about solving. Learning is not a linear process but a dynamic, iterative one where insights emerge through exploration, experimentation, reflection, and revision.

In a curriculum-free environment, learning goals emerge from the intersection of individual interests, societal needs, and available opportunities. Students might begin with questions that genuinely intrigue them: How can we reduce plastic waste in our community? Why do some people develop depression while others remain resilient? How might artificial intelligence change the nature of creative work? These authentic questions provide far more powerful motivation for learning than external requirements ever could.

The learning that emerges from such authentic engagement naturally becomes interdisciplinary because real problems don't respect academic boundaries. A student interested in reducing plastic waste will necessarily encounter chemistry, biology, economics, psychology, policy analysis, and communication. However, they will encounter these domains not as abstract academic subjects but as tools for understanding and addressing a problem they care about solving. This contextual learning proves both more engaging and more memorable than decontextualised subject instruction.

The elimination of traditional classrooms reflects recognition that learning occurs everywhere and involves many more people than professional educators. While physical spaces remain important for certain types of learning activities, the assumption that learning must occur in designated rooms at scheduled times with predetermined groups severely constrains educational possibilities. Some of the most powerful learning experiences occur in laboratories, community settings, online environments, maker spaces, internship sites, and informal conversations with experts and peers.

Technology enables unprecedented flexibility in when, where, and how learning occurs. Students can engage with global experts through video conferencing, collaborate with peers across continents through digital platforms, access world-class lectures and demonstrations through online resources, and prototype solutions using sophisticated simulation and fabrication tools. This distributed learning environment provides far richer opportunities than any single physical classroom could offer.

The "no classrooms" principle also reflects recognition that effective learning often requires sustained engagement with complex problems over extended periods. Traditional class schedules, with their artificial divisions of time and arbitrary switching between topics, interrupt the flow states

that characterise deep learning. Students working on meaningful projects need the flexibility to pursue investigations when their interest is peaked, to iterate rapidly when they're making breakthroughs, and to reflect deeply when they encounter setbacks.

The elimination of traditional examinations represents perhaps the most radical aspect of this vision, but also the most necessary. Standardised tests measure only a narrow range of human capabilities and often reward exactly the kinds of thinking that become less valuable in an AI-augmented world. When machines can quickly access and process vast amounts of information, human value lies in creativity, critical thinking, ethical reasoning, collaboration, and the ability to ask important questions rather than produce predetermined answers.

Moreover, the high-stakes nature of traditional examinations creates perverse incentives that undermine genuine learning. When significant consequences depend on test performance, students naturally optimise their behaviour for test success rather than deep understanding. They learn to cram information for short-term recall rather than developing sustainable knowledge. They avoid challenging material that might lower their grades rather than pursuing areas of genuine interest or difficulty.

Authentic assessment in a post-examination environment focuses on what students can create, contribute, and accomplish rather than what they can recall on demand. Students demonstrate their learning through projects that address real problems, through presentations that communicate their insights to authentic audiences, through collaborations that produce meaningful outcomes, and through reflections that demonstrate their metacognitive development.

This approach to assessment provides far richer information about student capabilities than traditional tests ever could. Instead of a single numerical score, authentic assessment produces portfolios of work that document learning journeys, demonstrate growth over time, and provide evidence of the diverse capabilities that matter for success in contemporary society.

The Educator Transformed: From Information Transmitter to Learning Architect

The transformation from subject-based to heutagogical education necessitates a fundamental reconceptualisation of the educator's role. This shift represents not a diminishment of educational professionals but rather an elevation of their function from relatively simple information transmission to the far more complex and important work of designing learning experiences, facilitating inquiry, and mentoring human development.

In traditional educational systems, educators function primarily as intermediaries between established knowledge and student minds. Their success is measured by their ability to clearly explain predetermined content and ensure that students can accurately reproduce this content on assessments. While this role requires certain skills and knowledge, it essentially positions educators as human textbooks—useful when information is scarce and inaccessible, but increasingly obsolete when information is abundant and instantly available.

The heutagogical educator operates from an entirely different paradigm. Rather than transmitting predetermined content, they create conditions in which authentic learning can occur. Rather than controlling the learning process, they support

Table 1: Traditional and Heutagogical Models Compared

Traditional Model	Heutagogical Model	Key Differences
Fixed curriculum for all learners	Personalised learning pathways	Individual agency vs standardisation
Scheduled classes in designated rooms	Flexible learning across multiple environments	Time/space constraints vs adaptive flow
High-stakes standardised examinations	Authentic assessment through meaningful projects	Recall testing vs creative demonstration
Subject-based knowledge silos	Integrated, problem-centered learning	Fragmentation vs holistic understanding
Teacher as information transmitter	Educator as learning facilitator and mentor	Passive consumption vs active construction

learners in taking ownership of their educational journeys. Rather than evaluating performance against external standards, they help learners develop their capacity for self-assessment and continuous improvement.

This transformation manifests across multiple dimensions of educational practice. As curators of learning ecosystems, heutagogical educators design rich, multifaceted environments that provide diverse opportunities for engagement, exploration, and creation. They identify meaningful problems that can serve as focal points for learning, connect students with relevant resources and expertise, and create structures that support both individual inquiry and collaborative investigation.

The curatorial function requires deep understanding of how learning occurs, familiarity with available resources and opportunities, and the ability to see connections across domains that might not be immediately apparent to novice learners. Effective curators don't simply point students toward existing resources; they actively design experiences that challenge assumptions, provoke curiosity, and create opportunities for meaningful discovery.

As mentors of inquiry and reflection, heutagogical educators help learners develop the metacognitive capabilities that enable self-directed learning. They teach students how to formulate meaningful questions, how to evaluate information sources, how to synthesise insights from multiple perspectives, and how to recognise and learn from their mistakes. This mentoring function requires sophisticated understanding of learning processes, emotional intelligence, and the ability to provide feedback that promotes growth rather than judgment.

The mentoring role involves helping learners navigate the inevitable challenges and setbacks that accompany authentic learning. When students encounter difficulties or become frustrated with their progress, effective mentors help them reframe these experiences as learning opportunities rather than failures. They model resilience, curiosity, and intellectual humility while providing the emotional support that enables learners to persist through difficult periods.

As facilitators of self-assessment, heutagogical educators help students develop their ability to evaluate their own progress, identify their strengths and growth areas, and set meaningful goals for continued development. This involves teaching students to recognise evidence of their own learning, to articulate their understanding clearly, and to seek feedback that supports their development rather than simply validates their performance.

The self-assessment capability proves crucial for lifelong learning because external evaluators will not always be available to provide feedback and guidance. Students who can accurately assess their own capabilities and learning needs become capable of continued growth throughout their lives, adapting to changing circumstances and pursuing new areas of interest and expertise.

As connectors to networks and communities, heutagogical educators help learners access the broader ecosystems of knowledge, expertise, and opportunity that exist beyond educational institutions. They facilitate connections with practitioners, researchers, and other learners who share similar interests or complementary capabilities. They help students understand how their learning contributes to larger conversations and purposes.

This networking function becomes increasingly important as knowledge work becomes more collaborative and interdisciplinary. Students need to learn how to contribute to communities of practice, how to seek and offer help effectively, and how to build the professional and personal relationships that support continued learning and meaningful work.

The transformation of educator roles requires substantial changes in preparation, support, and evaluation systems. Traditional teacher education programs focus heavily on content knowledge and instructional techniques appropriate for transmission-based teaching. Heutagogical educators need preparation in learning design, facilitation skills, mentoring approaches, and systems thinking. They need to understand how to create psychologically safe environments where learners feel comfortable taking risks and making mistakes.

Professional development for heutagogical educators must be ongoing and experiential rather than front-loaded and theoretical. Just as their students engage in authentic problems and reflective practice, educators need opportunities to continuously develop their practice through

collaboration with colleagues, experimentation with new approaches, and reflection on their effectiveness.

The evaluation of heutagogical educators must focus on learning outcomes and student development rather than instructional compliance or content coverage. Effective measures might include student growth in metacognitive capabilities, development of intrinsic motivation for learning, ability to work effectively in collaborative settings, and demonstrated capacity to apply learning to novel challenges.

Technology as Educational Transformation Catalyst: The 2047 Roadmap

The realisation of post-disciplinary, heutagogical education depends critically on leveraging transformative technologies that can support personalised learning, authentic assessment, and global collaboration. These technologies do not merely digitise existing educational practices but fundamentally reshape how learning occurs, enabling approaches that would be impossible through traditional means.

Artificial Intelligence: The Foundation of Personalised Learning

Artificial Intelligence represents the most transformative force in contemporary education, offering capabilities that can address many of the fundamental limitations of traditional instructional approaches. AI-powered learning systems can provide truly personalised instruction that adapts in real-time to individual learner needs, interests, and progress patterns.

Advanced AI tutoring systems can engage learners in Socratic dialogue, asking probing questions that guide discovery rather than simply providing answers. These systems can identify when learners are struggling and offer additional support, recognize when they are ready for greater challenges and provide more complex problems, and adapt their communication style to match individual preferences and learning patterns.

Natural language processing capabilities enable AI systems to provide sophisticated feedback on written work, helping learners improve their communication skills through iterative revision rather than single-point evaluation. Machine learning algorithms can analyse patterns in learner behaviour to identify optimal timing for different types of activities, suggest resources that align with individual interests and learning goals, and predict potential difficulties before they become obstacles.

Perhaps most importantly, AI can support the kind of authentic assessment that heutagogical education requires. Rather than relying on standardised tests, AI systems can continuously monitor learner progress through their actual work, providing rich data about capability development, collaboration skills, creative thinking, and problem-solving approaches. This continuous assessment provides far more actionable information than periodic testing while reducing the stress and artificial pressure associated with high-stakes examinations.

Extended Reality: Immersive Learning Environments

Extended Reality technologies, encompassing Virtual Reality, Augmented Reality, and Mixed Reality, create opportunities for experiential learning that were previously impossible. These technologies can transport learners to historical periods, microscopic environments, distant planets, or theoretical scenarios, providing direct experience with phenomena that would otherwise remain abstract.

In medical education, VR simulations allow students to practice complex procedures without risk to actual patients. In environmental science, students can experience climate change impacts in real-time simulations that compress decades of change into minutes of observation. In literature, students can walk through the settings of classic novels, gaining embodied understanding of cultural and historical contexts.

More importantly, XR technologies enable collaborative learning experiences that transcend geographical boundaries. Students from different countries can work together in shared virtual environments, gaining direct experience with cultural diversity and global collaboration. They can prototype solutions in virtual laboratories, test their ideas through realistic simulations, and iterate rapidly without the constraints of physical materials and safety considerations.

The immersive nature of XR learning creates emotional engagement that enhances memory formation and understanding retention. When learners can see, hear, and interact with learning

content, they develop richer mental models and stronger connections to the material. This embodied learning proves particularly effective for complex concepts that are difficult to understand through traditional text-based instruction.

Brain-Computer Interfaces: Understanding Learning in Real-Time

Brain-Computer Interface technologies offer unprecedented insights into learning processes by providing direct access to neural activity during learning experiences. These systems can monitor attention levels, cognitive load, emotional states, and comprehension in real-time, enabling immediate adjustments to learning experiences.

BCI technology can identify when learners are experiencing cognitive overload and automatically adjust the pace or complexity of instruction. It can recognise optimal learning states and suggest the best times for different types of learning activities. For learners with attention disorders or other neurological differences, BCI systems can provide personalised accommodations that optimise their learning environments.

Perhaps most significantly, BCI technology can provide objective feedback about learning effectiveness that goes beyond traditional performance measures. Rather than relying solely on test scores or subjective reports, educators can observe directly how different instructional approaches affect neural activity and learning consolidation.

Quantum Technologies: Expanding Cognitive Horizons

Quantum Science and Technology introduces learners to entirely new ways of thinking about reality, uncertainty, and problem-solving. Quantum concepts challenge classical assumptions about causality, locality, and determinism, preparing learners for a world where traditional logic may prove insufficient for understanding complex systems.

Quantum computing applications require thinking in terms of probability distributions rather than deterministic outcomes, parallel processing rather than sequential logic, and system-level interactions rather than isolated components. These cognitive approaches prove valuable far beyond quantum physics, providing mental models that apply to complex social, economic, and biological systems.

Quantum technologies also offer practical applications in cryptography, simulation, and optimisation that will transform multiple industries. Students who understand quantum principles will be prepared for careers that don't yet exist but will become crucial as quantum technologies mature.

Convergent Technologies: Synergistic Educational Applications

The real transformation occurs when these technologies converge to create integrated learning environments that leverage the strengths of each approach. AI-powered systems can use BCI feedback to optimise XR experiences for individual learners. Quantum simulations can provide realistic models for complex systems that learners explore through immersive virtual environments. Real-time translation enables global collaboration in shared virtual spaces.

Cognitive Digital Twins represent one example of technological convergence with enormous educational potential. These AI-enhanced models of individual learners can simulate different learning pathways, predict optimal educational interventions, and provide personalised recommendations based on comprehensive understanding of learner characteristics, preferences, and goals.

Blockchain-based credentialing systems can create portable, verifiable records of learning achievements that transcend institutional boundaries. Rather than accumulating credits from single institutions, learners can build comprehensive learning portfolios that document their capabilities across multiple contexts and experiences.

Implementation Strategy: From Pilots to System-wide Transformation

The transition from traditional subject-based education to heutagogical, technology-enhanced learning requires a carefully orchestrated implementation that begins with focused pilot programs and scales gradually to comprehensive system transformation. This phased approach allows for experimentation, learning, and adaptation while minimising disruption to existing educational operations, ultimately leading to a revolutionary assessment paradigm that replaces grades with authentic growth documentation.

Learning SPRINTs: The Foundation of Problem-Based Learning

Learning SPRINTs represents the fundamental building block of heutagogical education. These

Table 2: Emerging Technologies Shaping the Future of Education: Functions, Impact, and Readiness

Technology Category	Primary Educational Function	Transformative Potential	Implementation Timeline
Artificial Intelligence	Personalized instruction and assessment	Complete individualization of learning	Currently available
Extended Reality (XR)	Immersive, experiential learning	Direct experience with abstract concepts	Rapidly expanding
Brain-Computer Interface	Real-time learning optimization	Neural feedback for learning enhancement	Emerging applications
Quantum Technologies	Advanced problem-solving paradigms	Preparation for quantum-enabled future	Research and development phase
Blockchain Credentials	Portable, verifiable learning records	Global recognition of diverse learning paths	Early adoption phase

Short-duration, Problem-focused, Real-world, Integrated, Novel, and Transformative learning experiences replace traditional courses with intensive engagements around authentic challenges. Unlike traditional classes that cover predetermined content over extended periods, SPRINTs focus intensively on specific problems for shorter durations, allowing for deep engagement and immediate application of learning.

A typical Learning SPRINT might involve a small group of learners spending two to four weeks working intensively on a specific challenge, such as developing a water purification system for a rural community, creating a mental health support app for teenagers, or designing a sustainable urban transportation solution. The SPRINT would bring together learners with diverse backgrounds and interests, connect them with relevant experts and community members, and provide access to necessary resources and technologies.

The SPRINT format naturally encourages the kind of higher-order thinking that Bloom's taxonomy identifies as most valuable: analysis, synthesis, evaluation, and creation. Rather than beginning with factual knowledge and building toward application, SPRINTs start with complex problems that require learners to immediately engage in sophisticated thinking processes. They must analyse the problem context, synthesize information from multiple sources, evaluate different solution approaches, and create novel responses to authentic challenges.

Learning SPRINTs also develops crucial 21st-century skills that traditional education often neglects. Participants learn to work effectively in diverse teams, communicate complex ideas to different audiences, manage projects with uncertain outcomes, and persist through setbacks and failures. They develop empathy through direct engagement with community members affected by the problems they're addressing, and ethical reasoning through consideration of the broader implications of their proposed solutions.

Sandbox Ecosystems: Experimental Learning Laboratories

Sandbox Ecosystems provide institutional spaces where traditional rules and constraints are suspended to allow for educational experimentation and innovation. These might be physical spaces like maker labs or innovation studios, virtual environments that support global collaboration, or hybrid spaces that combine physical and digital resources.

The key characteristic of Sandbox Ecosystems is their explicit rejection of traditional educational constraints. Participants are not required to enrol in specific courses, accumulate predetermined credits, or follow established curricula. Instead, they pursue self-directed learning projects that align with their interests and goals, with support from mentors, peers, and community partners.

Successful Sandbox Ecosystems provide rich resources for learning and creation while maintaining minimal barriers to access and participation. They might include advanced fabrication equipment, scientific instruments, computing resources, library collections, and connections to expert networks. More importantly, they foster cultures of experimentation, collaboration, and mutual

support that encourage risk-taking and creative exploration.

The learning that occurs in Sandbox Ecosystems is inherently interdisciplinary because participants pursue authentic problems that don't respect academic boundaries. A student working on improving educational outcomes for refugee children might engage with psychology, linguistics, technology, policy analysis, community organising, and cultural anthropology. However, they encounter these domains not as separate subjects but as integrated tools for understanding and addressing complex human challenges.

Assessment Revolution: Beyond Grades to Growth Portfolios

The elimination of traditional examinations represents perhaps the most radical departure from conventional higher education within this implementation strategy. In a post-disciplinary learning ecosystem, assessment transforms from a terminal judgment to a continuous dialogue between learners, mentors, and the broader learning community.

Traditional examinations suffer from fundamental flaws that make them incompatible with future-ready education. They measure memorisation rather than application, reward conformity over creativity, and create artificial scarcity through ranking systems. Most importantly, they fragment learning into isolated subjects, preventing students from demonstrating the integrative thinking that real-world problems demand.

The new assessment paradigm centres on Growth Portfolios - dynamic collections of evidence that showcase a learner's evolving capabilities, reflections, and contributions. These portfolios contain project documentation, peer feedback, mentor evaluations, self-reflections, and real-world impact metrics. Unlike static transcripts, growth portfolios tell the story of learning journeys, highlighting problem-solving processes, collaborative skills, and ethical reasoning.

Consider how a student exploring sustainable urban planning through Learning SPRINTs might document their learning journey. Their portfolio would include research on climate-resilient architecture, prototypes of water management systems developed in Sandbox Ecosystems, community engagement reports, interdisciplinary collaborations with engineers and sociologists, and reflective essays on policy implications. This comprehensive evidence provides a far richer picture than any traditional examination could capture.

Table 3: Traditional vs Future Assessment Models

Traditional Assessment	Future Assessment
One-time examinations	Continuous portfolio development
Subject-specific testing	Cross-disciplinary project evaluation
Individual competition	Collaborative peer assessment
Standardized metrics	Personalized growth indicators
Pass/fail binary outcomes	Multi-dimensional competency mapping

The assessment approach for Learning SPRINTs focuses entirely on authentic demonstration of capabilities rather than artificial testing. Participants might present their solutions to community stakeholders, create prototypes that can be tested in real-world conditions, develop policy proposals that address regulatory challenges, or produce media content that communicates their insights to broader audiences. This authentic assessment provides far richer evidence of learning than traditional examinations while also creating value for communities and stakeholders.

Technology enables sophisticated assessment approaches that were previously impossible. Artificial Intelligence can analyse learning patterns, provide personalised feedback, and identify knowledge gaps in real-time. Blockchain technology ensures credential security and portability, while peer evaluation platforms foster collaborative learning communities.

The role of artificial intelligence in assessment extends beyond automation to genuine learning support. AI tutors can engage in Socratic dialogues, challenge assumptions, and guide students through complex reasoning processes. They can adapt questioning strategies based on individual learning styles and provide immediate feedback that helps students refine their thinking.

However, this technological transformation must be balanced with human wisdom and ethical oversight. While AI can process vast amounts of learning data, human mentors remain essential

for providing emotional support, contextual understanding, and moral guidance that machines cannot replicate.

Global Citizenship and Local Relevance: The Glocal Learning Matrix

Post-disciplinary education must navigate the tension between global connectivity and local rootedness. The concept of 'glocal' learning - thinking globally while acting locally - becomes central to educational design in the 2047 vision.

Real-time translation technology democratizes access to global knowledge while preserving local wisdom traditions. Students in rural India can collaborate with peers in urban centres or international universities without linguistic barriers. However, this connectivity must not erase cultural specificity or indigenous knowledge systems that provide unique insights into sustainable living, community governance, and holistic wellness.

The learning ecosystem should deliberately integrate local challenges with global perspectives. For instance, a student studying water scarcity might examine both local watershed management practices and international water policy frameworks. They might collaborate with traditional water harvesting experts, environmental scientists, policy makers, and technology entrepreneurs to develop comprehensive solutions.

Table 4: Glocal Learning Integration Framework

Local Dimension	Global Dimension	Integration Method
Traditional knowledge systems	International research findings	Comparative analysis projects
Community-specific challenges	Universal development goals	Cross-cultural collaboration
Regional cultural practices	Global citizenship values	Reflective dialogue sessions
Local resource constraints	International funding mechanisms	Partnership development initiatives

Extended reality technologies can bring distant contexts into local learning spaces. Students can virtually visit Amazon rainforests, Arctic research stations, or Silicon Valley innovation hubs while remaining physically grounded in their home communities. These immersive experiences broaden perspectives while strengthening appreciation for local contexts.

The curriculum of relevance emerges from this glocal intersection. Rather than predetermined subject matter, learning content arises from the dynamic interplay between local needs and global knowledge resources. This approach ensures that education remains socially responsive while preparing students for internationally competitive careers.

Economic Models and Sustainability: Financing the Future of Learning

The transformation to post-disciplinary education requires innovative economic models that align financial sustainability with educational excellence (Table 5). Traditional funding mechanisms, designed for lecture-hall education and standardised curricula, prove inadequate for flexible, technology-enhanced learning ecosystems.

The concept of 'Education as a Service' emerges as a viable alternative to the current "Education as a Product" model. Instead of purchasing degrees, learners invest in ongoing learning relationships that evolve throughout their careers. This subscription-based approach provides continuous value while generating sustainable revenue streams for educational institutions.

Corporate partnerships become essential for funding real-world learning experiences. Companies benefit from access to innovative student projects, fresh perspectives on industry challenges, and early identification of promising talent. Students gain practical experience, mentorship opportunities, and potential career pathways. Educational institutions receive funding, industry relevance, and enhanced reputation.

The role of government funding shifts from institutional support to innovation catalysis. Rather than subsidising traditional operations, public investment should focus on infrastructure development, faculty training, and research initiatives that advance the post-disciplinary model. Regulatory frameworks must evolve to recognise alternative credentialing systems and support experimental educational approaches.

International collaboration opens additional funding opportunities through research partnerships,

Table 5: Innovative Funding Models for Post-disciplinary Education

Funding Model	Description	Benefits	Implementation Strategy
Learning Subscriptions	Continuous access to educational resources and mentorship	Sustainable revenue, lifelong relationships	Flexible payment plans, corporate sponsorships
Project-Based Sponsorship	Companies fund specific student projects	Industry relevance, practical outcomes	Partnership agreements, IP sharing protocols
Outcome-Based Financing	Payment tied to student success metrics	Performance incentives, risk sharing	Career tracking systems, employer feedback loops
Community Investment	Local organizations support relevant learning initiatives	Social impact, community development	Stakeholder engagement, transparent reporting

student exchange programs, and joint degree initiatives. These relationships provide financial resources while exposing students to diverse educational philosophies and cultural perspectives.

Implementation Roadmap: From Vision to Reality

The transition from subject-based to post-disciplinary education requires careful planning, phased implementation, and continuous adaptation (Table 6). The roadmap spans immediate pilot programs, medium-term institutional reforms, and long-term systemic transformation.

Phase 1: Pilot Programs and Proof of Concept (Years 1-3)

Initial implementation focuses on small-scale experiments within existing institutions. Select departments or programs that volunteer to eliminate traditional subject boundaries and implement project-based learning approaches. These pilots serve as learning laboratories, generating evidence and refining methodologies.

Faculty development becomes the critical success factor during this phase. Educators must transition from content experts to learning facilitators, requiring intensive training in mentorship techniques, project design, and technology integration. Professional development programs should emphasise hands-on experience with AI tools, extended reality platforms, and collaborative learning environments.

Student readiness presents another significant challenge. Learners accustomed to passive consumption of predetermined curricula must develop agency, self-direction, and collaborative skills. Orientation programs should include metacognitive training, goal-setting workshops, and peer mentorship systems.

Phase 2: Institutional Transformation (Years 4-7)

Successful pilot programs provide blueprints for broader institutional adoption. Universities begin restructuring administrative systems, faculty evaluation criteria, and physical spaces to support post-disciplinary learning. Traditional departments give way to flexible learning communities organised around themes rather than subjects.

Technology infrastructure requires substantial investment during this phase. Institutions must develop or procure AI-powered learning platforms, extended reality studios, and collaborative workspace technologies. Digital credential systems need integration with national frameworks while maintaining institutional autonomy.

Partnership development accelerates as institutions recognise the importance of external collaboration. Relationships with industry, government agencies, non-profit organisations, and international institutions provide learning opportunities, funding sources, and career pathways for students.

Phase 3: Systemic Integration (Years 8-12)

The final phase involves the comprehensive transformation of higher education systems. Regulatory frameworks adapt to recognise alternative assessment methods and credentialing systems. Funding mechanisms shift toward outcome-based models that reward innovation and impact rather than enrolment numbers.

The Legacy We Choose: Education for Human Flourishing

As we stand at the threshold of 2047, the choices we make about higher education will define not just individual careers but the trajectory of human civilisation. The post-disciplinary model

Table 6: Implementation Timeline and Milestones

Phase	Duration	Key Activities	Success Metrics
Pilot Programs	Years 1-3	Faculty training, student orientation, small-scale experiments	Student engagement, learning outcomes, faculty satisfaction
Institutional Reform	Years 4-7	Administrative restructuring, technology adoption, partnership development	Institutional transformation, external recognition, sustainable operations
System Integration	Years 8-12	Regulatory alignment, funding model evolution, widespread adoption	Policy changes, market acceptance, global competitiveness

represents more than pedagogical innovation; it embodies a fundamental shift toward education that nurtures human potential rather than constraining it within artificial boundaries.

The elimination of subjects, curricula, and examinations should not be viewed as destruction but as liberation. We liberate learning from the tyranny of predetermined pathways, freeing students to pursue their authentic interests and societal needs. We liberate knowledge from disciplinary silos, enabling the integrated thinking required for complex problem-solving. We liberate assessment from ranking and competition, fostering collaborative communities dedicated to mutual growth.

The principle of "create, create, create" transforms education from consumption to production, from passive reception to active contribution. Students become knowledge creators, problem solvers, and innovation catalysts rather than mere repositories of information. This creative orientation prepares them not just for existing careers but for inventing entirely new fields of human endeavour.

Heutagogy - self-determined learning - recognises the fundamental dignity and agency of every learner. Rather than treating students as empty vessels to be filled, we honour them as intelligent beings capable of directing their own development. This philosophical shift has profound implications for human development, democratic participation, and social progress.

The technological tools that enable this transformation - artificial intelligence, extended reality, brain-computer interfaces - are not ends in themselves but means to more humane education. They should amplify human capabilities rather than replace human connection, enhance creativity rather than automate thinking, and democratize access rather than create new forms of exclusion.

India's unique position in this global transformation stems from its deep philosophical traditions of holistic learning combined with its emerging technological capabilities. The concept of "Guru" - one who leads from darkness to light - predates Western educational theory by millennia. The integration of ancient wisdom with contemporary innovation positions India to lead rather than follow in educational transformation.

The vision of universities without subjects challenges us to imagine education aligned with life rather than separated from it. In this future, learning happens everywhere, assessment honours growth over performance, and success is measured by contribution to human flourishing rather than individual accumulation.

This is not utopian dreaming but urgent necessity. The challenges facing humanity - climate change, social inequality, technological disruption, ethical governance of artificial intelligence - require educational approaches that transcend traditional boundaries. Our students need preparation not for the world as it was, but for the world as it could be.

The transformation begins with courage: the courage to question inherited assumptions, to experiment with new approaches, and to trust in human potential. It continues with commitment: the commitment to sustained effort, continuous learning, and collaborative action. It succeeds through compassion: the compassion to ensure that educational innovation serves all learners, especially those traditionally marginalised by conventional systems.

As we design the universities of 2047, we design the future of human consciousness. Let us choose wisely, boldly, and with profound hope for what learners can become when education truly serves their highest potential. The time for incremental reform has passed. The time for educational revolution has arrived.

Citius, Altius, Fortius: Advancing Education, Research, Innovation and Entrepreneurship for *Viksit Bharat*@2047— Part-II[#]

Ganapati D Yadav*

Globalising Indian Higher Education: Leveraging ICT for Foreign Faculty Engagement

The integration of foreign faculty into Indian higher education institutions can significantly enhance academic quality, global visibility, and institutional rankings. Traditionally, logistical and financial constraints have limited the number of such appointments. However, with the widespread availability of digital infrastructure and Information and Communication Technology (ICT), a transformative opportunity now exists to virtually recruit and engage global faculty without the necessity of long-term physical presence.

Institutes can adopt a trimester-based academic system to offer greater scheduling flexibility, enabling foreign experts to teach intensive modules remotely or during short in-person residencies. This modular structure can facilitate global academic participation across disciplines, including science, technology, humanities, and the arts. Several international models illustrate the benefits of such an approach:

- edX and Coursera-based courses already demonstrate how globally renowned professors from MIT, Stanford, and Harvard reach learners worldwide through structured, asynchronous, and synchronous formats.
- Singapore's National University (NUS) and Hong Kong University of Science and Technology (HKUST) successfully engage international scholars through hybrid appointments and guest lectureships to enhance course diversity and global perspectives.
- In Europe, the Erasmus+ Visiting Faculty Programme promotes mobility and shared teaching responsibilities between universities across borders, often virtually.

For India, engaging foreign faculty through virtual or hybrid modes can help address two key objectives:

Enhancing Academic Quality

Access to world-class educators can enrich curricula, introduce students to global research trends, and strengthen interdisciplinary learning.

Improving Global Rankings and Reputation

Internationalisation is a critical metric in most global ranking frameworks (e.g., QS, THE), and incorporating foreign faculty significantly boosts visibility and credibility.

To institutionalise this, Indian academia should:

- Establish dedicated international academic engagement offices.
- Provide financial and administrative support for short-term foreign teaching assignments.
- Develop robust ICT platforms for seamless virtual delivery.
- Create co-teaching models where Indian and foreign faculty collaborate on course design and delivery.

This approach aligns with the NEP—2020, which emphasises internationalisation and the use of technology in education. By adopting a strategic, ICT-enabled model of engaging foreign faculty, Indian institutions can accelerate their transformation into globally competitive centres of excellence.

One Nation, One Research Source: Democratising Access to e-Resources for a Knowledge-Driven Economy

Equitable access to quality research resources is foundational for building a vibrant, innovative, and inclusive research ecosystem. To achieve this, the Government must ensure that all registered students

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and researchers across HEIs in India are granted seamless, centralised access to scholarly databases, scientific journals, patents, datasets, and other critical e-resources. This can be enabled through authenticated institutional logins and verified ORCID (Open Researcher and Contributor ID) profiles.

The idea of 'One Nation, One Research Source' mirrors the principles of the National Digital Library and the One Nation One Subscription (ONOS) model recently piloted by some academic bodies. Making globally indexed databases such as Scopus, Web of Science, IEEE, ScienceDirect, JSTOR, and WIPO's patent databases freely accessible to students, researchers, and faculty will empower millions, bridge institutional divides, and catalyse quality research output. A few important measures can operationalise this vision:

Mandatory ORCID Registration

Every student, research scholar, and faculty member should be required to obtain an ORCID ID (*https://orcid.org/*), serving as a unique digital research identity akin to Aadhaar. This enables tracking of scholarly output, enhances transparency, and streamlines resource access.

Federated Access via Institutes

Institutional logins authenticated through national research identity systems can provide secure and equitable access to e-resources.

Promoting Cross-disciplinary and Applied Research

With shared resources, institutes must encourage interdisciplinary research that bridges academia, industry, and societal needs. The adage *'Think globally, act locally'* should underpin research agendas, combining global best practices with regional and national relevance.

Model from the World

- Europe's OpenAIRE initiative promotes open access to research output across EU nations through interoperable digital infrastructure.
- The US National Institutes of Health (NIH) mandates open access to all publicly funded research, thereby democratizing knowledge.
- China's CNKI provides unified access to a wide range of academic content for its universities and research institutes through national licensing.

Universal access to research tools is no longer a luxury; it is a necessity in a globally competitive knowledge economy. India must institutionalise and fund this collective vision, fostering a culture of inclusivity, excellence, and innovation from the undergraduate level upward. Using CSR funding for this purpose will go a long way. Inclusion of private institutes through some innovative scheme is required for India to be a world leader in research, innovation, and translation.

Strengthening Innovation Ecosystems in Academia: IPR Education, Valuation, and Commercialisation Frameworks

To build a robust innovation-driven academic ecosystem, all students enrolled in professional, vocational, and commerce programmes must undergo foundational training in Intellectual Property Rights (IPR) and their valuation. IPR literacy empowers students and researchers to protect, manage, and monetise their innovations responsibly. Moreover, faculty members must have access to regular upskilling opportunities on evolving IPR regimes, valuation methodologies, and legal frameworks governing technology transfer and commercialisation.

In addition to IPR, professional programs should incorporate courses on Environmental Law and Sustainability Regulations, preparing students to innovate within the bounds of environmental compliance and ethical standards, which are important to modern industrial and social problem-solving. All companies are required to give an account of ESG in their annual reports. Therefore, the following should be adopted as a government or institutional policy:

Mandatory IPR Curriculum

- Introduce compulsory IPR and IP valuation courses at the undergraduate and postgraduate levels across engineering, science, management, law, and medical programs.
- Encourage industry practitioners and patent attorneys to co-teach modules and case studies to bridge theory and practice.

Equitable IPR Ownership and Revenue Sharing

- Intellectual property generated through academic research should be shared on a 50:50 basis between the inventors and the host institute.
- If the research is industry-sponsored, the first right of refusal for commercialisation should rest with the sponsoring industry, within a defined timeframe.
- If monetised independently by the institute thereafter, profits should again be split 50:50.

- In cases where individual faculty or student researchers generate IP without external sponsorship, 80% of the monetised value should accrue to the inventor(s) and 20% to the institute, thus incentivising innovation and entrepreneurial risk-taking.

Faculty-Industry Engagement

Academicians should be allowed to consult for industry one day per week.

- If no institutional resources are used, faculty may retain two-thirds of the consultancy fees, with one-third shared with the institute.
- If institutional labs, equipment, or personnel are involved, 50% of consultancy revenue should be shared with the institute.

Innovation and Incubation Centres are established in CFIs such as IIT Madras and IIT Bombay, which have been highly successful. ICT Mumbai boasts of over 700 first-generation entrepreneurs who have been contributing to India's GDP, unbelievably about 8%. Some countries have taken the lead in this regard as follows:

- *United States*: The Bayh-Dole Act (1980) allowed US universities to retain ownership of inventions funded by federal research grants. Most universities now follow a 60:40 or 50:50 revenue-sharing model between inventors and the institution.
- *UK*: At the University of Oxford, IP revenue is typically split 60% to inventors, 20% to their department, and 20% to the university. The UK's Knowledge Transfer Partnerships (KTPs) also support structured industry-academia collaborations.
- *Germany*: German universities are encouraged to commercialise research through technology transfer offices (TTOs), with strong state support. Inventors typically receive up to 70% of net revenues.
- *Singapore*: The Agency for Science, Technology and Research (A*STAR) offers IPR training as part of doctoral programs, and revenue-sharing policies give up to 75% to researchers.
- In the Institute of Chemical Technology, Mumbai, the policy is 80% of the revenue is given to the inventor and 20% to the institute. In the case of consultation, it is 2/3 to the faculty consultant and 1/3 to the institute.
- *India*: The National Innovation and Start-up Policy (NISP) encourages institutes to create IP cells and lays out guidelines for IPR ownership, revenue sharing, and faculty entrepreneurship. However, a standardised national framework is still evolving.

Institutionalising structured IPR education and transparent, equitable commercialisation policies will energise the innovation ecosystem in Indian academia. When researchers are both empowered and rewarded, they become key drivers of technology-led economic growth and social impact. HEIs must also establish or strengthen Technology Transfer Offices (TTOs) to provide legal, financial, and market support for IP licensing and start-up incubation.

By aligning with global best practices and integrating them with local priorities, Indian institutions can create a fertile ground for world-class innovation, entrepreneurship, and industrial partnerships.

Embedding Ethics, Professionalism, and Moral Foundations in Professional Education

To nurture responsible professionals and socially conscious citizens, all professional programs must integrate core courses on Ethics, Professionalism, Moral Education, and the Indian Knowledge System (IKS). These components are foundational for shaping character, ensuring integrity in decision-making, and preparing students to navigate real-life dilemmas with clarity and conscience.

In today's increasingly interconnected and ethically complex world, technical knowledge alone is not sufficient. Students must be equipped to deal with real-world challenges involving conflicts of interest, corporate governance, environmental sustainability, data privacy, equity, and social justice. Moral reasoning, cultural awareness, and professional conduct are indispensable tools in shaping well-rounded graduates. The following are a few suggestions in this regard:

Mandatory Curriculum Integration

- Courses on Engineering and Medical Ethics, Business and Legal Ethics, and Professional Codes of Conduct must be made mandatory in all professional programs.
- Moral education should include case-based discussions, role-playing, and experiential learning to simulate real-life ethical conflicts.

Introduction to Indian Knowledge Systems (IKS)

- A foundational course on IKS should introduce students to timeless Indian philosophies of knowledge, ethics, sustainability, and wellness drawn from texts like the Vedas, Upanishads, Arthashastra, and Ayurveda.
- This will foster cultural rootedness, ecological consciousness, and inter-generational wisdom, enrich their worldviews and promoting values-driven leadership.

Faculty Capacity Building

- Faculty should receive training to effectively deliver ethics-based education, incorporating global and local case studies relevant to their disciplines.

Excellent Examples of such Practices Exist in some Foreign Countries.

- *USA*: The ABET accreditation process for engineering programmes requires explicit learning outcomes in "professional and ethical responsibility." Most top universities (e.g., MIT, Stanford) offer courses like *Ethics of Technology* or *Business Ethics* as mandatory or elective components.
- *UK*: Medical and law programmes emphasise professionalism and ethics through clinical simulations and legal case studies. The General Medical Council mandates lifelong ethical training for physicians.
- *Japan*: Ethical education is embedded in all disciplines, influenced by the principles of *bushidō* (way of the warrior), which emphasise honour, duty, and integrity.
- *South Korea*: The Ministry of Education mandates moral and civic education from school to university, reinforcing Confucian principles of ethical conduct.
- *India*: The NEP–2020 strongly advocates for value-based education and the promotion of Indian Knowledge Systems. Initiatives by AICTE and UGC, such as Universal Human Values (UHV) courses, are important steps in this direction.

Thus, inculcating ethics, professionalism, and moral values is not a peripheral activity—it is central to shaping professionals who will lead with integrity and compassion. Higher Education Institutions must champion this cause by embedding these courses into the very fabric of academic life. This will create a generation of technocrats, doctors, lawyers, engineers, and entrepreneurs who are not only competent but also conscientious.

***Nari Shakti* in Higher Education: Advancing Girls' Access Across All Disciplines**

India's path to becoming a truly equitable and prosperous nation hinges on unlocking the full potential of its girls and women through unrestricted access to higher education. Empowering girls through education, especially up to Master's and Ph.D. levels, is not just a moral imperative, but a strategic national investment with far-reaching social, economic, and demographic dividends.

All desirous and deserving girls should be provided free university education, including professional and doctoral programmes, irrespective of background, with financial support mobilised through industry partnerships, CSR contributions, and dedicated public funding. Those who can afford to pay may do so or be encouraged to sponsor another student, reinforcing a culture of shared responsibility. Indeed, the central government can share 50% of the burden and the remaining 50% with the States. It will be truly a revolutionary idea. This *Nari Shakti* programme will lead to the following:

Universal Access with Equity

No girl should be denied the opportunity to pursue higher education due to economic constraints. A policy of zero tuition for girls from disadvantaged backgrounds will level the playing field, especially in STEM, law, medicine, management, and research disciplines.

Multifaceted Societal Impact

- *Increased Marriageable Age*: Higher education naturally defers early marriage and fosters informed choices.
- *Population Stabilisation*: Educated women are more likely to adopt small family norms, directly influencing national demographic trends.
- *Enhanced Social Harmony*: Empowered women contribute to more stable families and inclusive societies through informed decision-making, financial independence, and civic participation.
- *Economic Growth*: Studies by the World Bank and McKinsey have shown that closing the gender gap in education and employment can boost GDP by over 25% in developing economies.

Cultural Transformation

Families across socio-economic strata will prioritise the education of girl children, helping dismantle patriarchal norms and fostering intergenerational mobility.

Some of the countries encourage women's education. For instance,

- Scandinavian countries ensure gender-balanced access to all disciplines through fully subsidised education and family-friendly policies.
- Rwanda, post-genocide, prioritised girls' education as a pillar of national rebuilding, achieving near gender parity in higher education.
- India has successful state-level models, such as:
    a. Tamil Nadu's free bus travel and bicycles for girl students.
    b. Maharashtra government has also announced free ship to girls up to bachelor's degree.
    c. Delhi's *Ladli Scheme* and scholarships for higher education.
    d. Maharashtra and Madhya Pradesh's tuition waivers for girls in government colleges.
- Bangladesh offers free education to girls up to the bachelor's level in public institutions, resulting in increased female enrolment and delayed marriages.

Indian academia should work towards,

- Offering full scholarships and fee waivers to girls up to the Ph.D. level.
- Encouraging industry to channel CSR funds into female education endowments.
- Creating inclusive campuses through gender-sensitive infrastructure, flexible learning pathways, and leadership mentoring programs for women.

This initiative is directly aligned with UN Sustainable Development Goals: SDG 4: Quality Education, SDG 5: Gender Equality, SDG 10: Reduced Inequalities, and SDG 8: Decent Work and Economic Growth

A society that educates its daughters builds a future that is more just, equitable, innovative, and sustainable. Nurturing *Nari Shakti* through universal access to higher education must become a cornerstone of India's social transformation strategy.

Establishing a Research, Innovation, and Translation Board in Higher Education Institutions

Every institute should establish a dedicated Research, Innovation, and Translation Board (RITB) to actively promote the translation of academic research into viable commercial innovations. Some of the major strategies are as follows:

Technology Transfer and Licensing Officers (TTLOs): Each institute must appoint skilled TTLOs responsible for managing intellectual property, facilitating partnerships with industry, and ensuring smooth technology licensing processes. These officers will serve as the critical link between researchers, industry, and the market.

Alumni networks are invaluable assets for driving innovation ecosystems. Engaging successful alumni entrepreneurs and industry leaders as mentors, investors, and collaborators will accelerate the commercialisation of research outputs and foster a culture of innovation within the institution.

- Streamlines the path from research to market-ready products and services.
- Enhances industry collaboration and increases opportunities for funding and resource sharing.
- Builds institutional reputation through impactful innovation and entrepreneurship.
- Creates additional revenue streams for both the institution and inventors.

Such a board will serve as a catalyst for converting academic excellence into societal and economic value, positioning the institute as an innovation hub of the future.

Appointment of Thesis Examiners to Elevate Research Quality

To uphold and enhance the quality of research and education, institutes must adopt international standards in the evaluation of theses. They must develop and maintain a comprehensive database of expert thesis examiners drawn from renowned scholars and professionals worldwide, ensuring global benchmarking of academic rigor. It is important to ensure that examiners are independent and unbiased: no former research students of the supervisor, close relatives, or collaborators of the

research guide should be appointed. They must promote transparent and merit-based selection of examiners to guarantee objective, high-quality evaluations that reflect current global research standards.

Industry-Sponsored Post-Doctoral Research Associates: Fostering Innovation and Collaboration

To accelerate technology development and strengthen academia-industry linkages, industries should be actively encouraged to sponsor post-doctoral research associates within companies and affiliated academic institutions. This model will promote applied research, facilitate expert consultation for faculty, and catalyse the creation of cutting-edge technologies.

Industry Sponsorship: Companies fund post-doctoral researchers working on industry-relevant problems, enabling focused innovation and faster translation of research into practical solutions.

Government Incentives: To motivate industry participation, governments should offer enhanced tax incentives, ideally at 200% or higher, for contributions towards establishing dedicated research corpuses supporting post-doctoral projects.

Start-Up Generation: This synergy between academia and industry will nurture entrepreneurial ventures and startups, fostering an innovation ecosystem that drives economic growth.

Enhancing Employability through a Virtual Career Support Hub

Institutes should develop and promote a virtual career support environment that serves as a centralised HUB, seamlessly connecting employers, career counsellors, universities, and Vocational Education and Training (VET) staff. This collaborative platform will better prepare students for the workforce by aligning academic learning with industry needs.

Institutes should employ advanced technology as an enabler to facilitate real-time interactions, mentorship, internships, and job placements. They should create an online portal offering comprehensive services such as career counselling, skill assessments, job listings, industry webinars, and personalised guidance. They should foster ongoing communication between all stakeholders to ensure students acquire relevant skills and insights, improving their employability and smooth transition into the professional world. Implementing such a technology-driven career support hub will significantly enhance student readiness and strengthen linkages between education and employment sectors.

Preparing Students in Cutting-edge Technologies through Modular Curriculum Design

In today's rapidly evolving technological landscape, frequently updating traditional curricula poses a significant challenge for educational institutions. To address this, institutes should adopt a modular approach by developing flexible online or hybrid modules covering emerging areas such as Artificial Intelligence, Big Data, Machine Learning, and more. The institute should integrate these modules into the Choice Based Credit System (CBCS), allowing students to select from a diverse bouquet of specialised courses aligned with their interests and career goals. They should ensure that modules are regularly updated to reflect the latest industry trends and technological advancements, keeping learning relevant and up-to-date. Institutes should award both academic credits and additional professional certificates, encouraging students to gain recognised technical qualifications sought by employers. They should leverage this platform to offer industry-oriented, skill-based modular courses that enhance students' immediate employability and readiness for the workforce. By embracing modular, flexible learning frameworks, institutions can empower students to stay ahead in fast-changing fields and align their education with real-world industry demands.

Driving Success of the NEP-2020 through Innovation in Higher Education

The success of the National Education Policy-2020 (NEP-2020) hinges on Higher Education Institutions (HEIs) innovating comprehensively across all facets of tertiary education, including curriculum content, teaching methodologies, internships, research, innovation, technology translation, and collaboration with leading institutions and industries. This holistic transformation will redefine HEIs into Innovation Universities, embodying agility and forward-thinking.

It is necessary to introduce major, minor, and interdisciplinary 'designer' degree programmes offering multiple exit options to provide flexibility and cater to diverse student interests and career paths. Institutes should leverage innovation in pedagogy and institutional partnerships to build dynamic, industry-relevant educational ecosystems. Seizing this opportune moment to evolve will empower them to become catalysts for knowledge creation, skill development, and socio-economic progress under the NEP framework.

Mentorship and Financial Support through Alumni Associations

No student admitted to any programmes should be forced to discontinue their education due to financial constraints. Alumni Associations must play a pivotal role in mentoring and supporting such students, with additional support drawn from CSR funds. Alumni residing in the town and nearby areas should act as dedicated guardians for 2-3 students each, fostering a personal connection by inviting them to their homes during important occasions and providing guidance and encouragement. Alumni living abroad can offer valuable mentorship to students and recent graduates planning to study or work internationally, helping them navigate academic, cultural, and professional challenges. This structured mentorship and financial support system will create a nurturing ecosystem that enhances student retention, success, and global exposure through strong alumni networks.

Integrating Artificial Intelligence, Machine Learning, and Deep Learning Across All Disciplines in Higher Education

Artificial Intelligence (AI), Machine Learning (ML), and Deep Learning (DL) are not only revolutionising industries but have become indispensable tools for research, teaching, and innovation. To align with national development goals like *Viksit Bharat@2047*, their integration into higher education must be systematic, inclusive, and comprehensive across all disciplines.

Core and Elective Courses Across Disciplines

- Engineering, Science, and IT programs should offer rigorous core and elective courses in AI/ML/DL fundamentals and applications.
- Humanities, Social Sciences, Law, and Management must include tailored courses emphasising AI applications such as legal analytics, behavioural prediction, and policy modelling.
- Medical and Life Sciences curricula should incorporate modules on AI-driven diagnostics, drug discovery, genomics, and public health modelling.

AI as an Enabling Tool in Projects and Labs

- Encourage data-driven learning by integrating AI tools in interdisciplinary projects and laboratory work, including:

i. Predictive modelling and forecasting.
ii. Natural language processing for text and speech analysis.
iii. Image and pattern recognition techniques.
iv. Simulations relevant to physics, chemistry, climate science, and beyond.

Innovative Teaching Methodologies Powered by AI

- Deploy AI-powered personalised learning platforms that adapt content delivery based on individual student needs and progress.
- Use intelligent tutoring systems to augment faculty efforts and provide real-time, adaptive feedback to learners.
- Implement automated assessment tools for scalable evaluation, freeing faculty time for mentorship and research.

Research and Thesis Work

- Mandate inclusion or exploration of AI/ML/DL methodologies in postgraduate and doctoral research, where appropriate.
- Promote interdisciplinary applications of AI, such as AI for climate modelling, cultural heritage preservation, and smart agriculture solutions.

Fostering Innovation and Entrepreneurship

- Equip students with AI tools to enhance startup ideation, customer insights, and product development within incubators and innovation labs.
- Integrate AI/ML/DL into design thinking, product engineering, and entrepreneurship programs to build an innovation-driven mindset.

Faculty Development and Curriculum Modernisation

- Launch large-scale faculty upskilling initiatives focused on AI pedagogy, tools, and emerging trends.

- Ensure curricula are AI-ready with case studies, hands-on labs, and industry-standard platforms such as TensorFlow, PyTorch, and OpenAI APIs.

Ethics, Bias, and Responsible AI

- Incorporate courses on AI ethics, data bias, privacy, and responsible innovation to prepare students for the broader societal implications of AI technologies.

Multilingual and Inclusive AI

- Promote AI-driven multilingual education tools to democratise learning across regional languages, expanding access and inclusivity.
- Leverage AI-powered adaptive learning platforms optimised for low bandwidth to bridge digital divides in rural and underserved communities.

Institutions worldwide are pioneering this integration as follows:

- Carnegie Mellon University (USA) embeds AI deeply across disciplines, offering tailored courses in AI for law, healthcare, and arts.
- The University of Cambridge (UK) has established interdisciplinary AI research centres focusing on climate science and heritage preservation.
- Tsinghua University (China) integrates AI-enabled personalised learning platforms in large-scale courses, enhancing student engagement.
- The National University of Singapore emphasises AI ethics and societal impact as core curriculum elements to foster responsible innovation.

AI, ML, and Deep Learning should be considered foundational digital literacy skills, on par with mathematics and languages. Embedding these technologies across all disciplines will empower graduates to be future-ready, innovation-driven, and instrumental in India's transformation into a global knowledge and technology powerhouse.

Outlook

The guiding mantra for the future of education, research, and innovation must be: 'Aspire. Advance. Achieve: Shaping the Future for *Viksit Bharat@* 2047'.

उत्तिष्ठत जाग्रत प्राप्य वरान्निबोधत्।

(Utthishṭhat Jāgrata Prāpya Varān Nibodhata).

This is the classical phrase from the Katha Upanishad, which was used by Swami Vivekananda many times. It means "Arise, awake, and stop not till the goal is reached. It is important in making HEIs to propel in the new world order to make our nation truly advanced.

I have often shared the following message while welcoming the newly admitted students and their families at ICT Mumbai, where I served as the Founding VC for 10.5 years: 'Reach the stars'.

Reach the stars

The Rich
The Poor.
The Marginal.
The Privileged.
The Underprivileged.
They studied here.
They made it Big.
Do not ask how to do it.
Do it.
Underestimate NOT.
Who you could be.
Think Big.
Dream Big.
Do NOT dismiss
your dreams.
To be without dreams
Is to be without hope.
To be without hope
Is to be without purpose.

This call to excellence applies universally to all stakeholders in HEIs: Students, Faculty, Alumni and Support Staff. With collective cooperation, commitment, and participation, every HEI can evolve into a respected brand of quality and innovation. As we journey forward, we should pledge to uphold fairness, raise the standards, and work tirelessly to empower all involved in this transformative mission. Together, we will shape an education system worthy of India's aspirations and global leadership.

Finally, let me quote the *Rig Veda*:

आ नो भद्राः क्रतवो यन्तु विश्वतः *Aa no bhadrah kratavo yantu vishwatah*.

May auspicious thoughts come to us from all over the world. It should begin now to make our dream of *Viksit Bharat@*2047.

❑

Use of Digital Technology in the Libraries of Government Universities in Haryana: A Study

Jitender Kumar* and Savita Mittal**

Digital Technology has become an important part of library collections. The article presents a study conducted to determine the status of digital technology application in select university libraries in Haryana. The study is based on primary data collected using self-designed questionnaires from three well-established, multidisciplinary state universities in Haryana: Guru Jambheshwar University of Science and Technology, Hisar, Chaudhary Charan Singh Haryana Agricultural University, Hisar, and Chaudhary Bansi Lal University. The study found that among the many resources offered by the GJU Hisar library, e-books purchased or subscribed from EBSCO (Academic E-Books Collection), JSTOR, Emerald, Institute of Physics, The MIT Press, Wiley-IEEE Press, Cambridge University Press, and McGraw-Hill Express Library are prominent. In addition, the National Digital Library of India programme has made accessible about 7 lakh e-books from South Asia Archive (SAA) and World e-Book Library. HAU library provides good facilities to students. Like GJU, it provides e-resources and e-books, and e-journals. GJU and HAU libraries use open-access databases like Open Access Repositories (DOAR). Chaudhary Bansi Lal University provides only e-ProQuest packages as e-resources. It does not provide e-books. All three university libraries are automated and use Koha software.

The rapid development of information technology makes it challenging to keep pace with new issues. Since the advent of new technologies, information activities have rapidly changed from traditional approaches. Libraries are currently using digital technology, which is more affordable, to satisfy the massive information boom and rising demand for information. Nowadays, digitisation and digital libraries are being discussed by all library and information professionals in India. Only automating library operations was mentioned by the LIS professional. The way libraries operate has changed dramatically as a result of recent developments in computer processing and storage, communication technologies, e-products, networking, and internet usage.

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The process of converting analogue media or resources into an electronic form to create digital collections is known as digitisation. Books, journal articles, microform, images, music, video, and more are examples of analogue media. It's a high-speed data transfer method, to put it simply. Digitization involves compressing work into a digit (0,1) form. Where we save the data, the numbers 0 and 1 represent the polarization of ions in a magnetic medium. Images used in text matter digitisation should be in two colours, i.e., black and white.

Information and Communication Technology (ICT), especially in the past 20 years, has played a major role in making it possible to efficiently access knowledge that has been buried. Initially, databases and information resources were developed in the library setting using information and communication technology, primarily to store and retrieve data. ICT has placed us in an electronic environment to assist in discovering, evaluating, obtaining, documenting, organising, and sharing information and information resources. It has also helped us organise various types of information services.

The study was limited to web-based library services, including reference, acquisition, circulation, cataloguing, periodicals, interlibrary loan/document delivery, and other web-based library services, to achieve the aforementioned goals. A survey of 173 respondents was conducted in three study university libraries in Haryana. During the survey period, web-based library automation software was used to identify study libraries based on their ability to provide functional web-based library services via their websites. The study's scope is the restricted use and contentment of digital resources by Haryana University users. The objectives of the Study are:

i. The objective is to gather, arrange, and compile digital and print materials, then distribute them for use both immediately upon care and later on.
ii. To determine how frequently e-resources are used.
iii. To learn about the strategies for raising awareness about e-resources.

iv. To investigate how to learn how to use e-resources.

v. Identify the issues and track them down while obtaining digital resources.

Nimbhorkar (2024), in her study, concluded that the automation of libraries has become essential to the management and improvement of library services in colleges and universities across the globe. The application and effects of library automation in higher education libraries in India and outside were examined in this study, with particular attention paid to technology developments, implementation difficulties, and the relative advantages of automation in various institutional contexts. Library automation facilitates user access to a wealth of information resources, streamlines procedures, and lowers human error. In this case study, different library automation systems are examined, their efficacy is evaluated, and the effects of these technologies on academic library staff and patrons are evaluated.

Meeramani N & Lakshmi, K.V.N. (2023), indicated that the universities at all levels are increasingly concentrating on the development, creation, and utilisation of digital library materials through the use of Information and Communication Technology (ICT). Wang and Zhao (2021) examined the current situation regarding the use of digital resources by the college library, the issues that exist, and the strategy for using these resources from the perspectives of investment, talent, and cultivation, as well as resource integration optimisation. In addition to resource waste, repeated content, and incompatibility between various information resource systems, there are still problems with the creation and enhancement of the digital resource management platform. Furthermore, because they are accustomed to the conventional reading mode and borrowing format, many students are not familiar with how to access and borrow digital resources, such as those from an electronic database or a digital library.

Liu Jing1 (2021), in a User Survey at Jiangsu University Library, assessed the Frequency Patterns of Library Use by International Students in Academic Libraries. The frequent patterns of international students' use of academic libraries are evaluated in this article. Five-point Likert scale survey questions from the Lib QUAL+TM paradigm were used to gather information about library usage patterns at Jiangsu University Library. The researchers employed inferential statistics and descriptive statistics in percentages and frequencies.

Mehta, D., and Wang, X. (2020). Sharing a university library's experience in response to the COVID-19 epidemic since early March 2020 is the aim of this article. In addition to outlining the library's stance during the crisis, the article illustrates the unprecedented difficulties the epidemic has presented for its digital services. This essay seeks to inform other academic libraries on the resources the library has made available to its faculty and students throughout the epidemic in the form of digital services. The difficulties and importance of both in-person and remote library personnel are also covered.

Pandey and Shailendra (2020) examine the title 'Rajasthani Arts and Culture: Acquiring Information Resources and Applying Them in Selected Rajasthani Universities and Institutions'. The article discusses the acquisition of Rajasthani arts and culture information assets from a few universities and libraries in Rajasthan. One of the numerous jobs associated with gathering expansion in various types of arts and cultural libraries is to address concerns regarding the library's purchase plan. The absence of a printed procurement strategy at the library is the first step. The methods for using information assets are discussed.

Aravind S. (2019) in their study on awareness and opinion regarding library systems and services examined the awareness and adherence to library policies and procedures by Madurai Kamaraj University students, gauging their degree of compliance, and finding out how they feel about the facilities and structures are the objectives of the learning process. At the end of the revision, the degree of consciousness is 92%, and the level of obedience is 82.29%. The overall satisfaction rating for the library's programmes and resources is 89.17%.

Bhat and Ganai (2018) examined the User Preference to Information Resources in North Indian Agricultural Libraries. The patrons' preference for digital and facsimile assets in agricultural collections is assessed by this learning. Surveys and phone evaluations were kept for compiling the required facts. Using the "Chi-Squared ($\chi 2$) Test," the user's desired and conforming variables have a seamless connotation. It stems from the fact that they are easier to evaluate and recover from, easier to admit

promptly, and more up-to-date than their print counterparts.

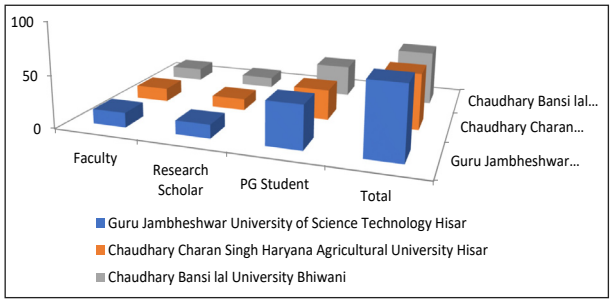
According to Isubika & Kavishe's (2018) study on the use of subscribed e-resources at the Mzumbe University Library in Tanzania, "98.3% of the users understood the term e-resources and 86.7% indicated that they have heard about the library-subscribed e-resources while only 56.6% indicated that they were aware of the Mzumbe University library-subscribed e-resources."

Arshad and Ameen (2017) investigated the usage patterns of scholarly e-journals in 12 disciplines at the University of Punjab (Pakistan). According to the survey, "academic staff have been using electronic information sources more frequently, and it shows that their preferred information source format has also changed from print to electronic for scholarly tasks."

Anusuya (2017) went into great length regarding the different problems in her research on the use of electronic resources by Karnataka's medical, dental, and paramedical sciences professions. A sample of 300 people participated in the survey conducted by the study. Only 230 out of 300 people were able to provide questionnaires to the researcher. The analysis demonstrated that there are nearly enough e-resources available in colleges and universities to support all of the current disciplines.

A systematic questionnaire was used to conduct the poll. 202 questionnaires were distributed and 173 were (Table 1) received : The Man 202 respondents were personally distributed to three study university libraries in Haryana. The survey had an 80% response rate in order to identify and interact with respondents who were available at the university libraries during the survey period; a stratified accidental random sampling method was employed. Questions are displayed as tables and figures, and a straightforward calculating approach is used for analysis. The information was analysed

Figure 1: User-wise Usage of University Library



and interpreted in the following areas based on the questionnaire responses.

Table 2: User-wise Library Categories

Description	Sciences	Social Science	Total	%
Faculty	21(12.14)	18(10.41)	39	22.55
Research Scholars	19(10.98)	15(8.67)	34	19.65
P.G. Students	42(24.27)	58(33.53)	100	57.80
	82(47.39)	91(52.61)	173	100

Figure 2: User-wise Library Categories

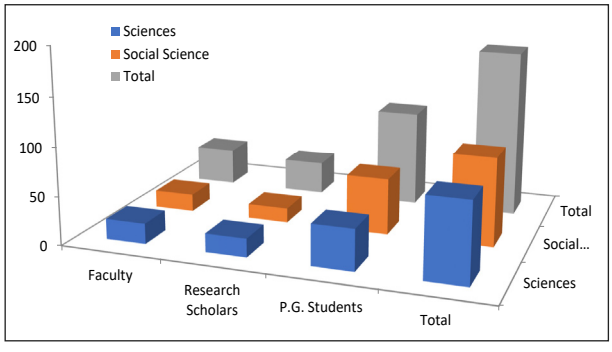


Table 2 shows that 202 questionnaires were distributed and 173 were received, of which users responded 21 (12.14%) for Science Faculty, 18 (10.41%) for Social Sciences Faculty, and 39 (22.55%) for Total Faculty User Service. User details: Research Scholars Science 19 (10.98%), Research Scholars Social Sciences 15 (8.67%), and Total Research Scholars 34 (19.65%). User details

Table 1: User-wise Usage of University Library

University	Faculty	Research Scholars	P.G. Students	Total
Guru Jambheshwar University of Science and Technology, Hisar	14(8.09)	13(7.52)	41(23.69)	68(39.30)
Chaudhary Charan Singh Haryana Agricultural University, Hisar	13(7.52)	11(6.35)	29(16.77)	53(30.64)
Chaudhary Bansi lal University, Bhiwani	12(6.93)	10(5.79)	30(17.34)	52(30.06)
	39	34	100	173(100)

PG Students for Science 42 (24.27%), PG Students for Social Sciences 58 (33.53%), and Total Students 100 (57.80%).

Table 3: Use of Web-based Library Services

Description	Faculty	Research Scholars	P.G. Students	Total	%
Yes	32(18.50)	34(19.66)	78(45.08)	144	83.24
No	07(4.04)	0(0)	22(12.72)	29	16.76
				173	100

Figure 3: Use of Web-based Library Services

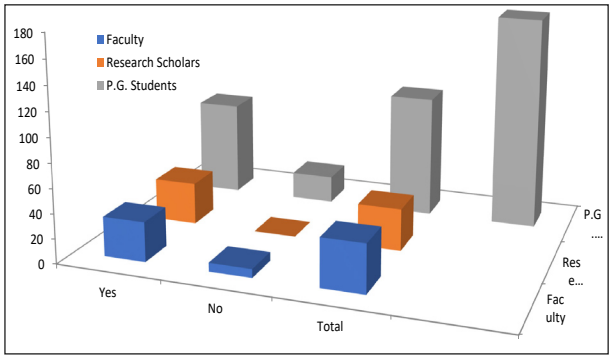


Table 3 shows the use of web-based library services. respondents as faculty 32 (18.50%), research scholars, 34 (19.66%), postgraduate students, 78 (45.08%) answered yes, and a total of 144 (83.24%) respondents agreed to use web-based library services. On the use of web-based library services, 07(4.04%) faculty respondents, 0(0) research scholars, 22(12.72%) postgraduate students answered no, and a total of 29(16.76%) respondents did not agree to use web-based library services.

Table 4 shows the user Information communication technologies used by respondents. It is revealed that there is maximum i.e. computers and their infrastructure frequently Used in 73(42.19%), Internet /Intranet by respondents frequently used 115(66.47%), Institutional data base by respondents frequently used 144(83.23%), Multimedia by respondents frequently used 105(60.69%), Online database/E archives/Journals by respondents frequently used 78(45.08%), Photocopying/Scanning by respondents frequently used 119(68.79%).

Figure 4: Frequency of Digital Library Use

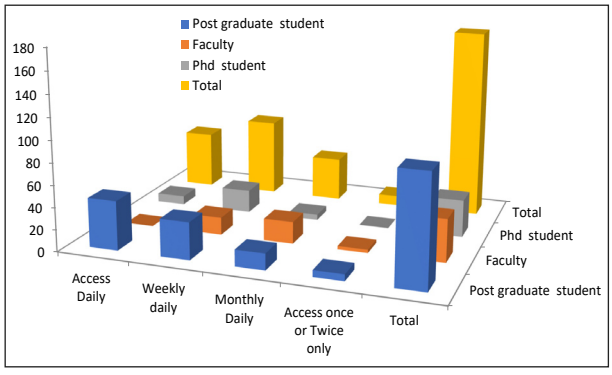


Table 4: Information Communication Technologies Used by Users

Sr. No	ICT resources provided by the library	Frequently Used	Sometimes Used	Uncertain	Rarely Used	Not Used	No response	Total
1	Computers and their infrastructure	73(42.19)	52(30.06)	16(9.24)	15(8.67)	10(5.79)	7(4.05)	173(100)
2	Internet /Intranet	115(66.47)	51(29.47)	5(2.90)	2(1.16)	0	0	173(100)
3	Institutional database	144(83.23)	18(10.40)	4(2.31)	2(1.16)	2(1.16)	3(1.74)	173(100)
4	Multimedia	105(60.69)	46(26.59)	8(4.63)	7(4.04)	2(1.16)	5(2.89)	173(100)
5	Online database/E archives/Journals	78(45.08)	59(34.10)	10(5.79)	12(6.94)	9(5.20)	5(2.89)	173(100)
6	Photocopying/Scanning	119(68.79)	30(17.34)	7(4.04)	8(4.62)	5(2.90)	4(2.31)	173(100)

Table 5: Frequency of Digital Library Use

Frequency Count	Postgraduate Student	Faculty	Ph D Student	Total
Access Daily	45(26.01)	0	08(4.63)	53(30.64)
Weekly daily	34(19.66)	16(9.25)	21(12.13)	71(41.04)
Monthly Daily	15(8.67)	20(11.56)	5(2.89)	40(23.12)
Access once or twice only	06(3.46)	03(1.74)	0	9(5.20)
Total	100(57.80)	39(22.55)	34(19.65)	173(100)

Table 6: Use of Digital Resources

S. No	Digital Resources	Frequently Used	Sometimes Used	Uncertain	Rarely Used	Not Used	No Response	Total (%)
1	E-Journals	70(40.47)	48(27.75)	18(10.40)	12(6.94)	11(6.35)	14(8.09)	173(100)
2	E-Books	55(31.79)	24(13.88)	25(14.45)	23(13.29)	24(13.88)	22(12.71)	173(100)
3	E-Reports (annual, statistical, research, survey, and technical)	42(24.27)	20(11.56)	30(17.34)	34(19.66)	37(21.38)	10(5.79)	173(100)
4	CD-ROM Databases	21(12.13)	15(8.68)	44(25.44)	40(23.12)	46(26.59)	7(4.04)	173(100)
5	Electronic Theses and Dissertations	30(17.34)	7(4.04)	52(30.05)	49(28.34)	35(20.23)	0(0)	173(100)
6	E-Conference Proceeding	46(26.58)	15(8.68)	25(14.45)	44(25.43)	38(21.97)	5(2.89)	173(100)
7	Reference Sources	41(23.70)	20(11.56)	43(24.86)	33(19.07)	30(17.34)	6(3.47)	173(100)
8	Audio–Visual Resources	20(11.56)	11(6.35)	50(28.91)	41(23.70)	47(27.16)	4(2.32)	173(100)

Table 5 and Figure 4 show frequency of digital library use by respondents. There is maximum access daily, 53(30.64%), Weekly daily 71(41.04), Monthly Daily 40(23.12), and Access once or twice only 9(5.20).

Table 6 shows Digital resources by respondents it maximum E-Journals Frequently Used 70 (40.47), respondents use E-Books 55(31.79), respondents use E-Reports (annual, statistical, research, survey, and technical) 42(24.27), respondents use CD ROM Databases 21(12.13), respondents use Electronic Theses and Dissertations 30(17.34), respondents use E-Conference Proceeding 46(26.58), respondents use Reference Sources 41(23.70) and respondents use Audio – Visual Resources 20(11.56).

Conclusions

83.24% respondents agreed to use web-based library services. computers and their infrastructure frequently Used in 73(42.19%), Internet /Intranet by respondents frequently used 115(66.47%), Institutional data base by respondents frequently used 144(83.23%), Multimedia by respondents frequently used 105(60.69%), Online database/E archives/Journals by respondents frequently used 78(45.08%), Photocopying/Scanning by respondents frequently used 119(68.79%). digital library uses by respondents there is maximum access daily 53(30.64%), Weekly daily 71(41.04), Monthly Daily 40(23.12). Digital resources by respondents its maximum E-Journals Frequently Used 70(40.47), respondents use E-Books 55(31.79), respondents use E-Reports (annual, statistical, research, survey, and technical) 42(24.27), respondents use CD ROM Databases 21(12.13), respondents use Electronic Theses and Dissertations 30(17.34), respondents use E-Conference Proceeding 46(26.58), respondents use Reference Sources 41(23.70) and respondents use Audio – Visual Resources 20(11.56).

Among the many resources offered by the GJU Hisar Library are 282284 e-books that have been purchased or subscribed to from EBSCO (Academic eBooks Collection), JSTOR, Emerald, Institute of Physics, The MIT Press, Wiley-IEEE Press, Cambridge University Press, and McGraw-Hill Express Library. In addition, the National Digital Library of India program has made approximately 7 lakh e-books from the South Asia Archive (SAA) and World e-Book Library accessible.

Suggestion

The term "digital library" refers to an electronic library where information is stored digitally. As technology advances, librarians and other information professionals need to learn new skills, including web-based technologies and networking. For DL to be feasible in terms of the need for real-time information, careful planning and development are necessary. There are several ways to improve the accuracy and real-timeness of the digital library, including applying different kinds of Information professionals must possess multidisciplinary knowledge and skills

in order to thrive. The effectiveness of the digital library system, which uses a variety of approaches to enhance the visual presentation, accessibility, behavior, and location of items, products, and services, depends on the library and information professionals' extensive knowledge and curiosity about the daily advancements in the field.

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Forging Future Leaders in Technology

Jagdeep Dhankhar, The Then Hon'ble Vice President of India, delivered the Convocation Address at the 4th Convocation Ceremony at the Indian Institute of Information Technology, Kota, Rajasthan on July 12, 2025. He said, "The world is full of well-trodden paths. Don't take a path which is too well-trodden. Greatness lies in travelling a road which is less travelled. If an idea occurs in your mind, don't park it in your mind. Don't fear failure. Failure is a myth. Any failure is nothing but a setback to achieving further growth. Chandrayaan 2 scripted, success of Chandrayaan 3. You always have to keep that in mind." Excerpts

कोटा में ऊँ का उच्चारण तो बनता है, ऊँ!

I say so because Kota has a unique position in the parliamentary history of this country. Hon'ble Speaker, Lok Sabha, Shri Om Birla has the distinction of being in his second term as Speaker consecutively. Now, someone will ask immediately—Dr. Balram Jakhar was also the Speaker consecutively for two terms from 1980 to 1989. What is special about Kota?

Taking a cue from the Hon'ble Governor about APJ Kalam, the name is being elaborated. Dr. Balram Jakhar was first elected from Punjab (Firozpur) and then elected from Rajasthan (Sikar) separately for his two terms. Our Om Birla ji has been elected from this constituency. So, Kota has a unique position. I'm sure everyone will agree. Good!

For me, it's a moment of immense pride to be amidst youthful energy, inquisitive minds, and the pioneering spirit of the Indian Institute of Information Technology. I extend my heartiest congratulations to all the graduating students, their dedicated faculty members. Their proud family members, and I salute the dynamic leadership of IIIT Kota.

A convocation in the life of a student walking out of the Institute with the tag of being an alumnus is a milestone development—time to be a realist. Convocation marks the harvest of perseverance, the fusion of your discipline and signals your unwavering pursuit of excellence. From within the sands and soils of Rajasthan, IIIT Kota is helping forge the foundation of Digital India, now a global need.

Friends, it is not merely imparting technical knowledge; it is much beyond. It is shaping the contours of a new, confident and technologically sovereign India. Convocation is far more than a beginning. It is a consequential expedition called life. Friends, this is more than a ceremonial passage. Remember, learning never ends.

दीक्षांत शिक्षान्त नहीं है। शिक्षा का अंत कभी नहीं होता है।

I am reminded of a philosopher before Socrates, Heraclitus. He reflected, the only constant in life changes. And if buttressed it by an illustration, the same person cannot enter the same river twice. You have to change, but to change for the better, you have to engage in constant learning, and it graduates at one time into self-learning

Friends, you are taking a leap into the larger public domain, but look at the timing of it. *Bharat*, home to one-sixth of humanity, is rightly perceived as a favourite global investment and opportunity destination. By whom? By Institutions like the International Monetary Fund, as well as other entities.

You would have noticed all around in *Bharat* an aura of hope and possibility with exponential economic upsurge, phenomenal infrastructural growth, deep technological penetration to name only just a few, but in this overall scenario, friends, my young friends, my dear friends, India's greatest wealth today is not its resources in oil, mineral or otherwise. It is you, the youth of this country, with nearly 65 % of our population being under the age of 35. And let me tell you, the median age in India is 29 years. Compare it with China 37, US 38 and Japan 48.

We possess a demographic advantage that is the envy of the entire world. But what does it mean to us? We have to steer our minds. We have to deeply reflect. We need to take our resolve. We need to make a commitment. The commitment is to let us avail and fructify this great opportunity that is once in history, not in centuries. India is blessed with this opportunity. Let us go into it. Now an opportunity must realise the challenges.

The challenge is beyond the size of the economy. Our economy's size is commendable. In the last 10 years, the jump has been seven points. Very difficult

to traverse a fragile economy to such a developed economy at number four, on the way to becoming third very shortly. That will continue. Maybe some can rationalise it also without a large population of 1.4 billion.

But as discerning minds, thinking minds, the future of India, you must have to work to ensure fast forward multiple times the hike in our per capita income. You are capable of it. You have to think about it, but to understand, I'm sure you'll achieve.

And you must emerge as leaders in ethical Artificial Intelligence. Let me reflect briefly which matters to you. Disruptive technologies, Artificial Intelligence, Internet of Things, Blockchain, Machine Learning and are far more significant and epochal than industrial revolutions. These technologies can be regulated, harnessed and positively unleashed only with your contribution.

And therefore the challenges that emanate in this institute and working within it have to be that into opportunities. Just imagine where we are heading. We never thought India would be amongst single-digit countries focusing on Quantum Computing, Green Hydrogen mission, and global digital infrastructure. These are areas where you can contribute. Our cybersecurity protocols must ensure privacy with dignity. It is something which has to be resolved with every changing time.

Our digital platforms must serve as public goods for the entire world. Look at the headway we made in UPI. It's a global buzzword. The world is looking at India, how to effect digitisation. You all must be aware, the World Bank President said, what India has achieved in digitisation, technological penetration is not normally achievable in four decades, plus India has done it in six years.

But we are getting into a new era, an era of new nationalism. Technological leadership is the new frontier of patriotism. We have to be world leaders in this. The battleground of the 21st century is no longer land or sea. Gone are those days of conventional warfare, also. Our prowess, our power, has to be determined by code, cloud and cyber, and for that, you have a great role to play. Nations will no longer be compromised or colonised by armies, but armies have now been replaced by algorithms.

Sovereignty will not be lost through invasions but through dependence on foreign digital infrastructure. You must have seen, if we get technology-driven equipment from outside, that country has the power to bring us to a standstill. Our equipment in Defence, the general will bear me out.

And therefore, the work on your table will never keep on increasing; you will always have work to serve society. India, once a global leader, cannot afford to be at rest, just being a passive user nation of borrowed technologies. Earlier, we used to wait for technology. The gap was decades. In my generation, it was narrowed down to years. It came to months. It has now been weeks. But why? We should be exporting it.

We must rise as architects of our own digital destiny and also influence the destiny of other nations. And for that, dear friends, our coders, Data Scientists, blockchain innovators, and AI engineers are the modern-day nation builders. And where are they? They are amongst you.

Just imagine what kind of a role you have. And you don't have to depend on anyone to perform a role like this. You can have your own startups. You can get into several other areas and groups.

But friends, even as we innovate, as we lead, we must not forget one thing. And that is our civilizational essence, our civilizational ethos. And that is, technology without values is a double-edged sword. Let me put it the other way around. Technology is like nuclear power. If regulated, it can give you electricity.

If used otherwise, you must have seen the terror, the horror, the demonising impact it has. We have seen global conflagrations which are open-ended now. You can see the results. When we look at Artificial Intelligence, the same AI that can revolutionise classrooms can also deepen divides.

India is a lesson to the entire world on what inclusivity is. India is a lesson to the entire world about unity and diversity. Look at us. All are different. But we are united to be here, and therefore as the next generation of digital leaders and you are those digital leaders. Our generation is not well equipped to score that goal which you alone can score. And therefore, you must also be conscience keepers of the tech world. Don't permit this great prowess and power to be demonised.

We need to build a *Bharatiya* system for Bhartiya users and globalise it like we have done yoga. It was there in our Atharva Veda long back. Prime Minister Modi took the lead. The largest number of nations came together, supported it, and yoga is not

made only for International Yoga day, it is an everyday matter for our good health and wellness.

But friends, to give really cutting-edge to transformative technology, we must appreciate the technology which we divide, the technology which comes into being because of our efforts, our sweating, like a smart App, but if a smart app doesn't work in rural India, it is not smart enough. Keep that in mind.

You must always be people-centric, which means keeping the last person in mind when it comes to growth. An AI model that doesn't understand regional languages is incomplete. We are proud of our languages. Many of them have been given the status of classical languages. Our languages are respected beyond the frontiers of *Bharat*.

So, AI models must be language-friendly. A digital tool that excludes the disabled is unjust. We as a nation are always meant to handhold those who suffer some kind of challenge, physical, mental, or otherwise.

And friends, the world is driven by research and innovation. I have said it multiple times and the Director has appreciated it. Research must not be for self, but it gives me good credentials. It should not be on the shelf in the library. Research and innovation must have an impact on the ground for the common man. And therefore, I say, Innovation must not become the privilege of the privileged, because the big change this country has seen in the last decade is that the privileged pedigree is extinct. Equality before the law has been restored. Those who thought they were above the law are facing heat of the law. And therefore, you must ensure that the fruits of technology reach India's last mile, its tribal communities, its women, its small farmers and children, friends after more than three decades.

And I was more involved as the Governor of the state of West Bengal. The nation came to have a National Education Policy in 2020. It evolved after taking input from all the stakeholders. We must invest in education and empowerment of our youth through opportunity, mentorship, and a vision that connects personal ambition with national progress to build a digital superpower. The National Education Policy will transform it. It has been well-evolved. I appeal to everyone across the country, those who have not started adopting the National Education Policy, I urge you to do it.

It is not a political education policy. It is not a government education policy. It is a National Education Policy, where there was convergence of ideation and ideas from very valuable sources, I am aware. And where the implementation is taking place, including Institutions like yours. The implementation must be authentic. It must be penetrating. Because students must come to know what it means for them. How it make a big difference for young students?

Friends, the National Education Policy calls upon students to break from silos and embrace a world of convergence. The policy and visions of the future are set by thinking technologists, individuals who bring together the precision of code and the depth of conscience. You understand code much better than I do, but conscience is our heritage. We are imparting to the entire world. And what does the National Education Policy further visualise? The logic of engineering and the imagination of the arts.

National Education Policy, I am very confident, will salvage us from the ossified education system put in place by colonisers. It has been dismantled. It has been removed. Our students need to know about it, but friends, when I look around, particularly from the perspective of the place where I am at the moment.

I am worrisomely concerned about this alarming scenario. We are facing the crisis of cramming culture, which has transformed vibrant minds into mechanical repositories of temporary information. There is no absorption. There is no understanding.

Cramming, cram and then read out what you have crammed. It is creating intellectual zombies rather than creative thinkers. Cramming creates memory without meaning. What does memory mean if there's no meaning? Who was your grandfather? What does APJ mean? Unless you understand.

So, cramming creates memory without meaning and adds degrees without depth. What is use of degrees if the degrees are of no depth and if your credentials do not carry the stamp of acceptability and what a worrisome scenario when students memorize without understanding, very painful, regurgitated, without questioning and what can we do when people graduate without wisdom, you are distinct, you are fortunate to getting this kind of quality education.

But I'm availing the opportunity to send a message to everyone. Coaching centres have turned out to be poaching centres. They have become black

holes for talent in regimented silos. You know it. You live in this city. Coaching centres, mushrooming; this is menacing for our youth, who are our future. Time is running out. We must address this malice that is hugely and very simply concerning.

We cannot allow our education to be so smeared and tarnished. Sight of billboards, advertisements in newspapers. Where does the money come from? It comes from those who either take loans or who painstakingly pay to make their future brighter. Surely this is not optimal utilisation of money. And these advertisements are alluring and tested. They are eyesore for our civilisational ethos.

कहाँ गुरुकुल की बात करेंगे? भारत के संविधान में जो 22 चलचित्र हैं उनमें गुरुकुल का है। हम शिक्षा दान में विश्वास करते हैं,

Where have we come? Coaching Centres can transform their infrastructure, and they can change the makeover into skill centres. I urge civil society, public representatives before me and outside to appreciate the urgency of this disease; they must converge to restore sanity in education. The education minister is before us, and brings Kota's past glory. Let it be an education hub. It should not be a coaching centre or a poaching centre. We need coaching for skills, and just imagine the pain. You know the seats are limited and coaching centres are all over the country.

They prepared the minds for years together, robotising our students. Their thinking is absolutely unjustified. What psychological problems can arise out of it, you know, more than I do. The obsession with perfect grades and standardised scores has compromised curiosity, which is an inalienable facet of human intelligence.

Friends, always remember your marksheet will never define you. Your grade will not define you. It can define you to your friends and relatives. But when you take a leap in a competitive world, your knowledge and thinking mind will define you. We must end this assembly line culture because this culture is very dangerous for our education. Coaching centers are against the flow of the National Education Policy.

This creates unnecessary hiccups, impediments to growth, progress. Friends, I leave it at that. But I am sure this will haunt you forever and help change the mindset of the people at large. And I say so particularly because those students who are in coaching centres they are in silos, they are not aware that the opportunity basket for them in *Bharat* is ever growing.

In the Blue economy, in the Space economy, in cyber security, in Artificial Intelligence, they can be as rightly indicated by the Honourable governor, much beyond job seekers. They can be job creators. They can be wealth creators for the nation. And friends, if only degrees were to matter and grades were to decide where you are, then I wonder where Bill Gates will be, where Steve Jobs will be, where Mark Zuckerberg will be, Michael Dell, Azim Premji.

They are drop-outs, am I right? You know it. You are better than they that you have come to get these credentials the right way. So, your rise can be more than any of these. And I'm just not being a dream merchant. I'm being realistic. I am a product of education. If I had not got a scholarship, I would not have had a good education. And I am before you, and my professional trajectory will bear it out.

At the toughest of life challenges, scarcity of everything under the sun. I therefore know that you are living in *Bharat*, which was not our dream because we could never dream that. But now our *Bharat* is what it is. Friends, it is the strength of your character, not your grades that will define you. Learn to grow within, your success outside is guaranteed.

And let me come to your power. You need to realise your power. Sometimes, if you don't realise your inner power, you can't contribute to society at large. Youth power, promise, potential and performance need closer attention and detailing by parents, by teachers, by lawmakers, by policymakers and by those in governance.

Youth power is well-channelised, exploited in the right direction, then it's a power much beyond imagination. The present scenario offers hope and possibility. There are government affirmative policies that hand-hold you at every step. And many have availed of these policies and are scripting development. The footprints are increasing in the shape of startups and unicorns, where our record is unrivaled in the world. And therefore, I appeal to the youth, particularly from Kota, where, because of coaching centers, they are unable to see what is written on the wall. Time for our youth to come out of old fossilised silos of only hankering after government jobs.

Greener pastures are much beyond. A look at the ever-fattening opportunity basket must receive

your full attention and I appeal to the director, faculty, parents and everyone to make our youth aware of the fattening opportunity basket. New opportunities, vistas as I reflected earlier, are emerging, artificial intelligence, space economy, cyber security, blue economy and many more. These are not just opportunities; these are gold mines. And these gold mines are awaiting your footfall for exploration and exploitation. I'm sure our youth will focus, being the most vital stakeholders. Who are you? You are the most vital stakeholders in democracy for governance.

You will skip the journey of *Bharat* to a developed nation in 2047. You have the capacity to fire the engine of growth and all cylinders, and I'm sure you will realise, Viksit *Bharat.* We may not be round, but we can feel.

I am full of optimism, confidence. You shall do it. Dear students, the world is full of well-trodden paths. Don't take a path which is too well-trodden. Greatness lies in travelling a road which is less travelled. If an idea occurs in your mind, don't park it in your mind. Don't fear failure. Failure is a myth. Any failure is nothing beyond a setback to achieve further growth. Chandrayaan-2 scripted, success of Chandrayaan 3. You always have to keep that in mind.

Do not merely chase the next unicorn. Don't say he made success with this unicorn, I'll have another one in the same line. Why? Go as per your attitude, aptitude, what you think is right, and find solutions. And one thing is very clear. The world will keep on changing. The only constant is change. So, there will always be enough work for human genius and mind to cater to societal needs.

Friends, as you step beyond these gates with courage in your hearts, I'm sure in your minds that what you're trained for and the Constitution, I say, is your soul. North Star, I have only one thing to say, march ahead, make India proud, make your parents proud, make your *Almamater,* ever proud of you.

Thank you so much.

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CAMPUS NEWS

National Workshop on Advanced Research Methodology and Statistical Analysis

A three-day National workshop on 'Advanced Research Methodology and Statistical Analysis for Social Science' was organised by the Department of Economics, GTN Arts College, Dindigul, Tamil Nadu, recently. The Event was sponsored by ICSSR-SRC, Hyderabad. During his welcome address, Director of the Event, Dr. P Ravichandran, Associate Professor and Head, GTN Arts College, Dindigul, Tamil Nadu highlighted the crucial role played by research in promoting academic excellence in a higher education institution.

Dr. S Sujatha**,** Associate Professor and Head-cum-Workshop Co-Director, explained the importance of the event for young researchers to be abreast of the latest developments in the methodology of research analysis and to publish as many articles as possible in peer-reviewed journals. The Presidential Address was delivered by Dr. P Balagurusamy, Principal, GTN Arts College, Dindigul. He insisted that the participants contribute quality research for the betterment of higher education.

Prof. S Ramaswamy, Advisor, GTN Group of Institutions delivered the Keynote Address. In his address, he insisted that young researchers involve themselves in researching various social issues and come out with valuable suggestions for policymakers. Felicitation was given by Dr. Durai Rethinam, Director, GTN Arts College, Dindigul and Dr. M Ponniah, GTN Arts College, Dindigul. Lion. Dr. K Rethinam, Secretary and Correspondent of the college inaugurated the event. He appreciated the faculty and participants for organizing a very useful programme for enhancing the quality research.

Dr. V Mohanasundaram, Associate Professor and Head, PSG College of Arts and Science, Coimbatore handled the session on 'Introduction to Social Science Research, Concept Mapping and Formulation of Research Problem'. He explained that social science research, the scientific method applied to social sciences, includes a variety of research approaches, tools, and techniques for collecting and analysing qualitative or quantitative data. These methods include laboratory experiments, field surveys, case research, ethnographic research, action research, and so forth. He also explained Concept Mapping and Formulation of the Research Problem.

Dr. C Paramasivan, Associate Professor and Research Advisor, Thanthai Periyar Government Arts and Science College, Trichy headed the next session. He gave an overview of the literature review/ problem identification, sources, and criteria. The session applied more focus on how to review the literature and find the critical parts and gaps in the research process, the sampling process of research, and the steps to be undertaken while pursuing research. Conceptual facts related to sampling techniques and their classification into probability and non-probability sampling were clarified. Biases associated with determining sample design were explained and discussed in detail. He elaborated on the technical aspect of writing citations and referencing that every researcher needs to know. He conveyed to the participants how to write the format that must be followed in citing books, journals, articles, websites, case studies, reports, international and national documents and periodicals, single author to many others through APA style. The speaker elaborated distinctive features of qualitative research designs, and important operational steps of qualitative data collection methods in brief.

Dr. P Karthikeyan, Associate Professor, Department of Manager Studies, Kongu Business School, Erode spoke on 'Primary and Secondary Data Collection, Coding of Question and Pre Testing and Pilot Testing'. According to him, primary data refers to the original data that has been collected specially for a particular purpose in the mind. Each type has its weaknesses and strengths. He said that the primary data is gathered by people who can focus directly on the purpose in mind. This ensures that questions are meaningful to the purpose, but can introduce bias in those same questions. Further, the secondary data doesn't have the privilege of this focus but is only susceptible to bias introduced in the choice of what data to reuse.

Dr. P Balasubramanian, Assistant Professor in Statistics, Thanthai Periyar Government Arts and Science College, Trichy. He spoke on 'Frequency Distribution t-Test, z-Test, ANOVA, Correlation, Regression and Cluster Analysis'. He explained that one can use the one-sample t-test to compare the mean of any variable measured on the subjects to a constant. Once you create this variable you can use a one-sample t-test to see if the mean difference score is significantly different from a constant. The most common way to determine whether there are

differences in the means of a continuous DV across a set of three or more groups is to perform an Analysis of Variance (ANOVA). There are many different types of ANOVAs.

Dr. P Chandrasekar, Assistant Professor of Economics, PSG College of Arts and Science, Coimbatore delivered his lecture on Discriminant Analysis, Factor Analysis and AMOS SEM Models, Multi-dimensional Scaling, and GLM Univariate Analysis and explained how often factor analysis is used in data reduction to identify key factors the explain most of the variance observed in much large number of manifest variable. On the other hand, he taught basic concepts of regression and structural equation modeling. He extended his session by explaining the equations of SEM and taught how to interpret the equation of multiple regressions using SPSS and explained how to find out the relationship between constructs and items in the measurement model and find the relation between construct and structural modal. He also gave an introduction to AMOS and explained the basic tools. He also gave hands-on experience in AMOS and elaborated on observed variables, unobserved variables, error term factor variance, and factor loading.

Dr. K Ramasamy, Librarian, MVM Government Arts College for Women handled the session on 'Reliability Checking, Hands-on Training (SPSS) and Checking Plagiarism'. The term reliability in psychological research refers to the consistency of a research study or measuring test. If findings from research are replicated consistently, they are reliable. Plagiarism is presenting someone else's work or ideas as your own, with or without their consent, by incorporating it into your work without full acknowledgment. Plagiarism may be intentional reckless, or unintentional. If you insert a source's words into your writing verbatim, one of the simplest yet obvious ways to avoid plagiarism is by using quotation marks around the text to denote that the words aren't your own, he said. A direct quote should also cite the source so that readers know who the quote is from. He also explained the types of Plagiarism, Source-based Plagiarism, Direct Plagiarism, Self or Auto Plagiarism, Paraphrasing plagiarism, Inaccurate Authorship, Mosaic Plagiarism, and Accidental Plagiarism.

The Valedictory Address was delivered by Dr. N Markkandeyan, Academic Director. It began with a brief outline of the sessions of the event. Followed by a brief feedback session from the participants. All participants expressed their satisfaction and overall coordination during the event. The Certificates were presented to the participants by the college Director, Dr. Durai Rethinam. The event was concluded with a Vote of Thanks proposed by Dr. R Balasubramani, Co-Director of the event.

International Conference on Signal Processing, Computation, Electronics, Power and Telecommunication

A two-day International Conference on 'Signal Processing, Computation, Electronics, Power and Telecommunication' is being jointly organised by the Departments of Electrical and Electronics Engineering, Electronics and Communication Engineering and Computer Science and Engineering, National Institute of Technology Puducherry, Karaikal, Puducherry from December 06-07, 2025. The event aims to bring students, experts, scholars, and industry professionals from all over the world to present and discuss emerging ideas and trends in their respective research fields. The Tracks of the event are:

- Artificial Intelligence and its Applications and Data Analytics.
- Internet of Things, Blockchain and Edge and Cloud Computing.
- Cyber-Physical Systems and Augmented and Virtual Reality.
- Wireless Communication, 5G and beyond and Underwater Sensor Networks.
- Antenna and Wave Propagation, Microwave, Satellite and Optical Communications.
- Digital Signal and Image Processing, Remote Sensing and VLSI and Embedded Systems.
- Power Electronics, Electric Machines and Drives, Electric Vehicles, Energy Storage and Management.
- Renewable Energy Systems, Smart Grids, Industrial Control Systems and Robotics, and Industry 4.0.

For further details, contact Dr. M Venkatesan, Head, Department of Computer Science and Engineering, National Institute of Technology Puducherry, Karaikal, Puducherry- 609609, Mobile No: 09655938902 / 06379492990 / 07502217554 /09789612633. E-mail*: iconscept@nitpy.ac.in / nitpy.iconscept@gmail.com.* For updates, log on to: *www.nitpy.ac.in/events*

International Conference on Sustainable Materials and Infrastructure

A three-day International Conference on 'Sustainable Materials and Infrastructure' is being jointly organised by the Centre for Strategic and

Sustainable Infrastructure, Department of Civil Engineering, Indian Institute of Technology Jammu and Indian Concrete Institute, J&K Centre from December 16-18, 2025. The academicians, research scholars, students, admixture manufacturers, builders/ contractors/site supervisors, cement manufacturers/ construction companies, Govt. agencies/officials, practising engineers/ consultants/ architects, manufacturers / RMC professionals, project management consultants/construction professionals may participate in the event. The event offers an engaging forum to explore cutting-edge advancements in eco-friendly materials, energy-efficient technologies, and innovative design approaches. Participants may exchange knowledge, present groundbreaking solutions, and build collaborations to accelerate the adoption of sustainable practices in the construction industry. Aligned with the principles of the United Nations Sustainable Development Goals (SDGs), the event addresses critical global challenges, including climate resilience, resource efficiency, sustainable urban development, and access to clean energy. The themes of the event are:

- Advanced Cementitious Material for Durability.
- Advanced Testing, Inspection and Monitoring Techniques for Materials and Structures.
- Computational Modelling for Durability.
- Corrosion Monitoring and Mitigation.
- Earthquake-Resistant Structures, Seismic Response Control.
- Eco-Sustainable Materials.
- Environmental Monitoring and AI.
- Geosynthetics for Sustainable Construction.
- Ground Improvement Method for Foundation and Tunnelling.
- High-performance Concrete.
- Highway Safety and Risk Assessment.
- Innovative Materials and Construction Techniques.
- Innovations In Bridge Design and Sustainable Construction Practices.
- Low-Carbon Cements, Cement Chemistry and Green Concrete.
- Microstructure of Sustainable Concrete/ Composites.
- Nanotechnology in Concrete and Construction.
- Non-destructive Testing of Concrete Structures.
- Pavement Design and Materials.
- Resource Conservation, Recycling, and Circular Economy.
- Service Life and Life Cycle Assessment of Buildings and Infrastructure.
- Sustainable Environment Management.
- Sustainable and Emerging Smart Transportation Systems.
- Sustainable Tunnelling Technologies.
- Utilisation of Waste Materials in Concrete.
- Valorisation/bio-remediation of Construction-based Materials.

For further details, contact Ms. Sharu Slathia, Room No: 01-AC-0327, Dean's Block, Indian Institute of Technology Jammu, Jagti, PO Nagrota NH-44, Jammu -181 221 J&K, Mobile No: 08082489865 / 07693095503, E-mail: *icsmi@iitjammu.ac.in.* For updates, log on to: *https://iitjammu.ac.in/post/icsmi*

Short-term Training Programme

The five-day Online Short-term Training Programme on 'Basics of Tribology and Its Industrial Engineering Applications' is being organised by the Sardar Vallabhbhai National Institute of Technology, Surat, Gujarat- 395007 from August 18-22, 2025**.** The faculty members, research scholars and PG students from all backgrounds of Engineering, Mathematics, Basic Sciences and scientists who are working in the R&D organisations/ industry persons may participate in the event. The objectives of the event are to provide a platform for interaction and exchange of ideas in the field of materials tribology and its applications from national academic institutes, research laboratories, and relevant industries. The topics of the event are:

- Fundamentals of Tribology.
- Tribological Studies in Automobiles.
- Theories on Friction and Wear.
- Bearing Tribology.
- Bearing Failure Analysis.
- Materials for Tribology Applications.
- Design of Tribological Elements.
- Engine Tribology.
- Condition monitoring, Diagnosis and Maintenance.
- Lubricants - MR Fluid and its Applications.
- Measurement Techniques of Tribology.
- Bio Tribology.
- Industrial Case Studies.

For further details, contact Coordinator, Dr. Sandeep Soni, Associate Professor, Department of Mechanical Engineering, Sardar Vallabhbhai National Institute of Technology, Surat, Gujarat- 395007, Mobile No: 09727337702, E-mail: *s.soni@med.svnit.ac.in.* For updates, log on to: www.*svnit.ac.in* ❑

COMMUNICATION

Reminiscences of Dr Jagdish Narain: The Man Who Gave a Permanent Habitat to the Association of Indian Universities

Sampson David*

The Association of Indian Universities (AIU) has had many stalwarts as its leaders over its 100-year journey. Dr Jagdish Narain was one among them who contributed most to building the legacy of AIU. Born in 1926, Dr Jagdish Narain was a visionary leader, a team-mentor, an institution builder, and a great human being. He took over as Secretary of AIU in 1983 and served till 1988. In his small stint as Secretary, he made AIU strong, resilient, self-reliant, and iconic in many ways. His biggest contribution to AIU is the construction of '*AIU House',* a permanent habitat for its headquarters in the heart of New Delhi.

I had the privilege of working under his dynamic leadership as a Cultural Officer at the Association of Indian Universities, New Delhi. As a leader, Dr. Narain embodied integrity, empathy, and vision, inspiring others to work towards a common goal. He led by example, inspiring people around him. The whole AIU had an enthusiastic environment during his leadership, and I relished it most. I had most of my work life learning from him. This write-up is a small sketch of his personality and a fond recount of my experiences with him. And a heartfelt tribute, too!

Dr Jagdish Narain joined AIU with a lot of academic and administrative acumen. A student of Technology and Management, Dr Narain served as Vice Chancellor of the University of Roorkee during 1977-1982. Given his immense capabilities, many Indian and international bodies sought consultancy from him. He provided his services as a think-tank to various consultancy firms. An expert in engineering, design, and management projects, Dr Narain not only applied his knowledge to train the serving engineers in computer applications but also in the construction of the Magnificent *AIU House*. He was a World Bank consultant for the water and land management institute. His administrative and technical expertise helped AICTE, USAID, and UNDP in the satisfactory completion of their projects.

Dr. Narain undertook several assignments in the USA, Latin America, and the Middle East on earth and rockfill dams and flood-control projects during his association with TAMS Consultants, New York, between 1969 and 1977. He has made valuable contributions to the development of basic concepts on the behaviour of clays and reinforced earth. Dr. Narain's contributions to geotechnical engineering, modernising research facilities, and teaching at the University of Roorkee are remembered fondly. He was conferred an honorary PhD by the university in 1985. The Indian Institute of Technology Roorkee honored him with the Distinguished Alumnus Award in 2007.

As Secretary of the AIU, he gave effervescent leadership, boosting all the member universities. He brought on board all higher education institutions of the country and ensured their participation in all the activities, making them the building blocks of AIU. He provided a safe environment for people to voice their ideas and concerns for improvement of Indian Higher Education Institutions and ensured that no one's voice is stifled in conversations. Dr. Narain's administrative prowess and fundraising abilities were extraordinary. By the end of his tenure as Secretary, he made AIU a rich, self-sufficient organization not only in monetary terms but also in reputation and popularity. A visionary and ambitious leader, Prof Jagdish Narain set rolling an ambitious vision and everlasting mission for AIU.

Dr. Narain's passion for art and culture led to the establishment of the Cultural Division (now Youth Affairs Division) in 1984, aligning with AIU's objectives. The AIU's Youth Affairs Division gave new life, energy, and excitement to the university students. Along with studies, they got the opportunity to showcase their talent in extracurricular activities in the inter university youth festivals. His excellent communication skills and passion for youth activities made him an adored figure. His efforts culminated in the successful organisation of the Non-Aligned Movement Countries Youth Festival (NAMYFEST) in 1985, bringing together 156 youth artists from 33 countries. Under his leadership, AIU's Diamond Jubilee celebrations in 1986 were a grand success, featuring academics, sports, and cultural programmes.

Now, with a range of competitive and non-competitive cultural events, like exhibitions, intellectual discourses, home stay camps through the Inter University Youth Festivals (UNIFESTs), International Youth Festival (IYF), National Moot Court, National Women Student Parliament, National

**Formerly Joint Secretary, Youth Affairs Division, Association of Indian Universities, New Delhi—110002. E-mail: Sampsondavid7914@gmail.com*

Qawwali Competition etc. dedicated to fostering holistic development, enhancing personality traits, promoting active citizenship, and cultivating youth leadership, the Youth Affairs Division has become the icon of AIU.

In recognition of his contributions in the field of civil engineering, Dr. Narain has been honoured with several awards, prizes and fellowships which include the National Design Award of the Institution of Engineers (India) and Norman Gold Medal of the American Society of Civil Engineers for his research paper on Flexibility of Compacted Clay and Cracking of Earth Dams etc. In 2007, the Indian Institute of Technology – Roorkee honoured Dr. Jagdish Narain with the Distinguished Alumnus Award. He was elected President of the Indian Geotechnical Society in 1979.

Even in his later years, Dr. Narain's heart remained attached to AIU House, and he would often visit Delhi to connect with the staff. His legacy extends beyond his professional achievements, touching countless lives as a mentor, leader, and humanitarian.

Dr. Jagdish Narain left for heavenly abode on January 5, 2012, making sad all of us who knew him directly or through his work. I was privileged to attend his memorial service alongside Dr. M M Ansari. Indeed, his contribution will continue to inspire future generations. This tribute is from one and all associated with him! ❑

Anveshan 2025- Student Research Convention: Schedule

Zone	Name of the University	Vice Chancellor	Coordinators	Dates
East	Apex Professional University Pasighat, Arunachal Pradesh- 791102	Prof. Nasir Ahmad Khan Vice Chancellor Email: drkhan58@gmail.com Mobile No: 09573605245	Prof Jyotsna Raj, Dean Email: jyotsna@apexuniversity.edu.in Mobile No:07005999342 Dr Sangita Borthakur (Deputy Coordinator) Assistant Professor Email: Sangita.b@apexuniversity.edu.in Mobile No: 09864271821	November 11-12, 2025
West	Sardar Patel University Vallabh Vidyanagar Gujarat - 388 120	Prof. Niranjan Patel Vice Chancellor Email: vcspu@yahoo.co.in Mobile No:09825949753	Prof. Arun Anand Department of Physics E-mail: aanand-phy@spuvvn.edu Mobile No: 070166 60654 Prof. Manish K Mishra Department of Chemistry Email : manishorgch@gmail.com Mobile No: 098244 29937	December 3-4, 2025
North	Govind Ballabh Pant University of Agriculture & Technology, Pantnagar, Udham Singh Nagar-263145, Uttarakhand	Dr. Manmohan Singh Chauhan Vice Chancellor Email: vcgbpuat@gmail.com Mobile No:09991652455	Dr. Deepa Vinay Registrar Email: registrar@gbpuat.ac.in Mobile No: 09528023394 Dr. R.S. Jadoun Dean, C.A.B.M. Email: dean.cabm@gmail.com Mobile No: 07500241410	November 25-26, 2025
South	VIT-AP University Amravati, Guntur Andhra Pradesh-522034	Prof. S V Kota Reddy Vice Chancellor Email: vc@vitap.ac.in Mobile No:07032555035	Dr. Santanu Mandal Associate Professor School of Advanced Sciences Email: santanu.mandal@vitap.ac.in Mobile No: 09433449881/ 07003582476 Dr Somya Ranjan Sahoo Associate Professor, School of Computer Science and Engineering E-mail: somyaranjan.sahoo@vitap.ac.in Mobile No: 09658834206	December 17-18, 2025

Convenors:
Dr Amarendra Pani, Joint Director, Research Division, Association of Indian Universities, New Delhi.
Email: anveshan.aiu@gmail.com
Mr Dhruva Banerjee, Founder & CEO, ProjectSet Ltd., United Kingdom. Email: dhruva.banerjee@projectset.com

THESES OF THE MONTH

SOCIAL SCIENCES
A List of doctoral theses accepted by Indian Universities
(Notifications received in AIU during the month of May-June, 2025))

Business Administration

1. Jain, Saloni. **Impact of organisation citizenship behaviour on organizational effectiveness: A comparative study on government and private universities**. (Dr. Prof T N Mathur and Dr. Seema Singh Rathore), Department of Business Studies, IIS University, Jaipur.

Commerce

1. Ralte, Lalnunmawii. **The music industry in Mizoram: An empirical study**. (Prof. Laldinliana), Department of Commerce, Mizoram University, Aizawl.
2. Shahbano. **A study of consumer behaviour towards shopping mall with special reference to FMCG products in U P**. (Dr. Indu Shukla), Faculty of Commerce and Management, Rama University, Kanpur.
3. Virana, Divya. **A comparative study on consumer buying behaviour towards branded abd non-branded bakery product**. (Dr. Anuj Goel), NICE School of Business studies, Shobhit Institute of Engineering & Technology, Meerut.

Economics

1. Manish Kumar. **Impact of farmer producer organisation's membership on female controlled income-share and household's nutrition in Bihar**. (Dr. Aviral Pandey), School of Educational Training & Research, Aryabhatta Knowledge University, Patna.
2. Vinod Kumar. **Impact of monetary policy in economic stability of India during 2000 to 2020**. (Dr. Anuj Goel), Department of Economics, Shobhit Institute of Engineering & Technology, Meerut.

Education

1. Babita. **Protection of rights of children in elementary schools of Haryana: An evaluation study**. (Dr. Sandeep Berwal and Dr. Yogesh Chander), Faculty of Education, Chaudhary Ranbir Singh University, Jind.
2. Lalrampari, Eva. **Teaching aptitude and attitude towards teacher education programmes of elementary and secondary student teacher in Mizoram**. (Prof. H Malsawmi), Department of Education, Mizoram University, Aizawl.
3. Meenu. **Madhyamik istar ke vidhyalayoan mein adhyayanrat uchh tatha nimn samajik-aarthik istar ke vidhyarthiyoan kee samvegatamak paripakvata evam shaikshik akanksha ka adhyayan**. (Dr. Deepa Rana), School of Education, Shobhit Institute of Engineering & Technology, Meerut.
4. Saraswat, Sushil Kumar. **Antarmukhee aur vahirmukhee adhyapak shikshoan kee shikshan prabhav sheelata ka unki vyavsayik pratibadhadhata tatha sangyanatamak shaili ke sandarbh mein adhyayan**. (Dr. Suraksha Bansal), School of Education, Shobhit Institute of Engineering & Technology, Meerut.
5. Sharma, Sandya. **A critical analysis of philosophy and connotations of artificial intelligence in education**. (Dr. Prateek Chaurasia), Department of Education, Mizoram University, Aizawl.

Journalism & Mass Communication

1. Anuj. **Relevance of chaupals in rural communication in post modern era: With special reference to national capital region**. (Dr. Dheeraj Kumar), Department of Mass Communication, Mizoram University, Aizawl.
2. Shekhawat, Chetali. **A woman's women: Study of women's image in national film award winning Indian cinema by women directors of 21st century**. (Dr. Shipra Mathur), Department of Journalism & Mass Communication, IIS University, Jaipur.
3. Sweta Rani. **Effectiveness of disaster risk communication: A case study on information campaign about flood in Kosi River in Bihar**. (Dr. Dheeraj Kumar), Department of Mass Communication, Mizoram University, Aizawl.

Law

1. Dixit, Sachin. **Trafficking of children in India with special reference to State of Uttar Pradesh**. (Dr. Praveen Kumar Mall), Faculty of Juridical Sciences, Rama University, Kanpur.
2. Khirwar, Sandeep. **Legislative and judicial trends in police reforms: A study in the light of current scenario**. (Dr. Jaswant Saini), Department of Law, Maharshi Dayanand University, Rohtak.
3. Narula, Pramod Kumar. **Critical study of money laundering laws in India in the present perspective**. (Dr. Kuldeep Kumar), School of Law and Constitutional Studies, Shobhit Institute of Engineering & Technology, Meerut.
4. Sharwan Singh. **Freedom of speech and expression in digital media era: A socio-legal study**. (Dr. Vir Vikram Bahadur Singh), Faculty of Juridical Sciences, Rama University, Kanpur.
5. Singh, Diksha. **A critical study of violation of human rights of LGBTs in NCR-Delhi**. (Dr. Prantap K Das), School of Law and Constitutional Studies, Shobhit Institute of Engineering & Technology, Meerut.

Management

1. Behera, Sudarsan. **Forest fire management in Odisha: Challenges and way forward with special reference to Ghumsur in Ganjam District**. (Dr. Damodar Jena and Dr. Biswajit Mishra), KIIT School of Rural Management, Kalinga Institute of Industrial Technology, Bhubaneswar.
2. Camose, Philip. **Strategic management of eco systems that provide holistic security to India to facilitate it's rise and recognition as a regional and global power**. (Dr. Preeti Garg), NICE School of Business studies, Shobhit Institute of Engineering & Technology, Meerut.
3. Ephraim, C. **Organisational climate and its influence on the performance of faculty members: A study of state government colleges in Mizoram**. (Dr. Lalhmingliana Renthlei), Department of Management, Mizoram University, Aizawl.
4. Jyotika. **Influence of media type on consumer attitude towards mobile advertising**. (Dr. Aarti), Department of Management, Maharshi Dayanand University, Rohtak.
5. Lallawmsanga. **Disaster risk assessment and rock mass characterization of state highways from Champhai to Zokhawthar, Champhai District, Mizoram**. (Dr. Laldinpuia), Department of Centre for Disaster Management, Mizoram University, Aizawl.
6. Mikul. **Impact of product and service quality on brand equity: A study of automobile sector**. (Dr. Ishwar Mittal), Department of Management, Maharshi Dayanand University, Rohtak.
7. Nidhi. **Role of psychological capital on employees turnover in health care**. (Dr. Aarti), Department of Management, Maharshi Dayanand University, Rohtak.
8. Panchal, Laxmi. **Impact of welfare measures on employee motivation and job satisfaction in Indian Railways (With special reference to Mumbai Western Railway Zone)**. (Dr. Purnima Sharma), Department of Management Studies, IIS University, Jaipur.
9. Sharma, Jyoti. **The role of behavioral finance in financial planning and investment decisions of individuals of Himachal Pradesh**. (Dr. Sushil Chauhan), Department of Commerce & Management Studies, Career Point University, Hamirpur.
10. Singhal, Neha. **Impact of generation Z manpower on the management practices in information technology-business process service industry in Delhi-NCR**. (Dr. Neha Yajurvedi), NICE School of Business studies, Shobhit Institute of Engineering & Technology, Meerut.
11. Tushika. **An empirical study on socio-cultural factors affecting tourism industry of Uttarakhand State on India**. (Dr. Preeti Garg), NICE School of Business studies, Shobhit Institute of Engineering & Technology, Meerut.

Physical Education & Sports

1. Katoch, Rupali. **Modulation of lactate removal pattern of soccer players with perspectives of defenders and attackers**. (Dr. Krishnendu Dhar), Department of Physical Education, Tripura University, Suryamaninagar.
2. Ombir. **Role and contribution of Shri Vijay Sharma "Dronacharya Awardee" in promotion of weight lifting**. (Dr. R P Garg), Department of Physical Education and Sports, Maharshi Dayanand University, Rohtak.

3. Rajesh Kumari. **Effect of low carbohydrate, high fat & protein diet on obese, diabetic and hemoglobin level of females of different age groups**. (Dr. R P Garg), Department of Physical Education, Maharshi Dayanand University, Rohtak.

Political Science

1. Khwairakpam, Goutam Singh. **Indo-Myanmar border trade: A study of Manipur and Mizoram**. (Prof. Ayangbam Shyamkishor), Department of Political Science, Mizoram University, Aizawl.
2. Nida Fatima. **Beyond the Western theorization of justice: A study of Sayyid Qutb's social justice in Islam**. (Dr. Javid Ahmad Dar), Department of Political Science, University of Kashmir, Srinagar.

Psychology

1. Dhaka, Gargi. **Post-traumatic growth, religious coping, psychological well-being, and medical adherence: A correlational study on cancer patients**. (Dr. Himangini Rathore Hooja), Department of Psychology, IIS University, Jaipur.

Public Administration

1. Lalfakmawii, Esther. **Administration and industrial development: A study of the directorate of commerce and industries in Mizoram**. (Prof. A. Muthulakshmi), Department of Public Administration, Mizoram University, Aizawl.

Sociology

1. Anwar, Tarique. **Interlinkages between diet diversity, micronutrients and body mass index among adolescents aged10-19 years in India**. (Prof. Sayeed Unisa), Department of Biostatistics and Epidemiology, International Institute for Population Sciences (Deemed to be University),Deonar.
2. Arora, Pooja. **Child Undernutrition In India: Burdens at individual, household and population level**. (Prof. Laxmi Kant Dwivedi), Department of Survey Research & Data Analytics, International Institute for Population Sciences (Deemed to be University), Deonar.
3. Barman, Papai. **Psychological and functional health of grandchild parenting among older grandparents in India: A comparative study between skipped and multi-generation households**. (Dr. Harihar Sahoo), Department of Family & Generations, International Institute for Population Sciences (Deemed to be University), Deonar.
4. Das, Deboshree. **Trajectories in subjective well-being from adolescence to young adulthood: Determinants and implications for health behaviour among individuals**. (Prof. Abhishek Singh), Department of Public Health & Mortality Studies, International Institute for Population Sciences (Deemed to be University), Deonar.
5. Das, Milan. **Understanding the socioeconomic and proximate determinants of period and cohort fertility in India**. (Prof. P Arokiasamy), Department of Development Studies, International Institute for Population Sciences (Deemed to be University), Deonar.
6. Gharge, Shivani Sayaji. **Food intake, physical growth, retention, dropout and learning outcomes in the context of the Mid Day Meal Programme in India**. (Prof. Sayeed Unisa), Department of Biostatistics and Epidemiology, International Institute for Population Sciences (Deemed to be University), Deonar.
7. Mustafa, Akif. **Intergenerational upward transmission of offspring educational benefits: A study on children's educational attainment, and health and wellbeing of older parents in India**. (Prof. Chander Shekhar), Department of Fertility & Social Demography, International Institute for Population Sciences (Deemed to be University), Deonar.
8. Nagargoje, Varsha P. **Family structure, intergenerational transfers and the well-being of older adults in India**. (Dr. Dilip T R), Department of Family & Generations, International Institute for Population Sciences (Deemed to be University), Deonar.
9. Pedgaonkar, Sarang P. **Pattern, trends, and clustering of select non-communicable diseases and their determinants in India**. (Prof. Abhishek Singh), Department of Public Health & Mortality Studies, International Institute for Population Sciences (Deemed to be University), Deonar.

10. Qmar, Arish. **The infirmity of refugees communities in India: A contrast and similarities among refugee group in India**. (Dr. Dipti Govil), Department of Family & Generations, International Institute for Population Sciences (Deemed to be University), Deonar.

11. Rao, Niharika. **A study on seasonal migration of sugarcane harvesting families in Maharashtra with special reference to nutritional & educational status of their children**. (Prof. Archana K Roy), Department of Migration & Urban Studies, International Institute for Population Sciences (Deemed to be University), Deonar.

12. Rishad, A P Muhammad. **Dynamics of return migration and reintegration during Covid- 19 pandemic: A study of gulf returnees in Kerala**. (Dr. Reshmi R S), Department of Migration & Urban Studies, International Institute for Population Sciences (Deemed to be University), Deonar.

13. Saikia, Daisy. **Cerebral Palsy in children: A mixed method study in Assam**. (Dr. Manas Ranjan Pradhan), Department of Fertility & Social Demography, International Institute for Population Sciences (Deemed to be University), Deonar.

14. Sikdar, Roni. **Downside low fertility: A women centric approach**. (Prof. Dhananjay W Bansod), Department of Public Health & Mortality Studies, International Institute for Population Sciences (Deemed to be University), Deonar.

15. Singh, Akancha. **Understanding malnutrition among older adults aged 60 and above in India: Exploration of methodological issues and risk factors**. (Prof. Aparajita Chattopadhyay), Department of Population & Development, International Institute for Population Sciences (Deemed to be University), Deonar.

16. Tripura, Bina Rani. **Swami Vivekananda's view on social inclusion and its present day relevance**. (Dr. Nanigopal Debnath and Dr Deepak Sharma), Faculty of Social Sciences, Tripura University, Suryamaninagar.

17. Verma, Yogesh. **Impact of mass media on university students: A sociological study**. (Dr. Kanwar Chauhan), Department of Sociology, Maharshi Dayanand University, Rohtak.

18. Yadav, Nilesh Jagannath. **Paradox of health, education, food and other non-food expenditure inequality in India**. (Dr. Suryakant Yadav), Department of Biostatistics and Epidemiology, International Institute for Population Sciences (Deemed to be University), Deonar.

19. Yadav, Ravita. **Understanding the dynamics of caste, gender and khap: A study in rural Haryana, India**. (Prof. K C Das), Department of Migration & Urban Studies, International Institute for Population Sciences (Deemed to be University), Deonar.

20. Zarzozuali. **Socio-cultural transformation through ethno-religious movement: A study of LIKBK in Lawngtlai, Mizoram**. (Dr. B Lalzarliana), Department of Sociology, Mizoram University, Aizawl.

Tourism & Hospitality Services

1. Abhishek. **Online marketing practices and their impact on guests' pre-purchase behavior: A study of Indian hotel industry**. (Dr. Sumegh), Department of Hotel and Tourism Management, Maharshi Dayanand University, Rohtak.

2. Navneet. **Organizational commitment and employee retention in Indian tourism industry**. (Dr. Gunjan Malik), Department of Hotel and Tourism Management, Maharshi Dayanand University, Rohtak. ❑

Invitation to Authors

Authors are invited to contribute articles on contemporary issues in higher education in general and Indian higher education in particular for publication in the 'University News'. The articles addressing the Editor University News be sent as an e-mail attachment in MS WORD to: unaiu89@gmail.com; ramapani.universitynews@gmail.com; universitynews@aiu.ac.in.

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Date:

Chairman

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SAS NAGAR

परिशिष्ट /ADDENDUM

विज्ञापन संख्या 11/2025/Advt. No.11/2025

The last date of receipt of applications which was 28th July, 2025 (Monday), has been extended to 25.08.2025 (Monday) for various faculty posts published on 28.06.2025 vide Advertisement No. 11/2025, dated 28.06.2025 in Hindustan Times, The Tribune, Amar Ujala, AIU (University News), Employment News and uploaded on Institute's website.

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MINORITY

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UN-AIDED

Sr. No.	Cadre	Total No. of Posts	Posts Reserved for
1.	**Principal**	01	01 – OPEN

The above post is open to all, however, candidates from any category can apply for the post.
Reservation for women will be as per **University Circular No. BCC/16/74/1998 dated 10th March, 1998. 4% reservation shall be for the persons with disability as per University Circular No. Special Cell/ICC/2019-20/05 dated 05th July 2019.**

Candidates having knowledge of Marathi will be preferred.

"Qualification, Pay Scales and other requirement are as prescribed by the UGC Notification dated 18th July, 2018, Government of Maharashtra Resolution No. Misc-2018/C.R.56/18/UNI-1 dated 8th March, 2019 and University circular No. TAAS/(CT)/ICD/2018-19/1241, dated 26th March, 2019 and revised from time to time". The Government Resolution & Circular are available on the website: mu.ac.in

Applicants who are already employed must send their application through proper channel. Applicants are required to account for breaks, if any, in their academic career.

Application with full details should reach the **SECRETARY, Thakur Educational Trust's (Regd.) THAKUR RAMNARAYAN COLLEGE OF ARTS & COMMERCE, Thakur Ramnarayan Educational Campus, S.V. Road, Dahisar (East), Mumbai-400068 within 15 days** from the date of publication of this advertisement. This is University approved advertisement.

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Web: www.marymathacollege.ac.in, E-mail: mmcmntdy@gmail.com

Phone: 04935 241087 (Off.), Manager: 9447092067, 9447410831

WANTED PRINCIPAL

Applications are invited from eligible candidates for the post of Principal, Mary Matha Arts & Science College, Mananthavady, under open merit. All eligible candidates can apply, but applicants from institutions other than Mary Matha Arts & Science College, Mananthavady should belong to the disciplines: English, Malayalam, Physics, Chemistry, Zoology, Computer Science, Commerce or Physical Education. Qualification, age, scale of pay and other conditions for appointment will be as per the norms of UGC/Kannur University/Government of Kerala. Application form and other details can be downloaded from the college website **(www.marymathacollege.ac.in/vacancy).** A duly filled-in application form with all supporting documents and application fee of Rs.1000/- (only Demand Draft- in favor of Manager, Mary Matha Arts & Science College, Mananthavady) should be submitted in the office of the Manager **within 30 days** from the date of this notification.

Mananthavady
19.07.2025

Sd/-
Manager

SHRI DHANESHWARI MANAV VIKAS MANDAL'S, R.B.M. COLLEGE OF EDUCATION

Applications are invited for the post of Professor, Associate Professor and Assistant Professor (M.Ed), & Perspectives in Education, Pedagogy Subjects, Health & Physical Education and Performing Arts (B.Ed) to be filled in **SHRI DHANESHWARI MANAV VIKAS MANDAL'S R.B.M. COLLEGE OF EDUCATION (B.Ed & M.Ed) HATTA TQ. BASMATH DIST. HINGOLI MAHARASHTRA**

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Sr. No.	Position	No. of Posts	Nature	Reservation
M.Ed		01	Regular	Unreserved
01	**Professor**			
02	Associate Professor	01	Regular	Unreserved
B.Ed	**Assistant Professor**	12	Regular	OPEN- 02, ST- 01, VJ(A)- 01, NTB- 01, NTC- 01, OBC- 03, SEBC- 02 EWS- 01,
01 02	Perspective in Education Pedagogy Subject (Math., Science, Social Science, Language)			
03	Health & Physical Education			
04	Performing Arts (Music/Dance/Theatre) Fine Art			
05 (Note: As Per the Government Decision Dated 25.10.2024, Parallel Reservation Should be strictly Implemented in Recruitments. Assistant Professor Parallel Reservation is as follows – Women - 05, Disabled - 01, Sportsperson - 01)				

Qualifications :- As per UGC & NCTE (2014 Rule)

A) Professor and Associate Professor shall possess the following Qualification:

i) Post graduate degree with minimum 55% Marks in the discipline relevant to the area of specialization.

ii) Post graduate degree in Education (M.Ed./M.A. Education) with minimum 55%marks

iii) Ph.D. degree in Education or in the discipline relevant to the area of specialization.

iv) Any other qualifications prescribed by UGC like NET qualification or length professional teaching experience as per UGC or state government norms for the positions of Professor and Associate Professor.

B) Assistant Professor shall possess the following Qualification

A) Perspectives in Education or Foundation Courses.

i) Post Graduate degree in Social Science with minimum 55% marks

ii) M.Ed degree from a recognized university with minimum 55% marks

iii) SET/NET/Ph.D in Education.

OR

i) Postgraduate (M.A.) degree in Education with minimum 55% marks

ii) B.Ed./B.E.L.Ed. Degree with minimum 55 % Marks

iii) SET/NET/Ph.D in Education.

B) Curriculum and Pedagogic Courses.

iv) Postgraduate degree in Sciences/Mathematics/ Social Sciences/Languages with minimum 55 % marks

v) M.Ed degree with minimum 55 % marks.

vi) SET/NET/Ph.D in Education.

(contd. on pg. 49)

(contd. from pg. 48)

C) Health & Physical Education

i) Master of Physical Education (M.P.Ed.) with minimum 55% marks

ii) SET/NET/Ph.D. in Physical Education.

D) Performing Arts (Music/Dance/Theatre) Fine Art.

i) Post graduate degree in fine Arts (MFA) with minimum 55% marks.

OR

i) Post graduate degree in Music/Dance /Theatre Arts with minimum 55% marks.

ii) SET/NET/Ph.D. in Fine Arts.

Salary and Allowance Pay : Scale as per UGC State Government & Swami Ramanand Teerth Marathwada University, Nanded rules from time to time.

NOTE :

1) Prescribed application from is available on the University **Website: (srtmun.ac.in).**
2) No. T.A./D.A. will be paid to attend the interview.
3) Eligible candidates those who are already in services should submit their application though proper channel.
4) 3% Reservation for handicapped and 30% for women candidates.
5) All attested Xerox Copies of certificates and other relevant documents should be attached to the application form.

Address of Correspondence

Secretary,
SHRI DHANESHWARI MANAV VIKAS MANDAL'S R.B.M.COLLEGE OF EDUCATION (B.Ed & M.Ed) HATTA
TQ. BASMATH DIST. HINGOLI PIN- 431705

HABIB EDUCATIONAL & WELFARE SOCIETY'S

M.S. COLLEGE OF ARTS, SCIENCE, COMMERCE & B.M.S.

HABIB EDUCATIONAL COMPLEX, M.H. Mohani Road, Kausa, Mumbra, Thane - 400612.
Phone: 09372203508 Email: president.hews@gmail.com

MINORITY

Applications are invited for the following posts from the Academic Year 2025-26

UNAIDED

Sr. No.	Cadre	Subject	Total No. of Posts	Category
1.	**Principal**	–	01	01 - OPEN
2.	**Assistant Professor**	Commerce	08	08 - OPEN
3.	**Assistant Professor**	Economics	07	07 - OPEN
4.	**Assistant Professor**	Accountancy	09	09 - OPEN
5.	**Assistant Professor**	Mathematics	01	01 - OPEN
6.	**Assistant Professor**	Botany	02	02 - OPEN
7.	**Assistant Professor**	Chemistry	02	02 - OPEN
8.	**Assistant Professor**	Information Technology	02	02 - OPEN
9.	**Assistant Professor**	Computer Science	02	02 - OPEN
10.	**Assistant Professor**	Hospitality Studies	07	07 - OPEN
11.	**Librarian**	--	01	01 - OPEN

The above posts are open to all, however candidates from any category can apply for the post.
Reservation for women will be as per **University Circular No. BCC/16/74/1998 dated 10th March, 1998. 4% reservation shall be for the persons with disability as per University Circular No. Special Cell/ICC/2019-20/05 dated 05th July, 2019.**
Candidates having knowledge of Marathi will be preferred.
"Qualification, Pay Scales and other requirement are as prescribed by the UGC Notification dated 18th July, 2018, Government of Maharashtra Resolution No. MISC-2018/C.R.56/18/UNI-1, dated 8th March, 2019 and University circular No. TAAS/(CT)/ICD/2018-19/1241, dated 26th March, 2019 and University circular CONCOL/15/ of 2013-2014 dated 15th October, 2013 revised from time to time" The Government Resolution & Circular are available on the website mu.ac.in
Applicants who are already employed must send their application through proper channel. Applicants are required to account for breaks, if any in their academic career.
Application with full details should reach the **CHAIRMAN, HABIB EDUCATIONAL & WELFARE SOCIETY'S, M.S. COLLEGE OF ARTS, SCIENCE, COMMERCE & B.M.S., HABIB EDUCATIONAL COMPLEX, M.H. Mohani Road, Kausa, Mumbra, Dist. Thane- 400 612.** Within 15 days from the date of publication of this advertisement.
This is University approved advertisement.

Sd/-
Chairman

Shri Shivaji Shikshan Prasarak Mandal, Barshi's

1) B.P.Sulakhe Commerce College, Barshi, Dist.Solapur

2) Rajarshi Shahu Law College, Barshi, Dist.Solapur

(Affiliated to Punyashlok Ahilyadevi Holkar Solapur University, Solapur)

&

3) K.M.J.Mahavidyalaya, Washi, Dist.Dharashiv

(Affiliated to Dr.Babasaheb Ambedkar Marathwada University, Chhatrapati Sambhajinagar)

Non-Minority Colleges

AIDED

Applications are invited for the post of PRINCIPAL from the academic year 2025-26

Sr.No.	Designation	Total Vacant Posts
1	**PRINCIPAL**	**03 (Three)**

1) The above posts are open to all however candidates from any category can apply for the post
2) Educational Qualifications, Service conditions & Pay Scale will be applicable as pe existing rules prescribed by the UGC Notification dated 18th July, 2018, Govt. of Maharashtra Resolution No. Misc-2018/C.R.56/1/ UNI-1 dt.8th March, 2019 and University Circular No. PAHSUS/Estt/7th Pay/2019/2285 dt.25th March, 2019
3) Candidate should submit their Academic Research Score (Academic Performance Indicator) report with related documents (Only for the post of PRINCIPAL)
4) A relaxation of 5% shall be allowed at the Bachelors as well as at the Masters level for the candidate belonging to SC/ST/OBC (Non-creamy Layer) / Differently-abled for the purpose of eligibility and assessing good academic record for direct recruitment.
5) Reserved candidates, who are domiciled out of Maharashtra State, will be treated as Open Category candidate.
6) Reserved candidates should also to send a copy of their application to the Deputy Registrar, Special Cell, Punyashlok Ahilyadevi Holkar Solapur University, Solapur
7) Applications received after the last date will not be considered. The College will not be responsible for postal delay, if any.
8) Reservation for women and disable person will be as per the Govt. norms.
9) Reserved category candidates shall produce the Caste Validity Certificate as per the directives issued by the State Government vide Circular No.BCC-201/Prs.Kra.1064/2011/16B dated 12.12.2011
10) Reserved category candidates (except SC/ST) shall produce Non-Creamy layer Certificate at the time of interview.
11) Applicant who are in service must sent their application through proper channel.
12) Applicants are required to account for breaks, if any, in their academic career.
13) Incomplete application will not be entertained.
14) T.A., D.A. will not be paid for attending the interview.
15) Applications with full details should reach to the General Secretary, Shri Shivaji Shikshan Prasarak Mandal, Barshi-413411, Dist.Solapur within 30 days from the date of publication of this advertisement. Incomplete applications will not be entertained.
16) This is University approved advertisement.

General Secretary,
Shri Shivaji Shikshan Prasarak Mandal,
Barshi, Dist.Solapur

Place :- Barshi
Date :- / /2025

(For application form visit Website-www.ssspmbarshi.org)

PUNYASHLOK AHILYADEVI HOLKAR SOLAPUR UNIVERSITY, SOLAPUR
(Under Maharashtra Public Universities Act, 2016)
Phone No.0217-2744770 Email-registrar@sus.ac.in

Punyashlok Ahilyadevi Holkar Solapur University, Solapur invites applications in the prescribed format from the eligible candidates for the following post.

Advt. No. : PAHSUS/Estt/2025/262

Sr. No.	Name of the Post	No. of Post	Category
01	**Registrar**	01	Unreserved

Advt. No. : PAHSUS/Estt/2025/263

Sr. No.	Name of the Post	No. of Post	Category
01	**Dean** I. Faculty of Science and Technology II. Faculty of Humanities	02	Open- 01 SC- 01

Advt. No. : PAHSUS/Estt/2025/264

Sr. No.	Name of the Post	No. of Post	Category
01	**Director, Knowledge Resource Centre**	01	Unreserved

Advt. No. : PAHSUS/Estt/2025/265

Sr. No.	Name of the Post	No. of Post	Category
01	**Director, Innovation, Incubation and Linkages**	01	Unreserved

Duly completed, application forms, along with all enclosures, shall be sent to the Ag. Registrar, Punyashlok Ahilyadevi Holkar Solapur University, Solapur – 413 255 so as to reach on or before 16/08/2025

Further details can be downloaded from the University website https://sus.ac.in link of Employment Opportunities. The same is hosted on Govt. of Maharashtra website www.maharashtra.gov.in

Note : The Candidates who have previously submitted applications for the post of Dean, Director, Knowledge Resource Centre and Director, Innovation, Incubation and Linkages as per the Advt. No. : PAHSUS/Estab./2024/214, 215 dated 24/07/2024 and Advt. No. : PAHSUS/Estab./2024/235 dated 25/10/2024 need not apply again, however, they may submit additional information and documents if relevant.

Date : 15/07/2025

Sd/-
(Dr. Atul Lakde)
Ag. Registrar

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advtun@aiu.ac.in(for advertisements),
subsun@aiu.ac.in(for University News Subscription)

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