



LEVERAGING ARTIFICIAL INTELLIGENCE IN ANDHRA PRADESH HIGHER EDUCATION UNDER NEP 2020 TO ADVANCE VIKSIT BHARAT@2047 VISION

Dr. Ganta Suresh Babu

Lecturer in Economics, VSR Government Degree College, Movva, Krishna District, Andhra Pradesh

ABSTRACT The paper aims to provide policy implications as to how Artificial Intelligence (AI) University in Amaravati city of Andhra Pradesh can transform higher education in Andhra Pradesh under the National Education Policy (NEP) 2020 to advance India's Viksit Bharat@2047 vision of a developed, self-reliant nation. In Andhra Pradesh, barriers like rural inequities persist, but initiatives like the NVIDIA-partnered AI University in Amaravati and e-governance (RTG, e-Pragati, EDUCLO) provide a robust ecosystem. The AI University should concentrate on training students across the traditional and technical Universities and Colleges in the State, faculty upskilling and to make these Colleges and Universities to provide consultancy services using AI. The Government of Andhra Pradesh establish an AI University to transform higher education by making all affiliated colleges centers for practical, project-based learning, enabling students to work on live AI projects, gain hands-on experience, and enhance research output, thereby producing industry-ready AI professionals. This initiative will align with NEP 2020 by promoting multidisciplinary, experiential, and research-driven learning, while also contributing to Viksit Bharat by fostering innovation, technological advancement, and sustainable, knowledge-based growth.

KEYWORDS : NEP 2020, Artificial Intelligence, AI University

The global education landscape is undergoing an unprecedented transformation driven by digital technologies, with Artificial Intelligence emerging as the most disruptive force. In a global context where Higher Education (HE) massification faces escalating demands for quality, transparency and accountability, institutions worldwide are rapidly adopting advanced technologies like AI to transform practices amid rising enrollment pressures and skill gaps (World Bank, 2025). The fourth industrial revolution, catalyzed by Artificial Intelligence, Machine Learning and Generative AI, is fundamentally restructuring the global knowledge economy. Projections from the International Monetary Fund (2024) suggest that AI will affect approximately 40 per cent of global jobs, with advanced economies experiencing the deepest disruptions — but also the greatest opportunities. Over the next decade, Artificial Intelligence (AI) adoption across sectors is projected to add \$17–26 trillion to the global economy, with India uniquely positioned to capture 10–15 per cent of this value through its vast STEM workforce, expanding R&D ecosystem and digital infrastructure, potentially elevating GDP under Viksit Bharat.

India, with its demographic dividend of 600 million people under the age of 25, stands at an extraordinary historical juncture: if it can skill its youth in AI at scale, it can emerge as the world's leading AI talent exporter and knowledge economy by 2047. The Government of India, through the National Education Policy 2020, has explicitly acknowledged AI's role in shaping future-ready education. The policy calls for integrating AI, machine learning, data science and computational thinking across all levels of education while ensuring that technology serves equity and inclusion, not just efficiency. NEP 2020 (Ministry of Education, 2020) represents the most comprehensive overhaul of India's education policy since independence. Section 24 explicitly calls for 'a dedicated unit for the building of digital infrastructure, digital content and capacity. The Viksit Bharat@2047 framework (NITI Aayog, 2023) identifies AI as one of eight 'sunrise technologies' requiring immediate national capacity-building, with a target of producing 1 million AI specialists by 2030. APAIU is uniquely positioned to contribute 20 per cent of this target from a single state institution

According to the All India Survey on Higher Education (AISHE) 2021-2022 released in January 2024 by the Ministry of Education, Government of India, in terms of fields of study, enrolment in STEM disciplines has seen a steady rise, with 98.5 lakh students enrolled in UG, PG and Ph.D. levels in 2021-22. Despite challenges, women are leading in disciplines such as Medical Science, Social Science and Arts. The dropout rate at the secondary level has also decreased significantly from 21 per cent in 2013-14 to 13 per cent in 2021-22.

Andhra Pradesh stands at a defining crossroads in the history of its higher education system. The state possesses the scale, the demographic dividend and the policy mandate under the National Education Policy (NEP) 2020 to drive a transformational agenda that places Artificial Intelligence (AI) at its strategic core. Yet, there are gaps in offering structured AI coursework, faculty AI literacy and the

contribution of the State in AI research output despite its considerable institutional scale. The absence of a dedicated, AI-specialized university, an institution built ground-up with AI as its organizational DNA, is the most significant structural gap in AP's education architecture.

NEP 2020 on Technology Use and Integration

NEP 2020's Section 23 comprehensively champions technology as a bidirectional enabler in education, positioning India—already a global ICT leader via Digital India—as a digitally empowered knowledge economy where tools like AI, machine learning, blockchain, adaptive testing and smart devices revolutionize not just content but the very pedagogy of learning. Section 24 reinforces online/digital equity amid pandemics, advocating pilot studies to balance benefits/risks like screen addiction, while optimizing DIKSHA/SWAYAM with user ratings, two-way AV tools, AR/VR content and mass media backups (TV/radio) for non-digital populations. Teachers require specialized online training for pedagogy/assessments, with PARAKH/NTA piloting tech-based 21st-century skill evaluations; blended face-to-face models preserve psychomotor/social learning, especially for arts/practicals overcome via virtual labs. Open, interoperable digital infrastructure, teacher incentives and standards combat the digital divide, enabling Andhra's AI University to export scalable models statewide—e.g., AI agents for governance mirroring RTG's "Agent Space"—propelling NEP's vision of technology as a great equalizer for Viksit Bharat@2047's \$30 trillion knowledge economy.

One Nation One Subscription (ONOS)

The Prime Minister of India, in his address to the Nation from the ramparts of the Red Fort on 15th August 2022, emphasized the critical role of Research and Development during the Amrit Kaal, issuing the clarion call of "Jai Anusandhan" to galvanize national focus on innovation. Echoing this, the National Education Policy 2020 (NEP 2020) positions research as a corequisite for exceptional education and holistic national development, aligning seamlessly with the vision of Atmanirbhar Bharat and Viksit Bharat@2047. The Government of India approved the One Nation One Subscription (ONOS) scheme, enabling country-wide access to high-impact international scholarly journals and publications for students, faculty and researchers across all Higher Education Institutions (HEIs) managed by central and state governments, as well as R&D institutions.

e-Governance

Andhra Pradesh's e-governance framework in higher education, exemplified by e-Pragati, Real-Time Governance (RTG) and EDUCLO, creates a digitized backbone for NEP 2020 implementation, offering Aadhaar-integrated services for admissions, fee reimbursement, scholarships, biometric faculty attendance via Facial Recognition Systems (FRS) and Learning Management Systems (LMS), all accessible via mobile-first portals. In synergy with ONOS, e-governance platforms shall host journal access gateways, enabling AI-enhanced modules where predictive analytics on unified data preempts equity gaps in Andhra Pradesh's colleges, such as targeting

rural learners. Towards 2047, e-governance evolves into an AI-orchestrated ecosystem, fusing NVIDIA AI University outputs with RTG for forecasting GER trends and incorporating IoT for smart campuses and ONOS analytics for publication surges.

AI University in Andhra Pradesh

The Andhra Pradesh State Government has announced the establishment of India's first dedicated Artificial Intelligence (AI) University in Amaravati, in ground breaking partnership with NVIDIA marking a transformative milestone in India's AI education and research landscape that directly operationalizes NEP 2020's technology mandates and Viksit Bharat@2047's innovation imperatives. This initiative focuses on skill development for engineering students with advanced research centers, world-class infrastructure and startup support, positioning Andhra Pradesh as a national hub for emerging technologies. Complementing NEP's National Educational Technology Forum (NETF) vision, the AI University will integrate with One Nation One Subscription (ONOS) platforms, enabling students and faculty to access global journals for interdisciplinary AI research in areas like agritech and green energy, while leveraging state e-governance like Real-Time Governance (RTG) for seamless data flows between academia and administration. This public-private synergy not only addresses Andhra's higher education challenges such as faculty shortages and rural-urban divides by creating job-ready AI talent pipelines, fostering Atmanirbhar Bharat through homegrown innovation ecosystems that bridge academic learning with industry needs. The AI University's collaboration with NVIDIA signals a strategic shift from theoretical education to applied innovation, featuring advanced computing infrastructure, specialized AI curricula tailored to global demands and R&D capabilities that translate NEP 2020's multidisciplinary ethos into scalable execution think GPU-accelerated labs hosting ONOS-fed research on generative AI models for Telugu-language education tools.

Policy Implications

The Andhra Pradesh AI University is poised to serve as a transformational engine in realizing the Viksit Bharat@2047 vision by fundamentally reimagining the role of higher education in a developing economy. At its core, Andhra Pradesh AI University will function as the state's premier knowledge factory producing AI-literate graduates, pioneering researchers and innovative entrepreneurs who collectively drive Andhra Pradesh's transition from a resource-dependent economy to a knowledge-powered one. Andhra Pradesh AI University must concentrate on contributing research output on AI. By embedding Artificial Intelligence across every dimension of higher education from personalized learning and intelligent research platforms to AI-driven governance and industry-integrated curricula, the Andhra Pradesh AI University shall directly address the three most critical gaps standing between India's present reality and its 2047 aspiration: the quality of human capital, the scale of research output and the speed of innovation commercialization. Every AI graduate that the Andhra Pradesh AI University shall produce multiplies in economic value, i.e., creating jobs, building startups, solving public problems and attracting global investment to Andhra Pradesh making the university not merely an educational institution but a sustained, compounding engine of state and national development.

Beyond individual human capital formation, the Andhra Pradesh AI University's most profound contribution to Viksit Bharat@2047 lies in its role as an inclusive, equity-driven institution that ensures AI's transformative benefits reach every stratum of Andhra Pradesh's society not just the urban elite. Through its Telugu Language AI research, rural AgriAI tools, HealthAI diagnostics for underserved communities and mandatory AI skilling programs for SC/ST, women and first-generation learners, the Andhra Pradesh AI University shall operationalize the constitutional promise of equality through the language of the 21st century's most powerful technology. When a farmer in Srikakulam uses an AI tool developed at the Andhra Pradesh AI University to predict crop disease in Telugu, or when a rural woman entrepreneur in Kurnool builds her first AI-powered business through the Andhra Pradesh AI University's incubation program, Viksit Bharat is no longer an abstract national aspiration and it becomes a lived, tangible reality for millions. In this way, the Andhra Pradesh AI University should be established to act as the bridge between India's democratic ideals and its technological destiny, between the ambitions of NEP 2020 and the horizon of 2047.

To fully harness AI's potential in higher education, Andhra Pradesh must act decisively through robust public-private partnerships, as

exemplified by the NVIDIA-backed AI University in Amaravati, ensuring that governments, universities and industry collaborate to cultivate an innovation-friendly ecosystem underpinned by NEP 2020. It is suggested that the Government of Andhra Pradesh consider establishing an AI University in the state with the objective of transforming higher education by promoting practical, project-based learning. This university could make all affiliated colleges and universities act as consultancy and project centers, enabling students to work on live AI projects and gain hands-on experience while contributing to industry and societal development.

It is recommended that the government address the gap in practical training currently present in engineering education. Unlike medical courses, where students are required to train in fully functional hospitals, engineering students often complete project reports and practicals that do not provide real-world experience. By making practical projects and real consultancy work mandatory, the AI University could ensure that students graduate as competent and industry-ready AI professionals, bridging the gap between theory and practice.

It is suggested that the AI University focus on enhancing research output in AI. Presently, India's research contributions in this field lag behind other advanced countries. By leveraging Andhra Pradesh's demographic advantage, the university could encourage students across the state to concentrate on research projects, with mentorship and collaboration from industry experts, thereby increasing both the quantity and quality of AI research.

It is also advisable that the AI University combine theoretical knowledge with practical application. All affiliated institutions should actively participate in live projects and consultancy services, ensuring that students not only learn AI concepts but also apply them to solve real-world problems. This approach will make the learning process more meaningful and aligned with industry needs.

The establishment of AI University shall contribute to the objectives of NEP 2020 by emphasizing experiential and research-based learning and by supporting NEP's goals of multidisciplinary education, skill development, innovation, and research-driven learning. It will promote critical thinking, creativity, and problem-solving skills among students, aligning with NEP's vision of preparing learners for global competitiveness and lifelong learning.

The Government consider this initiative as a strategic contribution to Viksit Bharat. By producing a skilled AI workforce, increasing research output, and fostering innovation, the AI University will help drive technological advancement, economic growth, and global competitiveness. Such a model can empower Andhra Pradesh to become a hub of AI excellence, directly contributing to India's vision of a developed nation through knowledge-driven growth, innovation, and sustainable development. The study suggest that the Government of Andhra Pradesh shall fully utilize the newly operational AI University in Amaravati as a cornerstone for leveraging Artificial Intelligence (AI) in higher education under NEP 2020, directly advancing the Viksit Bharat@2047 vision of a developed, self-reliant India powered by innovation and human capital.

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