

# Industry- Integrated Curriculum Model for New Age Skills: Insight of Industry Survey

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## ABSTRACT

This study develops an Industry-Integrated Curriculum Model to systematically address the growing demand for New Age Skills in the evolving global economy. Grounded in empirical data from a detailed industry survey, the research captures critical insights from professionals regarding prevailing skill gaps, emerging competency requirements, and the current readiness of graduates. The proposed model translates these industry priorities into a structured curricular framework that promotes deep academia-industry collaboration, adaptive learning pathways, and experiential pedagogy.

By aligning educational outcomes with explicitly stated industry needs, the model serves as a strategic blueprint for implementing the multidisciplinary and employability-focused vision of the National Education Policy (NEP) 2020. It emphasizes the integration of technical, cognitive, and socio-emotional skills through modules co-designed and validated by industry partners. The findings underscore the necessity of continuous feedback loops between educators and employers to ensure curriculum relevance and graduate employability.

This research offers a realistic approach to bridging the education-industry divide, providing educators, policymakers, and institutional leaders with an actionable model for cultivating a future-ready workforce equipped with the competencies required for innovation and sustained economic growth.

**Keywords:** Industry-Integrated Curriculum, New Age Skills, Curriculum Model, Industry Survey, Skill Gaps, NEP 2020, Employability, Academia-Industry Collaboration.

## INTRODUCTION

The transformation of higher education has become imperative in the context of rapid technological advancements, globalization, and evolving industry expectations. Traditional curriculum models, often characterized by theoretical orientation and limited industry exposure, are increasingly inadequate in preparing graduates for contemporary workforce demands. Recognizing this challenge, the National Education Policy (NEP) 2020 envisions a holistic, flexible, and multidisciplinary education system that emphasizes skill development, experiential learning, and strong industry-academia collaboration.

NEP 2020 places significant emphasis on outcome-based education, vocational integration, internships, and the adoption of emerging technologies within academic frameworks. It advocates for curricula that are responsive to industry needs and capable of equipping learners with both domain-specific and transversal skills such as critical thinking, problem-solving, and digital literacy. In parallel, industries are undergoing rapid digital transformation driven by technologies such as artificial intelligence, machine learning, data analytics, Internet of Things (IoT), and cloud computing, further widening the gap between academic training and industry expectations.

Despite policy reforms and growing awareness, a mismatch persists between the skills imparted by higher education institutions and those required by employers. This gap necessitates systematic research grounded in

industry feedback to guide curriculum redesign. In this context, the present study aims to assess industry perspectives on curriculum relevance, technological integration, and graduate preparedness through a structured survey of industry professionals.

The objectives of this research are threefold: (i) to analyse industry expectations regarding new-age skills and technology competencies, (ii) to evaluate the alignment of current curricular practices with NEP 2020 guidelines, and (iii) to propose strategic recommendations for an industry-centric curriculum framework. By empirically examining industry inputs, this study contributes to the development of sustainable, future-ready curriculum models that enhance employability and foster meaningful academia–industry partnerships.

## LITERATURE REVIEW

Existing literature highlights NEP 2020 objectives and industry perspectives on skill gaps and needed educational reforms. Previous research provides a foundation for analysing alignment between policy objectives and industry recommendations. India's National Education Policy (NEP) 2020, highlighting its comprehensive nature aimed at transforming the country's education system to be more inclusive, accessible, and equitable. The review categorizes the key aspects into various domains. Its emphasis on foundational literacy and numeracy. It provides Holistic learning approach with integrated and engaging curriculum and pedagogy. It provides ensuring equitable and inclusive education for all students. It is enhancing school management and governance for efficient resourcing.

The National Education Policy (NEP) 2020 provides a foundational theoretical lens for reimagining curriculum design in response to 21st-century skill demands. It advocates multidisciplinary and integrated learning, replacing rigid disciplinary silos with flexible academic pathways aligned to evolving career trajectories. The policy emphasizes holistic development by foregrounding cognitive, socio-emotional, ethical, and creative capacities alongside technical knowledge, reflecting industry's growing valuation of adaptability, communication, and emotional intelligence. NEP 2020 further promotes learner autonomy through flexible entry–exit options, competency-based progression, continuous assessment, and experiential, student-centric pedagogies. Its focus on critical thinking, creativity, digital literacy, technology integration, and the elevation of vocational education through industry partnerships establishes a strong conceptual basis for aligning education systems with Industry 4.0 realities and non-linear professional careers.

Extant literature on Industry 4.0 and employability reveals a persistent misalignment between academic curricula and industry requirements, driven by rapid technological change and slow curriculum governance. While emerging economies report high graduate employment rates, tracer studies and employer surveys consistently identify gaps in practical application, soft skills, contemporary technological exposure, and industry contextual understanding. Traditional curricula remain disproportionately focused on disciplinary knowledge, neglecting higher-order cognitive and socio-emotional competencies essential for innovation and lifelong learning. Research identifies industry–academia collaboration models—such as work-integrated learning, subject matter expert engagement, learning factories, joint research initiatives, industry advisory boards, and continuous feedback mechanisms—as effective strategies to address this gap. Collectively, these studies support an Industry Integrated Curriculum Model as a theoretically grounded and empirically validated framework for embedding new-age skills, accelerating curriculum responsiveness, and enhancing graduate employability in dynamic labour markets.

## KEY FEATURES: NEP 2020

1. Multi-Disciplinary Education
2. Holistic Development of students
3. Flexibility
4. Emphasis of Creative and Critical Thinking
5. Continuous Assessment
6. Role of teacher has changed in to facilitator
7. Inclusivity and Synergy in all Curriculum

NEP 2020 policy provides strengthening vocational education for professional development. It promotes continuous learning through adult education and lifelong learning initiatives. It involves in preservation of Indian languages, arts, and culture. It provides equitable integration of technology into education and affordable education system.

NEP 2020 suggests the following Implementation Strategies:

- 1) Strengthening advisory boards for effective governance.
  - 2) Ensuring adequate financing for quality education.
  - 3) Establishing practical steps for policy implementation.
  - 4) Additionally, the review acknowledges industry recommendations, which include:
    - Effective stakeholder engagement to align education with real-world needs.
    - Sufficient funding allocation for policy implementation.
    - Emphasis on teacher capacity building through training and professional development.
    - Encouragement of research and innovation in educational practices.
    - Expansion of vocational education to equip students with practical skills.
- In summary, the NEP 2020, coupled with industry recommendations, aims to create a dynamic and robust education system that prepares students to meet the challenges of the 21st century effectively.

### RESEARCH METHODOLOGY

This qualitative study employs document analysis of NEP 2020 and relevant industry reports to identify common themes and discrepancies. Content analysis is utilized to evaluate alignment between the policy framework and industry suggestions.

The research paper is based on primary and secondary data. Primary data is collected through the survey-based method. As NEP 2020 is emphasizing on collaboration aspect. It has focused on industry integration and involvement of Industries in the syllabus designing and overall practical skills development of students.

Considering this important perspective researcher has designed the research design by collecting first-hand information from Industry regarding requirement of upgradation in the syllabus. Survey conducted for 12 industries from various sectors. Accordingly, the analysis is done and conclusion is drawn. Secondary data is collected through the available data on NEP 2020 from journals, research papers and reports.

### RESEARCH ANALYSIS

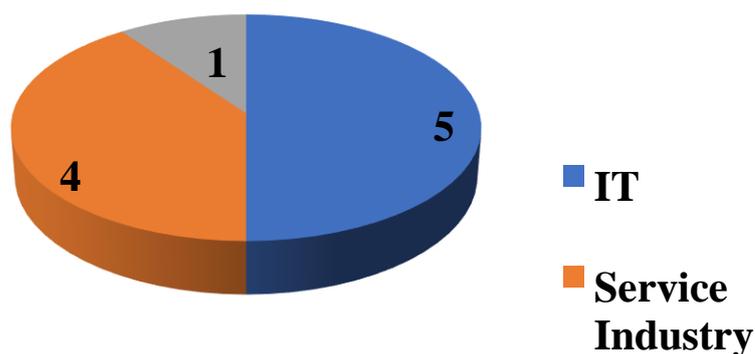
**Table 1**

Sr. No	Name of the Company	Location	Sector
1	eClerx	Hinjawadi Phase 2, Pune	IT Consulting and Outsourcing
2	Futurism Technologies	Baner, Pune	IT Services and IT Consulting

3	Mentor Me Careers	Pune	Career Guidance & Skill Development (Service Industry)
4	TalentServe	Mumbai	Staffing & Talent Management (Service Industry)
5	QSpiders – A Unit of Testyantra Software Solutions India Pvt. Ltd.	Head Office: Bangalore (Branches PAN India)	Training & Skill Development (Service Industry)
6	Ace Ventura	Mumbai	Recruitment & HR Consulting (Service Industry)
7	Just Dial Ltd.	Pune	Internet Technology & Local Search Services
8	ICT Academy	Chennai	Education, Training & Skill Development (Service Industry)
9	Microland	Mumbai	IT Infrastructure Services
10	Perennial Systems	Pune	IT Services – B2B Solutions
11	Brainberg	Shivaji Nagar, Pune	Training & Skill Development (Service Industry)
12	Lexicon Networks	Pune	IT Services

**Table 1.1: List of Collaborating Companies with Location and Sector**

### Company Sector



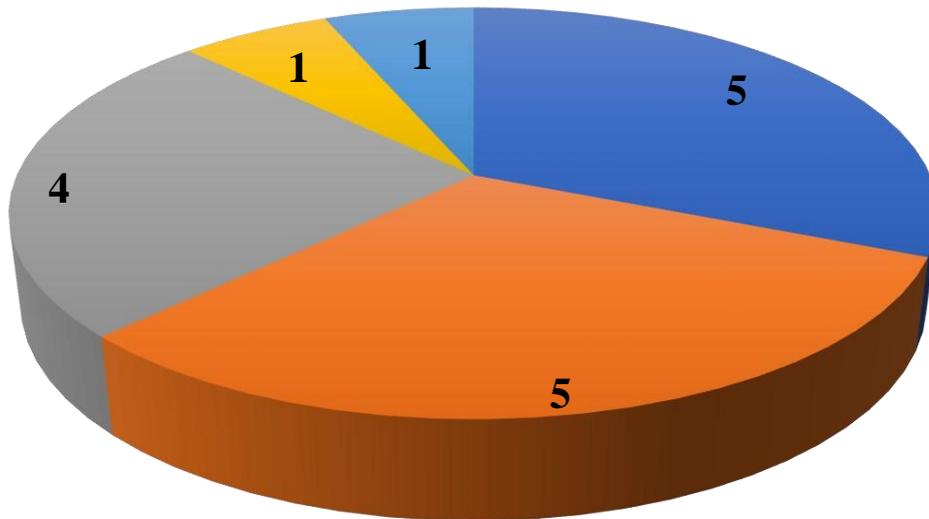
**Diagram: 1**

Observations: Above diagram depicts the sector wise categorization. It states those majorities are from IT sector, and then Service industry and followed by B2 B sector

**CURRICULUM SUGGESTION BY THE INDUSTRY:**

**Curriculum**

- Software Development and AI
- Project based Learning
- Emotional Intelligence
- Other than Software
- Upbeat Finance domain Courses



**Diagram: 2**

**Observation:** Above diagram states that Upbeat finance domain programs and AI, Software

Development programs are suggested by 5 industries. Followed by Project based learning by 4 Industries and then one of the industries has focused on development of emotional intelligence among students should be a part of curriculum.

**Technical Certifications Required:**

Certification Courses	No. of Company suggested
Excel	3
Digital Marketing	6
AI and Machine Learning	6
Business and Management	7
Cloud Computing	6
UI & UX	4

<b>Cyber Security</b>	5
<b>Content Writing</b>	5
<b>Programming language</b>	4
<b>Graphic design</b>	4
<b>Foreign Language</b>	4

**Table: 2- Technical Certifications Required**

Above table suggest that practical skills are the need of an hour and to be incorporated heavily in the syllabus designing.

### Findings From Industry Survey

The study presents a detailed examination of how NEP 2020 reflects industry priorities and concerns, identifying areas of alignment, potential challenges, and areas requiring further attention.

- 1) **Identification of Key Recommendations:** Through a thorough review of industry reports, publications, and recommendations, several key areas emerge where industry professionals emphasize the need for alignment between NEP 2020 and workforce requirements.
- 2) **Alignment with Holistic Development:** NEP 2020 emphasizes holistic development by integrating arts, humanities, and sciences into the curriculum. Industry professionals acknowledge the importance of such a holistic approach, emphasizing the need for graduates with diverse skill sets adaptable to changing job roles.
- 3) **Employability and Skill Development:** Industry recommendations consistently stress the importance of fostering employability skills such as critical thinking, communication, and problem-solving. NEP 2020's focus on vocational education, internships, and skill development aligns with industry demands for practical, job-ready graduates. *Referred by "The Future of Education: Reimagining Our Schools from the Ground Up" by Kieran Egan*
- 4) **Addressing Skill Gaps:** NEP 2020 recognizes the existence of skill gaps in the workforce and proposes measures to bridge them through flexible curricula, competency-based learning, and continuous skill upgrades. Industry professionals commend these initiatives but emphasize the need for greater emphasis on emerging technologies and industry-specific skills. *Referred by "The New Education: How to Revolutionize the University to Prepare Students for a World In Flux" by Cathy N. Davidson*
- 5) **Policy Implementation Challenges:** Despite the alignment between NEP 2020 and industry recommendations, challenges in policy implementation are identified. These include resource constraints, institutional inertia, and resistance to change at various levels of the education system.
- 6) **Collaboration Opportunities:** Both NEP 2020 and industry recommendations emphasize the importance of collaboration between educational institutions and industries. There is a consensus on the need for industry partnerships, guest lectures, and experiential learning opportunities to bridge the gap between academia and industry.
- 7) **Role of Stakeholders:** The findings highlight the critical role of stakeholders, including policymakers, educators, industry leaders, and students, in ensuring the successful implementation of NEP 2020.

Stakeholder engagement and participation are essential for aligning educational outcomes with industry needs effectively.

- 8) **Areas Requiring Further Attention:** While NEP 2020 addresses many concerns raised by industry professionals, there are areas that require further attention. These include the integration of emerging technologies, fostering entrepreneurship, and promoting lifelong learning to meet the demands of a rapidly evolving job market.
- 9) **Recommendations for Improvement:** Based on the findings, recommendations are proposed to enhance the alignment between NEP 2020 and industry requirements. These include increased industry-academia collaboration, regular curriculum updates, and professional development opportunities for educators, and incentives for innovation and entrepreneurship. *Referred by "Transforming Education: Lessons from Engineering Leaders" edited by Jacqueline Doyle and Susan Ambrose*
- 10) **Implications for Policy and Practice:** The findings have significant implications for policymakers, educators, and industry leaders involved in the implementation of NEP 2020. Addressing the identified challenges and leveraging collaboration opportunities can lead to a more effective education system that meets the needs of both students and industries.

### Industry Response on Nep 2020 And Data Analysis

The New Education Policy (NEP) 2020 is a significant development aiming at universalizing education and enhancing its quality in India. Education policy governs the structure and standards of education systems, crucial for national development. NEP 2020 focuses on universal access, aiming to bring out-of-school children into mainstream education and reforming the curriculum. It emphasizes multi-disciplinary education, holistic development, flexibility, and learner-centric approaches. Moreover, it promotes creativity, critical thinking, and continuous assessment, with teachers transitioning to facilitators. This policy aligns with the industry's demand for a diverse skill set, as reflected in the suggested technical certification courses, notably in AI, digital marketing, and cloud computing.

The NEP's emphasis on quality education resonates with the industry's need for skilled professionals, fostering synergy between education and employment sectors. The NEP's success hinges on its implementation and collaboration between policymakers, educators, and industry stakeholders to ensure equitable access to high quality education for all learners, addressing the nation's socio-economic challenges and fostering its global competitiveness. Discussion delves into the implications of findings for policy implementation, suggesting strategies to enhance collaboration between educational institutions and industries. It also addresses the role of stakeholders in aligning NEP 2020 objectives with industry requirements to ensure graduates' readiness for the workforce.

### Proposed Industry-Integrated Curriculum Framework

Based on empirical findings and NEP 2020 principles, a six-component framework is proposed:

1. Stakeholder-Inclusive Curriculum Design
2. Multidisciplinary, Project-Based Curriculum
3. Integrated Work Experience
4. Competency-Based Assessment and Certification
5. Faculty Development and Industry Exposure
6. Sustainable Partnership Governance

A phased implementation roadmap spanning 36+ months is outlined, covering foundation, curriculum development, capability building, pilot implementation, and scaling phases.

### **Evidence Of Impact and Case Study Outcomes**

International case studies from Singapore, Switzerland, and Germany demonstrate that industry-integrated models significantly improve employment outcomes, graduate satisfaction, employer satisfaction, and institutional reputation. Predicted impacts include reduced time-to-employment, higher starting salaries, and improved graduate preparedness.

### **Challenges, Barriers, And Mitigation Strategies**

Key challenges include faculty resistance, curriculum inflexibility, resource constraints, partnership sustainability, and equity issues. Mitigation strategies involve incentive restructuring, modular curriculum design, virtual collaboration tools, formal governance, and inclusive policy support.

## **POLICY RECOMMENDATIONS**

### **For Educational Institutions**

- a. Establish Industry Advisory Boards with decision-making authority.
- b. Integrate 40–60% practical, project-based components.
- c. Mandate faculty industry exposure and professional development.

### **For Government and Policymakers**

- a. Enable curriculum flexibility and rapid approval processes.
- b. Formalize recognition of industry certifications.
- c. Fund infrastructure and faculty development programs.

### **For Industry Partners**

- d. Participate actively in curriculum design and review.
- e. Offer structured internships with clear learning outcomes.
- f. Formalize partnerships through MOUs with long-term commitments.

## **DISCUSSION AND IMPLICATIONS**

The findings reveal strong consensus on skill requirements, a preference for experiential learning, and structural barriers to implementation. The proposed framework aligns with constructivist learning theories and multistakeholder governance models. Practical implications span educators, institutional leaders, students, and policymakers. Limitations include sample size and regional concentration, suggesting need for broader, longitudinal research.

## **CONCLUSION**

This research offers valuable insights into the alignment of NEP 2020 with industry recommendations. By bridging the gap between policy objectives and industry expectations, it sets the stage for a more responsive education system catering to the evolving needs of the economy and society. This research demonstrates that

industry-integrated curriculum models aligned with NEP 2020 principles represent a viable, evidence-based pathway toward responsive, relevant education. Implementation requires commitment from educational leaders, policymakers, and industry partners. The proposed framework offers a structured approach to bridging the education–industry divide, enhancing graduate employability, and supporting India’s economic growth in the 21st century.

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