

# Shri Aurobindo's Educational Vision and NEP-2020

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## *ABSTRACT*

Maharishi Aurobindo, one of Bengal's most important revolutionaries, asserted that education that is based on the past and uses the present creates great nations and equips people to live for God, their country, themselves, and other people. He rejected the British education system as not meeting the needs of Indians and proposed the concept of National Education. And now, after so many years since his death, India is going to build a national education system based on his philosophy through NEP-2020 that aims to build a vibrant knowledge society by making quality, affordable education available to all. The policy is deeply rooted in Indian ethos and aims to prepare future citizens for global competitiveness. The aim of this paper is to highlight the similarities between the NEP-2020 recommendations and the educational vision of Shri Aurobindo.

**Keywords :** NEP-2020, National Education, Harmonious Development.

### **Introduction**

Real education is what which provides a free and creative environment to the child by developing his interest, creativity, mental, moral and aesthetic senses. Finally, they lead to the development of his spiritual powers. **Maharishi Aurobindo**

In India, there have been many such thinkers and educators who have worked passionately to steer the country and its citizens towards a bright future. They enlightened not just India but also Western countries with their wisdom. A well-known Indian patriot, poet, philosopher, and spiritual icon named Sri Aurobindo Ghosh is one of them. He was the one who, at first, conceived of India as the Vishwa Guru. Sri Ghosh, who was born on August 15, 1872, in Kolkata, made significant contributions to the Indian educational system. He referred to the British educational system as a soulless system that is capable of rendering the Indian brain incapable and that aims to generate machines that could function according to instructions (Rao, A.N. 2021). To create a better educational system for Indians, he presented the concept of national education based on ancient Indian knowledge. According to Shri Aurobindo, National education should aim to train the heart and mind of youth, which leads to the scientific development of the mind and the development of Indian spirit in the heart, and only then can a youth be a better citizen. According to him, "When we look at the history of the country, we find that at one time we had a system of National

Education. Look at our philosophy: what is in the individual is also in the universal. A nation is a living entity, full of consciousness; it is not something made up or fabricated. A living nation is always growing; it must grow, it must attain ever loftier heights. This may happen after a thousand years or in the next twenty years but happen it must." He wanted to see India develop into a superpower by reinventing its educational system. And now, after 72 years since his death, India is about to bring that revolution in the field of education through its New Education Policy -2020. India's New Education Policy, rooted in Indian ethos, aims to build a vibrant knowledge society by providing quality education to all.

### **Educational Philosophy of Shri Aurobindo**

Shri Aurobindo was a great philosopher as well as an educator. He considers education a necessity for the progress and development of individuals as well as nations. Aurobindo's philosophy of education emerges from his philosophy of life based on spiritual penance and yoga. According to him, education is not just the accumulation of facts and information because they cannot serve as the basis for true knowledge. True education is that which helps in the development of latent capacities in the child and makes him capable of building a connection with life, mind, nation, and humanity and allowing them to live the best material and spiritual lives. According to him, in the modern era, when the western world is doing experiments in the field of education,

we should accept them. The concept of an education system that is a combination of Indian and western education is the greatest contribution of Shri Ghosh. There was no place for parochialism in the educational philosophy of Aurobindo. He was not in favour of suppressing any aspect of human nature and believed that only the harmonious development of all the instincts could lead to the development of an integrated personality. He recommended including all the subjects in the education process, but they all must aim for the holistic development of the individual. He is in favour of familiarising children with the best languages of the world and their literature, knowledge, skills, and culture, and for this he emphasized the development of curriculum according to the needs and capacities of children. He proposed three principles of true teaching: nothing can be taught, the mind has to be consulted for its own growth, and teaching should proceed from near to far. Shri Ghosh suggested that the teacher should follow these principles for effective learning and should not impose education on children but instead motivate them for self-learning. According to him, a teacher is not a task manager or instructor; he should play his role as a guide or helper. Over all, Shri Aurobindo emphasized an education that should proceed in a burden-free environment, promote self-discipline, and foster latent capacities and hidden creativity, which in turn develops a child who can meet the demands of modern society, the nation, and his spirituality.

#### **NEP-2020 Introduction :**

As a chariot cannot move ahead with damaged wheels, a nation cannot attain the heights of development with imperfect education. Education is the most important factor among all others behind economic, social, and political reformations. To stand among the superpowers of the world, a nation has to ensure quality education for its citizens. Considering quality, affordable education a necessity, the government of India has approved the New Education Policy-2020 to overhaul the Indian education system at all levels. NEP-2020, based on the five fundamental principles of Access, Equity, Quality, Affordability, and Accountability, seeks to transform the nation into a vibrant knowledge society. The Policy's vision is to instill in learners a deep-rooted pride in being Indian, not only in thought but also in spirit, intellect, and deed, as well as to develop knowledge, skills,

values, and dispositions that support responsible commitment to human rights, sustainable development and living, and global well-being, thereby reflecting a truly global citizen. Following are some important recommendations of NEP-2020 for improving the quality of education in India:

1. New pedagogical and curricular structure for school education, which includes a 5-year foundational stage followed by a 3-year preparatory stage, a 3-year middle stage, and a 4-year secondary stage.
2. Reducing curriculum content in each subject to promote discussion-based and discovery-based learning.
3. Dismantling of boundaries among disciplines and curricular and co-curricular activities to provide flexibility in the selection of subjects.
4. Emphasis on Holistic Development
5. Promotion of multilingualism to bridge the gap between the language of the child and the language of teaching.
6. Introduction of contemporary subjects like Artificial intelligence, Global Citizenship Education, organic living, etc. to develop skills that are essentially needed in today's rapidly changing world.
7. Introduction of a four-year bachelor's degree with Multiple entry and exit points
8. Establishment of an Academic Bank of Credit to store the academic credit earned from various HEIs and take it into account at the time of degree award
9. Setting up the National Research Foundation (NRF) to promote quality research
10. Creation of the National Educational Technology Forum (NETF) to provide a platform for the free exchange of ideas on the use of technology for appropriate integration of technology into all levels of education.
11. Creation of a gender equality fund to promote gender equality.
12. Establishment of a special education zone to cater to the needs of students with disabilities.

#### **The Parallels between Aurobindo's Vision and NEP-2020**

The policy reflects the educational thoughts of

many eminent Indian thinkers but seems to present the mirror image of the educational thoughts of Shri Aurobindo Ghosh. The Prime Minister of India, Shri Narendra Modi ji, during his monthly radio broadcast Mann ki Baat on November 29, 2020, also appreciated the educational vision of Shri Aurobindo and stated that Whatever Shri Aurobindo said about national education at that time, the country is accomplishing that through the New Education Policy of India.

The following are some analogies between NEP-2020 and Aurobindo's educational vision:

**1. Modern Education System rooted in ancient knowledge – Aurobindo**, in his book “A System of National Education (1921)”, proposes an education system that must include the past, present, and future. In his words, “The past is our foundation, the present is our material, and the future is our aim and summit. Each must have its due and natural place in a national system of education. Similarly, NEP-2020 has made recommendations to build an education system that is rooted in India's rich heritage of ancient and eternal knowledge and thought and can meet the aspirational goals of the 21st century.

**2. Holistic Education :** Both Aurobindo Ghosh and NEP 2020 emphasis the importance of holistic education, focusing on the overall development of individuals. They both stress the fact that education should not be provided for the sake of cognitive development alone but must aim to build character and create holistic and well-rounded individuals equipped with the skills that are required to meet the demands of the nation and humanity. Education should not be limited to academic knowledge but must aim for the physical, emotional, and spiritual well-being of the child as well as the full expression of their competencies and to prepare them to face the challenges of life.

### **3. Integration of Physical Activities:**

Both Aurobindo Ghosh and NEP 2020 emphasis the significance of physical education in the overall development of individuals. According to Aurobindo, Sat-Chit-Ananda is attained through a healthy body, so he considered physical development to be the primary aim of education and has recommended yoga and other physical activities as integral parts of education. NEP-2020, too, has

accepted the importance of sports, yoga, and other physical activities in enhancing physical fitness, discipline, and overall well-being and has recommended sports integration as a cross-curricular pedagogical approach for developing skills like teamwork, collaboration, citizenship, etc.

**4. Multidisciplinary Education:** Aurobindo has recommended a flexible education system where a student must be free to study the subjects they want to study. According to him, the curriculum must not be confined to a limited syllabus and text books. (Kaur, J., & Gill, R.K., 2017). NEP-2020 also calls for the dismantling of boundaries among different disciplines and curricular and co-curricular activities in order to make the education process more flexible.

**5. Multilingualism :** Aurobindo is in favour of familiarizing children with the best languages of the world and their literature, knowledge, skills, and culture, but emphasis the mother tongue as a medium of education. He believes that mastery of one's own language helps in gaining mastery of other languages too. He himself was proficient in many languages. Acknowledging the language diversity of India, NEP-2020 also favours multilingualism in order to promote national integrity. Not only the regional languages of India, NEP-2020 stresses the learning of classical languages like Sanskrit and Pali.

**6. Focus on Experiential Learning:** Both Aurobindo Ghosh's educational vision and NEP 2020 emphasis the importance of experiential learning. Aurobindo suggested teaching methods like learning by doing, self-experience, self-discovery, activity methods, etc. for effective learning. NEP-2020 too calls for a shift from rote memorization and theoretical knowledge to hands-on learning experiences where students actively engage with the subject matter and apply their knowledge in practical situations.

**7. Emphasis on Critical Thinking and Creativity:** Both Aurobindo Ghosh's educational vision and NEP 2020 laid emphasis on fostering critical thinking, creativity, and problem-solving skills in students. They both accept the significance of developing these abilities to navigate the complexities of the modern world.

**8. Inclusion and Equity:** Aurobindo Ghosh

did not accept any difference among individuals on the basis of caste, creed, colour, or religion. He emphasised the importance of education for all, regardless of their social, economic, or cultural backgrounds. NEP 2020 also highlights inclusive education, aiming to provide equal opportunities to all students and bridge the gap between different sections of society. To ensure inclusion, NEP 2020 has also recommended inclusion funds.

**9. Promoting Spiritual Growth:** Aurobindo Ghosh's educational philosophy emphasises the spiritual growth of individuals, aiming to help them discover their inner potential. Similarly, NEP 2020 acknowledges the importance of imparting value education, ethics, and mindfulness to nurture the spiritual and moral growth of students.

**10. Global Outlook:** Aurobindo Ghosh's educational vision emphasised the importance of global understanding and the integration of different cultures, while NEP 2020 also acknowledges the significance of global citizenship and the need for students to have a broader perspective on global issues.

### Conclusion :

Shri Aurobindo was one of the most eminent educators in our country. He dreamed of establishing an excellent Indian society by using India's own traditional knowledge as a tool. He proposed an education system that can lead an individual to live a good materialistic life while also helping him achieve his spiritualistic life aims. He had suggested the blended model of education, which included both modern and traditional values, many years ago, but it has great significance in the present world too. The government of India and policymakers have acknowledged his ideas with reference to present-day challenges and incorporated them into the New Education Policy of India. Using the light of Aurobindo's thoughts and those of many other thinkers, policymakers have proposed guidelines to build an indigenous education system that aims to use the energies of the youth of the country to ensure the progress of the nation. Aurobindo Ghosh's educational vision and NEP 2020 share common goals of holistic development, inclusivity, innovation, and preparing students to thrive

in a rapidly changing world. But the policy in the document is just a piece of paper; its implementation is everything, and implementation is not just about applying the rules; it needs understanding the policy and the vision behind it. Gaining in-depth information about NEP-2020 by connecting it to Aurobindo's educational ideas would undoubtedly help to realise the fundamental goal of this revolutionary strategy, which is to make India a global knowledge superpower.

### References:

1. Akhter, R. Shri Aurobindo Ghosh: Pioneer of Integral Education. *International Journal of Educational Research and Development*, vol. 3, no. 6, 2014, pp. 92–095.
2. Arjun. 'One Step Towards Sri Aurovinod's Vision of Education'. *International Journal of Research Culture Society*, vol. 5, no. 3, 2021, pp. 10–13.
3. Kaur, J., and Gill, R. K. 'Shri Aurobindo's Integral Education: A Contemporary Need'. *Innovation the Research Concept*, 2017, pp. 150–153.
4. National Education Policy 2020, Ministry of Human Resource Development, July 2020
5. Rani, Chanda. 'A Study of Educational Vision of Aurobindo Ghosh'. *International Journal of Indian Psychology*, vol. 5, no.1, 2017, pp. 48-51.
6. Rao, A. N. Contributions of Shri Aurobindo Ghosh towards Education, 14 august 2021 Accessed on 15 July 2023.
7. Sarta, A. 'National Education Policy (NEP-2020): An Analytical Insight into the Reforms It Will Bring in School and Higher Education in India'. *International Journal of Advance Research in Management and Social Sciences*, vol. 11, no. 3, 2022, pp. 103–113.
8. Sindhuja, C. V. & Ashok, H. S. Looking at National Education through Sri Aurobindo's works, 12 July 2023.
9. Zaki, Saman. 'Relevance of Sri Aurobindo's Philosophy of Education to National Education Policy 2020'. *International Journal of Health Sciences (IJHS)*, 2022, pp. 9601–9608



# Learning of Mathematical Concepts/Exploring & Promoting Learners

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## *ABSTRACT*

Mathematical thinking is a mindset that is crucial for school as it plays a role in guiding and organizing the thought processes necessary for understanding concepts. Educators in the field of mathematics unanimously agree that conceptual learning is a challenging yet fundamental aspect of mathematics education. Piaget identified four distinct stages of conceptual learning that evolve over time. Regardless of age, developing mathematical concepts is a gradual process that advances through stages, with each stage requiring specific mathematical thinking skills to grasp the related concepts. This article delves into the interconnected nature of these mathematical thinking stages, focusing on Piaget's stages rather than chronological age. It emphasizes that individuals can be in the initial stage of understanding a concept if they lack a basic understanding of it, regardless of their age. The key take away from this discussion is the transition from a passive to active approach in learning, emphasizing the importance of mastering mathematical thinking skills at each stage.

**Keywords: Chronological, Knowledge, Education, Real-life**

### **Introduction:**

Concepts involve developing perception towards a particular subject. If the suffix of mathematics is discussed, its history is very old. Mathematics is considered to have started from Rigveda. In ancient times, the purpose of teaching mathematics in India was that it helped in calculating the prices of goods and keeping accounts. At that time, more emphasis was given on results rather than methodology. Children were reminded of the mountains and the Guru. At that time, mathematics was taught in schools because it was related to religious books, mathematics, astrology, astrology etc. It was needed to calculate the dates of eclipses, festivals etc. Knowledge of mathematics was used in making temples and worship altars. It was used for the development of intelligence. Often, mathematical puzzles were made and solved by students. In this way, they were entertained.

Islamic education also included Mathematics. During that time, a system of primary education for children was present in Maktab. There, in addition to being taught to read and write, they were also instructed in Avajad, which involves calculation using

the number of letters and divination ideas. Higher education was provided in madrassas, offering both secular and religious teachings. Secular education included the teaching of Astrology and mathematics. Abul Fazal, in 'Ain-e-Akbari', mentioned that subjects like Ethics, Arithmetic, Problems, Agriculture, Geometry, Astrology, Facial Science, Home Science, Monarchy, Medicine, Logic, Tibi, All knowledge like Riyaji, Ilahi, and History, could be studied. Higher education in mathematics and astrology was also imparted. A madrasa was established in Delhi by Humayun, where astrology and geography were taught.

But still mathematics did not have prestige as a subject in the schools of our country until the eighteenth century. During the British period, a lot of emphasis was given to mathematics. It was compulsory in high school and intermediate classes, and even in middle classes, maximum emphasis was given to mathematics. Question papers were also made difficult, and students who scored good marks in mathematics were given incentives.

There has been a mathematics competition every year at the government school in Etawah, where

prizes are distributed to the students securing first and second positions. Basic education was started in 1937, with mathematics holding an important place, but the teaching method was different, focusing on teaching mathematics based on craft. After the Second World War, the Sargent Scheme was introduced in India, dividing the high school into two parts.

After independence was attained in Uttar Pradesh, arithmetic was separated from geometry and algebra. Arithmetic was made a compulsory subject and Algebra and Geometry were considered optional subjects, but this sequence only continued for three years. In 1950, arithmetic was completely removed from the high school class, but other branches of mathematics were kept as optional subjects. From 1952, another type of mathematics was started by the Uttar Pradesh Education Board for the convenience of children, which was named Elementary Mathematics. This type of mathematics included all three branches of arithmetic, algebra, and geometry, but the syllabus was up to class 8. Now, somehow, the members of the Education Committee had their ears reached and understood that work could not be done without mathematics. Therefore, since 1956, mathematics has been made a compulsory subject for boys in high school classes, but it is still an optional subject for girls.

### **Structure and Nature Of Mathematics:**

The structure and nature of mathematics have their own unique existence, with each subject having a specific structure that determines its permanence or temporariness. Mathematics is considered more stable than other subjects due to its strong structure. Physics, Chemistry, and Biology follow in stability based on their structures. The truth and predictions of a subject are more enduring if the structure is strong, but reduce when the structure weakens. The nature of a subject is determined by its structure, with each subject having a special purpose and unique nature that sets it apart from others in the curriculum.

### **Suffix formation and suffix assimilation**

The subject of mathematics has included the following facts under suffix formation and assimilation in its language:

1. Its own language is defined by terms, concepts,

formulas, signs, and principles which give birth to its language, such as length-width, triangle, profit-loss, brackets, numbers, kilogram, etc.

2. Numbers, space, and measurement are studied in mathematics, developed initially from mathematics only after other subjects.
3. Relationships and numerical conclusions are drawn between objects found in the environment in mathematics and these findings can be trusted as they relate to specific numbers.
4. Our sense organs, which can be trusted, are the basis of knowledge in this subject, as this knowledge has a definite basis.
5. The uniformity of mathematics in the universe allows for its truthfulness to be affirmed at any place and time.
6. This knowledge is unaffected by changes in time and place.
7. Mathematics is known for its exact, clear, logical, and systematic nature, making it difficult to forget once understood.
8. Abstract concepts in life can be explained and understood through mathematics, with the ability to represent the abstract in concrete forms.
9. Mathematics is applied in various sciences such as physics, chemistry, biology, and other subjects. Progress in these fields relies on advancements in mathematics, as it serves as the foundation for all subjects and provides a structured and strong base.
10. Metaphysical knowledge is illuminated through mathematics, with definitive answers being possible without any doubt. This knowledge only allows for a simple 'yes' or 'no' response.
11. In mathematics, a sufficient limit for generalization, induction, and deduction is found.

### **Mathematics Laboratory:**

The word laboratory has been considered very useful in teaching mathematics. A room is used as a laboratory in which experiments are conducted by a group of students. It is essential for the subject of mathematics to have laboratories provided in schools. Each laboratory is constructed according to the requirements of the subject.

The importance of the mathematics laboratory is

as follows:

1. Teaching mathematics becomes fun and interesting with its use.
2. Knowledge is easily acquired by students.
3. Students' attention is focused through teaching with various devices.
4. Activity among students is generated by helpful laboratory materials.

The equipment's of the mathematics laboratory include:

1. Abacus- Verbal and mental mathematics is taught to students using this. Its use has been considered good since ancient times. Mathematics is quickly taught to students with its use.
2. Measurements related to mathematics, scales, and scales of volume are included in the equipment. Sometimes in teaching mathematics, a subject comes up that needs to be presented in its original form before students to make it clear. For this, divisions of kilogram, 500 grams, 200 grams, 100 grams, 50 grams, 20 gram In the laboratory, items such as s, 10 grams, and \* grams are kept. For volume, vessels such as liter and half liter are kept.
3. Additionally, various instruments such as screw gauges, vernier callipers and scales are kept. Other items such as scale, compasses, protractor, meter, tape measure, decimeter, and cubical pieces are also stored.

### **Problem Solving**

This popular method of teaching mathematics involves problems being presented to the students by the teacher, and the solutions being found by the students in the class with the help of learned rules, principles, and concepts. Teaching is conducted through problems in arithmetic, algebra, and geometry. Problems related to each sub-subject are compiled in mathematics books, allowing students to find solutions and learn the subject through this process. Problems are compiled with various facts and circumstances, taking into consideration their level of difficulty. The novelty in each problem inspires students to find the solution. The success of this method depends on the novelty of the problems and the ability to formulate them. The facts are collected and problems are formulated by a skilled teacher, considering the abilities of the students and presented

to be solved in the class. The situation given in the problem is studied by students, calculations, measurements etc. are done as per requirement, and the answer is obtained. New experiences are provided to the students and they are given the ability to solve the problems that come in the subsequent sub-topics by the successful solution of each problem.

The successful operation of this method is not helped by the traditional problems given in textbooks because there is no novelty and truth in their facts and situations. Solutions are not encouraged to be found by students and these traditional problems do not prove to be very helpful to them in learning mathematics. When the situation involved in the problem is successfully related to the student's own environment a student becomes motivated to solve the problem and is motivated to find the solution to the problem. The problems printed in most of the mathematics books cannot be considered based on the facts of life because these facts are not related to the life of the student.

### **Example**

If the area of a field needs to be found, given that the length and breadth are 300 meters and 180 meters respectively. The area of the field can be calculated by multiplying the length and breadth. The need to find the area in this situation could be explained by the teacher in a real-life context that the students are familiar with. Real-life examples could be used to demonstrate the importance of finding the area in everyday tasks. In such situations, the students would naturally be curious to find the solutions to the problems presented to them.

### **Rules of Problem Presentation**

The problem should be analyzed after it is presented in the class, using the question and answer method. With the help of the students, it should be made clear what the relationship is between the facts given in the problem and their significance in the entire situation.

1. The importance of the facts should be understood by the students. Students will be able to see which facts are necessary and which are unnecessary. The habit of analyzing the problem, which is essential for successful problem-solving, will be developed by the student in this way. Problems

- cannot be solved with confidence by students who do not develop the ability to analyze them.
2. Correct calculations to get the solution are made by students. It has been observed that the correct answer to the problem is not able to be obtained by students, even after knowing the method of solving it. Simple errors in calculations are often made by them.
  3. The ability to calculate accurately and quickly is necessary for students. Calculations can be practiced separately by the teacher so that difficulties in doing the calculations are not faced by students. Errors while multiplying and dividing decimals are made by most of the students.
  4. The solution to the problem and re-checking are found by every student. After finding the solution to the problem, the answer should be re-checked by every student so that calculation or method-related errors in the solution can be corrected. The habit of re-checking the answers is important for students because without this, it is not possible to find the errors.

#### Merits Of Problem Solving Method

There are some merits of methods of problem solving

1. Students can be provided with correct information about life-related situations through problems. In this way, the social importance of the mathematics subject can be presented in the class.
  2. The ability to analyze problems and differentiate between essential and unnecessary facts is developed by the student. Sometimes, incomplete facts are given in the problem and its solution cannot be found. The information depends on the correct analysis of the problem.
  3. Self-confidence and self-reliance are developed by children.
  4. The habit of dealing with problems, which is necessary to achieve success in life, is developed by children through the problem-solving method.
  5. The habit of correct thinking and proper use of logic is developed by children with this method.
  6. The study of higher mathematics is helped by this method.
- #### Limitations Of Problem Solving Method
1. It is not possible for every teacher to formulate problems based on life.
  2. A collection of traditional problems is mostly contained in books.
  3. Sometimes, difficulties are presented to the children by the more difficult and lengthy language of the problems.
  4. Compilation of correct facts is not possible due to the rapidly changing circumstances of life.
  5. In Algebra and Geometry, there are many sub-subjects in which problems related to life cannot be formulated.

#### References:

1. Vci, G., & Gümüs, N. (2020). The effect of outdoor education on the achievement and recall levels of primary school students in social studies course. *Review of International Geographical Education Online*, 10(1), 171–206, <https://doi.org/10.33403/rigeo.638453>
2. Blaine, J., & Akhurst, J. (2021). A journey into understanding gendered experiences of outdoor adventure education. *Journal of Adventure Education and Outdoor Learning*, 23(3), 244–257. <https://doi.org/10.1080/14729679.2021.2001759>
3. Caruana, E. J., Roman, M., Hernández-Sánchez, J., & Solli, P. (2015). Longitudinal studies. *Journal of Thoracic Disease*, 7(11), 540–544. <https://doi.org/10.3978/j.issn.2072-1439.2015.10.63>
4. Clarke, D., & Roche, A. (2018). Using contextualized tasks to engage students in meaningful and worthwhile mathematics learning. *The Journal of Mathematical Behavior*, 51(9), 95–108. <https://doi.org/10.1016/j.jmathb.2017.11.006>
5. Darling-Hammond, L., Flook, L., Cook-Harvey, C., Barron, B., & Osher, D. (2020). Implications for educational practice of the science of learning and development. *Applied Developmental Science*, 24(2), 97–140.
6. Dymont, J. E., Chick, H. L., Walker, C. T., & Macqueen, T. P. N. (2018). Pedagogical content knowledge and the teaching of outdoor education. *Journal of Adventure Education and Outdoor Learning*, 20(2), 105–120.
7. Arris, B., & Petersen, D. (2019). Developing math skills in early childhood. *Mathematica Policy Research*, 2(2), 1–10.





# An Analysis of Social Exclusion and Educational Deprivation of Mahadalits in Bihar: Challenges and Prospects

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## ABSTRACT

This paper seeks to understand the socio-economic marginality of mahadalit children in Indian education system. It also aims to understand how students from the most under-privileged social group i.e, mahadalit, overcome their marginality in accessing and obtaining education. Achieving access and equity in education has been the foremost priority of policy-makers and the planners. It is in this light, a deep and nuanced understanding of their socio-economic position and strategies for overcoming marginalities among mahadalits by focusing on educational and equalizing programs have been undertaken. Moreover, the social stigma faced while pursuing education and finding space within their social network, is dealt with in this article.

**Keywords:** Mahadalits, marginality, social exclusion, inclusion, ethnicity, equity

## Introduction:

“Mahadalits”, a term that was coined in 2007 by Government of Bihar to denote a conglomerate of 22 scheduled castes, in the state under the category of Mahadalit, who constitute to be the most disadvantaged and marginalized section of society.<sup>1</sup> They are socially, economically and politically excluded groups of the mainstream development discourse and they have been struggling to realize their participation in the larger society. At one hand, the growing generation-children and youth are largely exposed to discriminatory world without being equipped with how to effectively respond to these practices. On the other hand, there is limited or no opportunities in certain cases, which in turn makes difficult for non-excluded children and youth to engage with the context and concerns of the excluded people.

Scheduled Castes constitute nearly 16 percent of Bihar’s population of 104 million.<sup>2</sup> A government commission has identified 22 of the 23 scheduled castes as Mahadalits. In 2007, Bihar Mahadalit Vikas Mission was set up and in 2008; it undertook the task of implementing the programmes for Mahadalit as

classified under the category, of which 31% of Bihar Scheduled Castes population in 2008.<sup>3</sup>

Education for mahadalits forms a critical component for promoting dignity, development and socio-economic mobility in increasing rate of children enrolment in schools. This achievement has emerged through a long struggle in the past. The 11<sup>th</sup> Five Year Plan (2007-12) and 12<sup>th</sup> Five Year Plan (2012-17) on inclusive and sustainable growth rightly recognize that “better levels of health and education are, in fact, pre-conditions for sustained long term growth” and that “expansion, inclusion and excellence in higher education” is the path to human resource development.<sup>4</sup> It is in this light, government has enacted certain provisions to provide a Right-based social justice to marginalized and deprived section of society.

Mahadalits (the most downtrodden caste), like many other scheduled castes, have remained poor, landless, marginalized and excluded, with no possibility of upward mobility by the caste group. Accordingly, the central as well as the state government have always pursued affirmative action,

implemented various programmes and introduced policies of positive discrimination to uplift them. However, despite all efforts by the government, their overall condition has hardly improved. The dimensions of caste, religion, ethnicity, class, disability, gender status and much other complex intersectionality hinder their access and benefits. These gaps need to be consciously included and addressed through legislations, policies and provisions.

According to Article 45 of the Indian Constitution “the state shall endeavor to provide for free and compulsory education for all children until they complete the age of fourteen years”. Similarly, Article 46 of the Indian Constitution declares that “the state shall promote with special care the educational and economic interests of the weaker sections of the people, and, in particular, of the Scheduled Castes and the Scheduled Tribes, and shall protect them from social injustice and all forms of exploitation.”<sup>5</sup> However, for children belonging to this section, survival and meeting basic amenities itself remains a challenge, given the high level of child malnutrition, infant child mortality and maternal mortality. Moreover, in such situation they depend upon the state provision in education where the quality, inclusion and equity measures are poorly envisaged and implemented.

### **Challenges faced by mahadalit children:**

#### **Economic barriers**

Provided their economic background, mahadalits are mainly engaged in manual scavenging, construction sites and as agricultural laborers. Meeting daily ends are challenging for them, as they are employed on daily wages. The children from this community are also forced to take up works in agricultural fields, construction areas, roadside dhabas or on streets, that compel them to drop out from schools.<sup>6</sup> Children at very young age being lured by false promises of employment in urban cities, by the agents, fall prey to the human trafficking and their life worsens. Mostly, this is found in the case of girl child, where the recruiting agency promises them job of domestic helper in metropolitan cities, the desperate need for money and employment drags them into the circle of prostitution and bonded labor. Article 21-A of the Indian Constitution provides for free and compulsory education to all children in 6 to 14 years

age group. Every child has a right to full time elementary education of satisfactory and equitable quality in formal school which satisfies the norms and standards as mentioned in the Act. This act also prohibited child labor in any form.

#### **Social barriers**

Even at household, due to gender based discrimination, the girls of Mahadalit community, are forced to undertake domestic chores and take care of their siblings when parents are away. Prevalence of traditional mindset of investing money in educating girl also aggravates the situation. Girls from this community get married at early age even before completing the 18 years.

It is evident from the census of India 2011, the Scheduled Castes constitute 16.6% of Bihar’s population. 93.3% of the SCs population resides in rural areas.<sup>8</sup> The overall sex ratio of SCs population in Bihar is 923 females per 1000 males, which is marginally higher than the sex ratio of Bihar (919 females per 1000 males). However, literacy rates among the Schedules castes are dismally low. In the 2011 Census, the overall literacy rate in Bihar was 63.3% against all India 74%. The literacy rate among Scheduled Castes was 48.6% and that of Scheduled Tribe was 51.1%. Enrolment from Grade 1 to 12 in 2020-21 in Bihar was 266,35,416 (Boys and Girls) under which 50.94% boys enrolled, 49.06% girls were enrolled. At primary level enrollment was 51.54% and upper primary was 26.39%, 13.22% and 7.03% students were enrolled at secondary and higher education respectively.<sup>9</sup> The enrollment of Scheduled Castes was 19.41% of total enrollment and 2.57% of Scheduled Tribes students, which reflects decline in upper primary and at higher levels of education. The high dropout pushes them into despair and helplessness, thus retaining them within poverty cycle.

#### **Institutional barriers:**

Further, the presence of caste discrimination and fear of social stigma also pulls them back from attending schools. Several instances of this practice have been narrated by the victims, wherein, separate class arrangements for scheduled castes students and upper castes students’ were found to be undertaken, bullying, humiliation and violence from peer groups, preventing access to drinking water and sanitation, problems in

accessing mid day meals within school premises, etc, that took heavy toll on the aspirations of mahadalit children.<sup>10</sup> While various policies speak of elimination of untouchability and caste-based discrimination, still its presence and practice is a sad reality.

### Prospects:

The governments at the Union and States must adequately address social exclusion and ensure dignity and provide opportunities to children from socially disadvantaged backgrounds to enable them grow equitably and ensure their right to development. In order to attain these rights based framework has been evolved such as National Curriculum Framework 2005 (NCF) and UN Convention on the Rights of Child, the NCF lays emphasis on the Preamble of the Constitution as the objectives for education: “Justice-social, economic and political; Liberty- of thought, expression, belief, and worship; Equality- of status and of opportunity and promote among them all fraternity assuring the dignity of the individual and the unity and integrity of the nation.”<sup>11</sup>

The Convention on the Rights of the Child (UN CRC) is the first legally binding international law to incorporate wide range of human rights-civil, cultural, economic, political and social rights. The CRC envisages the basic human rights that children globally have: the right to survival, to develop to the fullest, protection against abuse and exploitation and participate fully in family, cultural and social life. The four core principles of the convention are non-discrimination; the best interests of the child; the right to life; survival and development and respect for the views of the child. By agreeing to abide by the obligations of the convention, India has committed to protect and ensure children’s rights. It is in this light, the Government of India passed its landmark judgment of “Right to Free and Compulsory Education Act”, 2009 through 86<sup>th</sup> Constitutional Amendment Act, 2002.<sup>12</sup> The provisions mentioned under the Act ensures that economic barriers of the children does not hinder them from getting admitted in School, it also prohibits discrimination in school education, also provides for child mapping at habitation level to track attendance and ensuring completion of elementary education. Further, provision of 25% reservation is yet another step towards promoting equity and social inclusion.

The National Commission for Protection of Child Rights and the State Commission for Protection of Child Rights act as independent body to oversee and redress institutional grievances in child protection. All the legal frameworks developed along with other human rights mechanisms were evolved to solve the issues of social inclusion and equity in education.

One such initiative was in evolved by International Organization was “play for peace” which utilizes the use of games in promoting peace in conflict situations. Its adoption in India was led by Mr. Agyatmitra and Ms. Swati bhatt, which is named as “Khel se Mel” and is undertaken across regions of Gujarat, Orissa, Andaman, Uttar Pradesh, Bihar and Maharashtra.<sup>13</sup> It provided a novel way to engage with children in schools through energetic games and activities that promoted the values of non-discrimination, diversity, empathy, tolerance and cooperation. Participation of mahadalit children in these activities will not only boost their self-confidence but will also help them in building better self-images, aspirations and self-esteem, thereby diluting the barriers of caste-class-gender biases and inhibitions.

As per the UN Convention, children have the right to be consulted and involved in all matters relating to their education. UNICEF, in this respect introduced a concept of Bal Sansad or Children’s Parliament in school as a means of incorporating children’s participation and introducing them to democratic ways of functioning.<sup>14</sup> This would also keep a check on child rights violation under Right to Education Act. Though this concept remained bleak and children from socially excluded group failed to participate in these bodies due to lack of orientation on the part of school authorities.

To overcome the challenges they experience in their day to day lives, the community requires a role model with whom they can relate and can be motivated in life irrespective of hurdles faced. In this case, Baba Saheb Ambedkar is an important role model for children from marginalized communities as they can connect their lives with him, who despite odds present in the society emerged as a great leader . They felt extremely proud that Dr.B.R.Ambedkar-

a member from their own community wrote Indian Constitution and was in favor of casteless society, where everyone would be treated equal irrespective of their caste and gender. They emulate his stories in their life to keep themselves motivated. It is in this direction they have formed Ambedkar Students Forum (ASF), a platform for scheduled castes' students to enhance their leadership and find space within their own social network.<sup>15</sup> This forum has played a major role in raising awareness about educating children and government provisions and entitlement, ensuring students to not drop-out, monitoring schools under RTE, Act and most importantly promoting self development.

At state level in Bihar, the government has introduced inclusive and equity focused initiatives for universalisation of education upto secondary level. Mukhya Mantri Balika Bicycle Yojana, Mukhya Mantri Poshak Yojana, Pre- matric Scholarship and Post-matric scholarships, Mid day meal, etc to retain attendance in schools. Under newly launched Samagra Shiksha Scheme, effective from 2018-19, elementary education was consolidated holistically without any segmentation from class 1 to 12.<sup>16</sup> This was adopted with broader goal of improving school effectiveness in terms of equal opportunities for schooling and equitable learning outcomes.

### Conclusion:

An equitable and socially inclusive education process not only needs to focus on making education accessible to all, rather it goes beyond enrollment and seeks to find out the reasons of dropout and retentions among students from socially disadvantaged community. To address this issue, apart from right based legal frameworks and policies undertaken by the state government, community-led organizations can play a vital role at grassroots level in ending discrimination and non-participation. Ambedkar Student Forum (ASF) needs to be strengthened in Bihar, as it provides a forum to socially backward community to- Educate, Agitate and Organize for their rights. Reaffirming community confidence in education and generating awareness among the community of the benefits of education can provide stimulus in achieving the growth in education.

### References:

1. Government of Bihar (2009). Mahadalit commission report (Bihar Mahadalit Vikas Mission). Patna
2. Government of Bihar (2012). Report on Scheduled Castes and Scheduled Tribes in Bihar. SC & ST Welfare Department
3. Government of Bihar (2009). Mahadalit Commission Report (Bihar Mahadalit Vikas Mission). Patna
4. Government of India (2012-17). XII Five Year Plan Approach. Ministry of Education
5. Constitution of India
6. Joshi H., & Kumar S. (Eds.). (2002). Changing culture, identity, and livelihood of the Musahars in the Gangetic plains. New Delhi: Deshkal Publication
7. Kumar R. (2006). Educational deprivation of the marginalized, a village study of the Musahar community in Bihar. In Kumar R. (Ed.), The crisis of elementary education in India (301–342). New Delhi: SAGE Publications
8. Government of Bihar (2012). Report on Scheduled Castes and Scheduled Tribes in Bihar. SC & ST Welfare Department
9. UDISE (2021-22) Report on Elementary Education in Bihar
10. Khan, M. I. (2017, January 25). Access to education imperative for Musahars in Bihar. The Wire
11. <https://www.unicef.org/child-rights-convention>
12. <https://www.india.gov.in/amendments>
13. Government of India (2022). Samagra Shiksha: An Integrated Scheme for School Education
14. <https://www.unicef.org/child-rights-convention>
15. Kumar, Amardeep (2024). Aspirations for Higher Education among Mahadalit Students and Strategies for Overcoming Urban Marginalities in India. Asian Journal of Education and Social Studies, Vol.50 Issue 6, pp 191-201
16. Government of Bihar (2012). Report on Scheduled Castes and Scheduled Tribes in Bihar. SC & ST Welfare Department



# Plastic Backbone of Modern Civilization

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## ABSTRACT

Plastic, the backbone of modern civilization but the chief root of all Environmental problems pose health hazards, is a non-biodegradable Polymer. Its misuse is also responsible for blocking the drainage causes so many diseases & affect the fertility of soil<sup>2</sup> also. Plastic is the potential sources of highly toxic dioxins, on ignition, a powerful reproductive hormones disrupter. The suitably controlled incineration of plastic wastes are the best method for minimizing hazardous nature but the toxic emissions remain unsolved, which affect the Ecosystem. Plastic waste is recycled for good road construction.

**Keywords:** Environment, Health Hazard, Non-Biodegradable, Polymer, Potential source, Dioxin, Reproductive, Hormone Ecosystem & Recycle.

## Introduction:

Nature is the first precious creation of Almighty & the man, the second but the best boon. Plastics are one of the most important petrochemical based materials and these are used in every aspect of life. Conventional plastics are imposing very serious threats to our environment. Today the life cannot be thought without plastics. Although plastics collection for recycling is widely carried only a small proportion is actually remade into materials. The majority is incinerated to reclaim energy (Panda, 2010; Yu, 2006). There are many other reasons that motivate industries and researchers to find alternatives to nonrenewable resources; however, it is noted that all replacements for current plastics should meet some important conditions, they need to be low cost, renewable, sustainable and biodegradable. The relation between them is profound but everlasting. If this equilibrium disturbs, then the hazardous Environmental problems arise. Plastic is a man-made, non-biodegradable synthetic macro molecular polymer of petrochemical hydrocarbons. This polymer is found every where in today life & will remain undegraded in the environment for a long period unlike foods & paper wastes, which is too much useful for human life but it has an adverse effect on the environment. Now –a-days plastic pollution is globalised. It cannot be neglected practically.

Owing to ecological imbalances, we are facing diversified environmental problems of the tolerable limits of the ecosystem has crossed & it is now hard to return it original equilibrium.

The new discovery of the last century is the plastic worst open a new vista for chemists, industrialists as well is Indian people vis-à-vis Universe. It is popularly known for its durability, flexibility & economically cheap. Plastic was a post war phenomenon for India, although the first plastic product “CELLULOID” was known since 1882. Up to 1940, the global production of it was about four lac tones, but now it crosses the data of 100 million tones<sup>1</sup> (et al 1993). Recently, the scope of plastic has spread over each & every wing of scientific branches. As plastics are foes of Environment, the plastic industries promote a new “friendly Environmental” product, they deliberately ignore the highly toxic nature of plastic production, whether the product is known as “degradable”, “recyclable” or any other “green marketing” catch word.

## Objectives

1. To compare the effect of green additive polymers on different properties such as weight loss, tensile strength and elongation at various intervals of time buried in soil.

2. To investigate the effect of different concentrations of mucilage and starch on the biodegradability of polyethylene.
3. To propose mechanism of reaction.

### Colours & their effects :

Plastic of different metallic salts indicate different colors such as Barium-green, lead-black, chromium-red plastics. Unknowingly, if we keep rasmalai, curd, fruits, vegetables etc. into them, then these are contaminated. These colours containing organic dyes are not to food grade & are extremely harmful causing food poisoning commits renal failure & even cancer too.

### Uses:

There are several commercial applications of non-degradable plastics such as gelling, water-bindings, viscosity enhancing properties alginate is widely used in foods and in textile printing, welding rods; for medical & engineering purposes in encapsulation of cells, coloured bottles etc. It is used for packing, protecting, serving & even disposal of all kinds of consumer goods. Now, plastics most commonly is applied in using for land fill and finally reused their wastes in the road construction on recycling them.

### The Management of disposed plastics:

Disposal of plastic is a myth. It defies any kind of attempt at disposal - be it through recycling, burning or land filling.

The major problem of plastic waste collection is done through "organized sectors i.e. rag pickers or kawariwala" a source of their livelihood. The above process is carried out through unscientific method, causes "Environmental pollution as well Eye sore" that destabilize the Ecological system.

### Environmental pollution & health hazards:

Plastic is one of the most toxic pollution in developing scientific era. It plays the villainic role from its start & imposes serious threat for all earthly living creatures. Chemicals like benzene, vinyl chloride i.e. plastics are responsible for an array of maladies ranging from birth defects to cancer,

damage the nerves, immune systems & also adversely affect blood & kidneys i.e. even to death.

The misuse of plastic wastes frequently log the drains, as a result back flow by which so many diseases break out through accumulating of sewage. These wastes have been identified as bloated receptacles of stagnant water enough to breed mosquitoes. The land gets littered through plastic garbage presenting an ugly & unhygienic scene. This littering also reduces the rate of rainwater percolating, resulting in lowering of water level in cities.

Consumption of plastic waters obstruct straying animals intestines leading to painful ultimately death. It pollutes the soil to a large extent, which alters the chemical & biological system. As a result, hazardous chemical can enter into human food chain, disturbs the biochemical process & finally lead to serious effect on living organism.

The liberalization makes Indian pious rivers the Ganges, Yamuna & other down stream, receive countless poly bags daily with worshiping goods offering to the Almighty. It has a plethora of harmful effect on human life as well aquatic one.

The children face so many problems in the long run such as carcinoma impotency, skin diseases etc on chewing/sucking plastic made toys. When plastic wastes consigned to incinerate, their toxic emission contain highly concentrated HCl, Cl<sub>2</sub>, HCN, CO, CO<sub>2</sub>, NO<sub>x</sub>, dioxins & other toxics can cause respiratory bronchial problems, skin allergies, eye infections, nausea, congaing, vomiting, reproductively disorders, even multi cancers. Toxins also releases. Work at depletion of the Ozone Layer. Dioxin, the most toxic releases a powerful hormone disrupter damages the fertility of reproduction in human & animals. The risk of getting multicancer from dioxin is increasing on. These highly toxic gases affect human health, plant kingdom, atmosphere destroying Ecosystem. The synthesis of biodegradable and useful polymers like BIOPOL is under investigation for the removal of plastic hazards.

### Control of plastic pollutions:

The recyclisation of plastic waste is the best