

NATIONAL EDUCATION POLICY (NEP) 2020: IN LIGHT OF THE SUSTAINABLE DEVELOPMENT GOALS AND THE USE OF TECHNOLOGY

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Abstract

Quality education is the backbone for the growth of any society, and education policy is the way to attain it. The NEP 2020 is also consistent with Goal 4 of the United Nations Sustainable Development Goals (SDG 2030), which states unequivocally that equal access to education is the foundation of long-term development. By separating SDG targets from NEP, the government has ensured the success of the nation's self-reliance campaign by providing equal education to all. NEP 2020 will strengthen all the citizens of the country by enhancing their skills and knowledge. Furthermore, it clearly talks about the complete overhauling of the Indian educational system from pre-primary to higher education, along with curricular reform and institutional reform in a phased manner, which will help India achieve SDG objectives. Following the above principles of the SDG, NEP 2020 is based on five pillars: access, affordability, equity, quality, and accountability. The main objective of NEP 2020 is to establish India as "a global knowledge superpower" by providing quality education, encouraging innovation, and cultivating a sound research culture, in which technology plays a very important role. According to NEP 2020 paragraph 23, India is a global leader in information and communication technology and in other cutting-edge domains, such as space. The Digital India Campaign is helping to transform the entire nation into a digitally empowered society and knowledge economy. While education will play a critical role in this transformation, technology itself will play an important role in the improvement of educational processes and outcomes; thus, the relationship between technology and education at all levels is bidirectional. If we have to achieve the Sustainable Development Goals, then we need to improve the education system. Technology is an important tool to improve the education system. Thus, sustainable development goals, education, and technology are related to each other. The main aim of this research is to study how NP 2020 is helpful in improving our technology and achieving the Sustainable Development Goals.

Key words: NEP 2020; sustainable development. Goals, technology

1. INTRODUCTION

By 2030, India will have the largest number of young populations on the globe, a population size that will be a boon only if these young people are skilled enough to join the workforce. Quality education will play a major role in it. Development that meets the needs of the present without compromising the ability of future generations to meet their own needs This most widely accepted definition of sustainable development was given by the Brundtland Commission in its 1987 report, Our Common Future. Sustainable development (SD) calls for concerted efforts towards building an inclusive, sustainable and resilient future for people and planet.



Core Elements of Sustainable Development

Three core elements of sustainable development are economic growth, social inclusion, and environmental protection. It is crucial to harmonise them. Sustainable economic growth, achieving sustainable livelihoods, living in harmony with nature, and appropriate technology are important for sustainable development. Environmental Sustainability: It prevents nature from being used as an inexhaustible source of resources and

ensures its protection and rational use. Aspects such as environmental conservation, investment in renewable energy, saving water, supporting sustainable mobility, and innovation in sustainable construction and architecture all contribute to achieving environmental sustainability on several fronts.

Social Sustainability: It can foster gender equality and the development of people, communities, and cultures to help achieve a reasonable and fairly distributed quality of life, healthcare, and education across the globe.

Economic Sustainability: Focuses on equal economic growth that generates wealth for all without harming the environment. Investment and equal distribution of economic resources Eradicating poverty in all its forms and dimensions

Integration of scientific and traditional knowledge If the people are able to contribute their local resources and practices into the process of change, the development becomes not only sustainable but also gets accelerated. Combining traditional and scientific knowledge is called community knowledge. Moving towards SD in many areas will require community knowledge. Indigenous knowledge is also a potential source for the conservation of biodiversity. The significance of traditional knowledge has been recognised in India through initiatives such as the National Ayush Mission (NAM) and the Traditional Knowledge Digital Library (TKDL). Education has always been the main agent of change in the world. What happens in the classroom is reflected in society. It is not vice-versa. The difference, the intervention that we wish to make has to start from the educational ring itself The Sustainable Development Goals given to the world by the United Nations are based on what we need to survive in a better world. In Agenda 2030, there are 17 global goals, and a majority of activists support this mission. The National Education Policy 2020 (India) has mentioned the SDGs and given a call to align education in India to these goals.

This policy proposes the revision and revamping of all aspects of the education structure, including its regulation and governance, to create a new system that is aligned with the aspirational goals of 21st-century education, including SDG4, while building upon India's traditions and value systems.

2. SUSTAINABLE DEVELOPMENT GOALS RELATED TO NEP 2020

The National Education Policy (NEP) was introduced in 2020, becoming India's first education policy of the 21st century. NEP is introduced with a vision for education for sustainable development and is expected to move India onto the track to achieve Goal 4 quality education—by offering inclusive and equitable education to all. NEP has put a special consideration on the need of Structuring the entire education system of the country if India wants to timely achieve the set goals and targets. NEP 2020 has put a focus on providing comprehensive and integrated environmental education, including areas such as sustainable development and living, waste management, environmental protection, biodiversity, sanitation, and climate change. NEP particularly emphasized on training and sensitizing teacher educators and trainers Around Sustainable Development and has made it mandatory environmental education as a part of the curriculum. NEP aims to Provide education in a way that it shall provide and generate sustainable livelihoods and will boost the economy of the nation. Before the NEP, the focus and efforts were on promoting sustainable education through education. Pacific Education for Sustainable Development Framework has already identified areas of priority in the field of formal education and teacher training to build their knowledge and understanding and to promote sustainable practices, with special emphasis on promoting quality education. Education for Sustainable Development (ESD) has been a major area of focus, both nationally and internationally. As NEP was introduced recently, there is still a long way to go for the complete and effective implementation of the policy. Till then, the nation can keep following and implementing the good practices and put forth efforts to see how the NEP and ESD components can become an inseparable part of the curriculum methodology and how they can be reached and applied in every educational institution in India.

Implementing SDG-4: SDG-4 envisages ensuring inclusive and equitable quality education and promoting lifelong learning opportunities for all. The NEP, through the following provisions, strives to achieve these targets.

- **Multi-Disciplinary Approach**
- **Education and Skills Integration**
- **Making education more inclusive**
- **Effective Regulation**
- **Allowing Foreign Universities**

India has achieved significant progress towards the goal of education for all. Constitutionally, several key programmes and policies have been initiated to provide free and compulsory education to all children in the age range of six to fourteen years as a fundamental right. Initiatives such as Sarva Siksha Abhiyan (SSA) and Right to Education (RTE) have given much required impetus to education system in India. Though it has significantly improved the enrolment rates across the country in primary education, the challenge of quality in terms of learning outcomes remains to be addressed. Sustainable Development Goal 4 (SDG 4) is the education goal.

It aims to "ensure inclusive and equitable quality education and promote lifelong learning opportunities for all."

• *Target 4.1 By 2030, ensure that all girls and boys complete free, equitable, and quality primary and secondary education that leads to relevant and effective learning outcomes.*

NEP 2020 universalizes free and compulsory quality education without discrimination from early childhood care and education until the 12th grade through the Right to Education, Sarva Shiksha Abhiyan, and Beti Bachayo Beti Padhayo. NPEGEL, by paragraph 6. Equitable and Inclusive Education: Learning for All

• *Target 4.2 By 2030, ensure that all girls and boys have access to quality early childhood development, care, and pre-primary education so that they are ready for primary education.*

NEP paragraph 1.1: "The provision of early childhood care and education is provided by the preparatory class," or "Balavatika." ECCE ideally consists of flexible, multi-faceted, multi-level, play-based, activity-based, and inquiry-based learning, comprising of alphabets, languages, numbers, counting, colours, shapes, indoor and outdoor play, puzzles and logical thinking, problem-solving, drawing, painting, and other visual arts, crafts, drama, puppetry, music, and movement leanings.

• *Target 4.3: By 2030, ensure equal access for all women and men to affordable and quality technical, vocational, and tertiary education, including university*

NEP 2020, paragraphs 23–24.4.26 imperative to reduce barriers to skills development and technical and vocational education and training (TVET), starting from childhood (grade 6), as well as to tertiary education, including university, and to provide lifelong learning opportunities for youth and adults.

• *Target 4.4 By 2030, substantially increase the number of youth and adults who have relevant skills, including technical and vocational skills, for employment, decent jobs, and entrepreneurship.*

NEP paragraph 16: Re-imagining Vocational Education Equitable access to TVET needs to be expanded while quality is ensured. Learning opportunities should be increased and diversified, using a wide range of education and training modalities, so that all youth and adults, especially girls and women, can acquire relevant knowledge, skills, and competencies for decent work and life.

Skills acquisition: Beyond work-specific skills, emphasis must be placed on developing high-level cognitive and non-cognitive/transferable skills, such as problem solving, critical thinking, creativity, teamwork, communication skills, and conflict resolution, which can be used across a range of occupational fields.

• *Target 4.5: By 2030, eliminate gender disparities in education and ensure equal access to all levels of education and vocational training for the vulnerable, including persons with disabilities, indigenous peoples, and children in vulnerable situations.*

NEP paragraph 3. Curtailing Dropout Rates and Ensuring Universal Access to Education at All Levels 3.1 One of the primary goals of the schooling system must be to ensure that children are enrolled in and attending school. Through initiatives such as the Sarva Shiksha Abhiyan (now the Samagra Shiksha) and the Right to Education Act, India has made remarkable strides in recent years in education.

NEP gives attaining near-universal enrolment in elementary education Inclusion and equity: All people, irrespective of sex, age, race, colour, ethnicity, language, religion, political or other opinion, national or social origin, property or birth, as well as persons with disabilities, migrants, indigenous peoples, and children and youth, especially those in vulnerable situations or other status, should have access to inclusive, equitable quality education and lifelong learning opportunities. Vulnerable groups that require particular attention and targeted strategies include persons with disabilities, indigenous peoples, ethnic minorities, and the poor.

Gender equality: All girls and boys, women and men, should have equal opportunity to enjoy education of high quality, achieve at equal levels and enjoy equal benefits from education. Adolescent girls and young women, who may be subject to gender-based violence, child marriage, early pregnancy, and a heavy load of household chores, as well as those living in poor and remote rural areas, require special attention. In contexts in which boys are disadvantaged, targeted action should be taken for them. Policies aimed at overcoming gender inequality are more effective when they are part of an overall package that also promotes health, justice, good governance, and freedom from child labour.

• *Target 4.6 By 2030, ensure that all youth and a substantial proportion of adults, both men and women, achieve literacy and numeracy.*

NEP paragraph 2: Foundational Literacy and Numeracy: An Urgent and Necessary Prerequisite to Learning promote The principles, strategies, and actions for this target are underpinned by the contemporary understanding of literacy as a continuum of proficiency levels in a given context. It goes beyond the simple dichotomy of "literate" versus "illiterate." Therefore, action for this target aims at ensuring that by 2030, all young people and adults across the world should have achieved relevant and recognised proficiency levels in functional literacy and numeracy skills that are equivalent to levels achieved at the successful completion of basic education.

• *Target 4.7 By 2030, ensure that all learners acquire the knowledge and skills needed to promote sustainable development, including, among others, through education for sustainable development and sustainable lifestyles, human rights, gender equality, the promotion of a culture of peace and nonviolence, global citizenship, and appreciation of cultural diversity and of culture's contribution to sustainable development.*

NEP Paragraph 20: Professional Education It is vital to give a central place to strengthening education's contribution to the fulfilment of human rights, peace, and responsible citizenship from local to global levels, gender equality, sustainable development, and health. The content of such education must be relevant, with a

focus on both cognitive and non-cognitive aspects of learning. The knowledge, skills, values, and attitudes required by citizens to lead productive lives, make informed decisions, and assume active roles locally and globally in facing and resolving global challenges can be acquired through education for sustainable development (ESD) and global citizenship education (GCED), which includes peace and human rights education as well as intercultural education and education for international understanding.

- *Target 4.a: Build and upgrade education facilities that are child-, disability-, and gender-sensitive and provide safe, non-violent, inclusive, and effective learning environments for all.*

NEP paragraph 7. Efficient Resourcing and Effective Governance through School Complexes/Clusters paragraph 7.1. While the establishment of primary schools in every habitation across the country-driven by the Sarva Shiksha Abhiyan (SSA), now subsumed under the Samagra Shiksha Scheme and other important efforts across the States - has helped to ensure near-universal access to primary schools, it has also led to the development of numerous very small schools.

- *Target 4.b By 2020, substantially expand globally the number of scholarships available to developing countries, in particular the least developed countries, small island developing states, and African countries, for enrolment in higher education, including vocational training and information and communications technology, technical, engineering, and scientific programmes, in developed countries and other developing countries. Scholarship programmes can play a vital role in providing opportunities for young people and adults who would otherwise not be able to afford to continue their education. Where developed countries offer scholarships to students from developing countries, these should be structured to build the capability of the developing country.*

12.10,22.20 provide Financial assistance to students shall be made available through various measures. Efforts will be made to incentivize the merit of students belonging to SC, ST, OBC, and other SEDGs. The National Scholarship Portal will be expanded to support, foster, and track the progress of students receiving scholarships. Private HEIs will be encouraged to offer larger numbers of free tuition and scholarships to their students

- *Target 4.c By 2030, substantially increase the supply of qualified teachers, including through international cooperation for teacher training in developing countries, especially the least developed countries and small island developing states.*

According to NEP paragraph 15, teachers are the key to achieving all of the SDG 4 targets. It requires urgent attention, with a more immediate deadline, because the equity gap in education is exacerbated by the shortage and uneven distribution of professionally trained teachers, especially in disadvantaged areas. As teachers are a fundamental condition for guaranteeing quality education, teachers and educators should be empowered, adequately recruited and remunerated, motivated, professionally qualified, and supported within well-resourced, efficient, and effectively governed systems.

The five other SDGs with direct reference to education

- **Health and well-being (SDG 3 target 3.7)**

By 2030, ensure universal access to sexual and reproductive healthcare services, including family planning, information, and education, and the integration of reproductive health into national strategies and programs.

- **Gender equality (SDG 5 target 5.6)**

Number of countries with laws and regulations that guarantee women aged 15–49 years access to sexual and reproductive health care, information, and education

- **Decent work and sustainable growth (SDG 8 target 8.6)**

By 2020, substantially reduce the proportion of youth not in employment, education, or training.

- **Responsible consumption and production (SDG 12 target: 12.8)**

By 2030, ensure that people everywhere have the relevant information and awareness for sustainable development and lifestyles in harmony with nature.

- **Climate change mitigation (SDG 13 target 13.3)**

Improve education, awareness raising, and human and institutional capacity on climate change mitigation, adaptation, impact reduction, and early warning.

The advancement of human capital, as envisaged in the objectives of SDG 4, is an integral part of a country's development and the primary force behind economic and social well-being. The combination of many accumulated skills and goals (of which education is one of the most important factors) also contributes to the growth of social capital, which is characterised by favourable labour market conditions, increased investment, and better mobilisation of resources, resulting in a favourable business climate. very important for Using education data from 55 countries and territories, an econometric analysis revealed a positive correlation between capital investment in education and a nation's economic growth.

According to the Human Development Report 2020, there is a clear positive correlation between educational outcomes and Human Development Index (HDI) scores for most countries. Groups of developed countries that are doing well in terms of economic as well as overall human development parameters have higher levels of investment in education, as determined by expected and average years of schooling.

According to NITI Aayog, SDG 4 is linked to several other development goals such as: eradicating poverty (SDG 1), achieving gender equality (SDG 5), ensuring good health and wellbeing (SDG 3), reducing inequalities among countries (SDG 10), promoting sustained, inclusive, and sustainable economic growth and decent work for all (SDG 8), building resilient infrastructure and fostering innovation (SDG 9), ensuring access to information and awareness for sustainable consumption and style of production in harmony with nature (SDG 12), providing education and awareness toward taking urgent action to combat climate change (SDG 13), and promoting peaceful and inclusive societies (SDG 16)

By using education as a powerful tool, it can improve the standard of living and quality of life of citizens by generating employment opportunities for the youth, providing safety for women, protecting the environment, providing education to all age groups, reducing dropout rates, etc.

3. USE AND IMPLEMENTATION OF TECHNOLOGY UNDER NEP 2020

Over the last decade, India has transformed itself into an "information intensive society," and there is a growing requirement to embrace the usage of technology in the field of education. In this regard, the policy notes that one of the central principles steering the education system will be the "extensive use of technology in teaching and learning, removing language barriers, increasing access, as well as education planning and management." India is a global leader in information and communication technology and in other cutting-edge domains, such as space. The Digital India Campaign is helping to transform the entire nation into a digitally empowered society and knowledge economy. While education will play a critical role in this transformation, technology itself will play an important role in the improvement of educational processes and outcomes; thus, the relationship between technology and education at all levels is bidirectional.

According to NEP paragraph 23.3 An autonomous body, the National Educational Technology Forum (NETF), will be created to provide a platform for the free exchange of ideas on the use of technology to enhance learning, assessment, planning, administration, and so on, both for school and higher education.

The NETF will have the following functions:

- provide independent, evidence-based advice to central and state government agencies on technology-based interventions.
 - build intellectual and institutional capacities in educational technology;
 - envision strategic thrust areas in this domain, and
 - articulate new directions for research and innovation.
1. The NETF will organise multiple regional and national conferences, workshops, etc. to solicit inputs from national and international educational technology researchers, entrepreneurs, and practitioners.
 1. A rich variety of educational software, for all the above purposes, will be developed and made available for students and teachers at all levels. All such software will be available in all major Indian languages and will be accessible to a wide range of users, including students in remote areas and Divyang students.
 2. Teaching-learning e-content will continue to be developed by all states in all regional languages, as well as by the NCERT, CIET, CBSE, NIOS, and other bodies and institutions, and will be uploaded onto the DIKSHA platform.
 3. Technology-based education platforms, such as DIKSHA/SWAYAM, will be better integrated across school and higher education, and will include ratings and reviews by users so as to enable content developers to create user-friendly and qualitative content.
 4. The National Research Foundation will initiate or expand research efforts in this technology. In the context of AI, NRF may consider a three-pronged approach: (a) advancing core AI research; (b) developing and deploying application-based research; and (c) advancing international research efforts to address global challenges in areas such as healthcare, agriculture, and climate change using AI.
 5. Universities may also develop and disseminate courses in machine learning areas via platforms such as SWAYAM. For rapid adoption, HEIs may blend these online courses with traditional teaching in undergraduate and vocational programmes.
 6. Efforts to teach languages to school students will be dovetailed with efforts to enhance natural language processing for India's diverse languages.
 7. Pilot studies for online education: Appropriate agencies, such as the NETF, CIET, NIOS, IGNOU, IITs, NITs, etc., will be identified to conduct a series of pilot studies in parallel to evaluate the benefits of integrating education with online education while mitigating the downsides, and also to study related areas, such as student device addiction, the most preferred 8-formats of e-content, etc. The results of these pilot studies will be publicly communicated and used for continuous improvement.
 8. Digital infrastructure: There is a need to invest in the creation of open, interoperable, evolvable, public digital infrastructure in the education sector that can be used by multiple platforms and point solutions to solve for India's scale, diversity, complexity, and device penetration. This will ensure that the technology-based solutions do not become outdated with the rapid advances in technology.
 9. Online teaching platform and tools: Appropriate existing e-learning platforms such as SWAYAM and DIKSHA will be extended to provide teachers with a structured, user-friendly, and rich set of assistive tools for

monitoring the progress of learners. Tools, such as a two-way video and two-way audio interface for holding online classes, are a real necessity, as the present pandemic has shown.

10. Content creation, digital repository, and dissemination: A digital repository of content, including the creation of coursework, learning games and simulations, augmented reality, and virtual reality, will be developed, with a clear public system for ratings by users on effectiveness and quality. For fun-based learning, student-appropriate tools like apps, gamification of Indian art and culture in multiple languages, and clear operating instructions will also be created. A reliable backup mechanism for disseminating e-content to students will be provided.

11. Addressing the digital divide: Given the fact that there still persists a substantial section of the population whose digital access is highly limited, the existing mass media, such as television, radio, and community radio will be extensively used for telecast and broadcasts.

12. Such educational programmes will be made available 24/7 in different languages to cater to the varying needs of the student population. A special focus on content in all Indian languages will be emphasised and required; digital content will need to reach the teachers and students in their medium of instruction as far as possible.

13. Virtual Labs: Existing e-learning platforms such as DIKSHA, SWAYAM, and SWAYAMPRAKASH will also be leveraged for creating virtual labs so that all students have equal access to quality practical and hands-on experiment-based learning experiences. The possibility of providing adequate access to SEDG students and teachers through suitable digital devices, such as tablets with pre-loaded content, will be considered and developed.

14. Training and incentives for teachers: Teachers will undergo rigorous training in learner-centric pedagogy and on how to become high-quality online content creators themselves using online teaching platforms and tools. There will be an emphasis on the teacher's role in facilitating active student engagement with the content and with each other.

15. Online assessment and examinations: Appropriate bodies, such as the proposed National Assessment Center or PARAKH, school boards, the NTA, and other identified bodies, will design and implement assessment frameworks encompassing the design of competencies, portfolios, rubrics, standardised assessments, and assessment analytics. Studies will be undertaken to pilot a new way of assessment using education technologies focusing on 21st century skills.

16. Blended models of learning: While promoting digital learning and education, the importance of face-to-face, in-person learning is fully recognized. Accordingly, different effective models of blended learning will be identified for appropriate replication in different subjects.

17. Laying down standards: As research on online and digital education emerges, NETF and other appropriate bodies shall set up standards of content, technology, and pedagogy for online and digital teaching and learning. These standards will help to formulate guidelines for e-learning by states, boards, schools, school complexes, HEIs, etc.

4. CONCLUSION

The NEP seems to support holistic and inclusive education where learning based on inquiry, curiosity, discovery, discussion, and analysis is preferred. It also brings access, equity, quality, affordability, and accountability to education. This policy is aligned with the 2030 Agenda for Sustainable Development and aims to transform India into a vibrant knowledge society and global knowledge superpower by making both school and college education more holistic, flexible, multidisciplinary, suited to 21st century needs, and aimed at bringing out the unique capabilities of each student. Education, no doubt, is a key to bringing sustainable development and is a game-changing tool. Education can bring about the required changes. In the attitude, behaviour and skills among the school community who can become ultimate future problem solver and decision Makers. If schools, institutions, and colleges can bring in the theme of sustainability as a central part of education in a practical way, then this would be one of the greatest contributions to ESD. This paper attempted to examine what studies and literature have already been done in the field of ESD, what good practises have been shared, and what the remaining critical barriers and obstacles to ESD are and how to address them. The review article tries to elaborate on actions and steps needed around sustainability and focuses on education for sustainable development, not education about sustainable development.

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