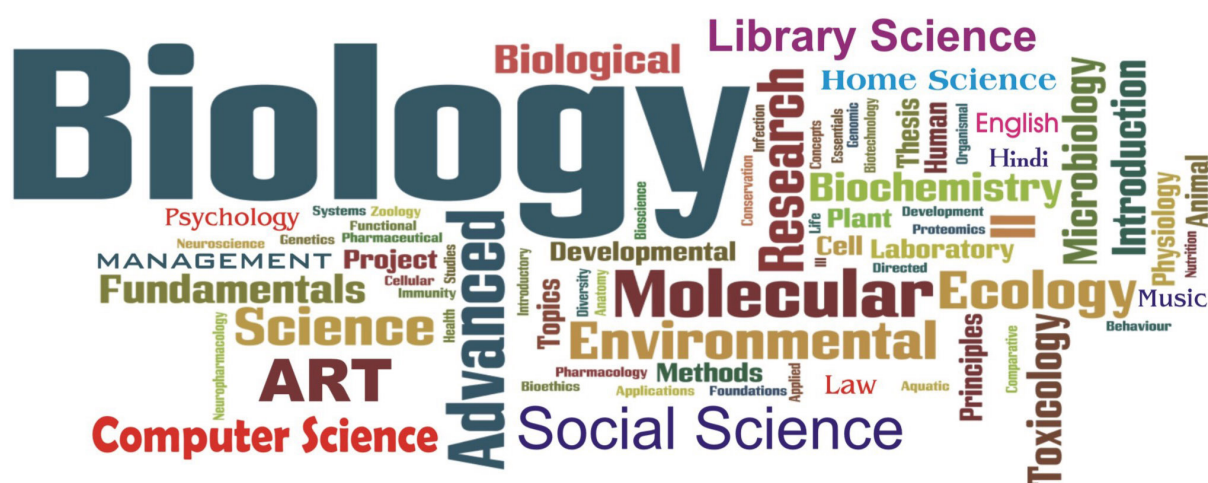


**Date : 30-31 October, 2023**

**Vol. - 5, No. - 9, Oct. - 2023**



# Unnati International Journal of Multidisciplinary Scientific Research



**Peer Reviewed - Refereed Journal  
Impact Factor - 4.8, Open Access,  
Double Blind, Monthly Journal**



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## Contribution of National Education Policy 2020 to Science Education and Creativity

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**ABSTRACT** :- The advancement of science and technology affects how a country develops. The development of science and technology is also influenced by young students' scientific inclinations, particularly at the secondary level. If students can develop a curiosity at this point, science instruction will be more readily incorporated into higher education. As a result, motivating young students to pursue science at the secondary level is extremely difficult. Young students can develop their scientific curiosity in a variety of ways with National Education Policy 2020. The innovation and research mindset in science that should be encouraged by teachers among the students is strongly advised by National Education Policy 2020.

The first education policy of the twenty-first century to anticipate universal access to high-quality education is the National Education Policy 2020. It is an amazing development that allows for the need to support creativity and originality to incorporate liberal education within the current educational system. This type of reorganization could have a significant impact on education quality, gross enrolment ratio, employability research, and internationalization in the future, both at the school level and in higher education institutions.

In this paper, the National Education Policy's holistic, transformative understanding has been clarified, emphasizing the implications of technology interventions for creative teaching-learning while shining a light on changes in higher education and schooling. The New Education Policy places a strong emphasis on fostering creative potential.

**KEYWORDS** :- National Education Policy 2020,

Science Education and Creativity.

**THE VISION OF NEP 2020** :- The vision of the New Education Policy is to improve the quality of education by giving equal importance to innovation and creativity and transform India into a "vibrant knowledge society" over the next decade. Therefore, the revised policy recommends nurturing creativity and innovation at all levels of education.

Thus, this article attempts to operationalize the vision of NEP 2020 with respect to the idea of creativity in education

**INTRODUCTION** :- The launch of the National Education Policy (NEP) 2020 was a historic moment for the country as the nation received a new education policy after 34 years.

This is the thrust area of the NEP 2020 policy, which states very explicitly that education should nurture the creative potentialities of each individual. It states that "Education Policy lays particular emphasis on the development of the creative potential of each individual. It is based on the principle that education must develop not only cognitive capacities – both the 'foundational capacities' of literacy and numeracy and 'higher-order' cognitive capacities, such as critical thinking and problem-solving – but also social, and ethical. Thus, the policy focuses on the developmental and inclusive perspective of creativity viewing it as a potentiality, that could be nurtured amongst all children.

Creativity, critical thinking, research, and innovation are very significant in bringing transformation by generating new knowledge in new areas. Innovation is what adds value to the products or the processes. Technological and

scientific innovation is also the main source of development and economic growth. More so, can be aptly said, in relation to market-oriented economies where innovation and research are the buzzwords and which they put a lot of emphasis on. Innovation and research are important if one wants to remain relevant for today and for tomorrow. The inquisitive minds need to work on these creative areas with education at an early stage so that it culminates to bring visible and sustained changes for the good of the nation and for all humanity. Education must lead to nation-building, "What the nation wants is pluck and scientific genius. We want great spirit, tremendous energy, and boundless enthusiasm. A nation is advanced in proportion as education & intelligence spread among the masses. Swamy Vivekananda. Implementation of NEP aligned with nation-building would establish an energetic and vibrant knowledge society. New Education Policy 2020 aims to promote creativity and critical thinking in children

**IMPLICATIONS OF THE STUDY :-** The teaching-learning process is closely linked to the way teachers perceive their learners with respect to their potentialities and also their perception and understanding of various constructs of creativity and its relation to the nature of the subject that they teach. Teachers should aim at cultivating students' curiosity and enhance their creative thinking abilities by providing an active learning environment through learning activities that involve the implementation of their knowledge as well as creative processes. If students are engaged in activities in a meaningful way, it gives them the opportunity to work freely and explore on their own without foreclosing on the experience that will provide opportunities to nurture their creativity. Engaging students in these activities while learning will provide a start-up for evolving a creative process, hence these should be used as pedagogical strategies in classrooms to assist students in thinking creatively and generating original and novel ideas. Thus, students should be involved in creative experiences as early as possible so that they can question the validity of

their previous knowledge and experiences about the phenomenon they observe in their surroundings and environment, find logical explanations, and build conceptual change while they try to understand newer concepts. Students should be provided with freedom of expression and multiple opportunities to get engaged with these processes so that they can think creatively by generating new ideas, and forming new connections or relations between various concepts. Though the potential for creativity amongst all students will be different, it can be developed by providing them equal opportunities and ample enabling experiences such as inquiry explorations, activities, experiments, project-based learning, exhibitions, etc.

**AIM OF NATIONAL EDUCATION POLICY, 2020 IN SCIENCE AND CREATIVITY :-** The National Education Policy (NEP) 2020 is an educational policy framework in India that aims to bring about significant reforms in the country's education system. One of the key goals of the NEP 2020 is to foster a holistic, multidisciplinary, and creative approach to education. This applies to various domains, including science and creativity.

When it comes to science and creativity, the NEP 2020 emphasizes the following aims:

**Promoting Critical Thinking and Problem-Solving:** The policy aims to move away from rote memorization and encourage students to develop critical thinking skills. It emphasizes understanding concepts deeply and applying them to solve real-world problems. This approach not only enhances scientific thinking but also nurtures creativity by encouraging students to come up with innovative solutions.

**Integration of Arts and Sciences:** The NEP 2020 recognizes the importance of breaking down the traditional barriers between arts and sciences. It encourages the integration of different disciplines, fostering a more holistic understanding of various subjects. This approach promotes creativity by allowing students to explore the intersections between science and other creative domains.



**Hands-on Learning and Experiments:** The policy emphasizes practical and hands-on learning experiences. This is particularly relevant to science education, where students are encouraged to engage in experiments and explore the scientific method. Such experiential learning not only enhances scientific knowledge but also stimulates curiosity and creativity.

**Promotion of Innovation and Research:** NEP 2020 emphasizes the importance of research and innovation in education. It encourages students to engage in research projects and innovative activities, which can contribute to the advancement of scientific knowledge and the development of creative thinking skills.

**Flexible Curriculum:** The policy recommends a flexible curriculum that allows students to choose subjects based on their interests and aptitudes. This approach enables students to explore their passions, which can include both scientific pursuits and creative endeavors. It ensures that education caters to individual talents and aspirations.

**Teacher Training and Professional Development:** The NEP 2020 recognizes the crucial role of teachers in nurturing creativity and scientific thinking among students. It recommends ongoing teacher training to equip educators with the skills and knowledge needed to foster creativity and provide effective science education.

**Assessment Reforms:** The policy suggests changes in assessment methods to move beyond conventional examinations. It encourages assessments that evaluate a student's understanding, application, and creativity. This shift from a solely exam-based approach promotes deeper engagement with scientific concepts and encourages innovative thinking.

**CHALLENGES OF NEP, 2020 IN SCIENCE AND CREATIVITY :-** The National Education Policy (NEP) 2020 of India is a comprehensive framework aimed at transforming the education system in the country. While it brings about several positive

changes and opportunities, there are also challenges associated with its implementation, particularly in the context of science education and fostering creativity. Here are some challenges related to the NEP 2020 in terms of science education and creativity.

**Balancing Rote Learning and Conceptual Understanding :-** The NEP 2020 emphasizes a shift from rote memorization to conceptual understanding and critical thinking. However, changing deeply ingrained teaching methods and assessment practices that prioritize rote learning in science subjects can be challenging. Teachers and students may struggle to adapt to this new approach, and there might be resistance to change.

**Lack of Infrastructure and Resources :-** Implementing a more practical and experiential approach to science education requires well-equipped laboratories, access to technology, and other resources. Many schools, especially in rural areas, may lack these facilities, hindering the effective implementation of the policy's recommendations.

**Teacher Training and Capacity Building :-** NEP 2020 calls for a transformation in the way teachers teach, requiring them to adopt interactive and student-centered methods. However, many teachers might not have been trained in these pedagogies during their own education. Proper training and professional development are essential for teachers to effectively impart scientific concepts and encourage creativity.

**Assessment and Examination Reforms :-** Shifting from traditional examinations that assess rote memorization to assessments that evaluate critical thinking and application of knowledge is a significant challenge. Designing assessment methods that accurately measure students' understanding of scientific concepts and their creativity can be complex and time-consuming.

**Encouraging Interdisciplinary Learning :-** NEP

2020 promotes interdisciplinary learning to foster creativity and holistic understanding. However, the existing curriculum and teaching practices are often siloed into separate subjects. Integrating different disciplines and creating a coherent curriculum that encourages cross-disciplinary exploration can be logistically challenging.

**Inclusion and Diversity :-** Ensuring that science education is inclusive and caters to the diverse learning needs of all students, including those with disabilities and from marginalized backgrounds, is a challenge. Additional efforts and resources may be required to provide equitable access to quality science education.

**Parental and Societal Expectations :-** Societal and parental expectations often prioritize traditional career paths, such as medicine and engineering, over creative and unconventional pursuits. Encouraging creativity and innovation in science might face resistance due to concerns about future employability.

**Research and Development in Education :-** While NEP 2020 emphasizes research-based education practices, the integration of educational research into the policy's implementation can be a slow process. Establishing a strong research and development ecosystem to support innovative teaching methods and curricular reforms is essential.

**Mindset Shift :-** Shifting from a content-centric approach to a skill and application-based approach requires a change in mindset among educators, students, and parents. Convincing stakeholders of the long-term benefits of nurturing creativity and critical thinking can be a challenge.

**Sustainability of Changes :-** Sustainable implementation of the policy's recommendations requires consistent funding, monitoring, and support from educational institutions and government bodies. The challenge lies in maintaining the momentum of reforms over time.

**SOLUTIONS of CHALLENGES :-** The National Education Policy (NEP) 2020 aims to transform India's education system by focusing on holistic development, creativity, and scientific understanding. To achieve this, several solutions can be implemented, including teacher training and professional development, resource allocation, curriculum design and flexibility, assessment reforms, experiential learning, technology integration, inclusion and diversity, research and innovation, community involvement, career guidance, teacher-student collaboration, recognition and rewards, research and development cells, and long-term commitment. These solutions aim to create a science education system that not only imparts knowledge but also nurtures creativity, critical thinking, and a passion for innovation among students. By implementing these solutions, educational stakeholders can work towards creating a science education system that not only imparts knowledge but also nurtures creativity, critical thinking, and innovation among students.

**CONCLUSION :-** Implementation of NEP 2020 has been a top priority for the government of India that contributes directly to transforming the education system in the country. The policy has recommended the nurturance of high-order thinking skills as part of the development of potentialities in children, which has been echoed in teachers' narratives. NEP is a comprehensive policy aiming to overhaul the education system to transform it to promote innovation. It will encourage students to bring forth unique and creative skills and solutions.

In essence, the National Education Policy 2020 aims to create a learning environment that not only imparts scientific knowledge but also nurtures creativity and the ability to think outside the box. By promoting critical thinking, integration of disciplines, hands-on learning, innovation, and teacher development, the policy seeks to prepare students to excel in both scientific endeavors and creative pursuits.

Addressing these challenges will require collaborative efforts from educational institutions,

policymakers, teachers, students, and the broader society. It's important to recognize that transforming an education system is a complex and ongoing process that requires continuous adaptation and improvement.

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