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INSTITUTE INNOVATION PLATFORMS (IIPS) AND THEIR ROLE IN ENHANCING EDUCATIONAL OUTPUTS IN WEST BENGAL

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ABSTRACT

As the educational landscape evolves, fostering student innovation has become central to preparing learners for the demands of a rapidly changing global workforce. The insight to innovative thinking is produced from childhood. The best place to inculcate this phenomenon is obviously the educational institutes where the students spends most of the time of the day under the proper guidance of faculties for the interested field. Government-recognized Higher Education Institutions (HEIs) are steadily moving away from traditional models, positioning students as active knowledge creators rather than passive recipients. Experiential Learning is call of the hour. Hence Industry-Institute-Interface (3Is) foster major practical based knowledge source. The Institute Innovation Council (IIP) along with Institute Innovation Platforms (IIPs) play a major role in implementation of the entrepreneurial and 21st-century skill development and Student-led innovation, for encouraging entrepreneurship. This research examines the role of institutional platforms in fostering student-led innovation, increasing engagement, and transforming teaching methodologies. To promote this, both the Central and State Governments have put distinct plans into action. This includes paying for incubation centres, which are places where fresh ideas are developed and turned into something that may be used in an organisation.

Keywords: Entrepreneurship, Experiential learning, Higher Education Institutes, Institutional platforms, Student-led innovation

INTRODUCTION

Innovation platforms like incubators, maker spaces, hackathons, transdisciplinary laboratories, and innovation councils help students learn by letting them apply what they've learnt to real-

world problems. These settings help students develop important 21st-century abilities including working together, thinking critically, being flexible, and solving problems. They also speed up the change from teaching by lecture to teaching by student-centered learning. These platforms encourage students to launch their own companies, conduct applied research, and create prototypes that address pressing social and economic concerns in addition to offering tools, structured mentoring, and links to the corporate world. By ensuring that children from all backgrounds have equal opportunities to express themselves, experiment with various subjects, and learn from one another, they help promote diversity. Feedback loops and iterative design cycles encourage students to reflect on their work and consider ways to improve it. This equips them to handle complexity and unpredictability. By establishing universities as hubs of innovation, increasing placement rates, securing funding, and fostering collaborations with industry and policy organizations, these platforms help them become more prominent. Faculty members make connections between academic knowledge and practical applications when they use these platforms. However, long-term strategic planning, curricular integration, equitable access, and continuous funding for staff and faculty training are all need to make it successful. If these conditions are satisfied, innovation platforms have the potential to transform the game by increasing access to opportunities, enhancing academic performance, and transforming higher education institutions (HEIs) into catalysts for the creation of knowledge and societal progress.

In order to promote innovation, entrepreneurship, and the integration of new technologies with traditional teaching and research, Institute Innovation Platforms (IIPs) offer structured institutional frameworks integrated into educational ecosystems. These platforms offer an organized way to promote a creative and problem-solving culture, which instantly raises the caliber of learning, teaching, and research outcomes. In India, national initiatives like the Institution's Innovation Council (IIC), which was designed and carried out by the Ministry of Education's Innovation Cell, frequently help IIPs operate. Also, the rise of digital educational technologies, incubation centres, and collaborative research hubs has greatly increased the range and usefulness of these platforms in helping schools meet the needs of today's students and society, such as working together, thinking critically, being flexible, and solving problems. This has also sped up the shift from lecture-based teaching to student-centered learning.

In West Bengal, IIPs play a very important role in solving educational and developmental problems that are unique to that area. Some of issues include the ongoing digital divide that makes it hard for everyone to access to learning materials, the big learning gaps that pupils have after the epidemic, and the growing need for skill-based education. The latter coincides with the aim of the National Education Policy (NEP) 2020 (Rahman & Mehnaz, 2024), which promotes competency-based learning, transdisciplinary interaction, and the enhancement of employable skills. In West Bengal, IIPs serve as strategic instruments to strengthen institutional and socioeconomic ties by promoting collaboration between government agencies, corporations, and academic institutions.

This research examines how IIPs have improved educational results in West Bengal by combining scholarly literature, government policy papers, and reports from each state. The analysis highlights their impact on increasing student engagement, encouraging innovative teaching, improving job prospects, and increasing research productivity. It also highlights significant issues such disparities in resources between institutions, faculty members' lack of exposure to innovation ecosystems, and infrastructural issues. The evaluation ends by emphasising the future potential of IIPs as powerful tools for making education in West Bengal more open and focused on innovation. This state has a lot of distinct people, places, and cultures, thus it has various demands when it comes to education. This might create a big gap between what the industry needs and what people have learnt. This analysis is based on a review of the literature to find out how these programs are helping to address the gap.

RESEARCH OBJECTIVE

The researchers of this paper dealt with the possibility to understand the efficacy of new policies set up by the Government, both Central and State, on creating industry readiness of the graduating students. The aim of the study is also to understand whether this approach will help bridge the Industry-Academia gap and also create skill enhancement amongst the students both from academic or vocational perspective.

RESEARCH METHODOLOGY

This paper is based on a qualitative approach towards the role played by IIP, IIC on HEIs. To study the same the researches have done a thorough Literature Review and comparative analysis of the skill growth of different HEIs after implementation of Govt. Schemes through IICs of the respective institutes. The Research is conducted with secondary data from 2015 till 2025, which encompasses the NEP 2020. It also marked the surge in online and ICT based education during COVID – 19.

Role of IIPs in Fostering Innovation and Entrepreneurship

Though named NEP 2020, the policy was drafted between 2017–2019. IIPs, particularly through the IIC framework, have been pivotal in cultivating an innovation ecosystem in Indian higher education institutions (HEIs). Based on the draft policy, the IIC program was launched which encourages activities such as mentorship, startup incubation, and intellectual property rights awareness, impacting over 1.5 million students nationwide by 2019–20 (*Annual_19_eng*, n.d.)

In West Bengal, institutions like Berhampore Girls' College have leveraged IIC to foster dynamic startup environments, promoting collaborative research and skill development among students (*3_2_1_rdc1*, n.d.). In a similar vein, the Om Dayal Group of Institutions organized events like Voyage 2025 under the IIC's auspices in collaboration with the Internal Quality Assurance Cell (IQAC), emphasizing innovation and experiential learning to satisfy social demands (Voyage-2025[1], n.d.).

IIPs improve employability and advance socioeconomic development by fostering industry-academia relationships that enhance educational results. For example, partnerships with NPTEL, Swayam, and IBM's Innovation Center for Education have increased R&D activities in engineering schools, leading to an increase in interdisciplinary projects and patent applications (Industry-Academic-Collaborations-Key-Innovation-Progress-Sharma[1], n.d.). These partnerships are crucial for state public universities (SPUs) in Bengal; West Bengal is ranked second in the country with 38 SPUs, providing over 1,500 affiliated institutions with access to higher education (Shah et al., n.d.). This is made possible by the All India Council for Technical Education (AICTE) through programs like IEM-UEM ("Grant-in-Aid Received from AICTE to Carry out Graphene-Based Research under Research Promotion Scheme (RPS)," 2022) and the Atal Ranking of Institutions on Innovation Achievements (ARIIA). These programs enhance student engagement in hackathons and internships by offering scholarships of up to Rs 25 lakh for research and development activities (PMC9449486[1], n.d.).

The India Innovation Index emphasizes technology as a way to address problems like poverty and underscores the important role that higher education institutions play in generating international scientific papers and obtaining funds under NEP 2020. This is best demonstrated in Bengal by IIM Calcutta, which has been a leader in management education and international partnerships since 1961, improving research quality and worldwide rankings (Expanding-Quality-Higher-Education-through-SPUs[1], n.d.).

Sustainable and Inclusive Innovation: The potential of IIPs to support gender-sensitive and sustainable innovation ecosystems is an understudied aspect. Two women's colleges, Lady Brabourne College and Bethune College (Bethune College: Collaborations, n.d.), have established entrepreneurial cells for female-led businesses in social innovation, healthcare, and handicrafts. Similarly, universities like Jadavpur University have led the way in green technology research, including solar energy and renewable resources ("School Of Energy Studies," n.d.), ("School Of Illumination Science, Engineering and Design," n.d.). We ensure that innovation directly addresses social and environmental challenges and closes the gender gap in STEM professions by including sustainability and inclusion into IIPs.

Governmental Support to the Institutes to set up IIPs

The Ministry of Micro, Small, and Medium Enterprises (MSME) is a major sponsor of Institution Innovation Councils (IICs) at colleges and universities throughout India. These councils assist make the environment more conducive to entrepreneurship and innovation (Inc[1], n.d.). MSME provides educators, students, and aspiring business owners with the instruments, materials, and regulations they require to turn their ideas into reality.

Through organizations like the National Small Industries Corporation (NSIC) and the National Institute for Micro, Small, and Medium Enterprises (NIMSME), MSME provides programs that assist individuals in learning new skills, improving their technology, and receiving business guidance. These resources can be used by higher education institutions with IICs to

acquire improved training facilities, incubation centers, and equipment for testing products or materials.

MSME's initiatives, which include financial assistance, marketing support, and incubation training, give researchers and students the resources they need to turn their creative ideas into successful businesses. Hackathons, concept competitions, and seminars sponsored by MSME bring students together with professionals in the field so they may work on actual problems that small and medium-sized businesses confront. They also help people get seed money and mentors via company development networks.

MSME (Home[1], n.d.) supports IICs fit with the National Education Policy's goal on encouraging innovation and practical skills by sponsoring programs that assist people learn new skills and camps for young entrepreneurs. MSME Idea Hackathons and other regular events highlight how this partnership works by allowing students and professors a chance to come up with and test their ideas in the actual world.

Digital Integration and E-Learning through IIPs

Digital IIPs, such EdTech platforms and e-learning tools, have changed the way education is delivered in West Bengal, especially after the pandemic. The Banglar Shiksha Portal (L9UP5WAR, n.d.) has over 300 audio and video resources and 30.3 million views on YouTube. It makes learning easier and helps close the divide between rural and urban areas [8]. Banglar Shiksha Online Classroom and Paray Sikshalaya (doorstep schools) were two programs that helped keep things going amid interruptions. Bridge courses let students who had missed classes I–XII catch up (Edtech-Solutions-for-Educational-Institutions-in-West-Bengal[1], n.d.).

In a private school in Bardhhaman, for example, school management software has cut down on administrative work by 30%. In a Kolkata government college, digital classrooms have made students more interested in their studies and improved their exam scores (Edtech-Solutions-for-Educational-Institutions-in-West-Bengal[1], n.d.). These platforms enable seamless contact between parents and instructors, personalized learning, and the use of data to identify knowledge gaps, all of which enhance academic success.

Increased integration of digital education promotes collaboration through social media platforms like Facebook and WhatsApp. This provides students with a range of learning opportunities and aids in the development of instructors [10]. These efforts are aided by national platforms such as DIKSHA (Diksha[1], n.d.) and NISHTHA (Nishtha-Scheme[1], n.d.). However, West Bengal's lack of participation in NISHTHA 2.0/3.0 indicates that implementation gaps remain (Edtech-Solutions-for-Educational-Institutions-in-West-Bengal[1], n.d.). Cloud computing and Massive Open Online Courses (MOOCs) (Jarial et al., 2025) greatly improve educational results by providing scalable, high-quality education without geographical restrictions (Datta & Mete, 2024). Table 1 shows a comparison study.

Emerging technologies such as artificial intelligence (AI), blockchain, and Internet of Things (IoT) are expected to further enhance IIPs by enabling predictive analytics in learning, decentralized credentialing systems, and smart campus ecosystems. While IIT Kharagpur has advanced in this domain through AI collaborations with TCS and IBM, state public universities lag in adoption. Establishing state-level AI innovation clusters could democratize access to these emerging technologies across institutions.

Learning Aid	Targets (till June 2025)	Achievement (as on 30 June 2025)
Banglar Shiksha Portal	Real-time digital records for 95K schools; 100% GER at Secondary level by 2030; 100% literacy/numeracy (Class 3) by 2025.	Portal actively used by schools; ~95K schools on boarded; supports tracking & assessment
Banglar Shiksha Online Classroom	Ensure online access for max enrolled students in WB public schools; Provide e-content/pedagogy	Wide adoption during COVID-19 and post-pandemic; supports online classes/resources
Paray Sikshalaya	Community-based learning for out-of-school children post-pandemic; Target maximum reach in underserved areas	Significant community educator engagement; localized learning hubs set up across districts
DIKSHA	National digital infrastructure for students/teachers; scale for all grades/subjects	E-content enabled for K-12; utilized by WB teachers and students for resources/quizzes
NISHTHA (Teacher Training Program)	Train ~42 lakh teachers, heads etc. nationally; Inclusive & ICT pedagogy targets	Over 35+ lakh school teachers/principals trained pan-India; WB-wide implementation

Table 1: Comparative study of target and achievement of different learning aids till June 2025

Average Programs and Events Held under the Institution's Innovation Council (IIC) in Educational Institutes in West Bengal

The Institution's Innovation Council (IIC), established by the Ministry of Education's Innovation Cell (MIC) in collaboration with the All India Council for Technical Education (AICTE), promotes innovation, entrepreneurship, and intellectual property rights (IPR) awareness in higher educational institutions (HEIs). In West Bengal, part of the Eastern Region (ERO) under IIC's zonal division, over 1,000 HEIs, including universities and colleges affiliated with MAKAUT and Jadavpur University (*WELCOME TO INNOVATION AND STARTUP*, n.d.) , are registered under IIC as of 2024–25 (*AR_2023-24_en*, n.d.)

IIC mandates a minimum of 12 activities per academic year (3 per quarter across 4 quarters) from its prescribed calendar to achieve full quarterly scores and star ratings (*MoE Innovation Cell*, n.d.) .This standard applies uniformly across India, including West Bengal, to ensure a robust innovation ecosystem. Institutes are incentivized to exceed this minimum through funding opportunities like the Atal Ranking of Institutions on Innovation Achievements (ARIIA), offering grants up to Rs. 25 lakh (*Government of India, All India Council for Technical Education* |, 2025)

On average, compliant West Bengal institutes conduct 12–20 activities annually, with emerging IICs adhering to the minimum (12) and established ones (e.g., 4-star rated) averaging 15–18, including self-driven events (*Manage Activity*, n.d.). Data from IIC 3.0/4.0 annual reports (2022–24) shows that Eastern Region institutes, including West Bengal, achieved an 85–90% compliance rate, equating to 10–15 reported activities per institute annually (*Annual_19_eng*, n.d.)

Challenges and Opportunities in Bengal's Context

Even while IIPs in West Bengal have some good things going for them, they also have problems, such as a lack of research momentum, poor resource management, and the digital divide. Post-pandemic changes show that there are still gaps in learning, hence we need strong systems with IIPs for targeted interventions (PDF) Shifts In Educational Outcomes In West Bengal, n.d.Digital education also has problems, such as diversions from non-educational information and a lack of infrastructure, especially in remote regions (Datta & Mete, 2024).

There is still a significant issue with faculty readiness. The number of student-centered innovation programs is growing, but funding for teacher education in design thinking, intellectual property rights, and entrepreneurship is insufficient. Based on global best practices, Faculty Innovation Fellowships may contribute to the stability of IIP ecosystems.

With recommendations for SPUs to collaborate in research clusters, become digital, and collaborate with other nations, NEP 2020's emphasis on digital technologies offers opportunities to improve outcomes. With additional flexibility and short-term funding, Bengal's 38 SPUs may meet international standards. Innovation and employment opportunities may be further enhanced by AICTE initiatives that promote connections between academia and industry ("(PDF) Role of Indian Higher Education Institutions towards Aatmanirbhar India," n.d.).

Additionally, district-level innovation clusters might address regional issues like farming, flood management, and rural health care, ensuring that IIPs directly contribute to Bengal's social and economic development.

Findings and Discussion

The literature analysis clarifies the critical role that Institute Innovation Platforms (IIPs) play in improving educational outcomes in West Bengal's Higher Education Institutions (HEIs), mainly through the Institution's Innovation Council (IIC). Important results show high levels of engagement: By 2024–2025, more than 1,000 HEIs will be registered under IIC, holding 12–20 events a year, encouraging innovation among 1.5 million students countrywide by 2019–20, with regional modifications producing 85–90% compliance (AR_2023–24_en, n.d.). In ARIIA and IIRF-ranked universities like IEM_UEM (Top Engineering College in Kolkata, West Bengal - IEM, n.d.), industry-academia partnerships like NPTEL and IBM improved R&D, increasing patent filings and employability by 15–20%. While programs like Paray Sikshalaya addressed post-pandemic gaps with widespread acceptance, digital IIPs like Banglar Shiksha Portal onboarded about 95,000 schools, delivering 30.3 million YouTube views and lowering administrative burdens by 30%. at line with sustainable innovations at Jadavpur University, inclusivity initiatives at women's colleges decreased gender gaps in STEM by 10–15%.

As seen by the rise in hackathon participation and internships, government initiatives like MSME and AICTE RPS made grants of up to Rs 25 lakh possible, further boosting skill development and bridging the gap between business and academia. But problems still exist: faculty training lags and limits expansion, and digital divides worsen rural learning loss, which is 25% after COVID (Datta & Mete, 2024).

In accordance with the NEP 2020 objectives, these platforms successfully develop 21st-century skills, encourage experiential learning via conversation, and improve industrial preparedness against the varied demands of West Bengal. However, targeted expenditures in the form of AI clusters and Faculty Fellowships are necessary to ensure fairness. In order to establish IIPs as catalysts for Viksit Bharat@2047, longitudinal studies might measure long-term improvements in employability.

Conclusion

By promoting innovation, digital access, diversity, and skill development, IIPs are crucial for raising the standard of instruction in West Bengal's schools. Even if they close significant inequalities in learning outcomes and preparedness for the workforce, issues like the digital divide and faculty preparedness require significant infrastructure investment and government assistance (IBAC, n.d.).

In keeping with the objectives of NEP 2020 and Viksit Bharat@2047, the future involves the creation of a State Innovation Fund, localized MOOCs in Bengali, green incubation centers, and state-level AI innovation hubs. By bringing together the best practices from around the

world, increasing the impact of women-led businesses, and emphasizing sustainable innovation, IIPs have the chance to alter West Bengal's position as a leader in inclusive, innovation-focused education.

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