21st Century Skills in Education: A Review of Frameworks and Implementation

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Abstract

The National Education Policy (NEP) 2020 introduces a substantial transformation in the educational framework of India by placing greater emphasis on the development of skills rather than mere memorization. This paper undertakes an examination of the fundamental elements of NEP 2020, including its educational reforms and its contribution to the transformation of India's education system in the direction of skills development. By conducting a comprehensive examination, this paper emphasizes the potential impacts of NEP 2020 in developing a framework for students equipped with skills necessary to thrive in the globalized economy of the twenty-first century.

Keywords: NEP 2020, Education, Skill devleopment, Skill-centric approaches, challenges.

1 Introduction

The education system has consistently held a pivotal position in the foundational tenets of the Indian Constitution. It serves as the instrument by which the individual is equipped with the necessary skills to realize their full potential in the future. Education assumes a pivotal position in a dynamic global landscape characterized by technological advancements across multiple disciplines. There is a need for an educated and proficient labor force that possesses the capacity to operate across multiple disciplines. Consequently, educational opportunities must be made available to ensure the long-term viability of the nation. The Agenda of One of the Sustainable Development Goals (adopted by all nations in 2015) aims

to promote opportunities for lifelong learning and assure equitable and inclusive quality education for all by 2030.(Lukose, 2023)

The National Education Policy (NEP) 2020 aims to implement a transformative approach to the education system through the promotion of problem-solving abilities, critical thinking, and creativity. This policy proposes a skills-based approach with the objective of cultivating versatile individuals capable of making meaningful contributions to society and effectively navigating the complexities of the contemporary era. The NEP 2020 implements comprehensive educational reforms at every level. Across all levels of education, from early infancy to higher education policy promotes interdisciplinary learning, course selection flexibility, and a holistic approach to development. The advancement of experiential learning and the reorganization of curricular frameworks prioritize the development of skills over memorization. The policy acknowledges the necessity of providing students with competencies that extend beyond their areas of expertise. Digital literacy, critical thinking, collaboration, and communication are deemed indispensable proficiencies in the twenty-first century. Promoting a multidisciplinary approach, the policy enables pupils to investigate a wide range of subjects and cultivate a more comprehensive repertoire of abilities.

Outcome-based education (OBE) is a fundamental concept that NEP 2020 highlights. The emphasis is shifted from instructional inputs to intended learning outcomes via OBE. Effective communication of learning objectives is essential in order for educators to develop courses that emphasize skill enhancement rather than simply imparting content. For OBE to be implemented effectively, rigorous methods of assessing course outcomes are necessary. In order to assess skills in addition to knowledge, conventional examination systems have been redesigned. A more comprehensive and ongoing assessment approach offers a more holistic perspective on the abilities of the students. NEP 2020 places significant importance on the alignment between program objectives and course outcomes. This procedure entails the harmonization of the objectives of program with the distinct educational results of individual courses. This process of mapping guarantees that every course makes a substantial contribution towards the cultivation of intended skills and competencies.

The education sector is in a constant state of change, as technological advancements, shifting societal dynamics, as well as the demands of the labor market all exert an influence. In light of societal advancements, it is imperative that the education system modify itself to furnish students with the requisite competencies and understandings to prosper in an intricate and interrelated global landscape. The world is experiencing swift changes in the twenty-first century as a result of globalization and digitization. Novel industries are emerging while conventional ones are undergoing a transformation. In addition to possessing academic qualifications, this ever-changing environment necessitates a workforce that exhibits practical expertise, adaptability, critical thinking, as well as problem-solving prowess. There has been an increased disparity between the competencies obtained via formal education and the ones that employers seek. A considerable number of recent graduates encounter difficulties in securing employment as a result of the incongruity between their academic background and the occupational demands of the sector. By emphasizing skill development and the practical implementation of

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knowledge, NEP 2020 ensures that graduates possess the necessary competencies to thrive in the professional world.

1.1   Skill Development

Within the framework of the NEP 2020, Outcome-Based Education assumes a critical function in cultivating the growth of students' skill sets. Conventional approaches to education frequently placed emphasis on the transmission of knowledge and the retention of information in writing, thereby limiting opportunities for the development of practical abilities. By defining observable, quantifiable, and specific learning outcomes that encompass both cognitive as well as non-cognitive abilities, OBE bridges this void. The aforementioned results comprise not only subject-matter expertise but also fundamental competencies including communication, problem-solving, collaboration, and flexibility. Learning outcomes are precisely defined declarations within an OBE framework that delineate the knowledge, comprehension, and abilities that a student ought to possess upon the culmination of a given course or program. The intended results are not ambiguous aspirations; instead, they are precise and measurable, furnishing educators and learners with a distinct course of action.

By incorporating skill-based learning outcomes through academic curricula, establishments can guarantee that pupils not only gain theoretical understanding but also develop practical competencies that are applicable in the workplace. Outcome-Based Education functions as a potent catalyst for the enhancement of skills within the educational environment. By basing education on precisely defined learning outcomes that incorporate practical skills as well as knowledge, OBE is in accordance with the goals of the NEP 2020 and equips students with the necessary abilities to prosper in a swiftly evolving and expertise-driven international environment. Incorporating skill development via OBE not only augments the employability of graduates but also furnishes them with the necessary capabilities to contribute to society in a versatile, inventive, and progressive manner.

1.2   Role Played by NEP 2020 in Promoting Skill Development

The NEP's revolutionary approach to the education system has significantly contributed to the advancement of skills. NEP 2020 guarantees that pupils attain a wide range of proficiencies necessary for achievement in the labor market of the twenty-first century. The policy recognizes the critical nature of abilities such as communication, problem-solving, critical thinking, and creativity. Together with academic knowledge, these abilities are emphasized in the NEP. As a result, the function of NEP within skill development is to cultivate students with a comprehensive skill set that can adeptly navigate the diverse demands of the workplace and society.

An additional noteworthy function of NEP 2020 is to prioritize vocational training and education. The policy prioritizes the reduction of the disparity between education and employment through the encouragement of vocational programs and internships. By providing students with industry-specific knowledge and practical skills, this methodology facilitates a smooth transition for them into the professional world. Consequently, the NEP plays a crucial role in skill development by guaranteeing that

students acquire the necessary competencies for lucrative employment and entrepreneurial endeavors, thereby enabling them to actively participate in the economic progress of the country.

Holistic Development: The National Education Policy 2020 promotes a multidisciplinary approach toward learning in recognition of the importance of holistic development. It encourages students to explore a variety of disciplines and topics, thereby developing their critical thinking, creativity, as well as problem-solving abilities.

Flexibility and Choice: The policy grants students autonomy and selection throughout their academic trajectory. The educational system prioritizes a student-centric approach, allowing individuals to select courses in accordance with their specific interests, aptitudes, and professional ambitions.

Focus on Skill Development: In terms of talent development, NEP plays a crucial function. The policy acknowledges that success cannot be achieved solely through academic knowledge. As a result, the policy incorporates digital literacy, problem-solving, critical thinking, and communication abilities into the curriculum, thereby preparing students to confront the challenges of the labor market in the twenty-first century.

Vocational Training: In addition, the NEP 2020 incorporates vocational training for students, which provides them with industry-specific knowledge and practical skills. It promotes vocational education and apprenticeships beginning in secondary school and guarantees that students are adequately prepared for entrepreneurial endeavors and employment.

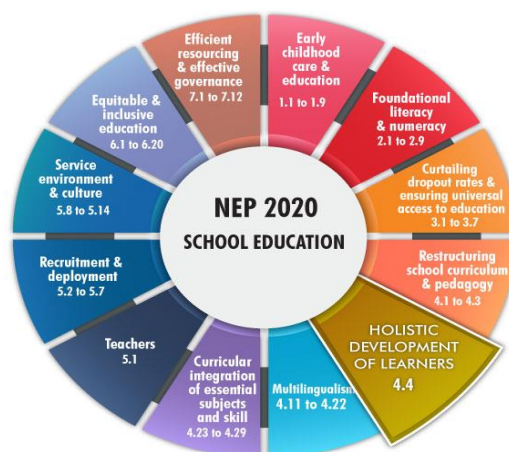## 1.3   Building 21st-century skills in student – NEP2020

Figure 1 Various component of NEP 2020[*]

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The advent of the twenty-first century has presented an array of novel obstacles and prospects. In an era of swift transformations, it is imperative that students cultivate a repertoire of 21st-century competencies. Critical thinking, problem-solving, collaboration, creativity, and communication are among these abilities. In recent times, there has been an increasing focus on equipping students with these competencies. This is especially evident in India, where the "National Education Policy 2020" (NEP2020) has designated the development of students who are proficient in navigating the complexities of the twenty-first century as a top priority. The overarching objective of NEP2020 is to furnish students with the necessary competencies to thrive in the twenty-first century.

NEP2020 assists in the development of a cohort of pupils who possess the requisite aptitudes to effectively confront the complexities of the twenty-first century and effectuate constructive change on a global scale through its emphasis on critical thinking, problem-solving, collaboration, communication, and creativity. By integrating technology, experiential learning, and multidisciplinary learning, NEP2020 equips students with the knowledge, skills, and resources necessary for global success.

There are various components on which NEP focuses on:

1. Critical Thinking & Problem Solving

An essential element of NEP2020 is its prioritization of the cultivation of students' critical thinking as well as problem-solving capabilities. Possessing these abilities is critical for achieving success in the contemporary, fast-paced world, in which information is perpetually evolving and novel challenges arise on a regular basis. By imparting critical thinking and problem-solving skills to students, we equip them with the necessary abilities to navigate this intricate environment and arrive at well-informed judgments.

2. Communication & Collaboration

A further crucial element of NEP2020 is its focus on collaboration and communication. It is becoming increasingly vital for individuals to have the ability to collaborate effectively with others in order to accomplish shared objectives. By fostering effective collaboration and communication among students, we assist them in establishing the networks and connections that are critical for achieving success in the contemporary era.

3. Creativity

NEP2020 emphasizes creativity in addition to critical reasoning, problem-solving, communication, and collaboration. Progress and innovation are dependent on creativity, which is gaining importance in the contemporary economy. By cultivating students' creativity, we are assisting them in devising novel and inventive resolutions to the challenges they will inevitably encounter in the future.

4. Multidisciplinary Learning

Multidisciplinary learning, which is intended to help students develop a broader perspective as well as a more profound understanding of the world, is one of the most significant developments. This approach is predicated on the notion that students are more likely to retain and engage with information when it is

presented in a meaningful way to them and that learning is greatest whenever it is contextualized and applicable to the real world.

5. Experiential Learning

An additional critical element of NEP2020 is its prioritization of experiential learning. Students acquire knowledge most effectively through practical experiences, such as internships, field excursions, and projects. By providing opportunities for students to implement their knowledge in practical, twenty-first century scenarios, we are aiding in the development of the necessary competencies for their future success.

6. Use Of Technology

NEP2020 concludes by emphasizing the significance of technology within education. Students' technological proficiency is becoming an ever-increasing necessity due to the proliferation of digital technologies. By integrating technology into the educational setting, we equip students with the necessary resources to retrieve, evaluate, and generate information in the contemporary digital age.

1.4 Challenges In Implementing A Skill-Centric Approach

1. The transition to a proficiency-based methodology, as delineated in the "National Education Policy" (NEP) 2020, is a paradigm-shifting undertaking that gives rise to a range of prospects and obstacles. Although the prioritization of skills is consistent with the changing demands of the contemporary global landscape, there exist numerous obstacles that must be surmounted throughout the execution of this methodology.

2. Change aversion among numerous stakeholders, including institutions, parents, and educators, is one of the most significant obstacles to instituting a skill-centric approach. Curriculum delivery and standardized assessment are frequently given precedence in conventional educational systems. Transitioning the emphasis from knowledge acquisition to hands-on implementation necessitates a paradigm shift, which could face resistance from individuals accustomed to the existing state of affairs.

3. Educators are crucial to the effective implementation of a skill-centered methodology. It is imperative that they modify their pedagogical approaches, evaluative techniques, and course curricula in accordance with the emerging paradigm. Effectively fostering skill development necessitates the implementation of comprehensive professional development and training initiatives that furnish educators with the requisite knowledge and abilities.

4. It is necessary to realign assessment strategies in order to assess practical skill acquisition in addition to knowledge retention. It is possible that conventional assessment methods fail to sufficiently evaluate competencies such as problem-solving, critical thinking, communication, and creativity. Creating valid and dependable evaluation methods that precisely quantify the acquisition of skills can present a formidable task.

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5. The adoption of skill-centric approach may require modifications to the allocation of resources. This includes the development of experiential learning environments, investments in technology, and updates to learning materials. Sufficient resources are critical for enabling skill development activities, initiatives, and practical experiences to be successful.

1.5 Impact of Skill-Centric Approach

1. By implementing a skill-centric approach, universities endow their graduates with tangible proficiencies that enhance their desirability to potential employers. Education can be transformed into a direct route to employment by emphasizing market-relevant skills; this narrows the divide between education as well as employability.

2. A skill-centric approach cultivates an entrepreneurial mindset and promotes innovation. It is more probable that graduates who possess problem-solving abilities, adaptability, and creativity will recognize opportunities, make contributions to innovation, and potentially engage in entrepreneurial endeavors, thereby stimulating economic expansion.

3. Addressing worldwide issues such as social inequality, healthcare, and climate change requires competencies including collaboration, ethical decision-making, and critical thinking. Those who receive a skill-centered education are empowered to make significant contributions to addressing the most critical challenges facing society.

4. Education that emphasizes skills development advocates for lifelong learning. Graduates are adequately equipped to consistently enhance their expertise and understanding in response to the dynamic nature of industries and the emergence of fresh obstacles. This flexibility guarantees continued professional advancement and individual progress.

2 Literature Review

(Kumar Jain et al., 2021) Notwithstanding the obstacles presented by the pandemic, the "National Education Policy" 2020 could supply an impetus for the education sector to flourish. The NEP's announcement drew criticism via industry experts, yet it has the potential to establish India as a globally renowned educational refuge. The "National Education Policy" 2020 signifies the transition from the previous policy, which was established in 1986, to a period characterized by novel educational reforms. This is the inaugural policy that endeavors to liberate students from the shackles of administrative limitations through the implementation of multiple-choice, interdisciplinary, and fortunate learning opportunities. Conversely, policy has been subject to critical examination and analysis by professionals in the field, resulting in divergent perspectives. The objective of the policy is to establish a resilient digital infrastructure within the education sector, which would guarantee continuous learning amidst unforeseen situations.

(M Shasidharan, 2021) Our Indian constitution stipulates, in Article 45 of the Directive Principles of State Policy, that education must be accessible to all on an equal basis. The state is required to comply

with the center's instructions because to the Education being on the Concurrent list, however it is not mandated. Primary education, which is currently mandated by Article 21A, is a fundamental entitlement for students aged 6 to 14 years. Numerous new educational initiatives, including the midday meal program, the Navodaya Vidyalas, Sarva Siksha Abhiyan, Kendriya Vidyalayas, and others, have been established under the National Education Policy. The primary objective of this "national education policy" is to reform the conventional structure of higher education and secondary education. Shri. Narendra Modi, the prime minister of India, and his cabinet have adopted National Education Policy 2020. Therefore, the 34-year-old Old "National Education Policy" must be replaced in order to increase global competitiveness. The policy is effectively structured around five fundamental domains, namely accountability, quality, affordability, accessibility, and equality.

(Madheswari, 2021) India has historically made significant and praiseworthy advancements in the domain of education. Since the introduction of the modern education system by Macaulay in 20th century, Indian education has been influenced by his ideas. All modifications and reforms to education policy were founded exclusively on Macaulay's system. "National Education Policy", 2020 endeavors to overhaul the entire educational system, including research studies and early childhood education. In this age of technological predominance and the global transition to a digital environment, the education system requires an immediate and profound transformation. Furthermore, the discrepancy identified in the academic achievements of prestigious establishments in comparison to other establishments, as well as the global standing of Indian universities, requires an overhaul of education system.

(Yadav, 2021) The "New Education Policy" (NEP 2020), which was unveiled by the Government of India, represented a positive development and welcomed respite amidst the global downturn brought about by the Covid-19 pandemic. The NEP 2020 announcement came as an absolute surprise to many. Numerous educationists did not anticipate the modifications which NEP 2020 has proposed. While education policy has had an equal impact on both secondary and tertiary education, this article is predominately concerned with NEP 2020 and its implications for higher education.

(Umachagi & Selvi, 2022) It is widely acknowledged that education policy, being the principal driver of economic and social growth, must be predicated, forward-looking, and precisely delineated in each nation. In light of their distinct cultural and traditional heritages, numerous countries have established a variety of educational systems. The recently unveiled "New Education Policy 2020" by the Government of India seeks to establish a sustainable knowledge society that is both dynamic and fair, by ensuring that all citizens have access to education of exceptional quality. A paradigm shift will occur as a result of this commendable measure, which will modernize, advance, and promote equity within the Indian education system.

(Soni, 2022) Education assumes a pivotal role in the progress and advancement of both the nation and its populace, thus serving as the cornerstone of society. Education undoubtedly possesses formidable capabilities. In accordance with the suggestions put forth by an advisory panel led by Dr. Kasturirangan, former chairman of the "Indian Space Research Organization", a New Education Policy has been formulated. This policy centers on the following aspects: affordability, accountability, quality, and equity

in the realm of education within our nation. The author of this paper will examine issues and challenges associated with the implementation of different strategies outlined in the 2020 national education policy, as well as the complexities involved and the key areas that are still lacking. Ultimately, the paper delves into the disparity that exists between policy and practice, supported by recent data statistics. In subsequent sections of this paper, every aspect pertaining to the potential difficulties that may arise as a result of the modifications to new education policy has been examined in depth.

(Jain, 2022) New Policy is an all-encompassing structure designed to bring about a paradigm shift in the education systems of India. Emphasizing the development of students' cognitive, social, and affective competencies, the policy proposes a multidisciplinary and holistic approach to education. Nevertheless, the execution of the policy encounters numerous obstacles, such as insufficient funding, inadequate infrastructure, and a scarcity of trained personnel. NEP 2020's critical analysis demonstrates that despite the policy's lofty goals and good intentions, its execution could encounter substantial obstacles. Despite the policy's commendable emphasis on a student-centric approach, the prevailing education system continues to be predominantly teacher-centric.

(Gupta & Gupta, 2022) Institutions of higher education will experience a significant paradigm shift within the next two decades. Academic leaders at various echelons, including department heads, heads of educational programs, heads of governance, deans, and team leaders, will have a substantial impact on the institute's implementation of innovations, reforms, and a fundamental transformation in order to attain accreditation, excellence, and quality education. Effective leadership at every level of the institute does not occur automatically on the basis of a person's credentials and experience. Leaders are educated and nurtured in order to confront the obstacles that arise from the transformation envisioned in the 2020 national education policy. The executives receive guidance and support to enhance their performance potential. The competence framework and leadership roles outlined in this paper are derived from the provisions of the National Education Policy 2020, a review of the relevant literature, and the authors' personal experiences.

(Vijay, 2023) The objective of the New Education Policy (NEP) 2020 is to revolutionize the education system in India through an all-encompassing series of reforms. The policy seeks to rectify the deficiencies that the existing system exhibits, including inadequate emphasis on critical thinking as well as problem-solving abilities and subpar academic achievements. The education system is intended to be made more holistic, multifaceted, and adaptable through the implementation of this policy. Additionally, the policy seeks to foster in students critical thinking, originality, and innovation. This document assesses the efficacy of the NEP 2020 in enhancing the education system of India through a comprehensive analysis. A comprehensive examination of existing literature, government documents, and information sources formed the basis of the review study.

(Lowe & Galhotra, 2023) The National Education Policy (NEP) 2020 introduces a substantial transformation in the educational framework of India by placing greater emphasis on the development of skills rather than mere memorization. This paper undertakes an examination of the fundamental elements of NEP 2020, including its educational reforms and its contribution to the transformation of

India's education system in the direction of skills development. The text explores the principles of outcome-based education, course outcome measurement, and the critical correspondence between program objectives and course outcomes as stipulated in the policy. By conducting an extensive examination, this article emphasizes the possible consequences of NEP 2020 on the development of a cohort of students who possess the aptitudes essential for the interconnected global economy of the twenty-first century.

(Lukose, 2023) The government's NEP 2020 represents a significant endeavor to reform the education system in response to the alterations brought about by the pandemic. The policy places greater emphasis on skill-based instruction for students, enabling them to make informed decisions regarding their future endeavors. The technological revolution, also referred to as the fourth industrial revolution, is causing a fundamental shift in human behavior, work practices, and social interactions. In order to turn our kids into real global resources, NEP is centered on encouraging innovation and curiosity among students so that college and university curricula are more skill-oriented. The purpose of this study is to investigate the involvement of stakeholders in skill-based development for students, as well as to identify the suggested learning skills that students should acquire. The purpose of this research is to determine how NEP 2020 influences the development of student skills. Additionally, the paper investigates the viewpoints of various stakeholders regarding skill development.

(Singh, 2024) Physical education programs are of paramount importance in educational environments as they actively encourage the adoption of healthy lifestyles as well as holistic growth among students. The purpose of this comprehensive evaluation is to analyze the impact of infrastructure on the improvement of physical education programs. Infrastructure comprises a multitude of elements, including but not limited to facilities, apparatus, and outdoor areas. It is critical to comprehend the manner in which these components contribute to the efficacy of "physical education programs" in order to maximize student engagement, learning achievements, and general welfare. Physical education, encompassing the development of social skills, physical fitness, cognitive advancement, and the acquisition of fundamental movement abilities, is an indispensable element in fostering overall well-being and health throughout one's lifespan. The success of physical education programs is predominantly determined by the framework that fosters and facilitates learning. The outcomes and caliber of Physical Education programs are substantially impacted by the infrastructure, encompassing structures, equipment, and outdoor spaces.

3 CONCLUSION

The NEP 2020 signifies a paradigm shift in Indian education, emphasizing skill development over mere memorization. Although the adoption of skill-centric approach is not devoid of obstacles, its potential ramifications for both individuals and society as a whole are substantial, as discussed in this paper. As a result, there will be a cohort of students who possess not only a solid foundation in academic principles but also the pragmatic abilities essential for achievement, ingenuity, and societal advancement in the twenty-first century.

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