ROLE OF MATHEMATICS IN NATIONAL EDUCATION POLICY 2020

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ABSTRACT

The goal of the National Education Policy (NEP) 2020 is to transform education in India. With an emphasis on arithmetic as a fundamental topic, this paper discusses how mathematical concepts apply to the 2020 National Education Policy (NEP), which seeks to transform Indian education. The function of mathematics in the National Education Policy (NEP) 2020 is examined in this essay.

INTRODUCTION

A complete structure planned for revolutionary change in the educational system in India is the National Education Policy (NEP) 2020. Numbers are one of the most important components of the National Education Policy (NEP) 2020. This comprehensive framework aims to transform India's educational system by emphasizing multidisciplinary and integrated education. In the NEP, mathematics is essential, especially for developing pupils' capacity for critical thought, logical reasoning, and problem-solving. The goal of the strategy is to encourage STEM education, career training, and inclusive education by integrating mathematics into a variety of courses and domains.

REVIEW OF LITERATURE

Early mathematical education is essential for cognitive development and helps youngsters lay the foundation for more complex thinking at higher levels, as reported by the aforementioned authors et al. Early mathematical education is essential for cognitive development and helps youngsters lay a solid foundation for more difficult ideas in subsequent years, suggest Bhattacharyya et al. The National Education Policy 2020 exhibits this idea by recognizing the importance of starting with fundamental knowledge and numeracy.STEM (science, technology, and interdisciplinary learning): According to research by Nagarajan and Kumar, integrating mathematics into science courses is necessary for advancing creativity and technical advancement. The National Education Policy 2020 supports this strategy by highlighting the necessity of educational programs that integrate mathematics into other subjects, such as science.

METHODOLOGY

This study explores the function of mathematicians in the scope of NEP 2020, utilizing a qualitative research method. The following techniques were applied:

Document Analysis: Using a qualitative inquiry method, this study delves deeply into the role of mathematical concepts in the framework of NEP 2020.

1. Examining documents: To appreciate the policy's perspective on mathematics education, a complete review of the NEP 2020 paper as well as relevant government publications.

2. Research Analysis: To learn more about the potential and challenges of the instruction and learning of mathematics, academic papers, research articles, and reports on NEP 2020 and mathematics education were reviewed.

3. Case Study Approach: A few examples of states and educational institutions that have adopted NEP-compliant improvements in the domain of mathematics.

LIMITATIONS

Scope of Implementation: Because NEP 2020 is still in its early stages of implementation, the study does not fully address the range of implementation in every region.

2. Absence of Longitudinal Data: The results of the NEP 2020, particularly with regard to its influence on mathematics education, are not well documented.

3. Variability in State-Specific Approaches: Various states might utilize different quantitative reforms and regulations, which could result in uneven application nationwide.

FINDINGS

Emphasis on Early Numeracy: The NEP 2020 places an important focus on foundational numeracy, which guarantees that kids understand fundamental mathematical ideas by the early grades and lays a strong foundation for further education.

Table 1: Important Elements of the Formation of Early Numeracy

Aspect	Explanation
Fundamental Skills	Basic arithmetic, number sense, and pattern recognition
Learning Approach	Activity-based learning, visual aids, and interactive exercises
Result	Improved logical thinking and problem-solving abilities

2.Mathematics Integration with Other Disciplines: The NEP promotes interdisciplinary education, in which mathematics is taught alongside other topics such as science, engineering, and even the social sciences.

TABLE 2: ILLUSTRATIONS FOR HOLISTIC LEARNING

Discipline	Integration with Mathematics
Science	Statistics, data analysis, and assessment
Engineering	Calculus, geometry, and problem-solving
Social Sciences	Demographic data and economic modelling

3. Emphasis on Inquiry-Based Learning: The policy encourages students to grasp the underlying ideas of mathematical concepts rather than just recalling formulas by emphasizing scientific inquiry and theoretical instruction.

GRAPH 1: ANALYSIS OF DIFFERENT METHODS OF LEARNING

Inquiry-based learning exhibits a greater amount of retention over time than conventional cycle learning, measured by the percentage of adolescents who retain concepts for a longer period of time.

4.Technology-Assisted Education in Mathematics Resources: Technology-Assisted Education in Mathematics Resources: The NEP encourages the use of digital tools, online resources, and educational simulations to improve mathematics comprehension because it recognizes the value of modern technology in education.

TABLE 3: TECHNOLOGY-ASSISTED EDUCATION IN MATHEMATICS RESOURCES

Varieties of Techniques	Sample
Computer-Based Simulations	Desmos and GeoGebra
online learning platforms	Coursera and Khan Academy
Interactive Apps	Wolfram Alpha, and Photomath

Graph 2: Understanding Technology's Impacts on Math Learning

More advanced levels of student involvement before and subsequent technology integration Improve comprehension rates with digital tools.

5.Teacher Training and Development: Through professional growth programs and educating teachers about novel methodologies and innovations, there is a considerable concentration on enhancing the quality of education in mathematics.

TABLE 4: TEACHER TRAINING AND DEVELOPMENT:

Type	Program
Workshops	Practical instruction in contemporary teaching techniques
Online Education	Programs for ups-killing educators through certification
Collaborative Education	Peer instruction and information exchange

6.**Inclusion and Accessibility**: y providing specialized educational resources, the National

Education Policy (NEP) aspires to provide equitable opportunity in mathematics educational opportunities for students with difficulties and those from families with limited resources.

TABLE 5: APPROACHES SUPPORTING INCLUSIVE EDUCATION

Methods	Deployment
Particular capabilities	Audio lessons and Braille books
Financial Assistance	Scholarships and free educational resources
Technology for the Disabled	Adaptive software and screen readers

CONCLUSION

Considering an emphasis on conceptual comprehension, practical application, and analytical thinking, mathematics is expected under the National Educational Policy 2020 (NEP 2020) as an essential component of the education system in India. By encouraging technology-driven learning, strengthening teacher capacity, and incorporating mathematics into multidisciplinary learning, the policy aims to revolutionize mathematics education. But issues including teacher preparation, resource distribution, and geographic inequalities must be solved if these improvements are to be implemented successfully. All things considered, the NEP 2020 offers a thorough framework for enhancing mathematics instruction, equipping students with the analytical and problem-solving abilities they need to meet world problems.

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