NEP 2020 and Multidisciplinary Institutions: Fostering Innovation and Research

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Abstract

The National Education Policy (NEP) 2020 marks a significant shift in India's higher education landscape by advocating for the transformation of higher education institutions into multidisciplinary entities. This policy underscores the importance of integrating diverse academic disciplines to foster innovation, strengthen research ecosystems, and promote holistic learning. Multidisciplinary institutions are expected to cultivate an environment that nurtures critical thinking, problem-solving skills, and adaptability, preparing students for the dynamic demands of the modern workforce. By dismantling rigid disciplinary silos, the policy encourages cross-disciplinary collaborations that drive cutting-edge research and innovation. However, the implementation of this vision comes with notable challenges, including the restructuring of curricula, faculty training, infrastructural development, and institutional governance. Addressing these challenges requires strategic planning, investment in resources, and policy support to ensure a smooth transition toward a multidisciplinary educational framework. This paper critically examines the role of multidisciplinary institutions in achieving the goals of NEP 2020. It explores key policy directives, evaluates the practical hurdles faced by institutions, and discusses strategies for effective implementation. Additionally, the study provides policy recommendations aimed at enhancing the integration of multidisciplinary education, ensuring that higher education institutions contribute meaningfully to national and global knowledge economies. Through this analysis, the paper aims to highlight the transformative potential of multidisciplinary education in fostering a culture of innovation, research excellence, and holistic student development.

Keywords: Education; Multidisciplinary; NEP 2020

I. Introduction:

The National Education Policy 2020 envisions a transformative shift in India's higher education system by fostering multidisciplinary institutions that break the rigid compartmentalization of disciplines. Traditionally, Indian universities and colleges have operated within narrow academic silos, limiting students' exposure to diverse fields. NEP 2020 aims to integrate subjects across domains, encouraging interdisciplinary learning and research to address real-world challenges. A key aspect of this vision is the development of large, multidisciplinary universities and colleges with at least 3,000 students, offering a broad-based, flexible curriculum that allows students to explore various fields before specializing. The policy emphasizes a holistic education model, where science, technology, humanities, arts, and social sciences coexist, fostering creativity, critical thinking, and problem-solving skills. This interdisciplinary approach enhances employability, preparing graduates for dynamic careers that demand adaptability and innovation. The introduction of the Multiple Entry and Exit System allows students to switch disciplines and earn certifications, diplomas, or degrees at different stages, providing greater academic flexibility. Additionally, the Academic Bank of Credits enables credit transfer across institutions, promoting mobility and lifelong learning.

The policy also integrates vocational education into mainstream academia, ensuring that students acquire practical skills alongside theoretical knowledge. Furthermore, research institutions are encouraged to collaborate across disciplines, fostering innovation-driven ecosystems that contribute to economic and societal progress. NEP 2020 advocates for liberal education, where students engage with diverse subjects, enhancing their analytical and communication skills. The policy encourages autonomy for higher education institutions, allowing them to design multidisciplinary programs tailored to emerging global trends. Additionally, the transformation of standalone institutions, such as engineering or medical colleges, into multidisciplinary entities ensures greater academic diversity and collaboration. This shift aligns with global education models, where interdisciplinary learning is crucial for solving complex problems in fields like artificial intelligence, climate change, and public health. Furthermore, the establishment of research-intensive universities and teaching-focused institutions ensures that both knowledge creation and dissemination are prioritized. NEP 2020 also underscores the importance of technology in education, promoting blended learning through digital tools, thereby making multidisciplinary education more accessible. The integration of Indian knowledge systems, ethics, and sustainable development perspectives further enriches the educational experience. These reforms aim to bridge the gap between academia and industry, producing graduates who are not only knowledgeable but also skilled in innovation and entrepreneurship. By shifting from rote learning to inquiry-based, multidisciplinary education, NEP 2020 aspires to create a generation of well-rounded professionals capable of driving national development. This vision aligns with India's goal of becoming a global knowledge hub, where higher education institutions serve as centres of research, creativity, and intellectual growth. In essence, multidisciplinary institutions under NEP 2020 represent a paradigm shift towards flexible, inclusive, and research-oriented education, fostering an environment where students can pursue knowledge across disciplines, innovate, and contribute meaningfully to society. By implementing these reforms, India's higher education system will be better equipped to meet 21st-century challenges, ultimately strengthening the nation's economic, social, and technological progress.

II. Objectives:

This paper critically examines the role of multidisciplinary institutions in achieving the goals of NEP 2020. It explores key policy directives, evaluates the practical hurdles faced by institutions, and discusses strategies for effective implementation. Additionally, the study provides policy recommendations aimed at enhancing the integration of multidisciplinary education, ensuring that higher education institutions contribute meaningfully to national and global knowledge economies.

III. Nep 2020: key provisions on multidisciplinarity:

NEP 2020 emphasizes a multidisciplinary approach in higher education to foster innovation, critical thinking, and holistic learning. It advocates for the establishment of large, multidisciplinary institutions offering a diverse range of subjects, integrating arts, sciences, and vocational training. Universities and colleges are encouraged to break rigid disciplinary boundaries, allowing students flexibility in course selection through a credit-based system. The policy also promotes research-focused education, fostering collaborations between institutions and industries (Shukla et al., 2022). By 2040, all higher education institutions are expected to become multidisciplinary, with a strong focus on experiential learning, skill development, and employability. Some key provisions related to NEP 2020 are listed below:

- **Holistic and multidisciplinary education:** NEP 2020 promotes a comprehensive and flexible education system that integrates sciences, arts, humanities, and vocational subjects. It encourages institutions to move away from rigid academic structures and adopt broad-based curricula that offer students a well-rounded education. Undergraduate programs will have multiple entry and exit options, allowing learners to customize their academic journey. Credit transfer systems will also be implemented to facilitate student mobility between institutions and disciplines. This approach aims to develop critical thinking, creativity, and adaptability among students, making them better equipped for diverse career opportunities.
- **Multidisciplinary higher education institutions (MHEIs):** To ensure greater accessibility and diversity in higher education, NEP 2020 envisions the establishment of multidisciplinary institutions. Standalone institutions, including engineering, medical, and law colleges, are expected to evolve into multidisciplinary universities or form clusters with other institutions. The policy aims to have at least one multidisciplinary institution in every district by 2030. This transformation is intended to provide students with exposure to multiple disciplines, fostering a culture of collaboration and innovation across fields.
- **Integration of vocational and academic streams:** NEP 2020 seeks to remove the traditional divide between vocational and academic education by integrating skill-based learning into mainstream education. Vocational training will be embedded into the curricula at all levels, ensuring students develop practical skills alongside theoretical knowledge. This will enhance employability and prepare graduates for a rapidly evolving job market (Srivastava, 2022). The policy also emphasizes internship opportunities and hands-on training to make education more industry-relevant.
- **Promotion of research and innovation culture:** To strengthen the research ecosystem in India, NEP 2020 proposes the establishment of research-intensive universities and the National Research Foundation (NRF). The NRF will provide funding and mentorship to promote interdisciplinary research and innovation. The policy aims to create an environment where institutions actively collaborate on research projects that address real-world challenges. By fostering a culture of inquiry and creativity, NEP 2020 seeks to position India as a global hub for research and technological advancements (Nayak and Das, 2022).
- **Convergence of liberal arts and STEM:** NEP 2020 advocates for an interdisciplinary approach that blends liberal arts with STEM (Science, Technology, Engineering, and Mathematics) education. The policy encourages students to explore subjects across diverse domains, enabling them to develop a broad skill set. (Singh, 2024). This convergence is designed to nurture critical thinking, problem-solving, and creativity, preparing students for dynamic career paths. By integrating multiple disciplines, the policy aims to create graduates who can adapt to complex and evolving global challenges.
- **Institutional restructuring for specialization:** The policy introduces a major restructuring of higher education institutions by classifying them into three categories: Research Universities, Teaching Universities, and Autonomous Degree-Granting Colleges. This classification is designed to help institutions focus on their strengths while promoting collaboration between different types of universities. Research Universities will emphasize advanced research, Teaching Universities will focus on quality education, and Autonomous Colleges will have the flexibility to design their curricula. This restructuring aims to create a more efficient and specialized higher education system that fosters innovation and excellence.

- **Multidisciplinary institutions as a catalyst for innovation:** Multidisciplinary institutions serve as catalysts for innovation by integrating sciences, humanities, and professional courses, fostering collaboration across fields, and equipping students with diverse skill sets. By breaking disciplinary silos, they encourage cross-disciplinary interactions where engineers work with psychologists, designers collaborate with technologists, and economists engage with environmental scientists, leading to groundbreaking solutions. Exposure to multiple disciplines enhances creativity, adaptability, and problem-solving abilities, making students more employable and better equipped to tackle complex global challenges like climate change, healthcare, and sustainability. Moreover, these institutions nurture a culture of research and innovation, where interdisciplinary collaboration sparks new ideas, patents, and startups, ultimately driving progress in various fields. This holistic approach ensures that students develop a well-rounded perspective, enabling them to navigate an increasingly interconnected world with confidence and ingenuity (Nirmal, 2024).

IV. Challenges in implementation of nep 2020:

The implementation of the National Education Policy (NEP) 2020 faces several challenges despite its transformative vision for Indian education. A major hurdle is the financial burden, as achieving the ambitious reforms requires substantial investment in infrastructure, faculty recruitment, and technological advancements, which remains constrained by budgetary limitations. Additionally, the policy calls for a shift from rote learning to multidisciplinary and experiential education, necessitating significant teacher training and curriculum restructuring, which can be time-consuming and complex. Resistance to change from traditional institutions and faculty members accustomed to conventional pedagogical methods further complicates the transition. The emphasis on multilingualism and mother tongue-based education in early schooling also presents challenges in states with diverse linguistic demographics and limited regional-language teaching resources (Narkhede et al., 2025). Moreover, ensuring equitable access to quality education, particularly for students from rural and economically weaker backgrounds, requires extensive digital infrastructure and internet penetration, which remains inadequate in many parts of the country. The policy's vision of transforming higher education institutions into multidisciplinary hubs faces regulatory and administrative obstacles, as universities must navigate accreditation, funding, and governance reforms while aligning with NEP's guidelines. Additionally, seamless coordination among central and state governments is essential for effective implementation, but differences in priorities and execution capacities may lead to inconsistencies in policy rollout (Kurien & Chandramana, 2020). The proposed shift to a four-year undergraduate program and multiple entry-exit options raises concerns about standardization and employability, as industries may take time to adapt to the changing qualification framework. Further, the establishment of the National Research Foundation to enhance research output is promising but requires sustained financial and institutional support. Addressing these challenges requires a collaborative approach involving policymakers, educators, and stakeholders to ensure NEP 2020 achieves its goal of holistic, inclusive, and future-ready education. The National Education Policy (NEP) 2020 envisions a multidisciplinary approach to higher education to foster innovation and research. However, its implementation faces several challenges which are discussed below:

- **Institutional resistance to structural changes:** Many universities and colleges follow rigid disciplinary silos, making the transition to a multidisciplinary system difficult. Administrative inertia, faculty apprehension, and concerns about restructuring curricula

contribute to resistance. Institutions may also worry about disruptions in accreditation, funding, and ranking systems (Garg, 2024).

- **Need for faculty training and interdisciplinary expertise:** Most faculty members are trained in specific disciplines and lack the experience or skills required for interdisciplinary teaching. The absence of structured faculty development programs further complicates the integration of multidisciplinary courses. Additionally, faculty members may resist changes due to workload concerns and unfamiliarity with new teaching methodologies.
- **Infrastructure and resource constraints:** Multidisciplinary education requires modern infrastructure, including flexible classrooms, research labs, and digital learning platforms. Many institutions, particularly in rural and semi-urban areas, face financial constraints, making it difficult to develop the necessary resources. The integration of digital tools and technology-driven learning is also limited by poor internet connectivity in some regions.
- **Assessment and accreditation complexities:** Existing evaluation frameworks focus on discipline-specific knowledge, making it difficult to assess interdisciplinary learning outcomes. Accreditation agencies may lack the necessary guidelines to evaluate multidisciplinary programs, leading to inconsistencies in quality assurance and recognition.
- **Rigid curriculum and credit transfer issues:** Traditional university curricula are structured around single-discipline learning, making it difficult to introduce flexibility. Students often face barriers in credit transfer when taking courses across different departments or institutions, limiting their ability to design personalized multidisciplinary learning paths.
- **Industry alignment and employability concerns:** Employers often prioritize specialized degrees, creating concerns among students about the job market value of interdisciplinary education (Yenugu, 2022). The lack of clear industry linkages and structured career pathways for graduates of multidisciplinary programs may discourage student enrollment.
- **Funding and financial sustainability:** Transitioning to a multidisciplinary model requires significant investment in faculty training, infrastructure, and digital learning tools. Public institutions often face budget constraints, and private institutions may struggle to attract funding without clear financial incentives.
- **Resistance from regulatory bodies:** Regulatory bodies such as the University Grants Commission (UGC) and All India Council for Technical Education (AICTE) have traditionally governed education based on distinct disciplines. Aligning policies with the NEP 2020 vision requires comprehensive reforms in accreditation, funding distribution, and governance structures.
- **Student awareness and acceptance:** Many students and parents are unfamiliar with the benefits of multidisciplinary education. The traditional preference for single-discipline degrees, especially in fields like engineering, medicine, and law, may lead to skepticism regarding the long-term career prospects of multidisciplinary learning (Chandramana & Kurien , 2022).
- **Digital divide and access inequality:** The successful implementation of NEP 2020 heavily depends on technology-driven learning. However, disparities in access to digital infrastructure, especially in rural and economically disadvantaged areas, may widen educational inequalities.

By systematically addressing these challenges through well-defined policies, India can successfully transition towards a multidisciplinary education framework, as envisioned in NEP 2020.

V. Policy recommendations for multidisciplinary education reform:

A holistic and well-coordinated approach is necessary to implement multidisciplinary education under NEP 2020 successfully. By addressing institutional barriers, enhancing faculty capabilities, improving infrastructure, reforming assessment models, aligning education with industry needs, ensuring financial sustainability, tackling regulatory challenges, increasing student participation, and bridging the digital divide, India can build a robust multidisciplinary education system that fosters innovation, research, and lifelong learning. Some policy recommendations are discussed below:

- ***Addressing institutional resistance:*** To successfully implement multidisciplinary education, institutions must overcome structural resistance by adopting clear yet flexible regulatory frameworks that provide structured pathways for innovation. Initiating pilot programs in select universities can showcase the benefits of interdisciplinary education, serving as benchmarks for broader adoption. Additionally, financial incentives and ranking benefits should be introduced to encourage participation. Leadership development programs should be inculcated to equip administrators with the necessary skills to facilitate this transition, alongside documented best practices and case studies to demonstrate successful implementation. Institutional collaboration networks should also be developed to allow knowledge sharing and exchange of successful models between universities.
- ***Enhancing faculty training:*** Faculty preparedness is a key factor in ensuring the success of interdisciplinary education, and thus mandatory faculty development programs should be inculcated to train educators in interdisciplinary teaching and research methodologies. Collaborations with global institutions and industry experts will help faculty stay updated with best practices. Establishing interdisciplinary research centers can foster innovation by encouraging faculty to work across disciplines. Furthermore, institutions should introduce joint faculty appointments and provide incentives and recognition for educators engaging in interdisciplinary research and curriculum development. Faculty exchange programs with international universities should be encouraged to expose educators to diverse teaching methodologies.
- ***Strengthening infrastructure:*** A robust infrastructure is essential for fostering a multidisciplinary learning environment, and thus increased government funding should be allocated to develop state-of-the-art learning facilities, digital resources, and research laboratories. Public-private partnerships should be inculcated to mobilize additional resources for infrastructure, including technology integration. Expanding online and hybrid learning models will improve accessibility, while establishing shared resource centers and digital repositories will facilitate knowledge exchange across disciplines. Universities should also focus on developing interdisciplinary innovation hubs where students and faculty can collaborate on solving real-world challenges.
- ***Reforming assessment and accreditation:*** Traditional evaluation models must evolve to accommodate interdisciplinary learning, and thus new accreditation guidelines should be inculcated to ensure academic flexibility while maintaining rigorous standards. Competency-based evaluations should replace rigid exam-based assessments, focusing on real-world problem-solving skills. Additionally, peer review

mechanisms should be introduced to enhance quality assurance, while portfolio-based assessments can help students demonstrate applied interdisciplinary knowledge. To promote cross-institutional learning, credit transfer mechanisms should be established. Institutions should also develop interdisciplinary capstone projects as part of assessment criteria to ensure students apply knowledge across multiple domains.

- ***Industry alignment:*** To bridge the gap between academia and the job market, multidisciplinary curricula should be aligned with industry needs, ensuring that graduates possess relevant skills. Institutions should inculcate internships, apprenticeships, and industry-led projects to provide practical exposure to students. Furthermore, employer awareness initiatives should be conducted to highlight the value of interdisciplinary graduates. Establishing career fairs, networking events, and startup incubators within universities can further enhance employability and innovation. Industry-academia advisory councils should be formed to provide continuous feedback on curriculum relevance and skill development.
- ***Financial sustainability:*** Ensuring long-term sustainability of multidisciplinary education requires special grants and transition funding to support institutions. Student accessibility should be improved through scholarships, subsidies, and low-interest loans, encouraging enrollment in interdisciplinary courses. Increasing research funding for interdisciplinary projects will drive innovation, while institutions should inculcate corporate sponsorships, philanthropic contributions, and self-sustaining revenue models such as executive education programs to generate additional funds. Alumni contribution programs should also be encouraged to support interdisciplinary initiatives.
- ***Overcoming regulatory challenges:*** Regulatory barriers must be streamlined to facilitate seamless implementation of multidisciplinary education, and thus UGC and AICTE guidelines should be reformed to allow greater curriculum flexibility. A unified regulatory body should be inculcated to standardize multidisciplinary programs, ensuring consistency across institutions. Additionally, simplified approval processes and collaborative governance models should be introduced to allow multiple institutions to co-develop interdisciplinary programs, further enhancing innovation. A national-level task force should be established to monitor progress and recommend policy adjustments for successful implementation.
- ***Increasing student awareness :*** Students must be well-informed about the opportunities in multidisciplinary education, and therefore awareness campaigns, career guidance sessions, and mentorship programs should be inculcated at institutional levels. Interactive platforms should be introduced to help students explore diverse career pathways. Encouraging student-led projects, hackathons, and interdisciplinary competitions will enhance engagement (Misra et al., 2025). Furthermore, interdisciplinary learning at the school level should be introduced to build early awareness, complemented by peer learning communities and student clubs focused on fostering cross-domain innovation. Institutions should also introduce interdisciplinary career counseling services to guide students in making informed academic and professional choices.
- ***Enhancing research and development in multidisciplinary areas:*** A strong research ecosystem is essential for the success of multidisciplinary education, and thus research funding should be prioritized for interdisciplinary projects. Universities should establish dedicated research clusters that bring together experts from different fields to solve complex societal problems. National and international research collaborations should be promoted to enhance knowledge-sharing and cross-border innovation. A

research publication platform for interdisciplinary studies should be developed to encourage knowledge dissemination.

- ***Promoting digital and technological integration:*** The effective integration of digital tools is crucial in modern multidisciplinary education. Institutions should inculcate digital learning platforms, virtual reality labs, and artificial intelligence-driven learning models to facilitate interactive and cross-disciplinary learning. The use of data analytics to track student performance across multiple disciplines should be explored to improve learning outcomes. Partnerships with EdTech companies should be encouraged to ensure students and faculty have access to the latest technological advancements.
- ***Encouraging policy advocacy and stakeholder collaboration:*** To ensure the long-term success of multidisciplinary education, collaboration among policymakers, educators, industry leaders, and students should be fostered. Regular policy dialogues should be held to address implementation challenges and develop adaptive strategies. Engaging key stakeholders in policy formulation will ensure that the education system remains relevant to evolving societal and economic needs. Institutions should also encourage community-based interdisciplinary projects to build stronger connections between academia and real-world challenges.

By incorporating these steps, multidisciplinary education can be successfully integrated, fostering a more flexible, innovative, and research-driven academic environment in alignment with NEP 2020. This approach encourages the breaking down of traditional academic silos, allowing students to explore diverse disciplines, develop critical thinking skills, and engage in holistic learning experiences. Furthermore, it promotes collaboration between different fields, enabling students and faculty to work on real-world problems through an interdisciplinary lens. The integration of research-oriented pedagogy, experiential learning, and technology-driven education enhances the quality of academic discourse and knowledge creation. By offering flexible course structures, multiple entry-exit options, and cross-disciplinary electives, institutions can nurture creativity and adaptability among learners. This transformation aligns with NEP 2020's vision of fostering an education system that is inclusive, globally competitive, and geared towards solving societal challenges through research and innovation.

VI. Conclusion:

Multidisciplinary institutions have the potential to reshape India's higher education landscape by fostering an ecosystem that promotes innovation, research, and holistic learning. By integrating diverse fields of study, these institutions can equip students with a well-rounded education, critical thinking abilities, and problem-solving skills essential for addressing complex global challenges. This shift aligns India's academic framework with international standards, enhancing the nation's competitiveness in the global knowledge economy. However, the transition towards multidisciplinary education is not without challenges. Issues such as faculty training, curriculum restructuring, infrastructural development, and regulatory alignment require sustained policy support and institutional commitment. Effective implementation of the National Education Policy (NEP) 2020, coupled with collaboration between academia, industry, and government, can bridge these gaps and accelerate progress.

Ultimately, the success of multidisciplinary institutions will not only benefit students and educators but also contribute significantly to national development. By fostering a culture of interdisciplinary research, entrepreneurship, and innovation, India can emerge as a global hub for knowledge creation and technological advancement. Strategic investments and policy initiatives will be crucial in realizing this vision, ensuring that multidisciplinary education becomes a cornerstone of the country's higher education system.

References:

[1] Chandramana, S. B., & Kurien, A. (2020). National Education Policy 2020: Issues and challenges. *Journal of Research in Humanities and Social Science, 10*(2), 6–9.

[2] Garg, S. (2024). Innovations in Teaching Pedagogies: Adapting to NEP in 2024. *Education System & NEP-2020: Educational*, 79.

[3] Kurien, A., & Chandramana, S. B. (2020). Impact of New Education Policy 2020 on higher education. *International Journal of Scientific and Research Publications, 10*(2), 6–9.

[4] Misra, D., Sharma, A., Kumar, B. R., Ibrahim, S. K. M., Kshirsagar, K. P., & Boopathi, S. (2025). Training for Enhancing Job Opportunities and Career Empowerment in Emerging Markets. In *Applications of Career Transitions and Entrepreneurship* (pp. 357-386). IGI Global Scientific Publishing.

[5] Narkhede, G., Pasi, B., Dhamak, P., Mahalle, P., & Ambhore, N. (2025). In the pursuit of educational excellence: investigating CSFs for implementing NEP 2020 to redefine the higher education ecosystem. *Journal of Applied Research in Higher Education*.

[6] Nayak, S., & Das, L. (2022). National Education Policy 2020 with reference to school education, higher education, vocational and technical education. *International Journal of Scientific and Research Publications, 12*(12), 441–448.

[7] Nayak, S., & Das, L. (2022). Role of NEP 2020 in transforming higher education in India. *Journal of Positive School Psychology, 6*(2), 12750–12760.

[8] Nirmal, P. B. (2024). Multidisciplinary Approach of NEP-2020: Transforming Higher Education in India. *TWIST*, *19*(3), 336-338.

[9] Shukla, B., Joshi, M., Sujatha, R., Beena, T., & Kumar, H. (2022). Demystifying Approaches of Holistic and Multidisciplinary Education for Diverse Career Opportunities: NEP 2020. *Indian Journal of Science and Technology*, *15*(14), 603-607.

[10] Singh, K. (2024). Making Sense of STEM Education: An Integration into Higher Education. *Current Social Sciences*.

[11] Srivastava, M. (2022). The new National Education Policy (NEP) of India: Will it be a paradigm shift? *International Journal of Inclusive Education*, 26(12), 1234–1249.

[12] Yenugu, S. (2022). The new National Education Policy (NEP) of India: Will it be a paradigm shift in Indian higher education? *International Journal of Inclusive Education, 26*(12), 1234–1249.