India's Journey Toward Quality Education: A Comprehensive Analysis of India's Progress on SDG 4 Compared to Global Benchmarks

Dr. Jyoti Deepak Joshi

Asst. Prof. Deccan Education Society's Chintamanrao Institute of Management Development & Research Sangli

Abstract—Education is the backbone in Nations' development; it is fundamental right of every child and is a powerful tool for social transformation. India being developing country has evolved educational development through different stages and phases so that each one can be benefitted with equal opportunity. United Nations' have designed global blue print for sustainable progress - 2030 agenda of Sustainable Development. Sustainable Development Goal 4 (SDG 4) is one of the 17 goals which specifically focuses on ensuring inclusive and equitable quality education and promoting lifelong learning opportunities for all by 2030. India has made ssignificant progress in education system and expanded access to education at all the levels nationwide; while implementing it there were many challenges in achieving equity and quality at all educational levels. However, developed nations, with robust education systems and strong institutional frameworks, present benchmarks that can inform India's efforts. This comprehensive study examines India's journey toward Sustainable Development Goal 4 (SDG 4) through a human approach comparing current achievements with developed nations across primary, secondary, tertiary, and lifelong learning dimensions. The study has conducted considering the latest data from Annual Status of Education Report 2024 (ASER 2024) and Unified District Information System for Education Plus (UDISE+) which is India's largest and most comprehensive Management Information System for school education, initiated by the Department of School Education and Literacy (DoSEL), Ministry of Education. World's most extensive educational database is included in UDISE+, it includes 14.72 lakh (1.472 million) schools across India, 24.8 crore (248 million) students who are enrolled and 98.08 lakh (9.8 million) teachers and other personnel who are part of education system.

This paper reveals the gaps that demand urgent attention that have been identified after evaluating the international benchmarks and UDISE+ 2023-24. The analysis includes the transformative vision of NEP 2020 adapted by India however complex realities faced by 250 million students, 9.8 million teachers, and countless families whose dreams are based on the educational opportunity available to them.

Index Terms—SDG 4, educational equity, learning outcomes, NEP 2020, digital divide, foundational literacy, global benchmarks, human development

I. INTRODUCTION

In India everyday around 250 million children from villages and cities across India board on their educational journey. This daily journey not only represents the school attendance but also it represents the dreams of the families who perceive that education is their pathway from poverty to prosperity. However, disparities in execution of education system throughout the nation struggles in fulfilling the dreams.

India being most diverse country in terms of social, economic, political and infrastructural dimensions, it is very challenging to provide and practice equality in all the aspects. India's educational ecosystem embodies people's greatest opportunity but the most complex challenge. In the year 2023-24, Unified District Information System for Education Plus (UDISE+) revealed transformative power of the system where 1.47 million schools, 9.8 million teachers, and countless families experienced the value of it. Currently Indian education has achieved the remarkable progress in number of enrolments, definitely there is transition in educational access throughout the nation, but quality learning is not ensured with the existing system. According to the Annual Status of Education Report (ASER) 2024; after surveying 649,491 children, it has noted that post

COVID skills are not as per the age or grade; the fundamental skills were noted below the expected level.

This research study scrutinizes India's growth and development towards Sustainable Development Goal 4 through a humanistic perspective, the data considered for the study includes the latest ASER 2024 and UDISE+ data which is compared with global benchmarks. Educational transformation is promised and ensured by National Education Policy 2020 (NEP 2020) and the 2030 SDG deadline approaches; this research explores how India can bridge the gap between educational dreams and reality for its 250 million students and their families.

II. RESEARCH OBJECTIVES

1. Holistic assessment of India's SDG 4 Progress
2. Comparative and gap analysis of selected developed nations
3. Examine the effectiveness of India's NEP 2020 and to investigate educational disparities

Literature Review

Sustainable Development Goal 4 has directed efforts of all Nations towards Equity, Quality and Inclusiveness; it has begun the journey for quality education and global commitment to universal quality education by 2030.

Mehrotra (2020) presented the remarkable human history of transformed scenario during last two decade and documented " how the Right to Education Act 2009 helped the excluded children to avail the benefit of schooling, especially the girls and marginalized communities; however, the enrolment number didn't improve the classroom environment. These excluders were not welcomed.

Annual Status of Education Report (ASER)2024, revealed the sobering reality of schools of rural India, dedicated volunteers conducted this study, they visited the homes across rural India since 2005; the major findings were focusing on incompetent and faulty system, it was observed that many school children struggle to read simple text and perform basic arithmetic.

Banerji & Chavan (2022) described learning poverty, which affects not only academic outcomes but dreams and aspirations of family and community development trends. He focused the realities that student of Grade 5 could not read Grade 2 texts.

Sahlberg (2021) analyzed and presented the Finland's success story, he focused on the outcome of teacher's empowerment and child centered approaches which can create the world class education.

Hippach-Schneider et al., 2023mentioned about Germany's dual education model of learning with practical skills and the transition from education to meaningful employment.

Das & Singh, 2023 in their research revealed that during COVID-19 pandemic disparities in remote education facilities among the rural and urban students wad noted as rural areas didn't have sufficient infrastructural facilities. The question raised by them was about the justice and opportunity in modern India. This digital divide in India exhibits the regional infrastructural inequalities and development.

Kaul, 2021 and Kumar & Priyam, 2023 focused on the NEP 2020's expected outcome; Kaul is of the opinion that for transformation of dreams into reality NEP 2020 is the bold vision which will bring educational transformation that will bring global educational equality. He further mentioned that NEP promises development in play based in early learning to research driven universities. Kumar & Priyam, 2023 in their research concluded that still there is inequality and imbalance in regional development and because of that some of the states are still struggling with availability of resources and coordination.

Ministry of education 2024, in UDISE plus system has tracked 248 million students across 1.47 million schools in India and maintained the world's largest database that reveals the facts of human stories.

Banerji, 2023 in his research identified that the most convincing data can be retrieved from ASER's household survey which is collected by volunteers who have met the children in their hometowns; this data represents the truth about learning which may not be available in the school records.

In nutshell of this review, it can be concluded that comprehensive and human – centered analysis is essential. For transformation in education, it's essential to know the facts and statistic of chlid's potential, family's aspiration and community's future as well. Quality education journey is possible if it understands the academic challenge and human endeavour.

Research Design and Approach

This comparative study is based on secondary data, that is analyzed to evaluate India's progress towards

Sustainable Development Goal 4 (SDG 4) in relation with developed nations. Multiple data sources are used for the study which employs both qualitative and quantitative analytical framework, data is assessed across four distinct levels; primary, secondary, tertiary and lifelong learning. Existing large - scale datasets are used to identify the patterns, gaps and opportunities in India's educational ecosystem.

Data Sources used for study are – Annual Status of Education Report (ASER), Unified District Information System for Education Plus (UDISE+), All India Survey on Higher Education (AISHE) Annual Status of Education Report (ASER) – 650,000 children's data which is collected annually across India which is inclusive database considered for the analysis.

Scope of Data covered for the study -

- Geographic scope
- All over India – rural districts across 28 states and 8 Union territories
- Sample considered: Per district 30 villages and per village 20 households selected randomly.
- Sample Size: per district around 600 households, Nation - wide around 300,000 households.
- Population included: regardless of school enrolment status; Children aged 3-16 years,
- Unified District Information System for Education Plus (UDISE+) – for trend analysis 2015 – 2024 data is considered. Data Covered: across India; 1.5 million schools that include government, private, and aided.

- Students considered: Around 250 million students enrolled.
- Teacher's Database: Around 9.8 million teachers and education personnel
- Infrastructure System of measurement: data of schools about facilities, resources, and accessibility features.

3. All India Survey on Higher Education (AISHE); Data includes – Universities, Colleges, specialized institutions and comprehensive metrices

- Universities - central, state and private 1,113 institutions.
- Colleges - affiliated and constituent colleges 42,343
- Specialized Institutions - stand - alone 11,799 institutions
- Comprehensive Metrices – Infrastructure, Enrollments, research output, and internationalization pointers

For international comparisons countries considered are United States, Germany, Japan & United Kingdom; datasets considered are -

1. OECD reports of Education – database of 37 member countries.
2. UNESCO Institute for Statistics (UIS) – important for SDG4 that provide framework for monitoring the official global benchmarks for educational progress.

This study includes descriptive comparative analysis which is supplemented by trend analysis and gap identification methodologies.

III. RESULTS & DISCUSSIONS

Performance of Primary Education: India Vs Developed Nations
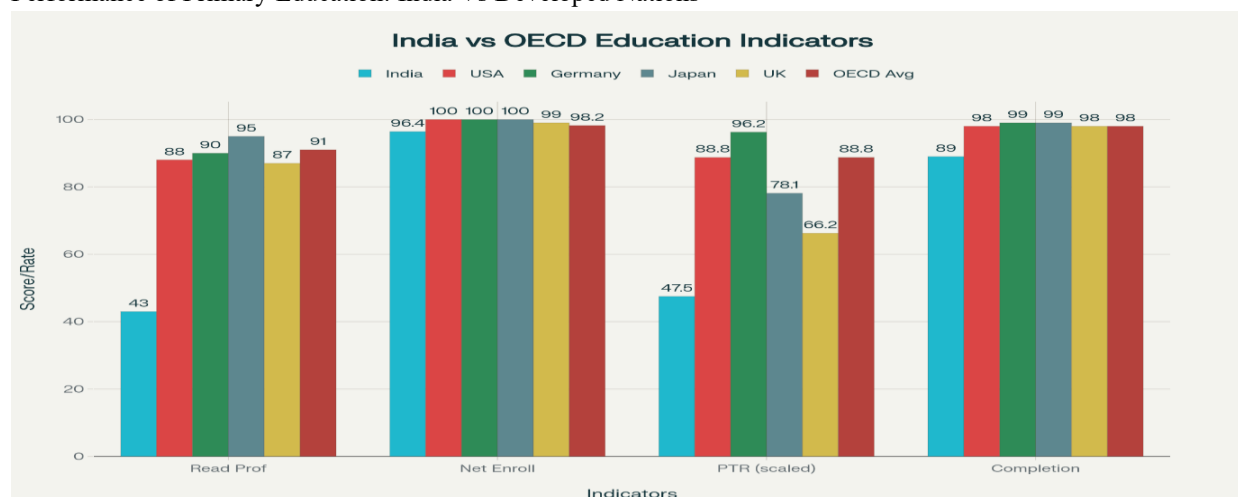
The chart exhibits;
- In reading proficiency India lags 48% behind in OECD average, net enrolment is 96.4%; however, only 43% have achieved reading proficiency, Pupil-teacher ratio is 26:1 which is significantly higher than OECD average of 14:1

Performance of Secondary Education: India Vs Developed Nations

Secondary Education International Comparison
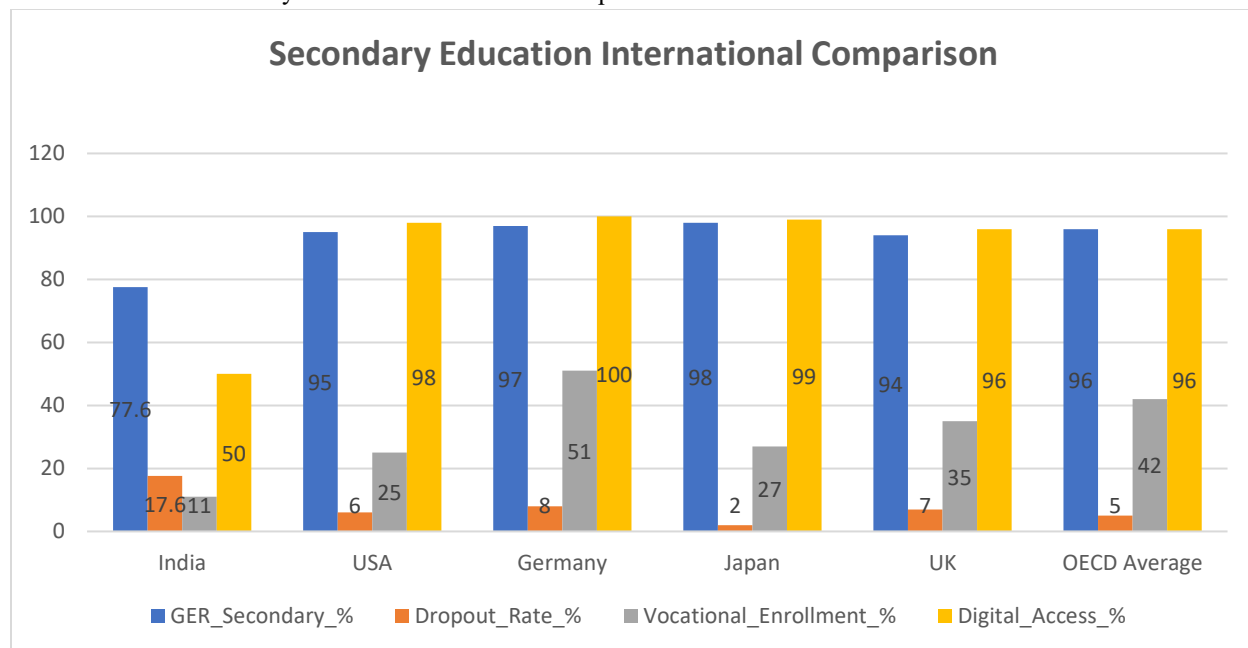
The chart exhibits; comparison of secondary education among different nations, India is
lacking in all the aspects General Enrollment ratio, vocational enrolment ratio and digital access as well. Dropout rate is very high in comparison with other countries. India need to improve upon all these aspects which is one of the major challenges to achieve SDG4.

Performance of Tertiary Education: India Vs Developed Nations


TERTIARY EDUCATION INTERNATIONAL COMPARISON
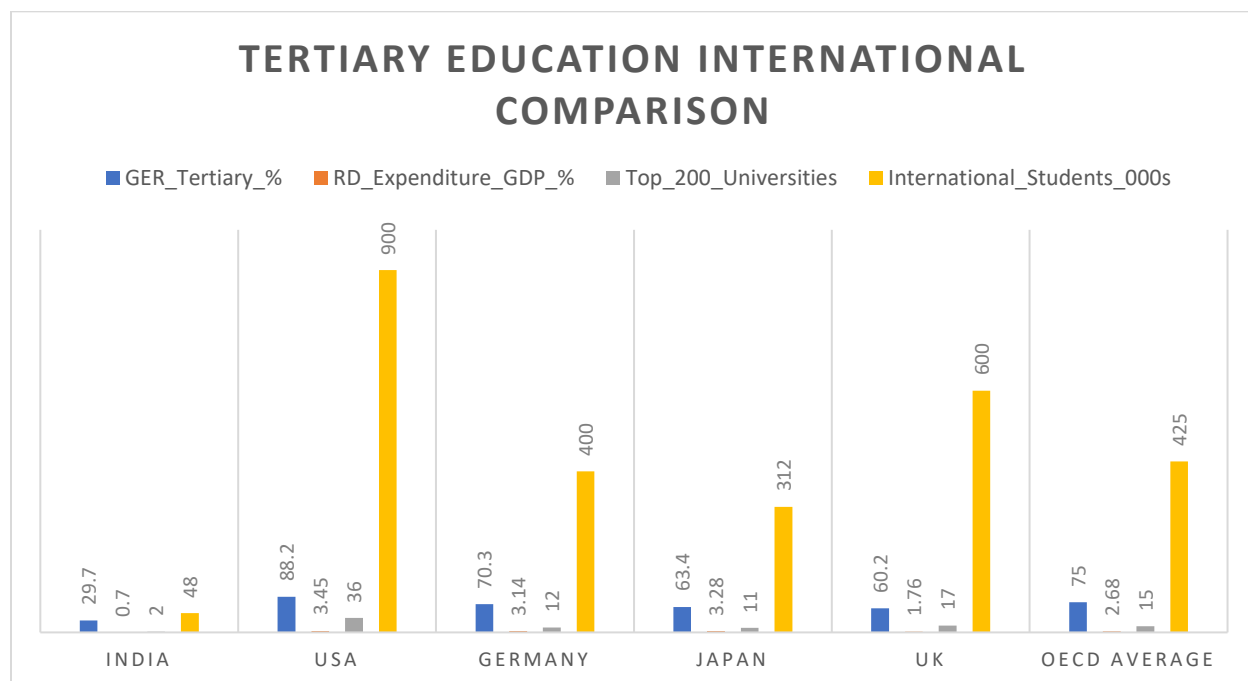
- Tertiary education international comparison exhibits similar results as secondary education; to achieve SDG4 India need focus upon it. There is major gap in research investment 0.7% vs 2.68% OECD average.

Enrollment Trends of India (2015 – 2024):
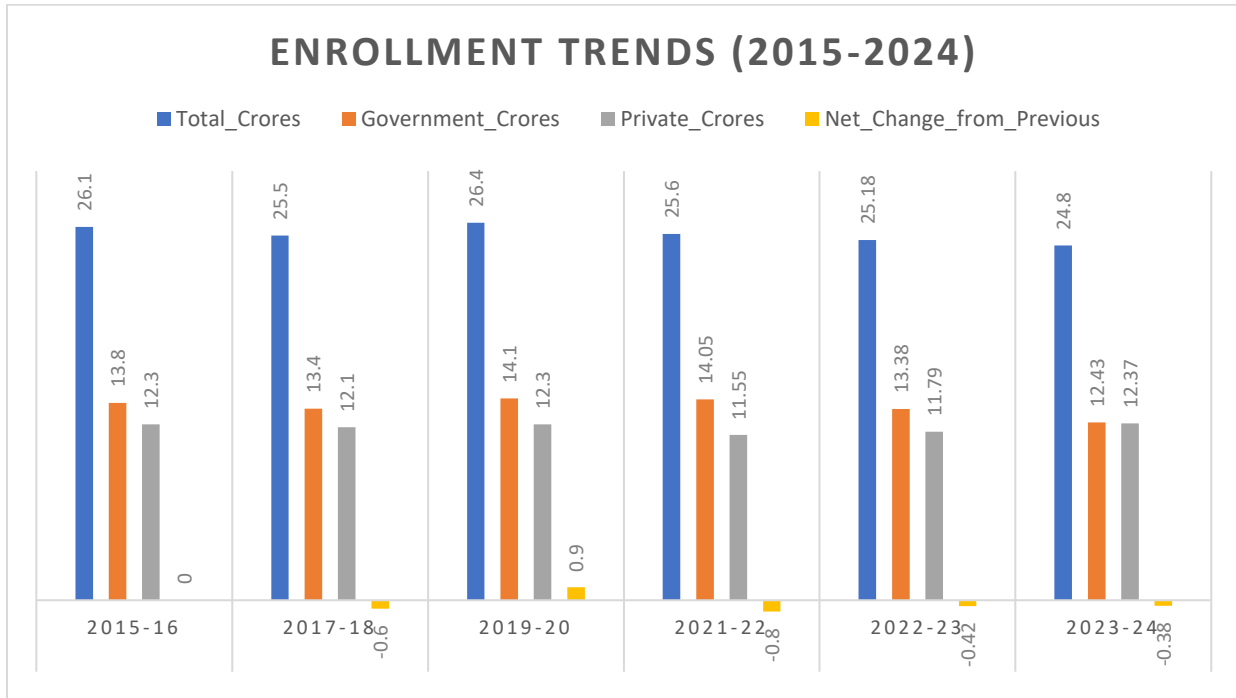
Enrollment trends show variations; this variation shows the challenges in implementation of SDG4.

State -wise Performance Analysis:
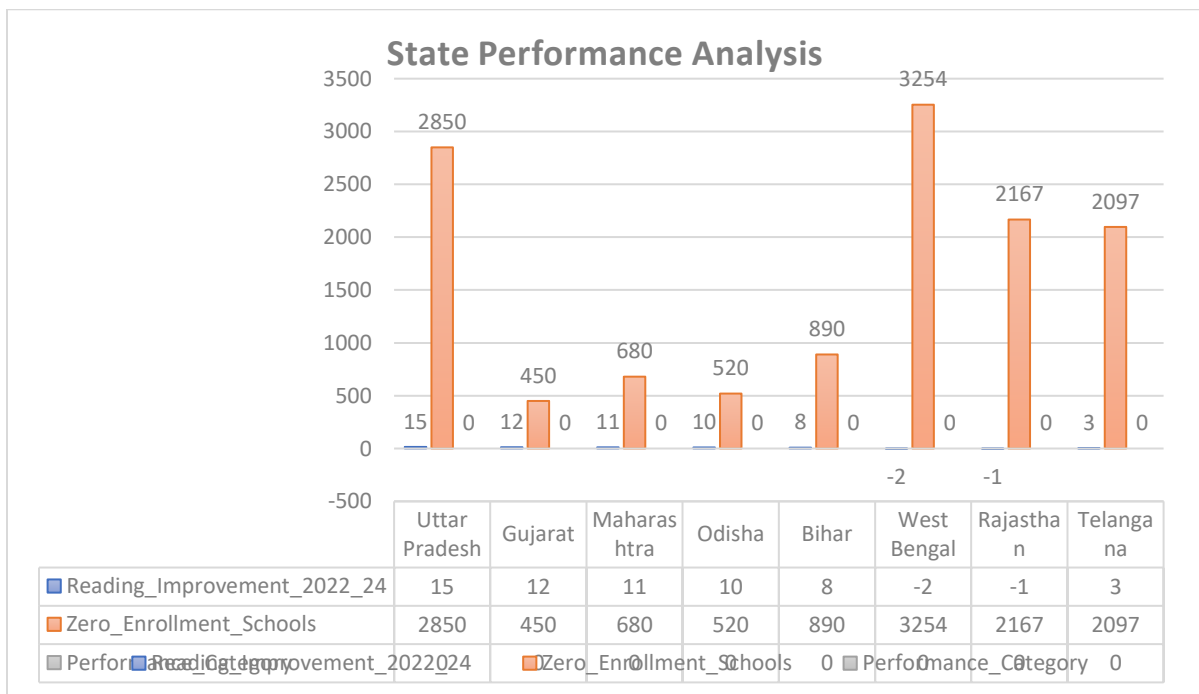
West Bengal and Rajsthan need to improve drastically about reading; the chart exhibits the disparities throughout the nation. NEP 2020 need to focus upon it.

ASER Learning trends from 2018-2024:
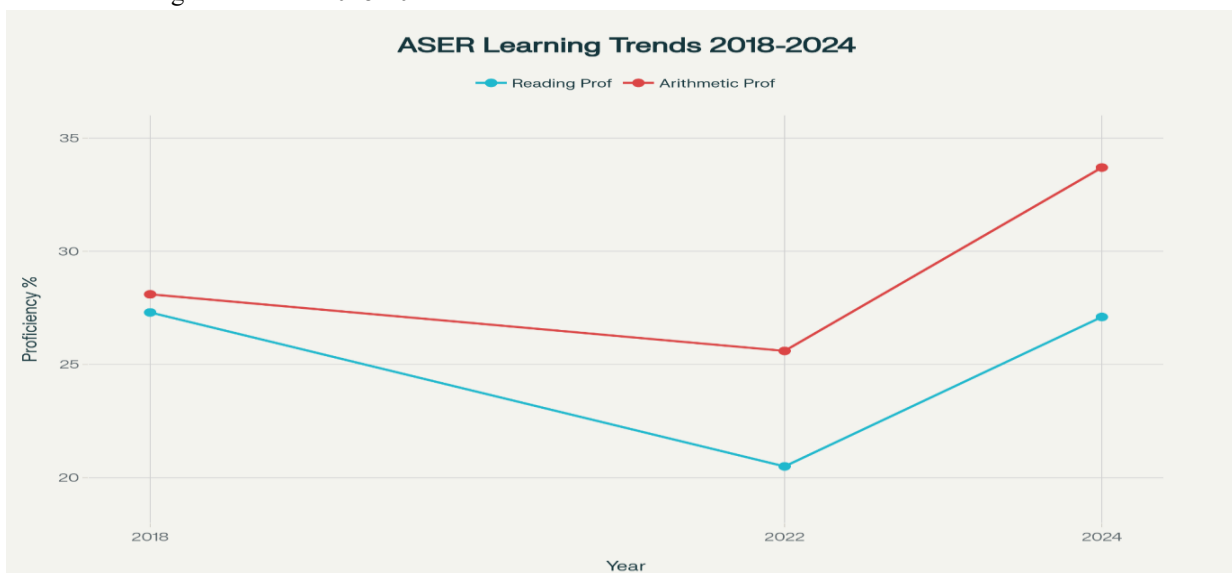
The chart exhibits learning trends from 2018-2024: The trend demonstrates the remarkable flexibility and progress after pandemic; it's observed that reading skills have improved notably;27.1% in 2024 vs 27.3% in 2018; about Arithmetic skills it is topped pre-COVID levels 33.7% in 2024 vs 28.1% in 2018; the trends reveal notable educational flexibility post-pandemic.

India's Digital Divide Analysis
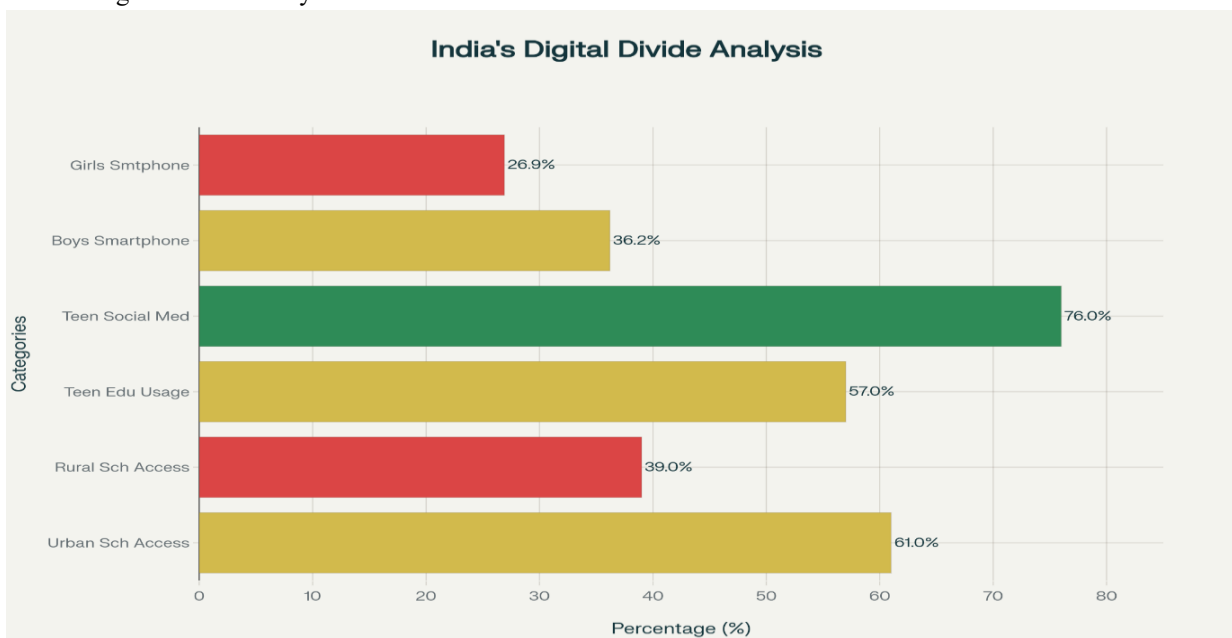
India's Digital Divide: Revealing Critical Gaps in Educational Technology Access - 22-point urban-rural gap and significant gender disparities; about digital access there is 22% gap between rural (39%) and urban(61%) areas. About smartphone ownership, gender disparity is observed; 36.2% boys vs 26.9% girls. Teenage Social media usage is 76% that exceeds the educational usage 57%.

Conclusion

The researcher would like to conclude the study with certain recommendations; for Governments, Schools and Universities.

Recommendations for Government:
1. Policy and Structural Reforms; throughout the study it has been noticed that policy and structural reforms are essential to achieve SDG4. While

implementation of NEP 2020 state specific strategies need be design; states like West Bengal and Rajsthan significantly lacking in reading proficiency. More budget needs to be allocated for Education considering the specific pupil – teacher ratio.

2. Digital Infrastructure and Equity; considering the digital access gap between urban and rural areas, robust plan shall be developed for better internet connectivity. To address the gender disparity targeted gender equity programs in technology access and smartphone ownership should be launched; this will bridge the existing gap.

3. Quality Assurance and Monitoring: Learning outcome monitoring systems shall be established focusing on the concerned findings; out of 96.4% net enrollment, only 43% have reading proficiency. Regional imbalances can be bridged by strengthening teacher training programs, designing mechanism to create accountability which will ensure quality instruction delivery across all regions.

4. Research and Development Investment; Significant growth in research investment is expected, which is currently 0.7%, it shall be near about closer with the OECD average of 2.68% so that tertiary education and innovation capabilities can be strengthened.

Recommendations for Schools

5. Emphasis on Basic Skills – ASER 2024 data majorly focus on students' enhancement zones which are very fundamental such as; reading and arithmetic skills; remedial playful programs can be conducted so that students can acquire it very easily.

6. Digital literacy: Develop structured digital learning environment with user friendly interface which will leverage the course outcome.

7. Inclusive Education Practices: for girls and marginalized communities design and execute targeted support system which will ensure inclusive and equitable practices. Schools can develop multilingual education while building English proficiency for global competitiveness.

8. Development of Teacher: Schools shall create supportive environment for teachers' development and empower them to deliver effective and quality education. Schools should invest in teachers' professional development

which should result in child development and better pedagogical approaches.

Recommendations for Universities

9. Research and Innovation Infrastructure: Universities shall build better research infrastructure and encourage industry – academia partnership to increase research activities and promote industry-academia partnerships to strengthen R & D capacity of the nation. Comprehensive s research facilities shall be developed to encourage faculties and engage them in cutting-edge research activities.

10. Competency-Industry Congruence: In reference with Germany's dual education model vocational training program can be incorporated. Curriculum can be redesigned after understanding understand industry needs and global standards; industry representatives can be appointed on the Board Of Studies. Memorandum of Association (MOU) can be signed to establish strong industry partnerships for internships, apprenticeships, and placement opportunities.

11. Quality assurance & accreditation and international collaborations: this will lead to develop international exchange programs and quality assurance mechanism that will bring global competitiveness not only with universities but also with the colleges and teachers affiliated with it. International collaborations will provide better opportunities and exposure to students.

12. Digital Transformation: universities can create digital libraries and database which can be used by students and teachers. Along with digital learning platforms and digital assessment can also be adopted.

IV. CONCLUSION

This paper focuses on remarkable progress of India towards quality education to achieve Sustainable Development Goal 4 (SDG 4). National Education Policy 2020 is one of the major mile stones in this journey and for this Coordination between Government, Schools, and Universities is essential which will help in developing global competitiveness.

REFERENCES

[1] Banerji, R. (2023). "Household surveys and learning assessments: Understanding ground realities in Indian education." International Journal of Educational Development, 98, 102-115.

[2] Das, S., & Singh, P. (2023). "COVID-19 and educational inequalities: Rural-urban disparities in remote learning." Economic and Political Weekly, 58(12), 45-52.

[3] Kumar, V., & Priyam, S. (2023). "Regional imbalances in NEP 2020 implementation: Challenges and opportunities." Contemporary Education Dialogue, 20(1), 78-95.

[4] Annual Status of Education Report. (2024). ASER 2024: Annual Status of Education Report (Rural). ASER Centre, Pratham Education Foundation.

[5] Ministry of Education, Government of India. (2024). Unified District Information System for Education Plus (UDISE+) 2023-24. Department of School Education and Literacy.

[6] Ministry of Education, Government of India. (2024). All India Survey on Higher Education (AISHE) 2023-24. Department of Higher Education.

[7] Ministry of Education, Government of India. (2020). National Education Policy 2020. Government of India.

[8] Government of India. (2009). The Right of Children to Free and Compulsory Education Act, 2009. Ministry of Law and Justice.

[9] OECD. (2024). Education at a Glance 2024: OECD Indicators. OECD Publishing.

[10] UNESCO Institute for Statistics. (2024). SDG 4 Data Digest: How to Monitor Quality Education. UNESCO.

[11] UNESCO. (2024). Global Education Monitoring Report 2024: Technology in Education. UNESCO Publishing.

[12] United Nations. (2015). Transforming Our World: The 2030 Agenda for Sustainable Development. UN General Assembly.

[13] World Bank. (2024). Learning Poverty: Global Database and Country Profiles. World Bank Group.

[14] ASER Centre. (2024). "Annual Status of Education Report." Retrieved from http://www.asercentre.org/

[15] Ministry of Education, India. (2024). "UDISE+ Portal." Retrieved from https://udiseplus.gov.in/

[16] UNESCO Institute for Statistics. (2024). "Education Data Portal." Retrieved from http://uis.unesco.org/

[17] OECD Education GPS. (2024). "Country Profiles and Education Statistics." Retrieved from https://gpseducation.oecd.org/