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SKILL-BASED EDUCATION IN INDIA: A COMPREHENSIVE ANALYSIS UNDER THE NATIONAL EDUCATION POLICY 2020

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ABSTRACT:

Education is the cornerstone of social development, which tries to improve multiple dimensions. Rapid technological change has increased the need for skill-based education in India. The study examines the existing skill gap in India, government initiatives under NEP 2020 and identifies key challenges in their effective implementation. This study uses a qualitative research approach using secondary data sources to analyse skill development within the framework of National Education Policy (NEP) 2020. Research indicates a minor enhancement in employability from 2020 to 2025; nonetheless, difficulties such as insufficient infrastructure, inadequate educator training, feeble industrial relationships, societal stigma, and unequal access remain widespread. While initiatives such as Skill India, PMKVY, PARAKH, and apprenticeships demonstrate substantial policy intent, successful outcomes need coordinated execution. The analysis reveals that NEP 2020 provides a comprehensive framework; yet, ongoing collaboration across stakeholders is important to overcome the skills gap and establish a future-ready workforce.

KEYWORDS:

SKILL-BASED EDUCATION, NATIONAL EDUCATION POLICY (NEP) 2020, SKILL DEVELOPMENT, VOCATIONAL EDUCATION, EMPLOYABILITY, INDUSTRY-ACADEMIA COLLABORATION.

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INTRODUCTION

Education is crucial for building values in a society, and it is important for future generations to value skill education, which can give individuals new skills, abilities, and opportunities to obtain the skills they need to become financially independent and help the economy grow (Mhalevolie, 2025). Skill-based education emphasis on the improvement of practical skills, competencies, and experiential understanding, all of which are immediately relevant to professional contexts. This technique stresses the development of abilities include critical thinking, problem-solving, communication, teamwork, and technical knowledge (Ali, 2024; Mhalevolie, 2025). These skills are important for employment, economic productivity, and continues engagement in lifelong learning pathways. The demands for skill development, although not new, has become urgent in recent years. In the context of Digital India for the satisfied demands of the contemporary job market scenario, skill-based education has become important (Khatoon, 2025). Technological advancements such as automation, artificial intelligence, and digital transformation have redefined labour market requirements, elevating the importance of workplace-relevant competencies that combine cognitive understanding with practical skills (Varsha, 2025). Global competitiveness relies on a workforce that possesses not just academic knowledge but also practical, technical, and soft skills. India's economic goals, such as the "Make in India" initiative and the target of becoming a $5 trillion economy, depend heavily on having a skilled workforce(Bora, 2021). A skilled workforce is essential to harness this dividend, enabling India to transition from relatively low-skill employment patterns toward a more competitive and technologically sophisticated labour market (Varsha, 2025).

The National Policy of Education NEP-2020 has introduced a transformative paradigm in the Educational System of India, focusing on the holistic development at all levels of education (Khatoon, 2025; Ali, 2024).This policy aims to equip students with competencies like critical thinking, problem-solving, and technical expertise, fostering employability and innovation (Talluri, 2025). It seeks to implement comprehensive changes that improve

skill-based education at all levels in terms of quality, relevance, and accessibility. Among its key features, the policy emphasizes a more flexible and multidisciplinary approach to learning, with a focus on critical thinking, creativity, and problem-solving skills for implementing skill-based education (Ali 2024). In response to the need for a more comprehensive, adaptable, and skill-oriented educational system, the National Education Policy 2020 was created. By focusing on multidisciplinary learning and vocational training, NEP 2020 aims to produce graduates equipped with practical skills, critical thinking abilities, and industry relevant expertise (Sinha& Saxena2025).

This study gives a conceptual examination of skill-based education within the NEP 2020 framework. It situates India's policy approach within broader international evidence on skills development, identifies persistent implementation challenges, and proposes actionable policy-relevant recommendations.

REVIEW OF RELATED LITERATURE

Khatoon(2025) explores the effectiveness of skill-based education in enhancing students' career readiness under NEP-2020 and highlights the need for continuous research and policy refinement to maximize the potential of skill-based education in bridging the gap between academia and industry, making learners future-ready in a rapidly evolving world.

Jafarov(2025) explores the interconnection between education systems and skill acquisition, emphasizing the role of formal and informal learning in developing a competent workforce and concludes with policy recommendations for integratingskilldevelopmentwithtraditional education to meet the demands of the 21st-century job market.

Ali (2024) examinedSkill-based education in India is undergoing a significant transformation, propelled by the National Education Policy (NEP) 2020 and highlights the importance of addressing societal prejudices, enhancing curriculum development, fostering industry collaboration, strengthening infrastructure, and promoting equitable access to ensure the success and sustainability of skill-based education initiatives.

Dash (2024) contextualizes NEP-2020 within the broad socio-economic framework, portraying it as an essential reform that addresses post-pandemic issues.

Singh& Gunasekaran(2024)analyse India's education policies from 1968 to NEP 2020 and, through a case study of Skill Enhancement Courses at the University of Delhi, find out that NEP 2020 effectively integrates vocational education with mainstream academics, leading to improved employability skills among graduates.

De and Majumder (2024) examine how NEP2020 intends to initiate a discourse on evidence-based assessment of the nation's skill landscape and address the issue of skill development as an integral part of the curriculum.

Bhardwaj et. al., (2024) analyses the idea of curriculum as conceived by different learning perspectives and how NEP 2020 draws inferences from them.

Kanungo (2024) examined the NEP's role in achieving Sustainable Development Goal 4 (SDG 4), noting that the focus on competency-based and accessible learning models supports educational equity and high quality.

Lukose & Sharma(2023) analyse that NEP 2020 significantly promotes skill-based and vocational education by integrating 21st-century skills into mainstream learning. It highlights the importance of stakeholder collaboration particularly involving teachers, parents, institutions, and regulatory bodies in supporting student skill development.

Singh and Singh (2023) highlight NEP 2020's role in transforming secondary education through curriculum reform, competency-based assessment, skill development, and inclusive practices.

Das and Malik (2022) studied the role of vocational education and entrepreneurship under NEP 2020, highlighting how the policy aims to transform India's education system by integrating industry-oriented learning and entrepreneurial competencies and highlights NEP 2020's focus on fostering creativity, innovation, and lifelong learning to prepare students as proactive and future-ready contributors to economic development.

Bora, J. (2021) this study highlights outdated curricula, weak vocational training, and socio-economic gaps as major barriers to skill development in India. It emphasizes aligning education with practical skills and calls for effective NEP 2020 implementation and stronger industry-academia collaboration.

Pathak (2020) reviews the challenges, outcomes, and current status of vocational development under NEP 2020, emphasizing the policy's focus on holistic growth and life-skills while highlighting gaps in the effectiveness of vocational programs in India.

Reddy (2020) analyses NEP 2020 as a comprehensive reform of India's education system, highlighting structural restructuring, governance changes, technology integration, regional-language instruction, assessment reforms, and unified regulation in higher education aimed at achieving inclusive and equitable quality education.

SIGNIFICANCE OF THE STUDY

This study is important as it gives a conceptual understanding of skill-based education in India based on the National Education Policy (NEP) 2020. It shows the currenttrends in employability,government initiatives and challenges for implementing skill-based education, which helps policymakers, educators, stakeholders and institutions with useful information. The study supports evidencebased educational reform by looking at government programs, policy and finding useful ways to improve infrastructure and theoverall development of skill education with valuable suggestions for stakeholders. It also shows how significant it is to have equitable access and work together with all stakeholders to generate a workforce that is ready for the future, which will help the

country thrive and flourish in 21st Century.

OBJECTIVES

1. To analyse the existing skill gap in India and evaluate the skill-based education
2. To examine Government Initiatives for Implementing Skill-Based Education under NEP 2020
3. To identify major challenges in the implementation of skill-based education under NEP 2020.

RESEARCH METHODOLOGY

This study uses a qualitative research approach using secondary data sources to assess Skill-Based Education in India as described in the National Education Policy (NEP) 2020. Data are taken from government reports, policy, articles, books, internet research papers and educational surveys to assess changing patterns, employability trends, government initiatives and challenges.

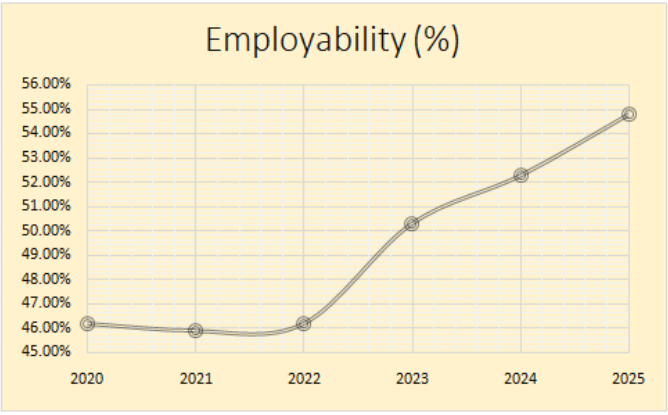
FINDINGS & ANALYSIS

CHANGING PATTERNS OF EMPLOYABILITY IN INDIA

TABLE 1: EMPLOYABILITY TRENDS IN INDIA (BASED ON INDIA SKILLS REPORTS)

Year	Employability (%)	Key Observation
2020	46.2%	High skill gap despite an increase graduate
2021	45.9%	Marginal decline in employability
2022	46.2%	Slight improvement due to digital upskilling
2023	50.3%	highest in five years, but below target levels
2024	52.3%	Focus on AI integration and closing the gap in high-demand tech sectors
2025	54.81%	Highest ever recorded; driven by global talent mobility and digital readiness

FIGURE 1: EMPLOYABILITY TRENDS IN INDIA FROM 2020-2025



Source: India Skills Report 2020–2025 (Wheebox, CII, and Taggd)

Table 1 shows how employability in India has changed from 2020 to 2023. In 2020, the employability rate was 46.2%, which means that less than half of graduates were ready to work. This indicate that there was a large difference between the education provided by schools and what employers needed. The COVID-19 pandemic generated certain challenges that made practical training and job possibilities worse, leading to a small drop in 2021 which is 45.9%. The number goes up to 48.7% in 2022, indicating that an increasing number of digital upskilling initiatives and online learning platforms are yielding positive outcomes. By 2023, the employability rate had reached 50.3%, signalling a strong upward trend that continued into the following years. The upward momentum continued into 2024, with the employability rate rising to 52.3%. This period was characterized by a strategic pivot toward AI integration and specialized training. Educational institutions and private platforms began focusing heavily on closing the skill gap in high-demand tech sectors, ensuring that graduates were not just "digitally literate" but "AI-ready." By 2025, India reached a significant milestone with an employability rate of 54.81% the highest ever recorded in the country's history. This was the highest rate of employment in the country's history. India's graduates have become more competitive both in their own nation and around the world as their skills have become more in line with foreign standards. This indicates that attempts to improve skills were slowly but surely working. But the number is still lower than it should be, which shows that there is still a need for better integration of skill-based education, collaboration with business and companies, and curriculum that emphasize competencies. Overall, the table shows how important it is to keep implementing NEP 2020 policies to close the skills gap and prepare people ready for work.

SKILL BASED EDUCATION AND NEP 2020

Skill-based education focuses on imparting practical skills, abilities, and experiential knowledge that are directly applicable to the business sector. This approach emphasizes the development of skills such as critical thinking, problem-solving, communication, teamwork, and technical expertise (Ali, 2024).Skill based is focused at developing an individual perceptive thinking and decision-making skills while incorporating values in life as well as developing creativity. Skill-based education integrates practical learning to help students develop personal and professional skills that will equip them for a competitive environment. Skill based education is an offshoot of expression New Education Policy which further gained momentum with the introduction of NEP 2020 (Mhalevolie 2025).

GOVERNMENT INITIATIVES FOR IMPLEMENTING SKILL-BASED EDUCATION UNDER NEP 2020

The NEP 2020 underscores the incorporation of skill-based education into regular schooling at both the primary and tertiary levels. This integration aims to

provide students with practical skills alongside theoretical knowledge, enhancing their employability (Ali 2024). An essential innovation is the integration of vocational education into the conventional curriculum, enabling students to acquire practical skills alongside academic knowledge, thereby enhancing employability. Significant national initiatives like the Skill India Mission, extended until 2026 with considerable financial resources, and Pradhan Mantri Kaushal Vikas Yojana (PMKVY 4.0) emphasize burgeoning fields such as artificial intelligence, digital marketing, and advanced technological competencies and enrolled candidates in 2025 is 264505 (PMKVY). By anticipating future trends, the National Skill Development Corporation (NSDC) enables India's youth to make a substantial contribution to the country's development. For school education, higher education, and skill development initiatives, the National Education Technology Forum (NETF) facilitates the free exchange of ideas about how to use technology to improve learning, assessment, planning, and administration, among other things. The NEP 2020 underscores experiential learning via organized internship and apprenticeship initiatives, such as the National Apprenticeship Promotion Scheme (NAPS), which offers students practical training and workplace exposure. The planned National Assessment Centre (PARAKH) seeks to enhance assessment reforms by standardizing evaluation techniques that measure academic attainment and occupational competencies. Concurrently, NEP 2020 advocates for collaboration between industry and academia, fostering partnerships between educational institutions and businesses for curriculum co-design, internships, guest lectures, and practical experience. Notwithstanding these extensive endeavors, problems in implementation endure. Discrepancies in enrollment and certification within flagship programs highlight the necessity for enhanced collaboration, effective resource allocation, and ongoing oversight to get desired results. NEP 2020 establishes a comprehensive framework for integrating skill-based education in India; nonetheless, its efficacy relies on strong inter-sectoral collaboration, enhancement of institutional capacity, and ongoing evaluation to guarantee significant learning and employability results(Talluri 2025).

CHALLENGES OF IMPLEMENTING SKILL BASED EDUCATION

NEP 2020 have proposed an elaborate measure to introduce Skill Based Education in the Indian Educational System, however, the efforts of the NEP towards incorporating Skill Based (Mhalevolie 2025). The challenges are: Many schools, especially in rural areas, lack proper vocational training facilities, equipment and workshops (Mir, 2025; Talluri, 2025; Sinha& Saxena, 2025; Rajpriya, 2025; Saluja & Kumari, 2024). Infrastructure and Resources are the major challenges in implementing Skill besed education in India (Khatoon, 2025; Mir, 2025; Talluri, 2025; Ali, 2024; Kalita, 2025). Skill-based education necessitates supplementary infrastructure, including laboratories, computers, workspaces, power supply, and machinery. Consequently, it can be difficult for weaker and smaller institutions, particularly in rural regions (Mhalevolie 2025; Saluja & Kumari 2024). Most teachers in schools and colleges are not trained to deliver skill-based classes (Ali, 2024; Bora 2021; Rajpriya, 2025; Kalita, 2025). Ensuring high-quality content and teacher training in multiple languages is a logistical challenge (Sinha et. al., 2015; Mhalevolie 2025; Mir 2025).Many trainers lack real-world industrial experience or training in teaching (Bora, 2021; Talluri, 2025). There is a weak linkage between educational institutions and industries (Mir 2025), the lack of alignment between curricula and industry needs often results in graduates struggling to find employment despite possessing academic qualifications. (Jafarov 2025; Mhalevolie 2025; Ali 2024). As without such linkage, there is lesser prospect of being gainful employment even after acquiring those skills (Mhalevolie 2025). One of the majors hurtle Skill Based Education is foreseen to face is lack of necessary funding (Mhalevolie 2025; Khatoon 2025; Ali 2024; Mir, 2025). Implementing the NEP 2020 will require significant funding, and there may be challenges in securing adequate funding from the government and other sources (Sharma & Thakur, 2025; Talluri, 2025). In developed countries, funding for education and skills development may be more widely available, but it remains a challenge (Saini & Chourasiya, 2023). Providing effective career guidance and counselling services to students is essential for helping them make informed choices about skill-based education pathways and career options (Bora, 2021). However, the availability of qualified career counsellors and access to career guidance resources may be limited, particularly in rural and underserved areas (Bora, 2021; Ali, 2024; Saluja & Kumari, 2024; Mir, 2025).

SUGGESTIONS FOR STRENGTHEN SKILL BASED EDUCATION IN INDIA

Following suggestions are proposed to strengthen skill-based education under NEP 2020:

- Better Infrastructure and Funding: More public money needs to be put into create contemporary training facilities, labs, and digital resources, especially in rural and underserved areas.
- Improve Teacher Skills:Teachers should participate in ongoing professional development programs to enhance their skills in areas such as vocational pedagogy, digital resources, and experiential learning strategies.
- Strengthen the connections between industry and academia: Schools should work with businesses to provide relevant courses, increase the number of internships, and encourage apprenticeships that give students more real-world experience.
- Reconstructing Career Guidance Institutions for Skill-Based Education: There are challenges with regards to career guidance and counselling within skill-based education which must be

complemented with better structured and accessible guidance institutions. Educational institutes must establish dedicated career guidance and counseling centers staffed with qualified professionals in order to help candidates make timely close quality decisions based on the best skills matching possible.

CONCLUSION

Skill-based education has become an essential for equipping India's workforce to meet the requirements of the 21st-century economy. The National Education Policy 2020 signifies a pivotal transition towards the incorporation of vocational education into conventional schooling, prioritizing adaptability, experience learning, and alignment with industry needs.This study emphasizes that although NEP 2020 offers a robust framework for enhancing skill development, ongoing challenges such as skill mismatches, insufficient infrastructure, inadequate teacher readiness, feeble industry collaboration, and societal stigma persistently obstruct effective implementation. Government efforts like Skill India, PMKVY, NSDC, NETF, PARAKH, and apprenticeship programs reflect robust policy purpose; yet, their efficacy relies on coordinated implementation, sufficient resource distribution, and ongoing assessment. Achieving the goals of NEP 2020 necessitates cooperative endeavors among policymakers, educators, industry stakeholders, and communities. By enhancing institutional capacity, fostering inclusion, and aligning education with the changing demands of the labor market, India can close the skill gap and leverage its demographic dividend. An integrated and equitable skill-based education system will promote employability and economic growth while contributing to sustainable development and lifelong learning opportunities for all.

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