Education for Sustainable Development (ESD): Gaps between Goals & Adaptability in the Indian Education

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Abstract

The study emphasizes the crucial role of education in Sustainable Development, asserting the need for 'Quality Education for Sustainable Development' through various government initiatives at different levels. It highlights the Global Education First Initiative and the Right to Education Act in India as key milestones. The paper identifies gaps between Sustainable Development Goals and the actual implementation in Indian school education, advocating for significant changes in educational practices and regulations to ensure quality. It also proposes strategies to overcome barriers to achieving these goals while reviewing existing literature and developing a holistic model for Indian schools to adapt and succeed.

Keywords
Sustainable Development, Quality Education, Stumbling Blocks, Insights

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1. Introduction

Education serves as the foundation for addressing the increasing need for sustainability across various domains. Defined in the 1987 Report of the World Commission on Environment and Development, sustainability entails meeting present needs without compromising the needs of future generations. It emphasises the judicious use of resources and underscores "Education for Sustainable Development," which equips individuals with the necessary knowledge and skills to foster a sustainable future. This approach promotes participatory teaching methods, critical thinking, and collaborative decision-making, aligning with the United Nations' Sustainable Development Goals, which emphasise the importance of quality education in reducing poverty and enhancing global health. The study aims to elucidate the challenges of the educational system in promoting sustainability, proposing models adaptable to contemporary socio-environmental needs.

2. Literature Review

Mohanty (2024) analyzes the essential role of education in achieving sustainable development goals (SDGs) through various indices and frameworks. The paper provides an overview of the SDGs' aim for a more equitable and sustainable world by 2030, emphasizing education's interaction with sustainable development. Selvan (2024) examines higher secondary education in Tamil Nadu, focusing on STEM awareness among students and how it varies with parents' educational status and school type. Mogren and Gericke (2017) highlight leadership practices as crucial for educational sustainability, proposing criteria such as collaborative interaction, student-centered education, and proactive leadership. Leicht et al. (2018) identify competencies necessary for sustainable development thinking and acting, stressing the need for educational reforms to foster holistic learners. Mohanty and Dash (2018) underscore the significance of UNESCO's SDG-4 and present a conceptual model of Sustainable Education, outlining key drivers: Profit, People, and Planet, along with their interconnections.

3. Objectives of the Study

(i) To examine the existing scenario of Sustainability in Education and the role of Education for overall Sustainable Development.

(ii) To understand the gaps between planning and implementation in respect of Education for Sustainable Development.

(iii) To analyse the various factors that help achieve the aims of the strategy and the role of different stakeholders involved in the process of obtaining the set targets.

5. Methodology of the Study

Data collected for the first time and hence are first-hand. Direct interaction among various stakeholder's viz. - A study was carried out in Bangalore, aiming to obtain inferences of opinion on the effectiveness of various awareness programmes conducted by schools on the importance of sustainable education from time to time, for safeguarding the environment. Data which is already collected and used by other scholars, researchers, academicians, government and non-government agencies at various levels – international, regional, national, local etc.,

Sampling design:

Sampling aims to have an apt sample size, having unique features or traits of participants because of extremes in their performance indicators or the target achieved by them against the set goals.

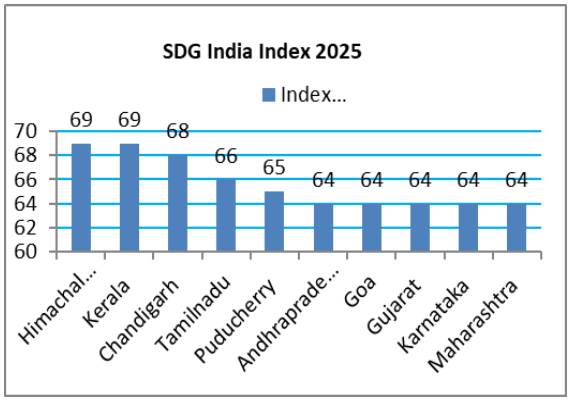
Sampling method: The performance indicators of the eastern and north eastern states of our country, pertaining to achieving very slow or low progress in education for sustainable development, in providing even the basic amenities to the elementary level of education.

Population: Segments of primary, upper-primary, secondary and senior-secondary schools and Higher Education of eastern and north eastern states of India.

6. Conceptual Framework of Sustainable Education in India

The United Nations' ambitious Sustainable Development Goals stresses on the need for 'New and Ambitious world-wide efforts to reduce poverty and hunger, improve health, enable quality, protect the planet: where education is the panacea. In the Agenda 2030 and the Sustainable Development Goals adopted by all the member states of the United Nations in 2015, describe a Universal Agenda 'applicable to and 'must be adhered to' by all the member countries to ensure seventeen (17) agenda items viz.: (1) No poverty, (2) Zero Hunger, (3) Good Health and Well-being, (4) Quality Education, (5) Gender Equality, (6) Clean Water and Sanitation, (7) Affordable and Clean Energy, (8) Decent Work and Economic Growth, (9) Industry Innovation and Infrastructure, (10) Reduced Inequalities, (11) Sustainable Cities and Communities, (12) Responsible Consumption and Production, (13) Climate Action, (14) Life Below water, (15), Life on Land, (16) Peace, Justice and Strong Institutions, (17) Partnership for the goals.

The statistics of recent research results by UNESCO shows [17] how education can influence and promote overall sustainable development: The Vision/Goal, Mission and its impact as per the survey has depicted a roadmap to be imbibed by the nations irrespective of their economic growth and technological advancements. The recent reports released by NITI Aayog reflects the Base Line Report of the Sustainable Development Goals (SDG) India Index 2018 documenting the progress made by India's States and Union Territories (UTs) on various Agenda Items. It aims to instil a sense of healthy competition and competitiveness among states and Union Territories on various agenda items, which will in turn be monitored on a real-time basis. This index is a measure to align our Prime Minister's clarion call of *'Sabka Saath' –'Sabka Vikas'* which embodies the Five Ps of the Global SDG Movement – People, Planet, Prosperity, Partnership and Peace. The Index shows that though India's position in the world rankings is 58 among 192 member countries, some of the states in our Country have crossed the half way towards the target. The top performer among States and Union Territories as depicted below shows the spirits imbibed by them in achieving the targets:



Kerala's top rank is attributed to its superior performance in providing good health, reducing hunger, achieving gender equality and providing quality education. Himachal Pradesh ranks high on providing clean water and sanitation, in reducing inequalities and preserving the mountain ecosystem. Tamilnadu attributes its contribution towards eradication of poverty and also providing clean and affordable energy. Among UTs, Chandigarh's exemplary performance is due to its potential in providing clean water and sanitation to its people besides its contributions in providing affordable and clean energy, generating decent work, economic growth and also in providing quality education. Sikkim and UTs Andaman & Nicobar Islands and Chandigarh have achieved the goal of Gender Equality. However, Jharkhand, Odisha and Nagaland are the states that have a lot more ground to cover in the overall performance.

Reasons for the progress in Performance:

- Poverty eradication and various schemes implemented by the government to satiate the hunger.
- Mid-day meal programme.
- Improved standard of living.
- Better health-care facilities coupled with active initiatives and infrastructure facilities even at the remotes parts of the country.
- Scholarship schemes for single girl child for higher education.
- Digital Education, coupled with smart classrooms
- Free and compulsory education for children.
- Prohibition of child labour and strict monitoring of human trafficking.
- Primary Health-care facilities, especially taking care of the health of women and children.

7. Data Analysis

Challenges or Stumbling blocks on the path of Education for Sustainable Development:

Table 1: Dropout (%) of 10 states

Sl. No.	State	2013-14 (Dropouts in %)	2014-15 (Dropouts in %)	% change in dropouts (Increase/ Decrease)
1	Assam	7.44	15.36	7.92
2	Arunachal Pradesh	10.89	10.82	-0.07
3	Mizoram	12.96	10.1	-2.86
4	Manipur	18	9.66	-8.34
5	Meghalaya	10.34	9.46	-0.88
6	Uttarpradesh	7.08	8.58	1.5
7	Jammu & Kashmir	5.46	6.79	1.33
8	Andhra Pradesh	4.35	6.72	-2.37
9	Madhyapradesh	10.14	6.59	-3.55
10	Haryana	0.41	5.61	5.2

[Table 1 – OGD, Platform, India. Community.data.gov.in - A Comparative Analysis on the Top 10 States, in respect of dropout rate at Primary Level School Education in India during 2013-14 & 2014-15].

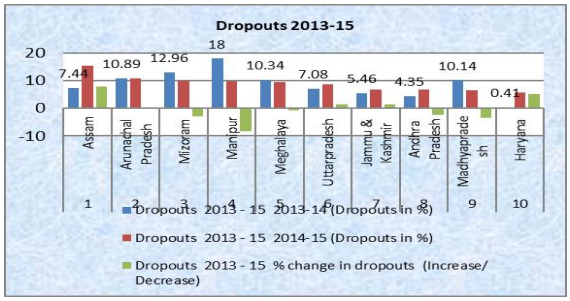


Table 2: States where Textbooks were not made available within 30 of the commencement of the academic year

Sl. No.	State	Rural	Urban
1	Andaman & Nicobar Islands	No	No
2	West Bengal	No	No
3	Uttarpradesh	No	No
4	Uttranchal	No	No
5	Meghalaya	No	No
6	Nagaland	No	No
7	Himachal Pradesh	No	No
8	Manipur	No	Yes
9	Bihar	No	Yes

[Table 2: Textbooks were not made available to the students of Elementary Classes within 30 days from

the commencement of the Academic Session 2015-16]
The table below shows the percentages of Schools with Girls' toilets (states showing deterioration in adequate facilities)

Table 3: Lack of basic amenities in Schools - a deteriorating scenario:

Sl. No.	State	2013-14 (%)	2014-15 (%)	2015-16 (%)
1	Assam	74.61	74.86	83.94
2	Bihar	75.5	76.3	90.05
3	Meghalaya	51.04	63.92	84.29

[Table 3: Percentage of toilet facilities provided for girls of total schools in particular states, the above three states – Meghalaya, Assam, and Bihar; though the existing conditions of Bihar have been drastically improved in the recent past compared to the corresponding previous years.]

Table 4: The States- percentage of schools having Girls' Toilets facilities

Sl. No.	State	2013-14 (%)	2014-15 (%)	2015-16 (%)
Primary Level				
1.	Assam	60.74	53.36	86.58
2.	Bihar	70.1	71.15	89.85
3.	Meghalaya	50.64	60.43	84.03
Upper Primary Level				
1	Assam	57.71	53.94	78.47
2	Meghalaya	50.32	61.91	89.14
Secondary				
1	Assam	72.49	71.32	84.73
2	Meghalaya	62.56	68.49	73.56
Senior Secondary				
1	Assam	79.37	79.77	88.22
2	Meghalaya	84.13	81.75	85.57

Table 4: Shows the ppercentage of toilet facilities provided for girls of total schools in particular states, the above three states – Meghalaya, Assam, and Bihar; though the existing conditions of Bihar have been drastically improved in the recent past compared to the corresponding previous years.

Table 5: Inadequate Drinking Water Facilities

Sl. No.	State	2013-14 (%)	2014-15 (%)	2015-16 (%)
Primary Level				
1	Assam	79.14	82.51	85.41
2	Arunachal Pradesh	79.12	80.13	80.8
3	Meghalaya	61.35	62.92	62.52
4	Nagaland	74.28	78.64	81.93
Upper Primary				
1	Assam	83.71	86.62	89.29
2	Arunachal Pradesh	91.29	91.42	92.12
3	Meghalaya	60.69	63.47	63.73
4	Nagaland	75.83	83.58	87.03

Table 6 Upper Primary Level

Sl. No.	State	2013-14 (%)	2014-15 (%)	2015-16 (%)
Secondary				
1	Nagaland	25.8	87.08	89.63
Senior Secondary				
1	Nagaland	87.41	89.35	90.86

Table 7 Pupil Teacher Ratio

Sl. No.	State	2013-14 (1:)	2014-15 (1:)	2015-16 (1:)
Primary Level				
1	Bihar	38	35	36
2	Jharkhand	30	29	27
3	UP	41	39	39
Upper Primary				
1	Bihar	23	23	24
2	Jharkhand	20	20	19
3	UP	34	33	31

Table 8 Upper Primary Level

Sl. No.	State	2013-14 (1:)	2014-15 (1:)	2015-16 (1:)
Secondary				
1	Bihar	50	59	66
2	UP	68	61	62
3	Jharkhand	51	57	56
Senior Secondary				
1	Andhra	38	35	71
2	Bihar	64	61	59
3	Jharkhand	53	63	78
4	MP	67	40	38
5	Maharashtra	43	43	44
6	UP	116	106	97
7	West Bengal	57	56	57

Table 9 Country Specific on Gross Enrolment Rate & Public Expenditure on Education - 2015

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Gross Enrolment Rate & Public Expenditure on Education – 2015

Countries	Primary (I-V)	Lower Secondary (VI - VIII)	Upper Secondary (IX - XII)	Tertiary	Public Expenditure on Education (As per % of GDP)
China	104.10	99.10	89.70	43.40	NA
Germany	105.00	101.50	104.80	68.30	4.95^{-1}
India	99.20	92.80	68.10	24.50	4.13^{-2}
Russia	100.50	101.00	113.60	80.43	3.86^{-3}
South Africa	99.7^{-1}	97.1^{-3}	88.5^{-3}	19.4^{-2}	6.02^{-1}
UK	108.70	112.7^{-1}	138.2^{-1}	56.5^{-1}	5.68
USA	100.20	102.10	93.3^{-1}	85.80	5.38^{-1}

Interpretations of the results analysed:

Table 1: The dropout trends in India in the primary school level of education reflect a mixture of both positive and negative outcomes year-on-year – 2013-14 & 2014-15. The data of the top 10 States, with respect to dropout rate at the Primary Level during the referred period, are given in the exhibit. In case of the dropout of two consecutive years 2013-14 & 2014-15, Assam shows an increasing rate of drop-out, i.e., 7.92% on the previous year, followed by Haryana from 0.45% to 5.3%, Uttar Pradesh shows a 1.5% increase and Jammu & Kashmir shows an increase of 1.33%. On the other hand, Manipur could bring the percentage down drastically by 8.34% followed by Madhya Pradesh 3.55%, Mizoram 2.86 & Andhra Pradesh 2.37% in the Primary School Level.

Though the various initiatives of the Governments of India from time to time to promote basic elementary education by way of legislation – say 'evidence-based-policy-making', implementing and executing various schemes and *'abhiyans'* coupled with initiatives of respective State Government (since education being the item under concurrent list) initiatives to facilitate the so called 'accessible', 'affordable' and 'quality education' in an equitable manner, still has a huge gap to be bridged. The latest data based on research report made available for the public by the Statistics Division of the Department of

School Education & Literacy, The Ministry of Human Resource Development (MHRD), Government of India titled 'Educational Statistics at a Glance' dated 5th March 2018 depicts the ground realities of the same gaps, lacunae, inadequacy and insufficiency in working of the policy implementation.

Among various inadequacies and inefficient systems of implementation at different levels of governance, it is worth noting to understand the lacunae where serious forethought and time-bound, action-oriented approaches are inevitable to achieve a balanced and equitable system of Education for Sustainable Development.

Table 2: The data on the question of whether textbooks were made available to the students within 30 days from the commencement of the Academic session 2015-16 (at the primary level), catering to two different segments, viz, Urban and Rural. Out of the total 37 independent Governing Units of the Country (28 states + 9 Union Territories) the Sl. No. 1 to 7 couldn't provide even the textbooks in a month's time and the Sl. No. 8 and 9 could provide the textbooks only in Urban areas, leaving the Rural areas aside. Out of the nine (9) states, seven (7) couldn't provide textbooks to the schools, which were Andaman Nicobar Islands, West Bengal, Uttar Pradesh, Uttaranchal, Meghalaya, Nagaland, Himachal Pradesh, and Manipur, in both Urban and Rural areas. However, Manipur and Bihar could provide textbooks only in urban areas, leaving rural areas aside.

Table 3& 4: Percentage of toilet facilities provided for girls of total schools in particular states, the above three states – Meghalaya, Assam, and Bihar; though the existing conditions of Bihar have been drastically improved in the recent past compared to the corresponding previous years. On average, the segment-wise results have also shown the same trend.

Table 5: The table shows that the total percentage of schools with adequate drinking water facilities is lower in Meghalaya & Nagaland, particularly at the primary level.

Table 7: Indicates the Pupil Teacher Ratio. Uttar Pradesh, Jharkhand, and Bihar show a ratio much higher than the prescribed norms of the RTE Act 2009, from the primary to the senior secondary level. The Right to Education Act (RTE) 2009 sets the norms for the Pupil-Teacher Ratio (PTR). A PTR of 30:1 has been prescribed at the primary level in both rural and urban areas, whereas for the upper primary level, it is 35:1.

Table 9 presents country-specific data on Gross Enrolment Rate & Public Expenditure on Education for 2015. Compared to the given countries, India's spending on education, especially on higher education, is meagre compared to other countries.

8. Findings and Implications:

- The research reports on Global scenario don't depict a different status which visibly or invisibly supports the data given in the table above.
- The disparity in mandated framework v/s. Equity in implementation or adaptation is the root cause that supports a societal gap between the haves and have-nots.
- Global snapshots reflect the world's richest 500 individuals have a combined income that is greater than the combined income of the World's poorest 41.60 Cr.
- Every year 1.10 cr children die before the age of 5 yrs..
- Every 10 days 3.00 lakh children die from malnutrition, poor sanitation or preventable diseases..
- Armed conflicts itself denies 2.80 cr children access to education and expose them instead to violence, bereavement and abuse. 5.70 cr of the world's children are out of school; half of them in the 32 countries suffering severe conflicts.
- 80.00 crs of the world's adults can't read and write and only 60% of the countries achieve gender parity in primary school enrolment.
- In 2009, world-wide military expenditure was US$ 1.5 TN whereas only $16 BN of aid is needed annually to provide basic primary education in poor countries (about 1% of what is spent on arms.) but in 2009 these countries received only $2 BN (0.001%) in aid for basic education.

9. Suggestions:

1.The answer to these issues of Education for Sustainability and Sustainable Development and problems has multi-dimensional perspectives, as various factors have equal importance in the process to make it happen.
2. The real drivers who can make it happen are the teachers of all levels of Schooling both formal and informal as indicated by Katrine, Dahl, Madsene in support of the opinion expressed by Scot, W, Gough, S. the vital role of teachers to make the young generation to cope up with uncertain and shifting knowledge; is not an easy task though not impossible.
3. A more focused, identical, universally acceptable, relevant to the time, inclusive, integrative, participative & practical curriculum is to be designed and disseminated throughout the world.
4. A strict & impartial quality monitoring system is to be in place to ensure that the quality of education is imparted in mushrooming private schools and also the quality and productivity of the staff is ensured in aided and government-run schools. These two extremes, coupled with the orientations and skills development of the teaching faculty, are to be assessed periodically to ensure the competency level of the faculty members to impart the curriculum and various allied activities according to the changing needs of society.
5. Awareness to parents on the importance of education, especially in the remotest areas of the country, is unavoidable.
6. Adequate allocation of resources is imperative to achieve the goal for long term basis where active involvement of all stakeholders – Governments & teachers, being the torch bearers of the process, Non-government organizations, private industrial sectors, Parents and the Management of the Educational institutions (for doing it more as a social cause than profit making), to help achieve the stated objectives and also bridge the gaps.

10. Summing Up

Adopting ESD to have an educational-culture; especially in the school curriculum that would promote learning and help tudents at the tender age itself to nurture them to be responsible, socially productive and useful individuals in the mainstream of sustainability their role as torch-bearers for the sake of conservation of natural resources and promote equality, sustainable consumption, lifestyle and practices to protect our environment and make this planet a place of sustainable habitat for the generation to come.

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